APPENDIX A

Air Quality, Global Climate Change, and Energy Impact Analysis

503 WEST MISSION COMMERCIAL PROJECT AIR QUALITY, GLOBAL CLIMATE CHANGE, AND ENERGY IMPACT ANALYSIS

City of Escondido

February 22, 2024

gandini

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

503 WEST MISSION COMMERCIAL PROJECT AIR QUALITY, GLOBAL CLIMATE CHANGE, AND ENERGY IMPACT ANALYSIS

City of Escondido

February 22, 2024

prepared by
Katie Wilson, MS
Catherine Howe, MS

GANDDINI GROUP INC.
555 Parkcenter Drive, Suite 225
Santa Ana, CA 92705
(714) 795-3100 | ganddini.com

Project No. 19703

TABLE OF CONTENTS

EXECUTIVE SUMMARY ..... **IV**

1. INTRODUCTION **1**

Purpose and Objectives 1
Project Location 1
Project Description 1
Phasing and Timing 1
Sensitive Receptors in Project Vicinity 2

2. AIR QUALITY ANALYSIS **5**

Existing Air Quality Conditions 5
Local Air Quality 5
Pollutants 7
Other Pollutants of Concern 9
Regulatory Setting 9
Federal – United States Environmental Protection Agency 10
State – California Air Resources Board 10
Regional 12
San Diego Association of Governments 14
Local – City of Escondido 14
Monitored Air Quality 19
Ozone 19
Carbon Monoxide 20
Nitrogen Dioxide 20
Particulate Matter 20
Air Quality Standards 22
Significance Thresholds 22
Regional Air Quality 22
Toxic Air Contaminants 22
San Diego County CO Emissions Significance Thresholds 23
Odor Impacts 23
Short-Term Construction Emissions 24
Methodology 24
Construction-Related Regional Impacts 25
Construction-Related Toxic Air Contaminant Impacts 25
Construction-Related Odor Impacts 25
Long-Term Operational Emissions 27
Operations-Related Regional Air Quality Impacts 27
Operations-Related Local Air Quality Impacts 28
Cumulative Air Quality Impacts 30
Project Specific Impacts 30
Air Quality Compliance 30

3. GLOBAL CLIMATE CHANGE ANALYSIS **32**

Existing Greenhouse Gas Environment 32
Water Vapor 32
Carbon Dioxide (CO_2) 32
Methane (CH_4) 33
Nitrous Oxide (N_2O) 33
Chlorofluorocarbons (CFC) 33
Hydrofluorocarbons (HFC) 33

Perfluorocarbons (PFC) 33
Sulfur Hexafluoride (SF_6) 34
Aerosols 34
Global Warming Potential 34
Greenhouse Gas Standards and Regulation 36
International 36
Federal 36
State of California 38
Local – City of Escondido 49
Significance Thresholds 50
Appendix G of State CEQA Guidelines 50
Thresholds of Significance for this Project 50
Project Greenhouse Gas Emissions and Consistency With Applicable Greenhouse Gas Reduction Plans and Policies 51
Cumulative Greenhouse Gas Impacts 51

4. ENERGY ANALYSIS 53

Existing Conditions 53
Overview 53
Electricity and Natural Gas 54
Transportation Energy Resources 55
Regulatory Background 55
Federal Regulations 55
State Regulations 56
Project Energy Demands and Energy Efficiency Measures 62
Evaluation Criteria 62
Methodology 62
Construction Energy Demands 63
Operational Energy Demands 65
Renewable Energy and Energy Efficiency Plan Consistency 66
Conclusions 66

5. EMISSIONS REDUCTION MEASURES 77

Construction Measures 77
Operational Measures 77

6. REFERENCES 78

Appendices

Appendix A Glossary

Appendix B CalEEMod Model Detailed Report

Appendix C EMFAC Data & CAP Consistency Checklist

List of Tables

Table 1. Local Monthly Climate Data 6
Table 2. State and Federal Criteria Pollutant Standards 16
Table 3. San Diego County Air Basin Attainment Status 17
Table 4. SDAPCD Air Quality Significance Thresholds 18
Table 5. Air Quality Monitoring Summary 21
Table 6. Construction-Related Regional Pollutant Emissions 26
Table 7. Operational Pollutant Emissions 29
Table 8. Global Warming Potentials and Atmospheric Lifetimes 35
Table 9. Total Electricity System Power (California 2022) 68
Table 10. SDG&E 2022 Power Content Mix 69
Table 11. Project Construction Power Cost and Electricity Usage 70
Table 12. Construction Equipment Fuel Consumption Estimates 71
Table 13. Construction Worker Fuel Consumption Estimates 72
Table 14. Construction Vendor Fuel Consumption Estimates (MHD & HHD Trucks) 73
Table 15. Construction Hauling Fuel Consumption Estimates (HHD Trucks) 74
Table 16. Estimated Vehicle Operations Fuel Consumption 75
Table 17. Project Annual Operational Energy Demand Summary 76

List of Figures

Figure 1. Project Location Map 3
Figure 2. Site Plan 4

EXECUTIVE SUMMARY

The purpose of this air quality, global climate change, and energy impact analysis is to provide an assessment of the impacts resulting from development of the proposed 503 West Mission Commercial project and to identify measures that may be necessary to reduce potentially significant impacts.

Standard Air Quality, Energy, and GHG Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the San Diego County Air Pollution Control District (SDAPCD) and State of California (State).

San Diego County Air Pollution Control District Rules

The following lists the SDAPCD rules that are applicable, but not limited to, the proposed project.

- Rule 20.2 Non-Major Stationary Sources – Controls the emissions of air contaminants;
- Sources – Controls the emissions of air contaminants;
- Rule 50 Visible Emissions – Controls visible emissions from all sources, including fugitive dust;
- Rule 51 Nuisance – Controls the emissions of odors and other air contaminants;
- Rule 55 Fugitive Dust Control – Controls the emissions of fugitive dust; and
- Rule 67.0.1 Architectural Coating – Establishes VOC content limits;

State of California Rules

The following lists the State of California Code of Regulations (CCR) air quality emission rules that are applicable, but not limited to, the proposed project.

- CCR Title 13, Article 4.8, Chapter 9, Section 2449 – In use Off-Road Diesel Vehicles;
- CCR Title 13, Section 2025 – On-Road Diesel Truck Fleets;
- CCR Title 24 Part 6 – California Building Energy Standards; and
- CCR Title 24 Part 11 – California Green Building Standards

Construction-Source Emissions

Project construction-source emissions would not exceed applicable screening thresholds of significance established by the SDAPCD.

Project construction-source emissions would not conflict with the San Diego Regional Air Quality Strategy (RAQS) or the California State Implementation Plan (SIP). As discussed herein, the project will comply with all applicable SDAPCD construction-source emission reduction rules and guidelines. Project construction source emissions would not cause or substantively contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less than significant.

Operational-Source Emissions

Project operational-sourced emissions would not exceed applicable screening thresholds of significance established by the SDPACD. Additionally, project-related trips will not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO "hotspots). Project operational-source emissions would therefore not adversely affect sensitive receptors within the vicinity of the project.

Project operational-source emissions would not conflict with the SDAPCD's Regional Air Quality Strategy (RAQS) or the California State Implementation Plan (SIP). The project's emissions meet SDAPCD screening thresholds and will not result in a significant cumulative impact. The project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential operational-source odor impacts are therefore considered less than significant.

Greenhouse Gases

Project-related greenhouse gas (GHG) emissions would not exceed screening criteria of the City of Escondido Climate Action Plan (CAP).

Furthermore, the project would not conflict with the goals of CARB Scoping Plan, AB-32, SB-32 and the City of Escondido CAP. Therefore, the project would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and impacts are considered to be less than significant.

Energy

For new development such as that proposed by the 503 West Mission Commercial project, compliance with California Building Standards Code Title 24 energy efficiency requirements (CALGreen), are considered demonstrable evidence of efficient use of energy. As discussed below, the project would provide for, and promote, energy efficiencies required under other applicable federal and State of California standards and regulations, and in so doing would meet or exceed all California Building Standards Code Title 24 standards. Moreover, energy consumed by the project's operation is calculated to be comparable to, or less than, energy consumed by other commercial uses of similar scale and intensity that are constructed and operating in California. Additionally, the project will comply with the City's Energy Climate Action Element (ECAE). On this basis, the project would not result in the inefficient, wasteful, or unnecessary consumption of energy. Impacts are considered to be less than significant.

1. INTRODUCTION

This section describes the purpose of this air quality, global climate change, and energy impact analysis, project location, proposed development, and study area. Figure 1 shows the project location map and Figure 2 illustrates the project site plan.

PURPOSE AND OBJECTIVES

This study was performed to address the possibility of regional/local air quality impacts and global climate change impacts, from project related air emissions. The objectives of the study include:

- documentation of the atmospheric setting
- discussion of criteria pollutants and greenhouse gases
- discussion of the air quality and global climate change regulatory framework
- discussion of the air quality and greenhouse gases thresholds of significance
- analysis of the construction related air quality and greenhouse gas emissions
- analysis of the operations related air quality and greenhouse gas emissions
- analysis of the conformity of the proposed project with the San Diego County Air Pollution Control District's (SDAPCD) air quality strategies
- analysis of the project's energy use impacts during construction and operation
- recommendations for mitigation/emissions reduction measures

The City of Escondido is the lead agency for this air quality and greenhouse gas analysis, in accordance with the California Environmental Quality Act authorizing legislation. Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with terms unique to air quality and global climate change, a definition of terms has been provided in Appendix A.

PROJECT LOCATION

The 1.5-acre (net) project site is located at 503 West Mission Avenue, situated at the southwest corner of the intersection of Mission Avenue and Centre City Parkway, in the City of Escondido, California. The project site is currently occupied with a sit-down restaurant, unpaved parking, and a pool for the adjacent hotel (Quality Inn). A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The proposed project involves demolition of the existing restaurant and redevelopment of the site with three new commercial/food service uses totaling 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. Project site access is proposed via one existing driveway at Mission Avenue and one new driveway at Centre City Parkway. Figure 2 illustrates the proposed site plan.

PHASING AND TIMING

The proposed project is anticipated to be operational in 2025. The project is anticipated to be built in one phase with project construction anticipated to start no sooner than November 2024, with completion estimated June 2025. The construction schedule utilized in the analysis represents a "worst-case" analysis scenario even if construction was to occur any time after the respective dates since emission factors for

construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.[1]

SENSITIVE RECEPTORS IN PROJECT VICINITY

Those who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SDAPCD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities. Schools and day-care facilities are also considered to be sensitive receptors. Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours.

The nearest sensitive receptors to the project site are: the existing motel use located adjacent to the west and the multi-family residential uses located adjacent to the south, approximately 60 feet (~18 meters) to the west, and approximately 165 feet (~50 meters) to the southeast of the project site boundaries. Other air quality sensitive land uses are located further from the project site and would experience lower impacts.

[1] As shown in the California Emissions Estimator Model (CalEEMod) User's Guide Version 2020.4.0, Section 4.3.2 "OFFROAD Equipment" as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

Figure 1
Project Location Map

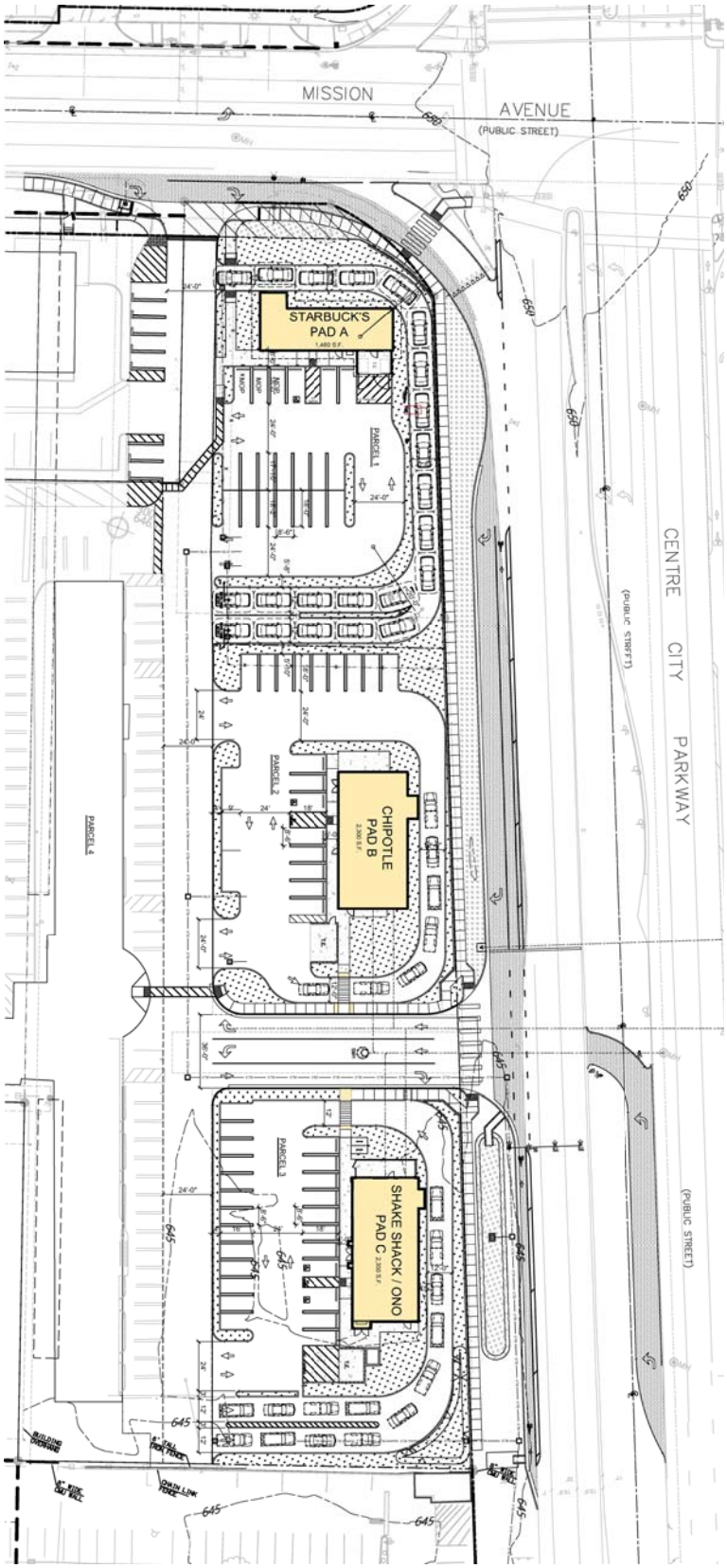


Figure 2
Site Plan

2. AIR QUALITY ANALYSIS

EXISTING AIR QUALITY CONDITIONS

Local Air Quality

The project site is located the western portion of San Diego County in the City of Escondido, which is part of the San Diego Air Basin (Air Basin) that is contiguous with the political boundary of San Diego County. The Air Basin is divided by the Laguna Mountain Range with peaks that exceed 6,000 feet and runs approximately parallel to the coast about 45 miles inland and separates the coastal area from the desert. To the north of the Air Basin are the Santa Ana Mountains, which run along the Orange County coast, turning east to join with the Laguna Mountains near the San Diego-Orange County border.

The same atmospheric conditions that create a desirable living climate combine to limit the ability of the atmosphere to disperse the air pollution generated by the large population attracted to the pleasant climate. In the summer, subsidence inversions occur as descending air associated with the Pacific high-pressure cell comes into contact with cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. In the winter, radiation inversion occurs when air near the ground cools through radiation and the air aloft remains warm. This creates a shallow inversion layer between these two air masses that can also trap pollutants. Limited rainfall occurs in the western San Diego County during the winter, as the oceanic high-pressure center is the weakest and farthest south as the fringes of mid-latitude storms occasionally move through the area.

The temperature and precipitation levels for the City of Escondido are shown below in Table 1. Table 1 shows that August is typically the warmest month and January and December are typically the coolest months. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table 1
Local Monthly Climate Data

Descriptor	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Max. Temperature	68.8	69	70.8	74.7	77.4	82	87.3	88.6	86.2	80	71.2	68.9
Avg. Min. Temperature	42.6	44.5	47.2	50.5	54.8	58.4	62.1	63.4	61	55.1	45.6	42.3
Avg. Total Precipitation (in.)	2.83	3.27	2.58	1.16	0.32	0.15	0.06	0.09	0.24	0.74	1.25	2.18

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2863
Data from the Escondido 2, CA station (042863).

Pollutants

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

Criteria Pollutants

The criteria pollutants consist of: ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants.

Nitrogen Dioxides

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NOx and the pollutants formed from NOx can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone (O_3) is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NOx and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high

traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Dioxide

Sulfur Oxide (SOx) gases (including sulfur dioxide [SO_2]) are formed when fuel containing sulfur, such as coal and oil is burned, and from the refining of gasoline. SOx dissolve easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

Lead

Lead (Pb) is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Particulate Matter

Particulate matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. Particulate matter is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

Reactive Organic Gases (ROG)

Although not a criteria pollutant, reactive organic gases (ROGs), or volatile organic compounds (VOCs), are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably. Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

Other Pollutants of Concern

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of toxic air contaminants include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important of these toxic air contaminants, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to toxic air contaminants can result from emissions from normal operations as well as from accidental releases. Health effects of toxic air contaminants include cancer, birth defects, neurological damage, and death.

Toxic air contaminants are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity. Sources of toxic air contaminants include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to the 2013 California Almanac of Emissions and Air Quality, the majority of the estimated health risk from toxic air contaminants can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). Diesel particulate matter is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of diesel particulate matter as a toxic air contaminant in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in diesel particulate matter by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot". Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of diesel particulate matter as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to diesel particulate matter is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by CARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. Naturally occurring asbestos is not present in San Diego County. The nearest likely locations of naturally occurring asbestos, as identified in the General Location Guide for Ultramafic Rocks in California prepared by the California Division of Mines and Geology, is located at Asbestos Mountain in the San Jacinto Valley; approximately 50 miles northeast of the site. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

REGULATORY SETTING

The proposed project is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through

legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The National Ambient Air Quality Standards (NAAQS) pollutants were identified using medical evidence and are shown below in Table 2.

The EPA and CARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual PM2.5 standard is met if the three-year average of the annual average PM2.5 concentration is less than or equal to the standard. Attainment status is shown in Table 3.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The State Implementation Plan (SIP) must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the State Implementation Plan (SIP).

As indicated below in Table 3, the Basin has been designated by the EPA as a non-attainment area for ozone (O_3 8-hour). and suspended particulates (PM10 and PM2.5). Currently, the Basin is in attainment with the national ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO_2), and nitrogen dioxide (NO_2).

State – California Air Resources Board

The CARB, which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the State Implementation Plan (SIP). The California Ambient Air Quality Standards (CAAQS) for criteria pollutants are shown in Table 2. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. Furthermore, the motor vehicle emission standards established by CARB include compliance with the Safer Affordable Fuel-Efficient Vehicles (SAFE) Rule, issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020). The SAFE Rule sets fuel economy and carbon dioxide standards that increase 1.5 percent in stringency each year from model years 2021 through 2026 and apply to both passenger cars and light trucks. CARB. It also sets fuel specifications to further reduce vehicular emissions. The SAFE Rule was repealed on December 21, 2021.

The San Diego Air Basin has been designated by the CARB as a nonattainment area for ozone, PM10 and PM2.5. Currently, the San Diego Air Basin is in attainment with the ambient air quality standards for CO, lead, SO_2, NO , and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

On June 20, 2002, the CARB revised the PM10 annual average standard to 20 µg/m3 and established an annual average standard for PM2.5 of 12 µg/m3. These standards were approved by the Office of Administrative Law in June 2003 and are now effective.

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, Title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a once-per-year 3-day pass for trucks registered outside of California.

The CARB is also responsible for regulations pertaining to toxic air contaminants. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into the San Diego Air Basin. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

In 2004, the California Air Resources Board (CARB) adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants (Title 13 California Code of Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure generally does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a necessary function such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). CARB has also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation, adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. While these regulations primarily target reductions in criteria air pollutant emission, they also have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

AB 617 Nonvehicular air pollution: criteria air pollutants and toxic air contaminants

This bill requires the state board to develop a uniform statewide system of annual reporting of emissions of criteria air pollutants and toxic air contaminants for use by certain categories of stationary sources. The bill requires those stationary sources to report their annual emissions of criteria air pollutants and toxic air contaminants, as specified. This bill required the state board, by October 1, 2018, to prepare a monitoring plan regarding technologies for monitoring criteria air pollutants and toxic air contaminants and the need for and benefits of additional community air monitoring systems, as defined. The bill requires the state board to select, based on the monitoring plan, the highest priority locations in the state for the deployment of community air monitoring systems. The bill requires an air district containing a selected location, by July 1, 2019, to deploy a system in the selected location. The bill would authorize the air district to require a stationary source that emits air pollutants in, or that materially affect, the selected location to deploy a fence-line monitoring system, as defined, or other specified real-time, on-site monitoring. The bill authorizes the state board, by January 1, 2020, and annually thereafter, to select additional locations for the deployment of the systems. The bill would require air districts that have deployed a system to provide to the state board air

quality data produced by the system. By increasing the duties of air districts, this bill would impose a state-mandated local program. The bill requires the state board to publish the data on its Internet Web site.

Regional

San Diego Air Pollution Control District

The SDAPCD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SDAPCD works directly with the San Diego Association of Governments (SANDAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

Air Quality Management Plan

The SDAPCD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. The SDAPCD is directly responsible for reducing emissions from stationary, mobile, and indirect sources.

The SDAPCD regulates most air pollutant sources, except for motor vehicles, marine vessels, aircraft, and agricultural equipment, which are regulated by the CARB or the EPA. In addition, the SDAPCD along with the CARB maintains and operates ambient air quality monitoring stations at numerous locations throughout San Diego County, including one at Camp Pendleton. These stations are used to measure and monitor criteria pollutant levels in order to determine the attainment status of the pollutants within the Air Basin.

The SDAPCD developed a Regional Air Quality Strategy (RAQS) to provide control measures to try to achieve attainment status for state ozone standards with control measures focused on Volatile Organic Compounds (VOCs) and oxides of nitrogen (NO_X). Currently, the County is in "nonattainment" status for federal and state O_3 and State PM10 and PM2.5. An attainment plan is available for only O_3. The RAQS was adopted in 1992 and has been updated as recently as 2016 which was the latest update incorporating minor changes to the prior 2009 update.

The 2016 update mostly summarizes how the 2009 update has lowered NO_X and VOCs emissions which reduces ozone and clarifies and enhances emission reductions by introducing three new VOC and four new NO_X reduction measures. NO_X and VOCs are precursors to the formation of O_3 in the atmosphere. The criteria pollutant standards are generally attained when each monitor within the region has had no exceedances during the previous three calendar years.

The 2022 RAQS update was approved by SCAPCD on March 9, 2023. The primary requirement associated with the 2022 RAQS is to ensure that a revised emission control strategy contained in each RAQS be at least as effective in improving air quality as the control strategy being replaced. The proposed and scheduled measures included will provide additional direct emission reductions of ozone precursors (volatile organic compounds (VOC) and oxides of nitrogen (NOx)), as well as indirect reductions of GHG and PM emissions. The RAQS is largely based on population predictions by SANDAG. Projects that produce the same or less growth than predicted by SANDAG would generally conform to the RAQS. Projects that create more growth than projected by SANDAG may create a significant impact if the project produces unmitigable air quality emissions or if the project produces cumulative impacts.

The following lists the SDAPCD rules that are applicable, but not limited to, projects in the Air Basin.

Rule 20.2 – Air Quality Impact Assessment Screening Thresholds

The SDAPCD has established thresholds in Rule 20.2 for new or modified stationary sources. The County's Guidelines for Determining Significance and Report Format and Content Requirements incorporate screening

level thresholds from Rule 20.2 for use in all County related Air Quality Impact Assessments (AQIA) and for determining CEQA air quality impacts (County of San Diego, 2007). These screening criteria can be used to demonstrate that a project's total emissions would not result in a significant impact as defined by CEQA. Also, since SDAPCD does not have AQIA threshold for VOCs, it is acceptable to use the Coachella Valley VOC threshold from South Coast Air Quality Management District. Should emissions be found to exceed these thresholds, additional modeling is required to demonstrate that the project's total air quality impacts are below the state and federal ambient air quality standards.

These screening thresholds for construction and daily operations are shown in Table 4. Non criteria pollutants such as Hazardous Air Pollutants (HAPs) or Toxic Air Contaminants (TACs) are also regulated by the SDAPCD. Rule 1200 (Toxic Air Contaminants - New Source Review) adopted on June 12, 1996, requires evaluation of potential health risks for any new, relocated, or modified emission unit which may increase emissions of one or more toxic air contaminants. The rule requires that projects that propose to increase cancer risk to between 1 and 10 in one million need to implement toxics best available control technology (T-BACT) or impose the most effective emission limitation, emission control device or control technique to reduce the cancer risk. At no time shall the project increase the incremental cancer risk to over 10 in one million or a health hazard index (chronic and acute) greater than one since risks above. Projects creating cancer risks less than one in one million are not required to implement T-BACT technology.

The U.S. EPA uses the term VOC and the CARB's Emission Inventory Branch (EIB) uses the term Reactive Organic Gases (ROG) to essentially define the same thing. There are minor deviations between compounds that define each term however for purposes of this study we will assume they are essentially the same due to the fact SCAQMD interchanges these words and because air quality models directly calculate ROG in place of VOC.

Rule 20.3 – Major Stationary Sources and Prevention of Significant Deterioration (PSD) Stationary Sources

Rule 20.3 requires a new or modified emissions units, relocated emission units, replacement emission units, and emergency equipment emission units with a post-project potential to emit 10 pounds per day or more of PM10, NOx, VOC, or Sox shall be equipped with best available control technology (BACT) for each air contaminant.

Rule 51 - Nuisance

Rule 51 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, 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. Compliance with Rule 51 will reduce local air quality and odor impacts to nearby sensitive receptors.

Rule 52 – Particulate Matter

Rule 52 prohibits a person from discharging into the atmosphere from any source particulate matter in excess of 0.10 grain per dry standard cubic foot (0.23 grams per dry standard cubic meter) of gas.

Rule 55 – Fugitive Dust Control

Rule 55 governs emissions of fugitive dust during construction activities and requires the following:

1. No person shall engage in construction or demolition activities in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.

2. Visible roadway dust as a result of active operations, spillage from transport trucks, erosions, or track-out/carry-out shall be minimized by the use of any of the equally effective track-out/carryout and erosion control measures listed in Rule 55 that apply to the project or operation. These measures include: track-out grates or gravel beds at each egress point; wheel-washing at each egress during muddy conditions; soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; watering for dust control; and using secured tarps or cargo covering, watering, or treating of transported material for outbound transport trucks.

Rule 67.0.1 - Architectural Coatings

Rule 67.01 requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

San Diego Association of Governments

SANDAG is the regional planning agency for San Diego County and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. With respect to air quality planning and other regional issues, SANDAG has prepared San Diego Forward: The 2021 Regional Plan (2021 Regional Plan) for the San Diego region (SANDAG 2021). The 2021 Regional Plan combines the Regional Transportation Plan, Sustainable Communities Strategy (SCS), and Regional Comprehensive Plan and provides a long-term blueprint for the San Diego region that seeks to meet regulatory requirements, address traffic congestion, and create equal access to jobs, education, healthcare, and other community resources. In regard to air quality, the 2021 Regional Plan reduces per capita GHG emissions from cars and light duty trucks to 20 percent below 2005 levels by 2035, exceeding the region's state mandated target of 19 percent. The 2021 Regional Plan also meets federal air quality conformity requirements (SANDAG 2021). On September 23, 2022, SANDAG's Board of Directors adopted the 2023 Regional Transportation Improvement Program (RTIP). The 2023 RTIP is a multibillion-dollar, five-year program of major transportation projects funded by federal, state, local, and private funding, including the TransNet local sales tax, covering fiscal years 2023 to 2027. The 2023 RTIP development process, which includes the air quality emissions analysis for all regionally significant projects, requires approval by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The Federal Highway Administration and Federal Transit Administration approved the 2023 RTIP and its federal conformity determination in December 2022.

Local – City of Escondido

Local jurisdictions, such as the City of Escondido, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the District is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the AQMPs. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the region will meet federal and state standards. Instead, the City relies on the expertise of the SDAPCD for guidance with the environmental review of plans within its jurisdiction.

City of Escondido General Plan

The City of Escondido's General Plan contains goals and policies regarding air quality in the Resources Conservation Element. The goals and policies applicable to the proposed project from the Resource conservation Element of the Escondido General Plan are stated below.

Goal 7 Improved air quality in the city and the region to maintain the community's health and reduce greenhouse gas emissions that contribute to climate change.

Policy 7.1 Participate in regional planning efforts and coordinate with the San Diego Air Pollution Control District and San Diego Association of Governments in their efforts to reduce air quality impacts and attain state and federal air quality standards.

Policy 7.3 Require that new development projects incorporate feasible measures that reduce construction and operational emissions.

Policy 7.4 Locate uses and facilities/operations that may produce toxic or hazardous air pollutants an adequate distance from each other and from sensitive uses such as housing and schools as consistent with California Air Resources Board recommendations.

Policy 7.6 Restrict the number and location of drive-through facilities in the city and require site layouts that reduce the amount of time vehicles wait for service.

Policy 7.7 Encourage businesses to alter local truck delivery schedules to occur during non-peak hours, when feasible.

Policy 7.8 Require that government contractors minimize greenhouse gas emissions in building construction and operations, which can be accomplished through the use of low or zero-emission vehicles and equipment.

Policy 7.11 Educate the public about air quality, its effect on health, and efforts the public can make to improve air quality and reduce greenhouse gas emissions.

Table 2
State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O_3)	0.09 ppm/1-hour 0.07 ppm/8-hour	0.070 ppm/8-hour	(a) Decline in pulmonary function and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage.
Carbon Monoxide (CO)	20.0 ppm/1-hour 9.0 ppm/8-hour	35.0 ppm/1-hour 9.0 ppm/8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	0.18 ppm/1-hour 0.03 ppm/annual	100 ppb/1-hour 0.053 ppm/annual	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm/1-hour 0.04 ppm/24-hour	75 ppb/1-hour 0.14 ppm/annual	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM_{10})	50 µg/m^3/24-hour 20 µg/m^3/annual	150 µg/m^3/24-hour	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in elderly.
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m^3 / annual	35 µg/m^3/24-hour 12 µg/m^3/annual	
Sulfates	25 µg/m^3/24-hour	No Federal Standards	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) property damage.
Lead	1.5 µg/m^3/30-day	0.15 µg/m^3/3-month rolling	(a) Learning disabilities; (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer-visibility of 10 miles or more due to particles when humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

Source: https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf

Table 3
San Diego County Air Basin Attainment Status

Pollutant	Federal Designation	State Designation
Ozone (8-hour)	Nonattainment	Nonattainment
Ozone (1-hour)	Attainment[1]	Nonattainment
CO	Attainment	Attainment
PM10	Unclassifiable[2]	Nonattainment
PM2.5	Attainment	Nonattainment[3]
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassified
Visibility	(No federal standard)	Unclassified

Source (Federal and State Status): https://www.sdapcd.org/content/sdapcd/planning/attainment-status.html

(1) The federal 1-hour standard of 0.12 ppm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.

(2) At the time of designation, if the available data do not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

(3) The California Air Resources Board (CARB) has not reclassified the region to attainment yet due to (1) incomplete data, and (2) the use of non-California Approved Samplers (CAS). While data collected does meet the requirements for designation of attainment with federal PM2.5 standards, the data completeness requirements for state PM2.5 standards substantially exceed federal requirements and mandates, and have historically not been feasible for most air districts to adhere to given local resources. APCD has begun replacing most regional filter-based PM2.5 monitors as they reach the end of their useful life with continuous PM2.5 air monitors to ensure collected data meets stringent completeness requirements in the future. APCD anticipates these new monitors will be approved as "CAS" monitors once CARB review the list of approved monitors, which has not been updated since 2013.

Table 4
SDAPCD Air Quality Significance Thresholds

Pollutant	Total Emissions		
	Pounds Per Hour	Pounds Per Day	Tons Per Year
PM10	-	100	15
PM2.5	-	55 [1]	10 [1]
NOx	25	250	40
SOx	25	250	40
CO	100	550	100
Lead	-	3.2	0.6
VOC	-	75 [2]	13.7 [3]

Source: San Diego County. March 2007. County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Air Quality. http://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf.

Notes:

(1) EPA "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" published September 8, 2005. Also used by the SCAQMD.

(2) Threshold for VOCs based on the threshold of significance for VOCs from the South Coast Air Quality Management District for the Coachella Valley.

(3) 13.7 Tons Per Year threshold based on 75 lbs/day multiplied by 365 days/year and divided by 2000 lbs/ton.

MONITORED AIR QUALITY

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. The SDAPCD regulates most air pollutant sources, except for motor vehicles, marine vessels, aircraft, and agricultural equipment, which are regulated by the CARB or the EPA. In addition, the SDAPCD along with the CARB maintains and operates ambient air quality monitoring stations at numerous locations throughout San Diego County, including one at Camp Pendleton. These stations are used to measure and monitor criteria pollutant levels in order to determine the attainment status of the pollutants within the Air Basin.

The Air Basin was designated nonattainment for the 1997 8-hour ozone NAAQS, effective June, 2004 based on ozone air quality measurements over the 2001-2003 three-year period. The Air Basin was designated as a "basic" (unclassified) nonattainment area, which allowed more flexibility to the SDAPCD than the more stringent nonattainment classifications. In June 2007, the SDAPCD submitted a SIP revision fulfilling the requirements EPA had established for a basic nonattainment area. However, due to a court ruling the EPA did not accept the SIP revision and instead reclassified the Air Basin as a "Moderate" ozone nonattainment area. On December 5, 2012 the SDAPCD applied for redesignation of the 1997 8-hour ozone based on air quality measurements over the 2009-2011 three-year period, which showed the Air Basin is currently in attainment for the 1997 standard.

In 2008, a more protective 8-hour ozone NAAQS was established by the EPA at a level of 0.075 ppm. In order to address the requirements of the California Clean Air Act (CCAA) of a 5 percent annual reduction in countywide emissions of ozone precursors or if that is not achievable an expeditious schedule for adopting every feasible control measure, the SDAPCD has developed the San Diego Regional Air Quality Strategy (RAQS) that identifies feasible emission control measure and provides expeditious progress toward attaining the State's ozone standards. The RAQS control measures focus on emissions sources under the SDAPCD's authority, specifically stationary emissions sources and some area-wide sources that include residential water heaters, furnaces, architectural coatings, and consumer products. The RAQS was initially adopted by the SDAPCD on June 1992 and amended on March 1993 based on CARB comments. The SDAPCD further updated the RAQS on December 1995, June 1998, August 2001, July 2004, April 2009, December 2016, and March 2023.

Data was taken from the Camp Pendleton monitoring station (Camp Pendleton Station). The Camp Pendleton Station is located approximately 18.7 miles northwest of the project site at 21441-W B Street, Oceanside. Table 5 presents the monitored pollutant levels from the Camp Pendleton Station. However, it should be noted that due to the air monitoring stations distance from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site.

Table 5 summarizes 2020 through 2022 published monitoring data, which is the most recent 3-year period available. The data shows that during the past few years, the project area has exceeded the ozone standards.

Ozone

During the 2020 to 2022 monitoring period, the State 1-hour concentration standard for ozone was not exceeded at the Camp Pendleton Station. The State 8-hour ozone standard has been exceeded for only three days in 2020 over the past three years at the Camp Pendleton Station. The Federal 8-hour ozone standard was exceeded for only three days in 2020 over the past three years at the Camp Pendleton Station.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area.

Carbon Monoxide

CO is another important pollutant that is due mainly to motor vehicles. The Camp Pendleton Station did not record an exceedance of the state or federal 8-hour CO standard for the last three years.

Nitrogen Dioxide

The Camp Pendleton Station did not record an exceedance of the State or Federal NO_2 standards for the last three years.

Particulate Matter

There was no information for the State 24-hour concentration standards for PM10 and Federal 24-hour standards for PM10 over the past three years.

There was insufficient data for the Federal 24-hour standard for PM2.5 over the past three years at the Camp Pendleton Station.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

Table 5
Air Quality Monitoring Summary

Pollutant (Standard)[1]		Year		
		2020	2021	2022
Ozone:	Maximum 1-Hour Concentration (ppm)	0.094	0.074	0.076
	Days > CAAQS (0.09 ppm)	0	0	0
	Maximum 8-Hour Concentration (ppm)	0.074	0.059	0.067
	Days > NAAQS (0.070 ppm)	3	0	0
	Days > CAAQS (0.070 ppm)	3	0	0
Carbon Monoxide:	Maximum 8-Hour Concentration (ppm)	*	*	*
	Days > CAAQS (9 ppm)	0	0	0
	Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:	Maximum 1-Hour Concentration (ppm)	0.058	0.059	0.050
	Days > CAAQS (0.18 ppm)	0	0	0
Inhalable Particulates (PM10):	Maximum 24-Hour Concentration (µg/m^3)	*	*	*
	Days > NAAQS (150 µg/m^3)	*	*	*
	Days > CAAQS (50 µg/m^3)	*	*	*
	Annual Average (µg/m^3)	*	*	*
Ultra-Fine Particulates (PM2.5):	Maximum 24-Hour Concentration (µg/m^3)	61.1	20.7	18.0
	Days > NAAQS (35 µg/m^3)	*	*	0
	Annual Average (µg/m^3)	9.5	*	*

Source: http://www.arb.ca.gov/adam/topfour/topfour1.php. Data from the Camp Pendleton Monitoring Station, unless otherwise noted.

Notes:

(1) CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million

* Means there was insufficient data available to determine value.

AIR QUALITY STANDARDS

Significance Thresholds

Appendix G of the State CEQA Guidelines

Appendix G of the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make a significance determination. Pursuant to Appendix G, the project would result in a significant impact related to air quality if it would:

- Conflict with or obstruct the implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Regional Air Quality

The SDAPCD has established annual significance thresholds for NOx and VOC for stationary sources. The SDAPCD has not established rules for characterizing impacts from construction. However, SDAPCD informally recommends quantifying construction emissions and comparing them to significance thresholds found in SDAPCD regulations for stationary sources (pursuant to SDAPCD Rules 20.2 and 20.3 and shown in Table 4). Because these Rules do not include VOCs or PM2.5, the screening level for VOCs and PM2.5 used in this analysis are from the South Coast Air Quality Management District (SCAQMD), which generally has stricter emissions thresholds than SDAPCD. If construction-phase emissions exceed these thresholds for a stationary source air quality impact analysis, then construction has the potential to violate air quality standards or to contribute substantially to an existing violation. For the purposes of this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SDAPCD air quality screening-level thresholds identified in Table 4.

Toxic Air Contaminants

Construction

Temporary TAC emissions associated with DPM emissions from heavy construction equipment would occur during the construction phase of the Project. According to the Office of Environmental Health Hazard Assessment (OEHHA)[2] health effects from TACs are described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 30-year lifetime will contract cancer based on the use of standard risk-assessment methodology. Additionally, the SDAPCD guidance does not require an HRA for short-term construction emissions. Construction activities associated with the project would be sporadic, transitory, and short-term in nature (approximately 7 months).

Operation

SDAPCD's Rule 1210 threshold for public noticing is based on what the SDAPCD has determined as the potential for a project to contribute to potential significant adverse health impacts to nearby sensitive receptors and is based on similar thresholds provided in Health Risk Assessments for Proposed Land Use Projects, prepared by CAPCOA, July 2009. Therefore, if the proposed project is anticipated to create TACs

[2] Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

from stationary sources or regular operations of diesel trucks on the project site that would potentially exceed the above thresholds at any nearby sensitive receptors than the TAC emissions should be analyzed through a comprehensive facility-wide health risk assessment (HRA).

CARB published the *Air Quality and Land Use Handbook* in April 2005 to serve as a general guide for considering impacts to sensitive receptors from facilities that emit TAC emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Some examples of CARB's siting recommendations include the following: (1) avoid siting sensitive receptors within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (2) avoid siting sensitive receptors within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); (3) avoid siting sensitive receptors within 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines; and (4) avoid siting sensitive receptors within 300 feet of a large gasoline dispensing facility (3.6 million gallons per year or more) or 50 feet of a typical gasoline dispensing facility (less than 3.6 million gallons per year).

The project is a commercial project consisting of fast-food restaurants with drive-through windows and will not be a source of toxic air contaminants.

San Diego County CO Emissions Significance Thresholds

CO emissions are the result of the combustion process, and therefore primarily associated with mobile source emissions. CO "hotspots" or pockets where the CO concentration exceeds the NAAQS and/or CAAQS, have been found to occur only at signalized intersections that operate at or below level of service (LOS) E with peak-hour trips for that intersection exceeding 3,000 trips (San Diego County 2007). Pursuant to the County's CEQA Significance Determination Thresholds, a site-specific CO hotspot analysis should be performed to determine if health standards are potentially violated and to identify any affected sensitive receptor if a proposed development would:

- Place receptors within 500 feet of a signalized intersection operating at or below LOS E (peak-hour trips exceeding 3,000 trips)
- Cause road intersections to operate at or below a LOS E (with intersection peak-hour trips exceeding 3,000)
- Result in emissions of CO that when totaled with the ambient concentrations, will exceed 1-hour concentration of 20 ppm or an 8-hour average of 9 ppm

Odor Impacts

An odor impact would occur if the proposed project creates an odor nuisance pursuant to SDAPCD's Rule 51, 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 do not apply to odors emanating from agricultural operations in the growing of crops or raising of fowl or animals."*

If the proposed project results in a violation of Rule 51 with regards to odor impacts, then the proposed project would create a significant odor impact. The odor analysis for both construction and operation of the proposed project can be found below.

SHORT-TERM CONSTRUCTION EMISSIONS

Construction activities associated with the proposed project would have the potential to generate air emissions, toxic air contaminant emissions, and odor impacts. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. The construction activities for the proposed project are anticipated to include: demolition of an existing 2,391 square foot restaurant, site preparation of approximately 0.92 acres to remove existing asphalt surfaces, pool, and tennis court; grading of approximately 1.5 acres; construction of 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window[3]; paving of a parking lot with 64 spaces; and application of architectural coatings. See Appendix B for more details.

The proposed project is anticipated to start construction no sooner than November 2024, with completion anticipated in June 2025. The project is anticipated to be operational in 2025.

Methodology

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the proposed project's short-term construction emissions for the criteria pollutants. The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

Emissions are estimated using the CalEEMod (Version 2022.1.1.21) software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California.

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The input values used in this analysis were adjusted to be project-specific for the construction schedule and the equipment used was based on CalEEMod defaults. The CalEEMod program uses the EMFAC2021 computer program to calculate the emission rates specific for the San Diego County for construction-related employee vehicle trips and the OFFROAD2017 computer program to calculate emission rates for heavy truck operations. EMFAC2021 and OFFROAD2017 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Daily truck trips and CalEEMod default trip length data were used to assess roadway emissions from truck exhaust. The maximum daily emissions are estimated values for the worst-case day and do not represent the emissions that would occur for every day of project construction. The maximum daily emissions are compared to the SDAPCD screening numeric indicators. Detailed construction equipment lists, construction scheduling, and emission calculations are provided in Appendix B.

Fugitive dust emissions vary greatly during construction and are dependent on the amount and type of activity, silt content of the soil, and the weather. Vehicles moving over paved and unpaved surfaces, demolition, excavation, earth movement, grading, and wind erosion from exposed surfaces can all be sources of fugitive dust. Construction operations are subject to the requirements established in SDAPCD Regulation 4, Rules 52, 54, and 55.

[3] The proposed coffee shop with drive-through was modeled as a Fast Food Restaurant without Drive-Through in CalEEMod as it was the closest land use available and the Fast food restaurant with Drive Thru land use was already being used.

Per SDAPCD Rule 67.0.1, the architectural coatings will be limited to an average of 150 grams per liter or less; however, CalEEMod defaults were utilized in the analysis.

The phases of the construction activities which have been analyzed below for each phase are: (1) demolition, (2) site preparation, (3) grading, (4) building construction, (5) paving, and (6) application of architectural coatings. To be conservative, it is anticipated that the building construction, paving and architectural phases will overlap. Details pertaining to the project's construction timing and the type of equipment modeled for each construction phase are available in the CalEEMod output in Appendix B.

Construction-Related Regional Impacts

The construction-related criteria pollutant emissions for each phase are shown below in Table 6. Table 6 shows that none of the project's emissions will exceed SDAPCD screening thresholds. Therefore, a less than significant air quality impact would occur from construction of the proposed project.

Construction-Related Toxic Air Contaminant Impacts

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. According to the Office of Environmental Health Hazard Assessment (OEHHA),[4] health effects from TACs are described in terms of individual cancer risk based on a lifetime (i.e., 30-year) resident exposure duration. Given the temporary and short-term construction schedule (approximately 7 months), the project would not result in a long-term (i.e., lifetime or 30-year) exposure as a result of project construction. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any regional thresholds.

The project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. The project would also comply with the requirements of SDAPCD Rule 1206 if asbestos is found during the renovation and construction activities. Therefore, impacts from TACs during construction would be less than significant.

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are short-term in nature and the odor emissions are expected to cease upon the drying or hardening of the odor producing materials. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed project. Diesel exhaust and VOCs would be emitted during construction of the project, which are objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not reach an objectionable level at the nearest sensitive receptors.

[4] Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

Table 6
Construction-Related Regional Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO_2	PM10	PM2.5
Maximum Daily Emissions[1,2]	6.59	18.70	23.00	0.04	5.56	2.25
SDAPCD Thresholds	75	250	550	250	100	55
Exceeds Thresholds?	No	No	No	No	No	No

Notes:

Source: CalEEMod Version 2022.1.1.21

(1) Represent on-site and off-site emissions. On-site emissions are from equipment operated on-site that are not operated on public roads. On-site site preparation and grading PM-10 and PM-2.5 emissions show compliance with SDAPCD Rules 52, 54, and 55 to reduce fugitive dust.

(2) Construction, painting and paving phases may overlap.

LONG-TERM OPERATIONAL EMISSIONS

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips and through operational emissions from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to air quality impacts with the on-going operations of the proposed project.

Operations-Related Regional Air Quality Impacts

The potential operations-related air emissions have been analyzed below for the criteria pollutants and cumulative impacts.

Operations-Related Criteria Pollutants Analysis

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of the CalEEMod model. The operating emissions were based on the year 2025, which is the anticipated opening year for the proposed project. The operations emissions printouts from the CalEEMod model are provided in Appendix B. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips (trip generation rate) from the *503 West Mission Commercial Project Transportation Impact Comparison* (Transportation Impact Comparison) prepared by Ganddini Group, Inc. (February 12, 2024) into the CalEEMod Model. The Transportation Impact Comparison found that the proposed project would create approximately 1,740 net new vehicle trips per day on weekdays and 2,051 net new vehicle trips per day on Saturdays (with incorporation of pass-by trip reduction and reduction from removal of existing uses). The Transportation Impact Comparison included trip generation rates of 106.85 trips per thousand square foot per weekdays and 319.86 trips per thousand square foot per Saturdays coffee shop with drive-through use (includes incorporation of pass-by trip reduction) and 390.11 trips per thousand square foot per weekdays and Saturdays for the fast-food restaurant with drive-through use (includes incorporation of pass-by trip reduction). In addition, the existing restaurant use to be removed as part of the project has a trip generation rate of 96.19 trips per thousand square foot per weekdays and Saturdays (includes incorporation of pass-by trip reduction). As the Transportation Impact Comparison did not provide Sunday trip rates, Saturday trip rates were utilized for Sunday. The program then applies the emission factors for each trip which is provided by the EMFAC2021 model to determine the vehicular traffic pollutant emissions.

Area Sources

Per the California Air Pollution Control Officers Association (CAPCOA) Appendix A Calculation Details for CalEEMod, area sources include emissions from consumer products, landscape equipment and architectural coatings. Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. As specifics were not known about the landscaping equipment fleet, CalEEMod defaults were used to estimate emissions from landscaping equipment. No other changes were made to the default area source parameters.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Project Impacts

The worst-case summer or winter criteria pollutant emissions created from the proposed project's long-term operations have been calculated and are shown below in Table 7. The results show that, even before reduction from removal of existing restaurant uses, none of the SDAPCD screening thresholds would be exceeded. Emissions would be further reduced with incorporation of the reduction from removal of existing uses. Therefore, a less than significant regional air quality impact would occur from the operation of the proposed project.

Operations-Related Local Air Quality Impacts

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the San Diego Air Basin. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips. The following analysis analyzes the vehicular CO emissions and odor impacts.

Local CO Emission Impacts from Project-Generated Vehicular Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards which were presented above.

To determine if the proposed project could cause emission levels in excess of the CO standards discussed above, a sensitivity analysis is typically conducted to determine the potential for CO "hot spots" at a number of intersections in the general project vicinity. Because of reduced speeds and vehicle queuing, "hot spots" potentially can occur at high traffic volume intersections with a Level of Service E or worse.

The SDAB is in attainment of State and federal CO standards. Nonetheless, a CO hotspot analysis is required by the County if a proposed development would cause road intersections to operate at or below a LOS E while exceeding 3,000 peak-hour trips. The Transportation Impact Comparison prepared for the project found that the project would generate approximately 1,740 net new trips on weekdays (with inclusion of pass-by reduction and reduction from existing uses) with 135 morning peak hour trips, 121 mid-day peak hour trips, and 122 evening peak hour trips and 2,051 net new trips on Saturdays (with inclusion of pass-by reduction and reduction from existing uses) with 186 mid-day peak hour trips (Ganddini Group, Inc. 2024). Therefore, the addition of project generated peak hour vehicle trips would not be anticipated to cause studied intersection to exceed 3,000 peak hour trips.

Therefore, no CO "hot spot" modeling was performed and no significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from the intermittent diesel delivery truck emissions and trash storage areas. Due to the distance of the nearest receptors from the project site and through compliance with SDAPCD's Rule 51 no significant impact related to odors would occur during the on-going operations of the proposed project.

Table 7
Operational Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Maximum Daily Emissions	9.72	7.48	68.00	0.16	13.40	3.49
-reduction from existing restaurant use being removed	-1.08	-0.86	-7.37	-0.02	-1.35	-0.36
Total Net Emissions	8.64	6.62	60.63	0.14	12.05	3.13
SDAPCD Thresholds	75	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:

Source: CalEEMod Version 2022.1; the higher of either summer or winter emissions.

CUMULATIVE AIR QUALITY IMPACTS

Project Specific Impacts

Cumulative air quality impacts may occur from a combination of the project's emissions with the emissions of other reasonably foreseeable projects and/or regional emissions. The project site is located in the San Diego Air Quality Basin and is regulated by the SDAPCD. San Diego County is currently in non-attainment for the 1-hour concentrations under the California Ambient Air Quality Standards (CAAQS) for Ozone (O_3), and for the 24-hour concentrations of PM10 under CAAQS. O_3 is formed when reactive organic gases (ROG) and nitrogen oxides react in the presence of sunlight. ROG sources include any source that burns fuels, such as gasoline, natural gas, wood and oil. Sources of PM10 include motor vehicles, wood burning stoves and fireplaces, dust from construction, landfills, agriculture, wildfires, brush and waste burning, industrial sources, and windblown dust from open lands.

SDAPCD has established air contaminant "trigger levels" which indicate scenarios that require additional review. These "trigger levels" include 100 pounds per day for PM-10, 250 pounds per day of NOx and 550 pounds per day of CO. As shown in Tables 6 and 7, construction and operation of the project would result in an increase in PM10, NOx and CO, but not to a level above SDAPCD's "trigger levels." Therefore, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under applicable federal or state ambient air quality standards. Impacts would be less than significant.

Air Quality Compliance

The proposed project would not conflict with or obstruct implementation of the SDAPCD's Regional Air Quality Strategy (RAQS) or the California State Implementation Plan (SIP). The following section discusses the proposed project's consistency with the SDAPCD's RAQS and SIP.

The California Clean Air Act requires areas that are designated nonattainment of state ambient air quality standards of any of the criteria pollutants to prepare and implement plans to attain the standards by the earliest practicable dates. As detailed above, the Air Basin is designated by the EPA for the national standards as a non-attainment area for ozone (O_3) and by CARB as nonattainment for ozone, PM10, and PM2.5. According the RAQS was developed to identify feasible emission control measures and provide expeditious progress toward attaining the state standard for ozone and particulate matter. The two pollutants in the RAQS are VOCs and NOx, which are precursors to the formation of ozone. Projected increases in motor vehicle usage, population, and growth create challenges in controlling and reducing air emissions. The RAQs, in conjunction with the Transportation Control Measures, were revised in 2016 as part of the RAQS for San Diego County. In addition, the most recent RAQS update, the 2022 RAQS, was approved in March 2023.

The SIP is the document that sets forth the State's strategies for attaining the NAAQS. The SDAPCD is the agency responsible for preparing the portion of the SIP applicable to the Air Basin. The RAQS outlines the plans and control measures designed to attain the NAAQS for ozone. The SDAPCD relies on information from CARB and SANDAG, including projected growth, mobile, area and all other source emissions in order to predict future emissions and develop appropriate strategies for the reduction of source air emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the incorporated cities and County of San Diego. As such, projects that propose development that is consistent with the growth anticipated by SANDAG would also be consistent with the RAQS and the SIP.

The proposed development consists of an approximately 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. The SANDAG Fast Facts population forecast for the City of Escondido shows that the City's population is anticipated to increase to approximately 177,559 by the year 2050 with a total citywide

population increase of 22,924 persons from 2020 to 2050.[5] Furthermore, 2050 employment projections show an increase of approximately 48 percent from 2020 job availability. Because the project is not residential it would not generate direct population or housing growth and there is a relatively small employment growth associated with the project; therefore, the project would be consistent with SANDAG's employment forecast and the City's General Plan. Furthermore, the proposed project would not permanently change the existing or planned transportation network or traffic patterns anywhere in the Air Basin. As such, the proposed project would be consistent with the local general plan and SANDAG's growth projections. Based on the above, the proposed project will not result in an inconsistency with the SDAPCD RAQS. Therefore, a less than significant impact will occur in relation to implementation of the RAQS.

[5] https://www.sandag.org/resources/demographics_and_other_data/demographics/fastfacts/esco.htm

3. GLOBAL CLIMATE CHANGE ANALYSIS

EXISTING GREENHOUSE GAS ENVIRONMENT

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO_2 and nitrous oxide (NOx) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop". The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide (CO_2)

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s. Each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC Fifth Assessment Report, 2014) Emissions of CO_2 from fossil fuel combustion and industrial processes contributed about 78% of the total GHG emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period 2000 to 2010. Globally, economic and population growth continued to be the most important drivers of increases in CO_2 emissions from fossil fuel combustion. The contribution of population growth between 2000 and 2010 remained roughly identical to the previous three decades, while the contribution of economic growth has risen sharply.

Methane (CH_4)

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide (N_2O)

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is also commonly used as an aerosol spray propellant, (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and in race cars).

Chlorofluorocarbons (CFC)

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons (HFC)

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons (PFC)

PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride (SF_6)

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

Global Warming Potential

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO_2). The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases (e.g., to compile a national GHG inventory), and allows policymakers to compare emissions reduction opportunities across sectors and gases. A summary of the atmospheric lifetime and the global warming potential of selected gases are summarized in Table 8. As shown in Table 8, the global warming potential of GHGs ranges from 1 to 22,800.

Table 8
Global Warming Potentials and Atmospheric Lifetimes

Gas	Atmospheric Lifetime	Global Warming Potential[1] (100 Year Horizon)
Carbon Dioxide (CO_2)	–[2]	1
Methane (CH_4)	12	28-36
Nitrous Oxide (NO)	114	298
Hydrofluorocarbons (HFCs)	1-270	12-14,800
Perfluorocarbons (PFCs)	2,600-50,000	7,390-12,200
Nitrogen trifluoride (NF_3)	740	17,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Notes:

Source: http://www3.epa.gov/climatechange/ghgemissions/gases.html

(1) Compared to the same quantity of CO_2 emissions.

(2) Carbon dioxide's lifetime is poorly defined because the gas is not destroyed over time, but instead moves among different parts of the ocean–atmosphere–land system. Some of the excess carbon dioxide will be absorbed quickly (for example, by the ocean surface), but some will remain in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments.

GREENHOUSE GAS STANDARDS AND REGULATION

International

Montreal Protocol

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

The Paris Agreement

The Paris Agreement became effective on November 4, 2016. Thirty days after this date at least 55 Parties to the United Nations Framework Convention on Climate Change (Convention), accounting in total for at least an estimated 55 % of the total global greenhouse gas emissions, had deposited their instruments of ratification, acceptance, approval or accession with the Depositary.

The Paris Agreement built upon the Convention and – for the first time – attempted to bring all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework.

Federal

The United States Environmental Protection Agency (USEPA) is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As

such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO_2 and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions will not themselves impose any requirements on industry or other entities. However, it is a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by the EPA and Department of Transportation on September 15, 2009.

Clean Air Act

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), the U.S. Supreme Court held in April of 2007 that the USEPA has statutory authority under Section 202 of the federal Clean Air Act (CAA) to regulate GHGs. The court did not hold that the USEPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA. The USEPA adopted a Final Endangerment

Finding for the six defined GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) on December 7, 2009. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA consistently with the United States Supreme Court decision. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

Energy Independence Security Act

The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of green jobs.[6]

Executive Order 13432

In response to the Massachusetts v. Environmental Protection Agency ruling, the President signed Executive Order 13432 on May 14, 2007, directing the USEPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. Executive Order 13432 was codified into law by the 2009 Omnibus Appropriations Law signed on February 17, 2009. The order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. Light-Duty Vehicle Greenhouse Gas and Corporate Average Fuel Economy Standards.

On May 19, 2009, President Obama announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy standards (CAFE)[7] and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO2 per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle.[8] In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025.

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model year 2020 are 43.7 mpg and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284 grams of CO2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. This Rule also excludes CO2- equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.[9]

State of California

California Air Resources Board

CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards

[6] A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.

[7] The Corporate Average Fuel Economy standards are regulations in the United States, first enacted by Congress in 1975, to improve the average fuel economy of cars and light trucks. The U.S Department of Transportation has delegated the National Highway Traffic Safety Administration as the regulatory agency for the Corporate Average Fuel Economy standards.

[8] United States Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, August 2012, https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF.

[9] National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: https://www.gpo.gov/fdsys/pkg/FR-2018-08-24/pdf/2018-16820.pdf.

[CAAQS]), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2004, the California Air Resources Board (CARB) adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants (Title 13 California Code of Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure generally does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a necessary function such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). CARB has also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation, adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. Refer to Section IV.B, *Air Quality*, of this Draft EIR for additional details regarding these regulations. While these regulations primarily target reductions in criteria air pollutant emission, they have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

The State currently has no regulations that establish ambient air quality standards for GHGs. However, the State has passed laws directing CARB to develop actions to reduce GHG emissions, which are listed below.

Assembly Bill 1493

California Assembly Bill 1493 enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

Executive Order S-3-05

The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels;
- By 2020, California shall reduce GHG emissions to 1990 levels; and
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs.

Assembly Bill 32 (California Health and Safety Code, Division 25.5 – California Global Warming Solutions Act of 2006)

In 2006, the California State Legislature adopted Assembly Bill (AB) 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO2, CH4, N2O, HFCs, PFCs, and SF6 and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

Senate Bill 32 and Assembly Bill 197

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197, and both were signed by Governor Brown. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities.

Climate Change Scoping Plan (2008)

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (Health and Safety Code section 38561 (h)). CARB developed an AB 32 Scoping Plan that contains strategies to achieve the 2020 emissions cap. The initial Scoping Plan was approved in 2008, and contains a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives.

As required by HSC Division 25.5, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was originally set at 427 $MMTCO_2e$ using the GWP values from the IPCC SAR. CARB also projected the state's 2020 GHG emissions under no-action-taken (NAT) conditions – that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB originally used an average of the state's GHG emissions from 2002 through 2004 and projected the 2020 levels at approximately 596 $MMTCO_2e$ (using GWP values from the IPCC SAR). Therefore, under the original projections, the state must reduce its 2020 NAT emissions by 28.4 percent in order to meet the 1990 target of 427 $MMTCO_2e$.

First Update to the Climate Change Scoping Plan (2014)

The First Update to the Scoping Plan was approved by CARB in May 2014 and builds upon the initial Scoping Plan with new strategies and recommendations. In 2014, CARB revised the target using the GWP values from the IPCC AR4 and determined that the 1990 GHG emissions inventory and 2020 GHG emissions limit is 431 $MMTCO_2e$. CARB also updated the State's 2020 NAT emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy. CARB's projected statewide 2020 emissions estimate using the GWP values from the IPCC AR4 is 509.4 $MMTCO_2e$.

2017 Climate Change Scoping Plan

In response to the 2030 GHG reduction target, CARB adopted the 2017 Climate Change Scoping Plan at a public meeting held in December 2017. The 2017 Scoping Plan outlines the strategies the State will implement

to achieve the 2030 GHG reduction target of 40 percent below 1990 levels. The 2017 Scoping Plan also addresses GHG emissions from natural and working lands of California, including the agriculture and forestry sectors. The 2017 Scoping Plan considered the Scoping Plan Scenario and four alternatives for achieving the required GHG reductions but ultimately selected the Scoping Plan Scenario.

CARB states that the Scoping Plan Scenario "is the best choice to achieve the State's climate and clean air goals."[10] Under the Scoping Plan Scenario, the majority of the reductions would result from the continuation of the Cap-and-Trade regulation. Additional reductions are achieved from electricity sector standards (i.e., utility providers to supply at least 50 percent renewable electricity by 2030), doubling the energy efficiency savings at end uses, additional reductions from the LCFS, implementing the short-lived GHG strategy (e.g., hydrofluorocarbons), and implementing the mobile source strategy and sustainable freight action plan. The alternatives were designed to consider various combinations of these programs, as well as consideration of a carbon tax in the event the Cap-and-Trade regulation is not continued. However, in July 2017, the California Legislature voted to extend the Cap-and-Trade regulation to 2030. Implementing this Scoping Plan will ensure that California's climate actions continue to promote innovation, drive the generation of new jobs, and achieve continued reductions of smog and air toxics. The ambitious approach draws on a decade of successful programs that address the major sources of climate-changing gases in every sector of the economy:

- More Clean Cars and Trucks: The plan sets out far-reaching programs to incentivize the sale of millions of zero-emission vehicles, drive the deployment of zero-emission trucks, and shift to a cleaner system of handling freight statewide.
- Increased Renewable Energy: California's electric utilities are ahead of schedule meeting the requirement that 33 percent of electricity come from renewable sources by 2020. The Scoping Plan guides utilities to 50 percent renewables, as required under SB 350.
- Slashing Super-Pollutants: The plan calls for a significant cut in super-pollutants such as methane and HFC refrigerants, which are responsible for as much as 40 percent of global warming.
- Cleaner Industry and Electricity: California's renewed cap-and-trade program extends the declining cap on emissions from utilities and industries and the carbon allowance auctions. The auctions will continue to fund investments in clean energy and efficiency, particularly in disadvantaged communities.
- Cleaner Fuels: The Low Carbon Fuel Standard will drive further development of cleaner, renewable transportation fuels to replace fossil fuels.
- Smart Community Planning: Local communities will continue developing plans which will further link transportation and housing policies to create sustainable communities.
- Improved Agriculture and Forests: The Scoping Plan also outlines innovative programs to account for and reduce emissions from agriculture, as well as forests and other natural lands.

The 2017 Scoping Plan also evaluates reductions of smog-causing pollutants through California's climate programs.

2022 Climate Change Scoping Plan

CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality on November 16, 2022. The 2022 Scoping Plan lays out the sector-by-sector roadmap for California, the world's fifth largest economy, to achieve carbon neutrality by 2045 or earlier, outlining a technologically feasible, cost-effective, and equity-focused path to achieve the state's climate target. The Plan addresses recent legislation and direction from Governor Newsom and extends and expands upon earlier plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. The plan also takes the unprecedented step of adding carbon neutrality as a science-based guide and touchstone for California's climate work. Specifically, this plan:

[10] California Air Resources Board, California's 2017 Climate Change Scoping Plan, November 2017, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands (NWL) to the state's GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

SB 32, Pavley. California Global Warming Solutions Act of 2006

(1) The California Global Warming Solutions Act of 2006 designates the State Air Resources Board as the state agency charged with monitoring and regulating sources of emissions of greenhouse gases. The state board is required to approve a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions level in 1990 to be achieved by 2020 and to adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective greenhouse gas emissions reductions. This bill would require the state board to ensure that statewide greenhouse gas emissions are reduced to 40% below the 1990 level by 2030.

(2) This bill would become operative only if AB 197 of the 2015–16 Regular Session is enacted and becomes effective on or before January 1, 2017. AB 197 requires that the California Air Resources Board, which directs implementation of emission-reduction programs, should target direct reductions at both stationary and mobile sources. AB 197 of the 2015-2016 Regular Session was approved on September 8, 2016.

Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs the CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009, the CARB approved the proposed regulation to implement the low carbon fuel standard. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of

these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to the CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009, the Natural Resources Agency adopted amendments to the state CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporate GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010, and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation".
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

Senate Bills 1078, 107, and X1-2 and Executive Orders S-14-08 and S-21-09

Senate Bill 1078 (SB 1078) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) changed the target date to 2010. Executive Order S-14-08 was signed on November 2008 and expands the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 100

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 375

Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). The CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. The CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG) jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by the CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

Senate Bill X7-7

Senate Bill X7-7 (SB X7-7), enacted on November 9, 2009, mandates water conservation targets and efficiency improvements for urban and agricultural water suppliers. SB X7-7 requires the Department of Water Resources (DWR) to develop a task force and technical panel to develop alternative best management practices for the water sector. In addition, SB X7-7 required the DWR to develop criteria for baseline uses for residential, commercial, and industrial uses for both indoor and landscaped area uses. The DWR was also required to develop targets and regulations that achieve a statewide 20 percent reduction in water usage.

Assembly Bill 939 and Senate Bill 1374

Assembly Bill 939 (AB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004, suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills.

California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions,

electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008, and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. CalEEMod modeling defaults to 2008 standards. 2013 Standards were approved and have been effective since July 1, 2014. 2016 Standards were adopted January 1, 2017. 2019 standards were published July 1, 2019 and became effective January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

Per Section 100 Scope, the 2019 Title 24, Part 6 Building Code now requires healthcare facilities, such as assisted living facilities, hospitals, and nursing homes, to meet documentation requirements of Title 24, Part 1 Chapter 7 – Safety Standards for Health Facilities. A healthcare facility is defined as any building or portion thereof licensed pursuant to California Health and Safety Code Division 2, Chapter 1, Section 1204 or Chapter 2, Section 1250.

Section 120.1 Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times. The 2019 version of the Code also completely revised the minimum ventilation requirements including DVC airflow rates within Section 120.1 Table 120.1–A. Table 120.1-A now includes air classification and recirculation limitations, these are based on either the number of occupants or the CFM/ft^2 (cubic feet per minute per square foot), whichever is greater.

Section 120.1 Ventilation and Indoor Air Quality also included additions for high-rise residential buildings. Requirements include that mechanical systems must provide air filters that and that air filters must be MERV 13 or use a particle size efficiency rating specified in the Energy Code. Window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1.

Per Section 120.1(a) healthcare facilities must be ventilated in accordance with Chapter 4 of the California Mechanical Code and are NOT required to meet the ventilations requirements of Title 24, Part 6.

Section 140.4 Space Conditioning Systems included both additions and revisions within the 2019 Code. The changes provided new requirements for cooling tower efficiency, new chilled water-cooling system requirements, as well as new formulas for calculating allowed fan power. Section 140.4(n) also provide a new exception for mechanical system shut-offs for high-rise multifamily dwelling units, while Section 140.4(o) added new requirements for conditioned supply air being delivered to space with mechanical exhaust.

Section 120.6 Covered Processes added information in regards to adiabatic chiller requirements that included that all condenser fans for air-cooled converseness, evaporative-cooled condensers, adiabatic condensers, gas

coolers, air or water fluid coolers or cooling towers must be continuously variable speed, with the speed of all fans serving a common condenser high side controlled in unison .Further, the mid-condensing setpoint must be 70 degrees Fahrenheit for all of the above mentioned systems.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regard to sunlight provided through skylights and overhangs.

Section 130.2 Outdoor Lighting Controls and Equipment added automatic scheduling controls which included that outdoor lighting power must be reduced by 50 to 90 percent, turn the lighting off during unoccupied times and have at least two scheduling options for each luminaire independent from each other and with a 2-hour override function. Furthermore, motion sensing controls must have the ability to reduce power within 15 minutes of area being vacant and be able to come back on again when occupied. An exception allows for lighting subject to a health or life safety statute, ordinance, or regulation may have a minimum time-out period longer than 15 minutes or a minimum dimming level above 50% when necessary to comply with the applicable law.

The 2022 Building Energy Efficiency Standards will become effective on January 1, 2023. [11] The core focus of the building standards has been efficiency, but the 2019 Energy Code ventured into onsite generation by requiring solar PV on new homes, providing significant GHG savings. The 2022 update builds off this progress with expanded solar standards and the move to onsite energy storage that will help Californians save on utility bills while bolstering the grid. The 2022 Energy Code update focuses on four key areas in new construction of homes and businesses:

- Encouraging electric heat pump technology and use, which consumes less energy and produces fewer emissions than traditional HVACs and water heaters.
- Establishing electric-ready requirements when natural gas is installed, which positions owners to use cleaner electric heating, cooking and electric vehicle (EV) charging options whenever they choose to adopt those technologies.
- Expanding solar photovoltaic (PV) system and battery storage standards to make clean energy available onsite and complement the state's progress toward a 100 percent clean electricity grid.
- Strengthening ventilation standards to improve indoor air quality.

The 2022 Energy Code affects homes by establishing energy budgets based on efficient heat pumps for space or water heating to encourage builders to install heat pumps over gas-fueled HVAC units; requiring homes to be electric-ready, with dedicated 240-volt outlets and space (with plumbing for water heaters) so electric appliances can eventually replace installed gas appliances; increasing minimum kitchen ventilation requirements so that fans over cooktops have higher airflow or capture efficiency to better exhaust pollution from gas cooking and improve indoor air quality; and allowing exceptions to existing solar PV standards when roof area is not available (such as for smaller homes). In addition, the effect on businesses includes establishing combined solar PV and battery standards for select businesses with systems being sized to maximize onsite use of solar energy and avoid electricity demand during times when the grid must use gas-powered plants; establishing new efficiency standards for commercial greenhouses (primarily cannabis growing); and improving efficiency standards for building envelope, various internal.

California Code of Regulations (CCR) Title 24, Part 11 (California Green Building Standards)

On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. The 2019 California Green Building Standards Code went into effect on January 1, 2020.

[11] California Energy Commission (CEC). 2022. Building Energy Efficiency Standards. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency.

2019 CALGreen Code: During the 2019-2020 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle. The 2019 version of the California Green Building Standards became effective January 1, 2020.

HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the post construction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require post construction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of post construction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regard to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regard to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regard to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regard to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

The 2022 California Green Building Standards Code became effective on January 1, 2023.[12]

HCD amended Section 5.106.5.3 in regard to increasing the EV capable space percentages and adding a new requirement for installed Level 2 DCFC chargers.

HCD under Section 5.106.5.4 added new regulation for electric vehicle charging readiness requirements for new construction of warehouse, grocery stores, and retail stores with planned off-street loading spaces. [13]

Executive Order B-30-15

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the Governor directed the following:

[12] California Building Standards Commission (CBSC). 2022. California Green Building Standards. Website: https://codes.iccsafe.org/content/CAGBC2022P1.

[13] https://www.dgs.ca.gov/BSC/Resources/2022-Title-24-California-Code-Changes

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

Executive Order B-29-15

Executive Order B-29-15, mandates a statewide 25 percent reduction in potable water usage. EO B-29-15 signed into law on April 1, 2015.

Executive Order B-37-16

Executive Order B-37-16, continuing the State's adopted water reductions, was signed into law on May 9, 2016. The water reductions build off the mandatory 25 percent reduction called for in EO B-29-15.

SBX1 2

Signed into law in April 2011, SBX1 2, requires one-third of the State's electricity to come from renewable sources. The legislation increases California's current 20 percent renewables portfolio standard target in 2010 to a 33 percent renewables portfolio standard by December 31, 2020.

Senate Bill 350

Signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions and ramp up the deployment of clean energy resources.

Executive Order N-79-20.

Executive Order N-79-20 was signed into law on September 23, 2020 and mandates 100 percent of in-state sales of new passenger cars and trucks be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the state be zero-emission vehicles by 2045 for all operations where feasible and by 2035 for drayage trucks; and to transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible.

Energy Sector and CEQA Guidelines Appendix F

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The 2016 update to the Energy Efficiency Standards for Residential and Nonresidential Buildings focuses on several key areas to improve the energy efficiency of renovations and addition to existing buildings as well as newly constructed buildings and renovations and additions to existing buildings. The major efficiency

improvements to the residential Standards involve improvements for attics, walls, water heating, and lighting, whereas the major efficiency improvements to the nonresidential Standards include alignment with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national standards. Furthermore, the 2016 update required that enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building permits for any construction.[14]

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality."[15] As of January 1, 2011, the CALGreen Code is mandatory for all new buildings constructed in the state. The CALGreen Code establishes mandatory measures for new residential and non-residential buildings. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2022 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2023.

Local – City of Escondido

City of Escondido General Plan

The City of Escondido's General Plan contains goals and policies regarding climate protection in the Resources Conservation Element. The goals and policies applicable to the proposed project from the Resource conservation Element of the Escondido General Plan are stated below.

Goal 7 Improved air quality in the city and the region to maintain the community's health and reduce green-house gas emissions that contribute to climate change.

Policy 7.2 Reduce regional greenhouse gas emissions through the following measures including, but not limited to:

a) Implementing land use patterns that reduce automobile dependence (compact, mixed-use, pedestrian, and transit-oriented development, etc.);
b) Reducing the number of vehicular miles traveled through implementation of Transportation Demand Management programs, jobs-housing balance, and similar techniques;
c) Supporting public transportation improvements;
d) Encouraging the use of alternative modes of transportation by expanding public transit, bicycle, and pedestrian networks and facilities;
e) Participating in the development of park-and-ride facilities;
f) Maintaining and updating the city's traffic signal synchronization plan;
g) Promoting local agriculture;
h) Promoting the use of drought-tolerant landscaping; and
i) Encouraging the use of non-polluting alternative energy systems.

[14] California Energy Commission, 2016 Building Energy Efficiency Standards, June 2015, http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf

[15] California Building Standards Commission, 2010 California Green Building Standards Code, (2010).

City of Escondido Climate Action Plan

The City of Escondido adopted their Climate Action Plan in March 2021. The CAP provides a comprehensive roadmap to address the challenges of climate change in the City of Escondido. The city partnered with the San Diego Association of Governments (SANDAG) to create the CAP to achieve GHG reductions and address climate change at the local level. In an effort to combat climate change, the CAP sets GHG reduction targets and proposes achievable, locally based strategies to reduce GHG emissions from both municipal and community activities. The CAP focuses on reducing emissions by 2020 and 2030 to be consistent with the legislative State targets and reducing emissions by 2035 to demonstrate the recommended trajectory to meet the State's 2050 goal. As stated in the CAP, the city includes reduction targets of 4 percent below 2012 levels by 2020, 42 percent below 2012 levels by 2030, and 52 percent below 2012 levels by 2035.

As stated in Section 4.1.1 of the CAP, the City has established a GHG screening threshold (set at 500 metric tons carbon dioxide equivalent [$MTCO_2e$] per year) for new development projects to determine if a project would need to demonstrate consistency with the CAP through the CAP Consistency Review Checklist (Checklist). New development projects that are consistent with the General Plan and are expected to generate fewer than 500 $MTCO_2e$ annually would not have a cumulative impact and would not be required to provide additional analysis. The Checklist includes a list of the size and types of projects that would be expected to generate fewer than 500 $MTCO_2e$ per year. In addition, new development projects that are expected to generate greater than 500 $MTCO_2e$ annually, but are consistent with the General Plan land use designation and zoning, may be determined to have a less than significant cumulative impact if they are determined to be consistent with the CAP. A project's consistency with the CAP will be determined through the Checklist. The Checklist contains GHG reduction measures applicable to development projects that are required to be implemented on a project-by-project basis to ensure that the specific emission targets identified in the CAP are achieved.

SIGNIFICANCE THRESHOLDS

Appendix G of State CEQA Guidelines

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

- Threshold 1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Threshold 2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Thresholds of Significance for this Project

To determine whether the project's GHG emissions are significant, this analysis uses the screening criteria identified in the City's CAP. As stated above, the City's CAP screening criteria utilizes a 500 $MTCO_2e$ per year emission threshold. However, if a project is below specific land use characteristics (i.e., land use type and number of dwelling units and/or square feet), they are not subject to the measures of the CAP as they are considered to emit less than the 500 $MTCO_2e$ per year of emissions. Furthermore, if a project does not fall within those land use characteristics and exceeds 500 $MTCO_2e$ per year, then the project would be required to demonstrate consistency with CAP through the Checklist.

An analysis of the project's compliance with all applicable regulations and plans in regard to GHG emissions has been included below.

PROJECT GREENHOUSE GAS EMISSIONS AND CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION PLANS AND POLICIES

As provided in the City's CAP, restaurants under 6,500 square feet are anticipated to have less than 500 MTCO2e per year and would result in less than significant impacts. Therefore, proposed restaurants under this square footage are not subject to the measures of the CAP.

The project plans to develop the site with commercial/food service uses totaling 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. Therefore, as the proposed project consists of restaurant uses and the total square footage is less than the CAP screening footage of 6,500 for restaurant uses, the proposed project's GHG impact is considered to be less than significant, the project is not subject to the measures contained in the CAP checklist, and no quantitative analysis of GHG emissions is required. The CAP checklist has been included in Appendix C.

The proposed project is consistent with the City's CAP and operation of the proposed project would not create a significant cumulative impact to global climate change. Furthermore, with consistency with the City's CAP, the proposed project would also not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

CUMULATIVE GREENHOUSE GAS IMPACTS

Although the project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. Therefore, in the case of global climate change, the proximity of the project to other GHG emission generating activities is not directly relevant to the determination of a cumulative impact because climate change is a global condition. According to CAPCOA, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective."[16] The resultant consequences of that climate change can cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change.

The state has mandated a goal of reducing statewide emissions to 1990 levels by 2020, even though statewide population and commerce are predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce statewide GHG emissions. Consistent with CEQA Guidelines Section 15064h(3),[17] the City, as lead agency, has determined that the project's contribution to cumulative GHG emissions and global climate change would be less than significant if the project is consistent with the applicable regulatory plans and policies to reduce GHG emissions.

As discussed above in the Project Greenhouse Gas Emissions and Consistency With Applicable Greenhouse Gas Reduction Plans and Policies section above, the project is consistent with the City's CAP.

[16] Source: California Air Pollution Control Officers Association, CEQA & Climate change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, (2008).

[17] The State CEQA Guidelines were amended in response to SB 97. In particular, the State CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction program renders a cumulative impact insignificant. Per State CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project will comply with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, [and] plans or regulations for the reduction of greenhouse gas emissions."

Thus, given the project's consistency with the City's CAP, the project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Given this consistency, it is concluded that the project's incremental contribution to greenhouse gas emissions and their effects on climate change would not be cumulatively considerable.

4. ENERGY ANALYSIS

EXISTING CONDITIONS

This section provides an overview of the existing energy conditions in the project area and region.

Overview

California's estimated annual energy use as of 2022 included:

- Approximately 287,220 gigawatt hours of electricity;[18]
- Approximately 2,056,267 million cubic feet of natural gas per year;[19] and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015).[20]

As of 2021, the year of most recent data currently available by the United States Energy Information Administration (EIA), energy use in California by demand sector was:

- Approximately 41.2 percent transportation;
- Approximately 23.6 percent industrial;
- Approximately 18.2 percent residential; and
- Approximately 17.1 percent commercial.[21]

California's electricity in-state generation system generates approximately 203,257 gigawatt-hours each year. In 2022, California produced approximately 71 percent of the electricity it uses; the rest was imported from the Pacific Northwest (approximately 12 percent) and the U.S. Southwest (approximately 17 percent). Natural gas is the main source for electricity generation at approximately 47.46 percent of the total in-state electric generation system power as shown in Table 9.

A summary of and context for energy consumption and energy demands within the State is presented in "U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts" excerpted below:

- In 2022, California was the seventh-largest producer of crude oil among the 50 states, and, as of January 2022, the state ranked third in crude oil refining capacity.
- California is the largest consumer of jet fuel and second-largest consumer of motor gasoline among the 50 states.
- In 2020, California was the second-largest total energy consumer among the states, but its per capita energy consumption was less than in all but three other states.
- In 2022, renewable resources, including hydroelectric power and small-scale, customer-sited solar power, accounted for 49% of California's in-state electricity generation. Natural gas fueled another 42%. Nuclear power supplied almost all the rest.

[18] California Energy Commission. Energy Almanac. Total Electric Generation. [Online] 2022. 2022 Total System Electric Generation (ca.gov).

[19] Natural Gas Consumption by End Use. U.S. Energy Information Administration. [Online] 2022. https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.

[20] California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] 2021. https://www.energy.ca.gov/data-reports/planning-and-forecasting

[21] U.S. Energy Information Administration. California Energy Consumption by End-Use Sector, 2021. California State Profile Overview.[Online] January 8, 2023 https://www.eia.gov/state/?sid=CA#tabs-2

- In 2022, California was the fourth-largest electricity producer in the nation. The state was also the nation's third-largest electricity consumer, and additional needed electricity supplies came from out-of-state generators.[22]

As indicated above, California is one of the nation's leading energy-producing states, and California per capita energy use is among the nation's most efficient. Given the nature of the proposed project, the remainder of this discussion will focus on the three sources of energy that are most relevant to the project—namely, electricity and natural gas for building uses, and transportation fuel for vehicle trips associated with the proposed project.

Electricity and Natural Gas

Electricity and natural gas would be provided to the project by San Diego Gas & Electric (SDG&E). SDG&E provides electrical and natural gas service to the project area through State-regulated utility contracts. SDG&E provides electric energy service to 3.7 million people located in most of San Diego County and the southern portion of Orange County, within a service area encompassing approximately 4,100 square miles.[23] The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. In 2021, SDG&E provided approximately 17,561 Gigawatt-hours per year of electricity.[24]

Table 10 identifies SDG&E's specific proportional shares of electricity sources in 2022. As shown in Table 10, the 2022 SDG&E Power Mix has renewable energy at 44.8 percent of the overall energy resources, of which biomass and waste is at 2.9 percent, solar energy is at 28 percent, and wind power is at 13.9 percent; other energy sources include natural gas at 54.4 percent and unspecified sources at 0.8 percent.

Natural gas is delivered through a nation-wide network of high-pressure transmission pipelines. In 2021, SDG&E provided approximately 524 million therms of natural gas.[25]

The following summary of natural gas resources and service providers, delivery systems, and associated regulation is excerpted from information provided by the California Public Utilities Commission (CPUC).

The CPUC regulates natural gas utility service for approximately 11 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), San Diego Gas & Electric (SDG&E), Southwest Gas, and several smaller investor-owned natural gas utilities. The CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage and Gill Ranch Storage.

California's natural gas utilities provide service to over 11 million gas meters. SoCalGas and PG&E provide service to about 5.9 million and 4.3 million customers, respectively, while SDG&E provides service to over 800, 000 customers. In 2018, California gas utilities forecasted that they would deliver about 4740 million cubic feet per day (MMcfd) of gas to their customers, on average, under normal weather conditions.

The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers. Larger volume gas customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65% of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35%.

[22] State Profile Overview. [Online] [Cited: April 20, 2023.] https://www.eia.gov/state/?sid=CA#tabs-2

[23] https://www.sdge.com/more-information/our-company

[24] Obtained from http://www.ecdms.energy.ca.gov/elecbyutil.aspx

[25] Obtained from http://www.ecdms.energy.ca.gov/gasbyutil.aspx

The PUC regulates the California utilities' natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering and billing.

Most of the natural gas used in California comes from out-of-state natural gas basins. In 2017, for example, California utility customers received 38% of their natural gas supply from basins located in the U.S. Southwest, 27% from Canada, 27% from the U.S. Rocky Mountain area, and 8% from production located in California."[26]

Transportation Energy Resources

The project would attract additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. Gasoline (and other vehicle fuels) are commercially provided commodities and would be available to the project patrons and employees via commercial outlets.

The most recent data available shows the transportation sector emits 38 percent of the total greenhouse gases in the state and about 84 percent of smog-forming oxides of nitrogen (NOx).[27,28] About 27 percent of total United States energy consumption in 2022 was for transporting people and goods from one place to another. In 2022, petroleum comprised about 90 percent of all transportation energy use, excluding fuel consumed for aviation and most marine vessels.[29] In 2022, about 135.06 billion gallons (or about 3.22 billion barrels) of finished motor gasoline were consumed in the United States, an average of about 370 million gallons (or about 8.81 million barrels) per day.[30]

REGULATORY BACKGROUND

Federal and state agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. On the state level, the PUC and the California Energy Commissions (CEC) are two agencies with authority over different aspects of energy. Relevant federal and state energy-related laws and plans are summarized below.

Federal Regulations

Corporate Average Fuel Economy (CAFE) Standards

First established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[31]

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model

[26] California Public Utilities Commission. Natural Gas and California. http://www.cpuc.ca.gov/natural_gas/

[27] CARB. California Greenhouse Gas Emissions Inventory – 2022 Edition. https://www.arb.ca.gov/cc/inventory/data/data.htm

[28] CARB. 2016 SIP Emission Projection Data. https://www.arb.ca.gov/app/emsinv/2017/emseic1_query.php?F_DIV=-4&F_YR=2012&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA

[29] US Energy Information Administration. Use of Energy in the United States Explained: Energy Use for Transportation. https://www.eia.gov/energyexplained/?page=us_energy_transportation

[30] https://www.eia.gov/tools/faqs/faq.php?id=23&t=10

[31] https://www.nhtsa.gov/lawsregulations/corporate-average-fuel-economy.

year 2020 are 43.7 mpg and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284 grams of CO2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. This Rule also excludes CO2- equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.[32]

On May 12, 2021, the National Highway Traffic Safety Administration (NHTSA) published a notice of proposed rulemaking in the Federal Register, proposing to repeal "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program," published Sept. 27, 2019 (SAFE I Rule), in which NHTSA codified regulatory text and made additional pronouncements regarding the preemption of state and local laws related to fuel economy standards. Specifically, this document proposed to fully repeal the regulatory text and appendices promulgated in the SAFE I Rule. In addition, this document proposed to repeal and withdraw the interpretative statements made by the Agency in the SAFE I Rule preamble, including those regarding the preemption of particular state Greenhouse Gas (GHG) Emissions standards or Zero Emissions Vehicle (ZEV) mandates. As such, this document proposed to establish a clean slate with respect to NHTSA's regulations and interpretations concerning preemption under the Energy Policy and Conservation Act (EPCA). This action is effective as of January 28, 2022. [33]

Intermodal Surface transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values guiding transportation decisions.

The Transportation Equity Act of the 21st Century (TEA-21)

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation, discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

State Regulations

Integrated Energy Policy Report (IEPR)

Senate Bill 1389 requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety. The Energy Commission prepares these assessments and associated policy

[32] National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: https://www.gpo.gov/fdsys/pkg/FR-2018-08-24/pdf/2018-16820.pdf.

[33] https://www.federalregister.gov/documents/2021/05/12/2021-08758/corporate-average-fuel-economy-cafe-preemption

recommendations every two years, with updates in alternate years, as part of the Integrated Energy Policy Report.

The 2022 Integrated Energy Policy Report (2022 IEPR) was adopted in February 28, 2023. The 2022 IEPR provides updates on a variety of energy issues facing California. These issues will require action if the state is to meet its climate, energy, air quality, and other environmental goals while maintaining reliability and controlling costs. The 2022 IEPR also discusses the California Energy Commission's equity and environmental justice efforts, its development of a more easily navigable online data platform via the California Energy Planning Library, and an update to the California Energy Demand Forecast. The report also provides information on emerging topics related to energy reliability, western electricity integration, hydrogen, gasoline prices, gas transition, and distributed energy resources.[34]

The 2023 Integrated Energy Policy Report (2023 IEPR) was completed in January 2024. The 2023 IEPR discusses speeding connection of clean resources to the electricity grid, the potential use of clean and renewable hydrogen, and the California Energy Demand Forecast to 2040. The report also provides updates on topics such as gas decarbonization, energy efficiency, the Clean Transportation Program, Assembly Bill 1257 (Bocanegra, Chapter 749, Statutes of 2013), and publicly owned utilities' progress toward peak demand reserves and margins.[35]

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

California Building Standards Code (Title 24)

The California Building Standards Code Title 24 was previously discussed in Section 3 of this report.

California Building Energy Efficiency Standards (Title 24, Part 6)

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2022 Title 24 standards, which became effective on January 1, 2023[36] and build upon the 2019 Standards. The core focus of the building standards has been efficiency, but the 2019 Energy Code ventured into onsite generation by requiring solar PV on new homes, providing significant GHG savings. The 2022 update builds off this progress with expanded solar standards and the move to onsite energy storage that will help Californians save on utility bills while bolstering the grid. The 2022 Energy Code update focuses on four key areas in new construction of homes and businesses:

[34] California Energy Commission. Final 2022 Integrated Energy Policy Report. February 2023. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2022-integrated-energy-policy-report-update

[35] California Energy Commission. Final 2023 Integrated Energy Policy Report. January 2024. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report

[36] California Energy Commission (CEC). 2022. Building Energy Efficiency Standards. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency.

- Encouraging electric heat pump technology and use, which consumes less energy and produces fewer emissions than traditional HVACs and water heaters.
- Establishing electric-ready requirements when natural gas is installed, which positions owners to use cleaner electric heating, cooking and electric vehicle (EV) charging options whenever they choose to adopt those technologies.
- Expanding solar photovoltaic (PV) system and battery storage standards to make clean energy available onsite and complement the state's progress toward a 100 percent clean electricity grid.
- Strengthening ventilation standards to improve indoor air quality.

The 2022 Energy Code affects homes by establishing energy budgets based on efficient heat pumps for space or water heating to encourage builders to install heat pumps over gas-fueled HVAC units; requiring homes to be electric-ready, with dedicated 240-volt outlets and space (with plumbing for water heaters) so electric appliances can eventually replace installed gas appliances; increasing minimum kitchen ventilation requirements so that fans over cooktops have higher airflow or capture efficiency to better exhaust pollution from gas cooking and improve indoor air quality; and allowing exceptions to existing solar PV standards when roof area is not available (such as for smaller homes). In addition, the effect on businesses includes establishing combined solar PV and battery standards for select businesses with systems being sized to maximize onsite use of solar energy and avoid electricity demand during times when the grid must use gas-powered plants; establishing new efficiency standards for commercial greenhouses (primarily cannabis growing); and improving efficiency standards for building envelope, various internal.

California Building Energy Efficiency Standards (Title 24, Part 11)

The 2019 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2020. The 2019 CALGreen Code includes mandatory measures for non-residential development related to site development; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.

As previously discussed in Section 3 of this report, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle. HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regard to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regard to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regard to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regard to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

The 2022 California Green Building Standards Code became effective on January 1, 2023.[37]

HCD amended Section 5.106.5.3 in regard to increasing the EV capable space percentages and adding a new requirement for installed Level 2 DCFC chargers.

HCD under Section 5.106.5.4 added new regulation for electric vehicle charging readiness requirements for new construction of warehouse, grocery stores, and retail stores with planned off-street loading spaces. [38]

Senate Bill 100

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 350

As previously discussed in Section 3 of this report, Senate Bill 350 (SB 350) was signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions and ramp up the deployment of clean energy resources.

Senate Bill 1020

Senate Bill 1020 (SB 1020) requires all eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035, 95 percent of all retail sales of electricity to California end-use customers by December 31, 2040, 100 percent of all retail

[37] California Building Standards Commission (CBSC). 2022. California Green Building Standards. Website: https://codes.iccsafe.org/content/CAGBC2022P1.

[38] https://www.dgs.ca.gov/BSC/Resources/2022-Title-24-California-Code-Changes

sales of electricity to California end-use customers by December 31, 2045, and 100 percent of electricity procured to serve all state agencies by December 31, 2035.

Assembly Bill 32

As discussed in Section 3 of this report, in 2006 the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and best management practices that are technologically feasible and cost effective. Please see Section 3 for further detail on AB 32.

Assembly Bill 1493/Pavley Regulations

As discussed in Section 3 of this report, California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

Executive Order S-1-07/Low Carbon Fuel Standard

As discussed in Section 3 of this report, Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard and began implementation on January 1, 2011. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may

be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

California Air Resources Board

CARB's Advanced Clean Cars Program

Closely associated with the Pavley regulations, the Advanced Clean Cars emissions control program was approved by CARB in 2012. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles for model years 2015–2025.15 The components of the Advanced Clean Cars program include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.[39]

In addition, the Advanced Clean Cars II was effective as of November 30, 2022. This regulation takes the state's already growing zero-emission vehicle market and robust motor vehicle emission control rules and augments them to meet more aggressive tailpipe emissions standards and ramp up to 100 percent zero-emission vehicles. The Advanced Clean Cars II regulations will rapidly scale down light-duty passenger car, pickup truck and SUV emissions starting with the 2026 model year through 2035. The regulations are two-pronged. First, it amends the Zero-emission Vehicle Regulation to require an increasing number of zero-emission vehicles, and relies on currently available advanced vehicle technologies, including battery-electric, hydrogen fuel cell electric and plug-in hybrid electric-vehicles, to meet air quality and climate change emissions standards. These amendments support Governor Newsom's 2020 Executive Order N-79-20 that requires all new passenger vehicles sold in California to be zero emissions by 2035. Second, the Low-emission Vehicle Regulations were amended to include increasingly stringent standards for gasoline cars and heavier passenger trucks to continue to reduce smog-forming emissions. In October 2023, CARB staff launched a new effort to consider potential amendments to the Advanced Clean Cars II regulations, including updates to the tailpipe greenhouse gas emission standard and limited revisions to the Low-emission Vehicle and Zero-emission Vehicle regulations.[40]

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (Title 13, California Code of Regulations, Division 3, Chapter 10, Section 2435) was adopted to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles. This section applies to diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. Reducing idling of diesel-fueled commercial motor vehicles reduces the amount of petroleum-based fuel used by the vehicle.

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, form In-Use Heavy-Duty Diesel-Fueled Vehicles

The Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles (Title 13, California Code of Regulations, Division 3, Chapter 1, Section 2025) was adopted to reduce emissions of diesel particulate matter, oxides of nitrogen (NO_X) and other criteria pollutants from in-use diesel-fueled vehicles. This regulation is phased, with full implementation by 2023. The regulation aims to reduce emissions by requiring the installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-

[39] California Air Resources Board, California's Advanced Clean Cars Program, January 18, 2017. www.arb.ca.gov/msprog/acc/acc.htm.

[40] California Air Resources Board, Advanced Clean Cars II. https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii

controlled models. The newer emission-controlled models would use petroleum-based fuel in a more efficient manner.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or Senate Bill 375 (SB 375), coordinates land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction mandates established in AB 32.

As previously stated in Section 3 of this report, Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the SANDAG jurisdiction, which has authority to develop the SCS or APS. For the SANDAG region, the targets set by CARB are at 15 percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

PROJECT ENERGY DEMANDS AND ENERGY EFFICIENCY MEASURES

Evaluation Criteria

In compliance with Appendix G of the State CEQA Guidelines, this report analyzes the project's anticipated energy use to determine if the project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

In addition, Appendix F of the State CEQA Guidelines states that the means of achieving the goal of energy conservation includes the following:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

Methodology

Information from the CalEEMod 2022.1.1.21 Output contained in Appendix B, utilized for air quality and greenhouse gas analyses in Sections 2 and 3 of this report, were also utilized for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

Construction Energy Demands

Construction is anticipated to occur between approximately November 2024 and June 2025 and be completed in one phase. Staging of construction vehicles and equipment will occur on-site. The approximately seven-month schedule is relatively short and the project site is approximately 1.5 acres.

Construction Equipment Electricity Usage Estimates

As stated previously, Electrical service will be provided by SDG&E. The focus within this section is the energy implications of the construction process, specifically the power cost from on-site electricity consumption during construction of the proposed project. Based on the 2021 National Construction Estimator, Richard Pray (2021)[41], the typical power cost per 1,000 square feet of building construction per month is estimated to be $2.37. The project plans to develop the site with commercial/food service uses totaling 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. Based on Table 11, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately $101.36. Furthermore, as shown in Table 11, the total electricity usage from project construction related activities is estimated to be approximately 215 kWh.[42]

Construction Equipment Fuel Estimates

Fuel consumed by construction equipment would be the primary energy resource expended over the course of project construction. Fuel consumed by construction equipment was evaluated with the following assumptions:

- Construction schedule of 7 months
- All construction equipment was assumed to run on diesel fuel
- Typical daily use of 8 hours, with some equipment operating from ~6-7 hours
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/gallon (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf).
- Diesel fuel would be the responsibility of the equipment operators/contractors and would be sources within the region.
- Project construction represents a "single-event" for diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources during long term operation.

Using the CalEEMod data input for the air quality and greenhouse gas analyses (Sections 2 and 3 of this report), the project's construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB's 2017 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal. Table 12 shows the results of the analysis of construction equipment.

As presented in Table 12, project construction activities would consume an estimated 19,056 gallons of diesel fuel. As stated previously, project construction would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

[41] Pray, Richard. 2021 National Construction Estimator. Carlsbad : Craftsman Book Company, 2021.

[42] Assumes the project will be under the standard small commercial rate under SDG&E. https://www.sdge.com/total-electric-rates.

Construction Worker Fuel Estimates

It is assumed that construction worker trips are from light duty autos (LDA), light duty truck 1 (LDT1), and light duty truck 2 (LDT2) at a mix of 25 percent/50 percent/25 percent, respectively, along area roadways.[43] With respect to estimated VMT, the construction worker trips would generate an estimated 8,922 VMT. Data regarding project related construction worker trips were based on CalEEMod 2022.1.1.21 model defaults.

Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analyses (Sections 2 and 3 of this report) using information generated using CARB's 2021 EMFAC model (see Appendix C for details). An aggregate fuel efficiency of 24.95 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. Table 13 shows that an estimated 358 gallons of fuel would be consumed for construction worker trips.

Construction Vendor/Hauling Fuel Estimates

Table 14 and Table 15 show the estimated fuel consumption for vendor and hauling during demolition, site preparation, and building construction. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 2,776 VMT. Data regarding project related construction worker trips were based on CalEEMod 2022.1.1.19 model defaults.

For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles. Therefore, vendors delivering construction material or hauling debris from the site during demolition, site preparation, and building construction would use medium to heavy duty vehicles with an average fuel consumption of 7.29 mpg for medium heavy-duty trucks and 5.83 mpg for heavy heavy-duty trucks (see Appendix C for details).[44] Tables 14 and 15 show that an estimated 459 gallons of fuel would be consumed for vendor and hauling trips.

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately seven-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in the construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

The project would utilize construction contractors which practice compliance with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Compliance with these measures would result in a more efficient use of construction-related energy and would minimize or eliminate wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption.

Additionally, as required by California Code of Regulations Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby minimizing or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment.

[43] CalEEMod User's Guide Appendix C (April 2022) states that construction work trips are made by a fleet consisting of 25 percent light-duty auto (or passenger car), 50 percent light-duty truck type 1 (LDT1), and 25 percent light duty truck type 2 (LDT2).

[44] CalEEMod User's Guide Appendix C (April 2022) states that vendor trips are made by a fleet consisting of 50 percent medium trucks (MHDT) and 50 percent heavy trucks (HHDT) and that hauling and onsite truck trips are made by a fleet consisting of 100 percent HHDT.

Enforcement of idling limitations is realized through periodic site inspections conducted by City building officials, and/or in response to citizen complaints.

Operational Energy Demands

Energy consumption in support of or related to project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the project site) and facilities energy demands (energy consumed by building operations and site maintenance activities).

Transportation Fuel Consumption

Using the CalEEMod output from the air quality and greenhouse gas analyses (Sections 2 and 3 of this report), it is assumed that, for both the proposed project and the existing restaurant uses to be removed, an average trip for autos and light trucks was assumed to be 5.54 miles and 3- 4-axle trucks were assumed to travel an average of 6.64 miles.[45] In order to present a worst-case scenario, it was assumed that vehicles would operate 365 days per year. Table 16 shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.[46]

The proposed project would generate a total of 1,740 weekday trips per day (with incorporation of pass-by trip reduction) and the existing restaurant uses to be removed by the proposed project generate 230 weekday trips per day (with incorporation of pass-by trip reduction). The vehicle fleet mix was used from the CalEEMod output. Table 16 shows that an estimated 149,262 gallons of fuel would be consumed per year for the operation of the proposed project. However, the existing restaurant uses to be removed by the proposed project consume approximately 19,778 gallons of fuel per year. Therefore, with the incorporation of the reduction of existing uses, operation of proposed project would result in a net increase of approximately 129,485 gallons of fuel consumption per year.

Trip generation and VMT generated by the proposed project are consistent with other similar commercial uses of similar scale and configuration as reflected respectively in the Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (SANDAG 2002). That is, the proposed project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips and VMT, nor associated excess and wasteful vehicle energy consumption. Furthermore, the state of California consumed approximately 3.1 billion gallons of diesel and 13.6 billion gallons of gasoline in 2022.[47,48] Therefore, the increase in fuel consumption from the proposed project is insignificant in comparison to the State's demand. Therefore, project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity and natural gas (provided by SDG&E). The annual natural gas and electricity demands were provided per the CalEEMod output from the air quality and greenhouse gas analyses (Sections 2 and 3 of this report) and are provided in Table 17.

[45] CalEEMod default distance for the both the existing uses and proposed project is 6.64 miles for W-O (work-other) and O-O (other-other) is 5.54 miles. The trip type utilized for each vehicle category was determined based on both the description of the trip type (CalEEMod User's Guide Appendix A, 2022) as well as the total daily VMT calculated by CalEEMod.

[46] Average fuel economy based on aggregate mileage calculated in EMFAC 2021 for opening year (2025). See Appendix C for EMFAC output.

[47] https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics

[48] https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/diesel-fuel-data-facts-and-statistics and https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm

As shown in Table 17, the estimated electricity demand for the proposed project, with incorporation of the existing uses, is approximately 173,578 kWh per year. In 2022, the non-residential sector of the County of San Diego consumed approximately 12,802 million kWh of electricity.[49] In addition, the estimated natural gas consumption for the proposed project, with incorporation of the existing uses, is approximately 418,037 kBTU per year. In 2022, the non-residential sector of the County of San Diego consumed approximately 241 million therms of gas.[50] Therefore, the increase in both electricity and natural gas demand from the proposed project is insignificant compared to the County's 2022 non-residential sector demand.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. In California, the California Building Standards Code Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, appliances, etc.). The proposed project would be required to comply with Title 24 standards.

Furthermore, the proposed project energy demands in total would be comparable to other commercial projects of similar scale and configuration. Therefore, the project facilities' energy demands, and energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Renewable Energy and Energy Efficiency Plan Consistency

Regarding federal transportation regulations, the project site is located in an already developed area. Access to/from the project site is from existing roads. These roads are already in place so the project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the ISTEA because SCAG is not planning for intermodal facilities in the project area.

Regarding the State's Energy Plan and compliance with Title 24 CCR energy efficiency standards, the applicant is required to comply with the California Green Building Standard Code requirements for energy efficient buildings and appliances as well as utility energy efficiency programs implemented by SDG&E.

Regarding Pavley (AB 1493) regulations, an individual project does not have the ability to comply or conflict with these regulations because they are intended for agencies and their adoption of procedures and protocols for reporting and certifying GHG emission reductions from mobile sources.

Regarding the State's Renewable Energy Portfolio Standards, the project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CALGreen Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials.

As shown in Section 3 above, the proposed project is consistent with the applicable strategies of the City of Escondido Climate Action.

Conclusions

As supported by the preceding analyses, project construction and operations would not result in the inefficient, wasteful or unnecessary consumption of energy. The proposed project does not include any unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities and is a commercial project that is not proposing any additional features that would require a larger energy demand than other commercial projects of similar scale and configuration. The energy demands of the project are anticipated to be accommodated

[49] California Energy Commission, Electricity Consumption by County. https://ecdms.energy.ca.gov/elecbycounty.aspx

[50] California Energy Commission, Gas Consumption by County. http://ecdms.energy.ca.gov/gasbycounty.aspx

within the context of available resources and energy delivery systems. The project would therefore not cause or result in the need for additional energy producing or transmission facilities. The project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservations goals within the State of California. Notwithstanding, the project proposes commercial uses and will not have any long-term effects on an energy provider's future energy development or future energy conservation strategies.

Table 9
Total Electricity System Power (California 2022)

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total Imports (GWh)	Total California Energy Mix (GWh)	Total California Power Mix
Coal	273	0.13%	181	5,716	5,897	6,170	2.15%
Natural Gas	96,457	47.46%	44	7,994	8,038	104,495	36.38%
Oil	65	0.03%	-	-	-	65	0.02%
Other (Waste Heat/Petroleum Coke)	315	0.15%	-	-	-	315	0.11%
Unspecified Sources of Power	-	0.00%	12,485	7,943	20,428	20,428	7.11%
Total Thermal and Unspecified	97,110	47.78%	12,710	21,653	34,363	121,473	45.77%
Nuclear	17,627	8.67%	397	8342	8739	26,366	9.18%
Large Hydro	14,607	7.19%	10,803	1,118	11,921	26,528	9.24%
Biomass	5,366	2.64%	771	25	797	6,162	2.15%
Geothermal	11,110	5.47%	253	2,048	2,301	13,412	4.67%
Small Hydro	3,005	1.48%	211	13	225	3,230	1.12%
Solar	40,494	19.92%	231	8,225	8,456	48,950	17.04%
Wind	13,938	6.86%	8,804	8,357	17,161	31,099	10.83%
Total Non-GHG and Renewables	106,147	52.22%	21,471	28,129	49,599	155,747	54.23%
Total Energy	203,257	100%	34,180	49,782	83,962	287,220	100%

Notes:

(1) Source: California Energy Commission. 2022 Total System Electric Generation. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2022-total-system-electric-generation

Table 10
SDG&E 2022 Power Content Mix

Energy Resources	2022 SDG&E Power Mix
Eligible Renewable[1]	44.8%
Biomass & Biowaste	2.9%
Geothermal	0%
Eligible Hydroelectric	0%
Solar	28.0%
Wind	13.9%
Coal	0%
Large Hydroelectric	0.0%
Natural Gas	54.4%
Nuclear	0.0%
Other	0%
Unspecified Sources of power[2]	0.8%
Total	100%

Notes:

Source: https://www.sdge.com/sites/default/files/documents/16402%20SDGE_PCL_Sept23.01.pdf

(1) The eligible renewable percentage above does not reflect RPS compliance, which is determined using a different methodology.

(2) Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.

Table 11
Project Construction Power Cost and Electricity Usage

Power Cost (per 1,000 square foot of building per month of construction)	Total Building Size (1,000 Square Foot)	Construction Duration (months)	Total Project Construction Power Cost
$2.37	6.110	7	$101.36

Cost per kWh[1]	Total Project Construction Electricity Usage (kWh)
$0.47	215

Notes:

(1) Assumes the project will be under the standard small commercial rate under SDG&E. https://www.sdge.com/total-electric-rates

Table 12
Construction Equipment Fuel Consumption Estimates

Phase	Number of Days	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP hrs/day	Total Fuel Consumption (gal diesel fuel)[1]
Demolition	20	Concrete/Industrial Saws	1	8	33	0.73	193	208
	20	Rubber Tired Dozers	1	8	367	0.4	1174	1270
	20	Tractors/Loaders/Backhoes	3	8	84	0.37	746	806
Site Preparation	2	Graders	1	8	148	0.41	485	52
	2	Rubber Tired Dozers	1	7	367	0.4	1028	111
	2	Tractors/Loaders/Backhoes	1	8	84	0.37	249	27
Grading	4	Rubber Tired Dozers	1	8	367	0.4	1174	254
	4	Tractors/Loaders/Backhoes	1	7	84	0.37	218	47
	4	Plate Compactors	1	8	8	0.43	28	6
	4	Excavators	1	8	36	0.38	109	24
Building Construction	120	Cranes	2	6	367	0.29	1,277	8,284
	120	Forklifts	2	6	82	0.2	197	1,277
	120	Generator Sets	1	8	14	0.74	83	538
	120	Tractors/Loaders/Backhoes	2	6	84	0.37	373	2,419
	120	Welders	3	8	46	0.45	497	3,222
Paving	10	Cement and Mortar Mixers	1	6	10	0.56	34	18
	10	Pavers	1	6	81	0.42	204	110
	10	Paving Equipment	1	8	89	0.36	256	139
	10	Rollers	1	7	36	0.38	96	52
	10	Tractors/Loaders/Backhoes	1	8	84	0.37	249	134
Architectural Coating	10	Air Compressors	1	6	37	0.48	107	58
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								19,056

Notes:

(1) Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp. (Source: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf)

Table 13
Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	20	12.5	12	3,000	24.95	120
Site Preparation	2	7.5	12	180	24.95	7
Grading	4	10	12	480	24.95	19
Building Construction	120	2.57	12	3,701	24.95	148
Paving	10	12.5	12	1,500	24.95	60
Architectural Coating	10	0.51	12	61	24.95	2
Total Construction Worker Fuel Consumption						358

Notes:

(1) Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod Version 2022.1.1.21 defaults.

(2) Per CalEEMod User's Guide Appendix C (April 2022), CalEEMod assumes that construction work trips are made by a fleet consisting of 25 percent light-duty auto (or passenger car), 50 percent light-duty truck type 1 (LDT1), and 25 percent light duty truck type 2 (LDT2).

Table 14
Construction Vendor Fuel Consumption Estimates (MHD & HHD Trucks)

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)[1]	Vehicle Miles Traveled[1]	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	20	0	7.63	0	6.56	0
Site Preparation	2	0	7.63	0	6.56	0
Grading	4	0	7.63	0	6.56	0
Building Construction	120	1	7.63	916	6.56	140
Paving	10	0	7.63	0	6.56	0
Architectural Coating	10	0	7.63	0	6.56	0
Total Construction Vendor Fuel Consumption						140

Notes:

(1) Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod Version 2022.1.1.21 defaults.

(2) Per CalEEMod User's Guide Appendix C (April 2022), CalEEMod assumes vendor trips are made by a fleet consisting of 50 percent medium trucks (MHDT) and 50 percent heavy trucks (HHDT).

Table 15
Construction Hauling Fuel Consumption Estimates (HHD Trucks)

Phase	Number of Days	Total Hauling Trips	Trip Length (miles)[1]	Vehicle Miles Traveled[1]	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	20	1.4	20	560	5.83	96
Site Preparation	2	32.5	20	1,300	5.83	223
Grading	4	0	20	0	5.83	0
Building Construction	120	0	20	0	5.83	0
Paving	10	0	20	0	5.83	0
Architectural Coating	10	0	20	0	5.83	0
Total Construction Hauling Fuel Consumption						319

Notes:

(1) Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod Version 2022.1.1.21 defaults.

(2) Per CalEEMod User's Guide Appendix C (April 2022), CalEEMod assumes hauling and onsite truck trips are made by a fleet consisting of 100 percent HHDT.

Table 16
Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles[1]	Average Trip Length (miles)[2]	Daily VMT	Average Fuel Economy (mpg)[3]	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Proposed Project							
Light Auto	Automobile	877	5.54	4,859	31.5	154.24	56,298
Light Truck	Automobile	86	5.54	476	23.63	20.16	7,359
Light Truck	Automobile	390	5.54	2,161	23.52	91.86	33,530
Light Heavy Truck	2-Axle Truck	49	5.54	271	11.89	22.83	8,333
Light Heavy Truck 10,000 lbs +	2-Axle Truck	13	5.54	72	11.57	6.22	2,272
Motorcycle	Automobile	48	5.54	266	39.12	6.80	2,481
Medium Truck	Automobile	237	5.54	1,313	19.5	67.33	24,576
Motor Home	--	10	5.54	55	5.27	10.51	3,837
Medium Heavy Truck	3-Axle Truck	15	6.64	100	7.4	13.46	4,913
Other Bus	--	1	5.54	6	5.69	0.97	355
School Bus	--	2	5.54	11	8.6	1.29	470
Urban Bus	--	1	5.54	6	5.79	0.96	349
Heavy Heavy Truck	4-Axle Truck	11	6.64	73	5.94	12.30	4,488
Total		1,740	--	9,668	-	408.94	--
Total Annual Fuel Consumption - Proposed Project							**149,262**
Existing Restaurant Use to be Removed							
Light Auto	Automobile	116	5.54	643	31.5	20.40	7,446
Light Truck	Automobile	12	5.54	66	23.63	2.81	1,027
Light Truck	Automobile	51	5.54	283	23.52	12.01	4,385
Light Heavy Truck	2-Axle Truck	7	5.54	39	11.89	3.26	1,190
Light Heavy Truck 10,000 lbs +	2-Axle Truck	2	5.54	11	11.57	0.96	350
Motorcycle	Automobile	6	5.54	33	39.12	0.85	310
Medium Truck	Automobile	31	5.54	172	19.5	8.81	3,215
Motor Home	--	1	5.54	6	5.27	1.05	384
Medium Heavy Truck	3-Axle Truck	2	6.64	13	7.4	1.79	655
Other Bus	--	0	5.54	0	5.69	0.00	0
School Bus	--	0	5.54	0	8.6	0.00	0
Urban Bus	--	0	5.54	0	5.79	0.00	0
Heavy Heavy Truck	4-Axle Truck	2	6.64	13	5.94	2.24	816
Total		230	--	1,279	-	54.19	--
Total Annual Fuel Consumption - Existing Restaurant to be Removed							**19,778**
Total Net Annual Fuel Consumption with Incorporation of Reduction from Removal of Existing Uses							**+129,485**

Notes:

(1) Based on the size of the site and relative location, trips were assumed to be local rather than regional.

(2) The project analysis utilizes the weekday net total vehicle trips of 1,740 trips per day as provided in the Transportation Impact Comparison (Ganddini Group February 12, 2024). It should be noted that this net total trip calculation includes pass-by reductions, but not the reduction of existing uses. In addition, to be consistent and conservative, the existing use to be removed anlaysis utilized the weekday trips with pass-by reduction (230 total daily vehicle trips).

(3) Based on EMFAC2021 emission rates for opening year of 2025.

Table 17
Project Annual Operational Energy Demand Summary

Natural Gas Demand	kBTU/year[1,2]
Proposed Project:	
Fast-Food Restaurant with Drive-Through	522,687
Fast-Food Restaurant without Drive-Through[2]	164,112
Subtotal - Proposed Project	686,799
Reduction from existing restaurant use to be removed	-268,762
Net Total	**+418,037**

Electricity Demand	kWh/year
Proposed Project:	
Fast-Food Restaurant with Drive-Through	165,646
Fast-Food Restaurant without Drive-Through[2]	52,009
Parking Lot	41,097
Subtotal - Proposed Project	258,752
Reduction from existing restaurant use to be removed	-85,174
Net Total	**+173,578**

Notes:

(1) Taken from the CalEEMod 2022.1.1.21 output (Appendix B of this report).

(2) The proposed coffee shop with drive-through was modeled as a Fast-Food Restaurant without Drive-Through in CalEEMod as it was the closest land use available.

5. EMISSIONS REDUCTION MEASURES

CONSTRUCTION MEASURES

Adherence to SDAPCD Rule 55 is required.

No construction mitigation is required.

OPERATIONAL MEASURES

No operational mitigation is required.

6. REFERENCES

California Air Resources Board

2008 Resolution 08-43

2008 Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act

2008 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2013 Almanac of Emissions and Air Quality.
Source: https://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm

2014 First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB32, the California Global Warming Solutions Act of 2006. May.

2017 California's 2017 Climate Change Scoping Plan. November.

2022 Scoping Plan for Achieving Carbon Neutrality. November 16.

City of Escondido

2012 General Plan. May.

2021 Climate Action Plan. March.

Ganddini Group, Inc.

2024 503 West Mission Commercial Project Transportation Impact Comparison. February 12.

Governor's Office of Planning and Research

2008 CEQA and Climate: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review

2018 CEQA Guideline Sections to be Added or Amended

Intergovernmental Panel on Climate Change (IPCC)

2014 IPCC Fifth Assessment Report, Climate Change 2014: Synthesis Report

Office of Environmental Health Hazard Assessment

2015 Air Toxics Hot Spots Program Risk Assessment Guidelines

San Diego County

2007 County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Air Quality. March 19.

2013 Guidelines for Determining Significance and Report Format and Content Requirements Climate Change, November 7.

2018 County of San Diego Guidelines for Determining Significance Climate Change. January 2018.

San Diego Air Pollution Control District

1976 Rule 51 Nuisance, Amended November 8

1998 Rule 20.2 New Source Review: Non-Major Stationary Sources, Amended November 4

1998 Rule 20.3 New Source Review: Major Stationary Sources and PSD Stationary Sources, Amended November 4.

2009 Rule 55 Fugitive Dust Control, Amended June 26

2015 Rule 67.0.01 Architectural Coatings, Amended June 24

2017 Rule 1210 Toxic Air Contaminant Public Health Risks-Public Notification and Risk Reduction, Amended July 11,

2017 Annual Air Quality Monitoring Network Plan 2016. June 30.

San Diego Association of Governments (SANDAG)

2011 2050 Regional Transportation Plan, October 28.

2015 SANDAG Data Surfer. http://datasurfer.sandag.org/

2016 2016 Regional Transportation Improvement Program

2022 2023 Regional Transportation Improvement Program. September 23.

Southern California Association of Governments

2020 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy

U.S. Environmental Protection Agency (EPA)

2017 Understanding Global Warming Potentials
(Source: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials)

U.S. Geological Survey

2011 Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California

APPENDICES

Appendix A Glossary of Terms

Appendix B CalEEMod Model Detailed Report

Appendix C EMFAC Data & CAP Consistency Checklist

APPENDIX A

GLOSSARY

AQMP	Air Quality Management Plan
BACT	Best Available Control Technologies
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse gas
GWP	Global warming potential
HIDPM	Hazard Index Diesel Particulate Matter
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LST	Localized Significant Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
O_3	Ozone
OPR	Governor's Office of Planning and Research
PFCs	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PMI	Point of maximum impact
PPM	Parts per million
PPB	Parts per billion
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SANBAG	San Bernardino Association of Governments
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SSAB	Salton Sea Air Basin
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
TAC	Toxic air contaminants
VOC	Volatile organic compounds

APPENDIX B

CALEEMOD MODEL DETAILED REPORT

19703 - EXISTING USES OPERATIONAL ANALYSIS ONLY - 503 West Mission Commercial Project Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19703 - EXISTING USES OPERATIONAL ANALYSIS ONLY - 503 West Mission Commercial Project
Operational Year	2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	26.6
Location	33.12749826337111, -117.09163050076094
County	San Diego
City	Escondido
Air District	San Diego County APCD
Air Basin	San Diego
TAZ	6202
EDFZ	12
Electric Utility	San Diego Gas & Electric
Gas Utility	San Diego Gas & Electric
App Version	2022.1.1.21

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
High Turnover (Sit Down Restaurant)	2.39	1000sqft	0.05	2,391	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.12	1.08	0.79	7.37	0.02	0.02	1.34	1.35	0.02	0.34	0.36
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.08	1.04	0.86	6.89	0.02	0.02	1.34	1.35	0.02	0.34	0.36
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.00	0.98	0.71	5.68	0.01	0.02	0.99	1.01	0.02	0.25	0.27
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.18	0.18	0.13	1.04	< 0.005	< 0.005	0.18	0.18	< 0.005	0.05	0.05

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.09	1.01	0.72	7.21	0.02	0.01	1.34	1.35	0.01	0.34	0.35
Area	0.02	0.07	< 0.005	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—

Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	1.12	1.08	0.79	7.37	0.02	0.02	1.34	1.35	0.02	0.34	0.36
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.07	0.98	0.79	6.83	0.02	0.01	1.34	1.35	0.01	0.34	0.35
Area	—	0.05	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	1.08	1.04	0.86	6.89	0.02	0.02	1.34	1.35	0.02	0.34	0.36
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.98	0.91	0.64	5.56	0.01	0.01	0.99	1.00	0.01	0.25	0.26
Area	0.01	0.06	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	1.00	0.98	0.71	5.68	0.01	0.02	0.99	1.01	0.02	0.25	0.27
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.18	0.17	0.12	1.02	< 0.005	< 0.005	0.18	0.18	< 0.005	0.05	0.05
Area	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	0.18	0.18	0.13	1.04	< 0.005	< 0.005	0.18	0.18	< 0.005	0.05	0.05

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	1.09	1.01	0.72	7.21	0.02	0.01	1.34	1.35	0.01	0.34	0.35
Total	1.09	1.01	0.72	7.21	0.02	0.01	1.34	1.35	0.01	0.34	0.35
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	1.07	0.98	0.79	6.83	0.02	0.01	1.34	1.35	0.01	0.34	0.35
Total	1.07	0.98	0.79	6.83	0.02	0.01	1.34	1.35	0.01	0.34	0.35
Annual	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	0.18	0.17	0.12	1.02	< 0.005	< 0.005	0.18	0.18	< 0.005	0.05	0.05
Total	0.18	0.17	0.12	1.02	< 0.005	< 0.005	0.18	0.18	< 0.005	0.05	0.05

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01
Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01

Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.05	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.02	< 0.005	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	0.02	0.07	< 0.005	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.05	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—
Total	—	0.05	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—

Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T

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

5.9. 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
High Turnover (Sit Down Restaurant)	230	230	230	83,946	1,245	1,892	1,892	521,962

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

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)
0	0.00	3,587	1,196	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
High Turnover (Sit Down Restaurant)	85,174	589	0.0330	0.0040	268,762

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
High Turnover (Sit Down Restaurant)	725,749	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
High Turnover (Sit Down Restaurant)	28.5	—

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
High Turnover (Sit Down Restaurant)	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
High Turnover (Sit Down Restaurant)	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

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	16.8	annual days of extreme heat
Extreme Precipitation	5.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	14.0	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	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	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 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	47.4
AQ-PM	15.0
AQ-DPM	32.7
Drinking Water	47.8
Lead Risk Housing	10.4
Pesticides	45.1
Toxic Releases	12.9
Traffic	34.3
Effect Indicators	—
CleanUp Sites	77.0
Groundwater	89.2
Haz Waste Facilities/Generators	92.7
Impaired Water Bodies	98.1
Solid Waste	98.1
Sensitive Population	—
Asthma	10.1
Cardio-vascular	50.9
Low Birth Weights	13.5
Socioeconomic Factor Indicators	—

Education	44.6
Housing	20.3
Linguistic	9.46
Poverty	56.8
Unemployment	4.23

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	43.19260875
Employed	33.54292314
Median HI	43.89837033
Education	—
Bachelor's or higher	55.60118055
High school enrollment	100
Preschool enrollment	27.28089311
Transportation	—
Auto Access	52.9449506
Active commuting	35.67303991
Social	—
2-parent households	10.17579879
Voting	77.73643013
Neighborhood	—
Alcohol availability	64.09598358
Park access	10.9842166
Retail density	67.71461568

Supermarket access	49.05684589
Tree canopy	40.74169126
Housing	—
Homeownership	70.80713461
Housing habitability	77.96740665
Low-inc homeowner severe housing cost burden	27.81983832
Low-inc renter severe housing cost burden	82.63826511
Uncrowded housing	64.30129603
Health Outcomes	—
Insured adults	59.70742974
Arthritis	9.5
Asthma ER Admissions	89.2
High Blood Pressure	35.9
Cancer (excluding skin)	18.5
Asthma	34.7
Coronary Heart Disease	12.2
Chronic Obstructive Pulmonary Disease	12.3
Diagnosed Diabetes	34.4
Life Expectancy at Birth	48.8
Cognitively Disabled	4.2
Physically Disabled	33.4
Heart Attack ER Admissions	81.6
Mental Health Not Good	38.2
Chronic Kidney Disease	27.1
Obesity	47.2
Pedestrian Injuries	61.2
Physical Health Not Good	36.4

Stroke	22.5
Health Risk Behaviors	—
Binge Drinking	40.3
Current Smoker	38.5
No Leisure Time for Physical Activity	43.7
Climate Change Exposures	—
Wildfire Risk	22.5
SLR Inundation Area	0.0
Children	67.0
Elderly	38.5
English Speaking	79.4
Foreign-born	34.7
Outdoor Workers	37.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	62.4
Traffic Density	65.0
Traffic Access	46.3
Other Indices	—
Hardship	41.9
Other Decision Support	—
2016 Voting	76.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	30.0
Healthy Places Index Score for Project Location (b)	43.0
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
Operations: Vehicle Data	Per the Transportation Impact Comparison (Ganddini 2024), 96.19 trips/TSF for both Weekdays & Saturdays (w/ pass-by rdx). No Sunday rates provided in Transportation Impact Comparison; therefore, Saturday rates used for Sunday. Pass-by trip %'s were changed to zero & split between primary and diverted %s.

19703 503 West Mission Commercial Project Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

3.3. Site Preparation (2024) - Unmitigated

3.5. Grading (2024) - Unmitigated

3.7. Building Construction (2024) - Unmitigated

3.9. Building Construction (2025) - Unmitigated

3.11. Paving (2025) - Unmitigated

3.13. Architectural Coating (2025) - Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19703 503 West Mission Commercial Project
Construction Start Date	11/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	26.6
Location	33.12750033070468, -117.09160441679279
County	San Diego
City	Escondido
Air District	San Diego County APCD
Air Basin	San Diego
TAZ	6202
EDFZ	12
Electric Utility	San Diego Gas & Electric
Gas Utility	San Diego Gas & Electric
App Version	2022.1.1.21

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

Fast Food Restaurant with Drive Thru	4.65	1000sqft	0.11	4,650	8,775	—	—	—
Parking Lot	64.0	Space	1.08	0.00	0.00	—	—	—
Fast Food Restaurant w/o Drive Thru	1.46	1000sqft	0.03	1,460	3,490	—	—	—

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.60	6.59	18.7	23.0	0.04	0.73	0.14	0.87	0.67	0.03	0.71
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.99	1.67	17.0	16.6	0.03	0.69	4.87	5.56	0.64	1.62	2.25
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.53	0.57	3.87	4.40	0.01	0.15	0.07	0.16	0.14	0.03	0.14
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.10	0.71	0.80	< 0.005	0.03	0.01	0.03	0.02	< 0.005	0.03

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	2.60	6.59	18.7	23.0	0.04	0.73	0.14	0.87	0.67	0.03	0.71
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
2024	1.99	1.67	17.0	16.6	0.03	0.69	4.87	5.56	0.64	1.62	2.25
2025	1.80	1.50	13.1	14.7	0.03	0.50	0.03	0.53	0.46	0.01	0.47
Average Daily	—	—	—	—	—	—	—	—	—	—	—
2024	0.22	0.19	1.72	1.79	< 0.005	0.07	0.07	0.14	0.07	0.03	0.09
2025	0.53	0.57	3.87	4.40	0.01	0.15	0.01	0.16	0.14	< 0.005	0.14
Annual	—	—	—	—	—	—	—	—	—	—	—
2024	0.04	0.03	0.31	0.33	< 0.005	0.01	0.01	0.03	0.01	< 0.005	0.02
2025	0.10	0.10	0.71	0.80	< 0.005	0.03	< 0.005	0.03	0.02	< 0.005	0.03

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.4	9.72	6.82	68.0	0.16	0.14	13.3	13.4	0.13	3.36	3.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.1	9.45	7.48	64.2	0.15	0.14	13.3	13.4	0.13	3.36	3.49
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.47	7.99	5.54	47.9	0.11	0.10	9.03	9.13	0.10	2.29	2.39
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.55	1.46	1.01	8.74	0.02	0.02	1.65	1.67	0.02	0.42	0.44

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.3	9.52	6.64	67.6	0.16	0.12	13.3	13.4	0.12	3.36	3.48
Area	0.05	0.19	< 0.005	0.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Energy	0.02	0.01	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	10.4	9.72	6.82	68.0	0.16	0.14	13.3	13.4	0.13	3.36	3.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.1	9.29	7.29	64.0	0.15	0.12	13.3	13.4	0.12	3.36	3.48
Area	—	0.15	—	—	—	—	—	—	—	—	—
Energy	0.02	0.01	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	10.1	9.45	7.48	64.2	0.15	0.14	13.3	13.4	0.13	3.36	3.49
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	8.43	7.81	5.35	47.6	0.10	0.09	9.03	9.12	0.08	2.29	2.37
Area	0.02	0.17	< 0.005	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Energy	0.02	0.01	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—

Total	8.47	7.99	5.54	47.9	0.11	0.10	9.03	9.13	0.10	2.29	2.39
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.54	1.43	0.98	8.69	0.02	0.02	1.65	1.66	0.02	0.42	0.43
Area	< 0.005	0.03	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Energy	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	1.55	1.46	1.01	8.74	0.02	0.02	1.65	1.67	0.02	0.42	0.44

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.92	1.61	15.6	16.0	0.02	0.67	—	0.67	0.62	—	0.62
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.85	0.88	< 0.005	0.04	—	0.04	0.03	—	0.03
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.54	0.00	0.00	0.11	0.11	0.00	0.02	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.14	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

3.3. Site Preparation (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.70	1.43	13.7	12.9	0.02	0.65	—	0.65	0.59	—	0.59
Dust From Material Movement	—	—	—	—	—	—	2.44	2.44	—	1.17	1.17
Demolition	—	—	—	—	—	—	1.76	1.76	—	0.27	0.27
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.32	0.00	0.00	0.06	0.06	0.00	0.01	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.18	0.05	3.32	1.16	0.02	0.04	0.60	0.65	0.04	0.16	0.21
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

3.5. Grading (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.54	1.29	12.5	11.3	0.02	0.55	—	0.55	0.50	—	0.50
Dust From Material Movement	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.14	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.43	0.00	0.00	0.08	0.08	0.00	0.02	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.89	1.58	13.9	14.7	0.03	0.57	—	0.57	0.52	—	0.52
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.63	0.66	< 0.005	0.03	—	0.03	0.02	—	0.02
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.11	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	1.49	13.1	14.6	0.03	0.50	—	0.50	0.46	—	0.46
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	1.49	13.1	14.6	0.03	0.50	—	0.50	0.46	—	0.46
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	0.42	3.71	4.14	0.01	0.14	—	0.14	0.13	—	0.13
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.68	0.76	< 0.005	0.03	—	0.03	0.02	—	0.02
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	0.01	0.01
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.63	6.50	0.01	0.20	—	0.20	0.19	—	0.19
Paving	—	0.28	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01

Paving	—	0.01	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.58	0.00	0.00	0.11	0.11	0.00	0.02	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.13. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03
Architectural Coatings	—	4.14	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Architectural Coatings	—	0.11	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Architectural Coatings	—	0.02	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	8.22	7.57	5.28	53.8	0.12	0.10	10.5	10.6	0.09	2.67	2.77
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fast Food Restaurant w/o Drive Thru	2.12	1.95	1.36	13.8	0.03	0.03	2.71	2.74	0.02	0.69	0.71
Total	10.3	9.52	6.64	67.6	0.16	0.12	13.3	13.4	0.12	3.36	3.48
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	8.05	7.39	5.80	50.9	0.12	0.10	10.5	10.6	0.09	2.67	2.77
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Fast Food Restaurant w/o Drive Thru	2.07	1.90	1.49	13.1	0.03	0.03	2.71	2.74	0.02	0.69	0.71
Total	10.1	9.29	7.29	64.0	0.15	0.12	13.3	13.4	0.12	3.36	3.48
Annual	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	1.34	1.25	0.84	7.44	0.02	0.01	1.39	1.41	0.01	0.35	0.37
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fast Food Restaurant w/o Drive Thru	0.20	0.18	0.14	1.25	< 0.005	< 0.005	0.26	0.26	< 0.005	0.06	0.07
Total	1.54	1.43	0.98	8.69	0.02	0.02	1.65	1.66	0.02	0.42	0.43

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	0.02	0.01	0.14	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	0.02	0.01	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	0.02	0.01	0.14	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	0.02	0.01	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.13	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—

Landscape Equipment	0.05	0.04	< 0.005	0.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	0.05	0.19	< 0.005	0.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.13	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—
Total	—	0.15	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.02	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	< 0.005	0.03	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—

Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	11/1/2024	11/29/2024	5.00	20.0	—
Site Preparation	Site Preparation	11/30/2024	12/2/2024	5.00	2.00	—
Grading	Grading	12/3/2024	12/8/2024	5.00	4.00	—
Building Construction	Building Construction	12/9/2024	5/25/2025	5.00	120	—
Paving	Paving	5/17/2025	6/1/2025	5.00	10.0	—
Architectural Coating	Architectural Coating	5/17/2025	6/1/2025	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
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37

Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	7.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Building Construction	Cranes	Diesel	Average	2.00	6.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	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
Demolition	—	—	—	—
Demolition	Worker	12.5	12.0	LDA,LDT1,LDT2
Demolition	Vendor	—	7.63	HHDT,MHDT
Demolition	Hauling	1.40	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	12.0	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.63	HHDT,MHDT
Site Preparation	Hauling	32.5	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	12.0	LDA,LDT1,LDT2
Grading	Vendor	—	7.63	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	2.57	12.0	LDA,LDT1,LDT2
Building Construction	Vendor	1.00	7.63	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	12.0	LDA,LDT1,LDT2
Paving	Vendor	—	7.63	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	0.51	12.0	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.63	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

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

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	0.00	0.00	9,165	3,055	2,815

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	2,391	—
Site Preparation	—	—	1.88	257	—
Grading	—	—	2.00	0.00	—
Paving	0.00	0.00	0.00	0.00	1.08

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Fast Food Restaurant with Drive Thru	0.00	0%
Parking Lot	1.08	100%
Fast Food Restaurant w/o Drive Thru	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	589	0.03	< 0.005
2025	0.00	589	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
Fast Food Restaurant with Drive Thru	1,814	1,814	1,814	662,114	9,416	14,921	14,921	4,010,900
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Fast Food Restaurant w/o Drive Thru	156	467	467	89,373	1,283	3,841	3,841	735,138

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

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)
0	0.00	9,165	3,055	2,815

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Fast Food Restaurant with Drive Thru	165,646	589	0.0330	0.0040	522,687
Parking Lot	41,097	589	0.0330	0.0040	0.00
Fast Food Restaurant w/o Drive Thru	52,009	589	0.0330	0.0040	164,112

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Fast Food Restaurant with Drive Thru	1,411,432	131,133
Parking Lot	0.00	0.00
Fast Food Restaurant w/o Drive Thru	443,159	52,155

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Fast Food Restaurant with Drive Thru	53.6	—
Parking Lot	0.00	—
Fast Food Restaurant w/o Drive Thru	16.8	—

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
Fast Food Restaurant with Drive Thru	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Fast Food Restaurant with Drive Thru	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Fast Food Restaurant with Drive Thru	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Fast Food Restaurant w/o Drive Thru	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00

Fast Food Restaurant w/o Drive Thru	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Fast Food Restaurant w/o Drive Thru	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

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	16.8	annual days of extreme heat
Extreme Precipitation	5.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	14.0	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	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	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 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	47.4
AQ-PM	15.0
AQ-DPM	32.7
Drinking Water	47.8
Lead Risk Housing	10.4
Pesticides	45.1
Toxic Releases	12.9
Traffic	34.3
Effect Indicators	—
CleanUp Sites	77.0
Groundwater	89.2
Haz Waste Facilities/Generators	92.7
Impaired Water Bodies	98.1
Solid Waste	98.1
Sensitive Population	—
Asthma	10.1
Cardio-vascular	50.9

Low Birth Weights	13.5
Socioeconomic Factor Indicators	—
Education	44.6
Housing	20.3
Linguistic	9.46
Poverty	56.8
Unemployment	4.23

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	43.19260875
Employed	33.54292314
Median HI	43.89837033
Education	—
Bachelor's or higher	55.60118055
High school enrollment	100
Preschool enrollment	27.28089311
Transportation	—
Auto Access	52.9449506
Active commuting	35.67303991
Social	—
2-parent households	10.17579879
Voting	77.73643013
Neighborhood	—
Alcohol availability	64.09598358

Park access	10.9842166
Retail density	67.71461568
Supermarket access	49.05684589
Tree canopy	40.74169126
Housing	—
Homeownership	70.80713461
Housing habitability	77.96740665
Low-inc homeowner severe housing cost burden	27.81983832
Low-inc renter severe housing cost burden	82.63826511
Uncrowded housing	64.30129603
Health Outcomes	—
Insured adults	59.70742974
Arthritis	9.5
Asthma ER Admissions	89.2
High Blood Pressure	35.9
Cancer (excluding skin)	18.5
Asthma	34.7
Coronary Heart Disease	12.2
Chronic Obstructive Pulmonary Disease	12.3
Diagnosed Diabetes	34.4
Life Expectancy at Birth	48.8
Cognitively Disabled	4.2
Physically Disabled	33.4
Heart Attack ER Admissions	81.6
Mental Health Not Good	38.2
Chronic Kidney Disease	27.1
Obesity	47.2

Pedestrian Injuries	61.2
Physical Health Not Good	36.4
Stroke	22.5
Health Risk Behaviors	—
Binge Drinking	40.3
Current Smoker	38.5
No Leisure Time for Physical Activity	43.7
Climate Change Exposures	—
Wildfire Risk	22.5
SLR Inundation Area	0.0
Children	67.0
Elderly	38.5
English Speaking	79.4
Foreign-born	34.7
Outdoor Workers	37.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	62.4
Traffic Density	65.0
Traffic Access	46.3
Other Indices	—
Hardship	41.9
Other Decision Support	—
2016 Voting	76.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	30.0

Healthy Places Index Score for Project Location (b)	43.0
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	Site is ~1.5 acres with 1,460 sf coffee-shop with DT with 3,490 sf landscaping, 4,650 sf fast-food restaurant w/ DT with 8,774.88 sf landscaping, and a parking lot with 64 parking spaces (total paved area calculated at ~1.077 acres based on remainder of site area).
Construction: Construction Phases	Construction anticipated to begin November 2024 and be completed by June 2025, lasting ~7 months. Site anticipated to balance.
Construction: Off-Road Equipment	Per applicant, grading to include a dozer, compactor, excavator & backhoe, all other equipment for construction phases based on CalEEMod default list. CalEEMod default construction timing for the building construction phase was reduced by ~40%; therefore, ~40% more equipment has been added to the building construction phase.
Construction: Demolition	Demo of existing 2,391 sf restaurant. Removal of existing trees/shrubs and existing asphalt & concrete (parking lots, pool/tennis court etc.) included in site prep (estimated at ~0.92 ac or 40,075 sf asphalt/concrete to be removed = 40,075sfx0.3in=12,023c ftx45lbs/cf2=541,013lbs= ~257 tons).

Operations: Vehicle Data	Per Transportation Impact Comparison (Ganddini 2024), 390.11 trips/TSF for both weekday and Saturday (w/ pass-by rdx) for fast food restaurant w/ DT uses & 106.85 trips/TSF/Weekday (w/ pass-by rdx) & 319.86 trips/TSF/Saturday (w/ pass-by rdx) for coffee shop use. Transportation Impact Comparison Saturday rates used for Sunday rates. Pass-by trip %'s were changed to zero & split between primary and diverted %s.
Construction: Dust From Material Movement	—

APPENDIX C

EMFAC DATA & CAP CONSISTENCY CHECKLIST

Climate Action Plan Consistency Review Checklist

Project # _____

Introduction

The City of Escondido ("City") adopted an updated Climate Action Plan ("CAP") on March 10, 2021 by Resolution No. 2021-37. The CAP outlines strategies and measures that the City will undertake to achieve its proportional share of State greenhouse gas ("GHG") emissions reduction targets. The CAP's strategies and measures are designed to reduce GHG emissions for build-out under the General Plan. The CAP does so by (1) calculating a baseline GHG emissions level as of 2012; and (2) estimating future GHG emissions under a business as usual standard; and (3) implementing state mandated GHG reduction targets. Measures to reduce GHG emissions for projects with land use consistent with the City's General Plan are found in the CAP.

Analysis of GHG emissions and potential climate change impacts from new development is required under CEQA. The purpose of the CAP Consistency Checklist ("Checklist") is to provide a streamlined review process for proposed development projects that trigger environmental review pursuant to the California Environmental Quality Act ("CEQA").

The City's CAP is a qualified GHG emissions reduction plan in accordance with State CEQA Guidelines Section 15183.5. Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of a CAP. Projects that are consistent with the General Plan and implement applicable CAP GHG reduction measures may incorporate by reference the CAP's cumulative GHG analysis. Conversely, projects that are consistent with the General Plan, but do not implement CAP GHG reduction measures, as well as General Plan Amendments and Annexations that increase emissions beyond CAP projections — will require a project-level GHG analysis.

The purpose of this Checklist is to implement GHG reduction measures from the CAP and determine if development would demonstrate consistency with the CAP's assumptions for implementation. Projects that are consistent with the CAP, as determined through the use of this Checklist, may rely on the CAP for the cumulative impact analysis of GHG emissions. Projects that are not consistent with the CAP must prepare a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions, incorporation of the measures in this Checklist to the extent applicable, and demonstration of consistency with a VMT threshold currently in development by the City. Cumulative GHG impacts could be significant for any project that is not consistent with the CAP.

This Checklist may be updated periodically to incorporate new GHG reduction techniques, include reference to or requirements of new ordinances adopted by the City, or to comply with later amendments to the CAP or local, State, or federal law. Comprehensive updates to this Checklist will be coordinated with each CAP update. Administrative updates to the Checklist may occur regularly, as necessary for the

purpose of keeping the Checklist up-to-date and implementable. Updates to the CAP Checklist associated with an update to the City's CAP would require City Council approval and shall comply with CEQA.

Applicability and Procedures

This Checklist is required only for discretionary projects[1] that are subject to and not exempt from CEQA. Projects that are exempt from CEQA are deemed to be consistent with the City's CAP, and no further review is necessary, with the exception of a Class 32 "In-Fill Development Projects" categorical exemption (State CEQA Guidelines Section 15332), for which projects are required to demonstrate consistency with the CAP through this Checklist.

General procedures for Checklist compliance and review are described below. Specific guidance is also provided under each of the questions under Steps 1 and 2 of the Checklist.

- The City's Community Development Department reviews development applications relative to environmental review requirements under Article 47 of the Escondido Zoning Code. These environmental quality regulations implement CEQA and State CEQA Guidelines by applying the provisions and procedures contained in CEQA to development projects proposed within the City.

- The project proponent or applicant must demonstrate if the project request is CAP compliant to the satisfaction of the Director of Community Development. In doing so, the project proponent or applicant must provide written documentation to demonstrate the applicability of the Checklist; and provide substantial evidence that demonstrates how the proposed project would implement each applicable Checklist requirement described herein.

- If a question in the Checklist is deemed not applicable (N/A) to a project, written documentation and substantial evidence supporting that conclusion shall be provided to the satisfaction of the Director of Community Development.

- Development projects requiring discretionary review that cannot demonstrate consistency with the CAP using this Checklist shall prepare a separate, project-level GHG analysis as part of the CEQA document prepared for the project and may be required to prepare an Environment Impact Report ("EIR").

- The specific applicable requirements outlined in the Checklist shall be required as conditions of project approval for CAP compliant projects with streamlined GHG emissions assessments.

[1] In this context, a project is any action that meets the definition of a "Project" in Section 15378 of the State CEQA Guidelines.

Application Information

Contact Information

Project No. and Name: *503 West Mission Commercial Project*

Property Address and APN: *503 W. Mission Avenue, Escondido, CA 92025*

Applicant Name and Co.: *Nilesh Patel*

Contact Phone: *(858) 442-2495* Contact Email:

Was a consultant retained to complete this checklist? ☒ Yes ☐ No
If Yes, complete the following:

Consultant Name: *Katie Wilson* Contact Phone: *(714) 795-3100 x202*

Company Name: *Ganddini Group* Contact Email: *katie@ganddini.com*

Project Information

1. What is the size of the project site (acres)? *1.5 acres*

2. Identify all applicable proposed land uses:

☐ Residential (indicate # of single-family dwelling units):

☐ Residential (indicate # of multi-family dwelling units):

☒ Commercial (indicate total square footage): *6,110 SF*

☐ Industrial (indicate total square footage):

☐ Other (describe use and indicate size):

3. Provide a description of the project proposed. This description should match the basic project description used for the CEQA document. The description may be attached to the Checklist if there are space constraints.

The proposed project involves demolition of the existing restaurant and redevelopment of the site with three new commercial/food service uses totaling 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. Project site access is proposed via one existing driveway at Mission Avenue and one new driveway at Centre City Parkway.

Step 1: Land Use Consistency

The first step in this section evaluates a project's GHG emissions consistent with the City's *Guidance to Demonstrating Consistency with the City of Escondido Climate Action Plan for Discretionary Projects Subject to CEQA* (Guidance Document). A summary of the process for determining the required level of analysis for these projects is provided in Figure 1, "Require Level of Analysis Flowchart," provided in the Guidance Document.

The CAP contains in-City GHG projections for 2020, 2030, and 2035. Measures to reduce GHG emissions for projects with land use consistent with the General Plan are found in the CAP. If any one of these calculations is erroneous, the CAP fails to accomplish this purpose. Therefore, the first step of this checklist is to determine if the project's anticipated growth would have been included in the CAP's business-as-usual land use and activity projections. This section allows the City to determine a project's consistency with the land use assumptions used in the CAP. Projects that are consistent with the General Plan may incorporate by reference the CAP's cumulative GHG analysis.

For projects that are determined to be consistent with CAP projections, the next step is to identify if the project would be estimated to emit fewer than 500 metric tons of carbon dioxide equivalent ($MTCO_2e$) annually. If found to emit fewer than 500 $MTCO_2e$, a project would not contribute considerably to cumulative climate change impacts as stated in the City's Guidance Document. Therefore, these projects would be considered consistent with the CAP.

Additionally, at the time of this CAP Checklist preparation, the City is in the process of developing screening thresholds for vehicle miles traveled (VMT) consistent with State legislation. . Thus, projects that would be below both the GHG and VMT screening level thresholds would not be anticipated to result in cumulative GHG impacts and conflict with the City's ability to achieve its GHG reduction targets.

Step 1: Land Use Consistency		
Checklist Item (Check the appropriate box and provide an explanation and supporting documentation for your answer)	**Yes**	**No**
1. Is the proposed project consistent with the City's existing General Plan land use designation? If **"Yes"**, proceed to Question 3 of Step 1. *See analysis in report for project's consistency with the General Plan* If **"No"**, proceed to Question 2 of Step 1.	☒	☐
2. If the proposed project is not consistent with the existing General Plan land use designation, does the project include a General Plan Amendment that would generate GHG emissions equal to or less than estimated emissions generated under the existing designation? If **"Yes",** provide estimated project emissions under both existing and proposed designation(s) for comparison and proceed to Question 3 of Step 1. If **"No",** the project's GHG impact is potentially significant, and a GHG analysis must be prepared in accordance with the City's Guidance Document and applicable CEQA Guidelines. The project would not be eligible for GHG streamlining provisions of the CAP. The project must incorporate each of the measures identified in Step 2 to mitigate cumulative GHG emissions impacts unless a measure is determined to be infeasible in accordance with CEQA Guidelines Section 15091. Proceed and complete a project specific GHG analysis, and Step 2 of the Checklist.	☐	☐
3. The size and type of projects listed below would emit fewer than 500 $MTCO_2e$ per year. Based on this threshold, does the proposed project exceed these characteristics? ▪ Single-Family Housing[2]: 36 dwelling units ▪ Multi-Family Housing: 55 dwelling units ▪ Office: 43,000 square feet ▪ Commercial Space: 20,000 square feet ▪ Regional Shopping Center: 18,000 square feet ▪ Restaurant: 6,500 square feet ▪ General Light Industrial: 58,000 square feet ▪ Warehouse (Unrefrigerated): 233,000 square feet ▪ Warehouse (Refrigerated): 62,000 square feet ▪ Mixed-Use: See the City's Guidance Document[3] for methods to estimate mixed-use development thresholds ▪ Other: For project types not listed in this section the need for GHG analysis and mitigation will be made on a project-specific basis, considering the 500 $MTCO_2e$ per year screening threshold. If **"Yes",** proceed to Step 2. *Project proposes a total of 6,110 SF of restaurant uses. See report for more detail.* If **"No",** in accordance with the City's CAP screening criteria, the project's GHG impact is less than significant and is not subject to the measures of the CAP.	☐	☒

[2] Single-Family Housing developments are defined as single-family detached homes on individual lots. All other residential use types (e.g. single-family attached, condo/townhouse, apartment) should be considered "Multi-Family Housing" for the purposes of comparing a project to the screening thresholds.

[3] *Guidance for Demonstrating Consistency with the City of Escondido Climate Action Plan for discretionary Projects Subject to CEQA*, available at https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/ClimateActionPlan/Final/Escondido_ThresholdsMemoFinal3.10.2021.pdf

Step 2: CAP Measures Consistency

The second step of CAP consistency review is to evaluate a project's consistency with the applicable strategies and measures of the CAP. Each Checklist item is associated with specific GHG reduction measures in the City's CAP.

Step 2: CAP Measures Consistency			
Checklist Item (Check the appropriate box and provide an explanation for your answer. Please use additional sheets if necessary)	**Yes**	**No**	**N/A**
Parking and Transportation Demand Management			
1. Electric Vehicle Charging Stations (Measures T-1.3 & T-1.4) All Projects: Will the project install electric vehicle charging stations (EVCSs) consistent with the following requirements: ☒ • Comply with the most recently updated version of the California Building Energy Efficiency Standards (Title 24, Part 6)? • For multi-family residential and commercial (i.e. office and retail commercial) projects, will the project install electric vehicle charging stations at a minimum of 10 percent of the total parking spaces provided? • For single-family residential projects, will the project install at least one EVCS in each new single-family home? Check "N/A" only if the project is not proposing any parking; or if the project does not propose any construction activities.	☐	☐	☒
Please substantiate how the project satisfies question 1:			
2. Pedestrian Infrastructure (Measure T-3.2) All Projects: If the following conditions are met, would the project pay its fair-share contribution or fully install pedestrian infrastructure improvements? ☐ The project frontage is located along a roadway for which pedestrian improvements are identified in the City's Street Design Manual, Pedestrian Master Plan, Trail Master Plan, or Safe Routes to School and Transit Plans; ☐ The proposed project would include site design amenities with pedestrian access points from the existing, identified roadway; and, ☐ The identified pedestrian improvements have not yet been installed. Or if they have been installed, the infrastructure is being redesigned, upgraded, and/or maintained to promote universal access. Check "N/A" only if the project does not propose any construction activities.	☐	☐	☒

Please substantiate how the project satisfies question 2:

3. Transportation Demand Management and Transit (Measures T-3.4 and T-3.6) Single-Family Projects: N/A Multi-Family Residential Projects: If the project is located in the Downtown Specific Plan area and is proposing a reduction in over 15 percent of the required amount of on-site vehicular parking, would the project implement the following policies or programs? • The project would provide six-month transit passes to new residents; • The project establishes strong connections in site design to promote convenient access and transit orientation; and, • The project would monitor transit use by new residents for the first six months of project operations. Non-Residential Projects: If the project is located within the Downtown Specific Plan, South Centre City Specific Plan, or East Valley Parkway Specific Plan, will the project implement Transportation Demand Management (TDM) program that includes, at a minimum: • "End-of-trip" facilities for bicycle commuters (e.g. bicycle parking spaces, showers, lockers); • Discounted monthly North County Transit District (NCTD) passes or transit subsidies; • Informational material (provided to each employee or tenant) for carpool and vanpool ride-matching services; and • Parking cash-out policies. Check "N/A" only if the project is a single-family residential project; if the project is multi-family or non-residential but not located within the aforementioned specific plans; or if the project does not propose any construction activities..	☐	☐	☒

Please substantiate how the project satisfies question 3:

4. Bicycle Infrastructure (Measure T-3.5) All Projects: If the following conditions are met, would the project pay its fair-share contribution to bicycle infrastructure improvements? ☐ Intersection or roadway improvements are proposed as part of the project; and ☐ The City's Bicycle Master Plan for identifies bicycle infrastructure improvements at any intersection(s) or roadway segment(s) that would be impacted as part of the project. Check "N/A" if the intersection or roadway improvements required are fully in place to the satisfaction of the Director of Community Development; or if the project does not propose any construction activities.	☐	☐	☒

Please substantiate how the project satisfies question 4:

Building Energy Use and Efficiency

5. Alternatively Fueled Water Heaters (Measures E-4.1 and E-4.2) Residential Projects: If the project is a new single-family or multi-family residential development, will the project install electric heat pump water heaters? Non-Residential Projects: If the project is non-residential, will the project install electric heat pump water heaters? Check "N/A" only if the project is non-residential and has an alteration and addition with a permit value of $200,000 or less; or if the project does not propose any construction activities.	☐	☐	☒

Please substantiate how the project satisfies question 5:

6. Electric Cooking Appliances (Measure E-4.2) Single-Family Residential Projects: N/A Multi-Family Residential Projects: If the project is a new multi-family residential development, will the project install only electric cooking appliances? Non-Residential Projects: N/A Check "N/A" only if the project is a single-family residential or non-residential project, or if the project does not propose any construction activities.	☐	☐	☒
Please substantiate how the project satisfies question 6:			
7. Zero Net Energy (Measure E-5.2) Residential Projects: N/A Commercial Projects: If the project is a new commercial retail or office development, would the project achieve zero net energy (i.e. the total amount of energy used on-site is equal to the amount of renewable energy created on-site) and comply with the most recently updated California Building Energy Efficiency Standards (Title 24, Part 6)? Check "N/A" only if the project is a residential or project, or if the project does not propose any construction activities.	☐	☐	☒
Please substantiate how the project satisfies question 7:			

Landscaping and Land Conservation			
8. Landscape Water Consumption (Measure W-6.2) Single-Family Residential Projects: If the project is proposing a single-family or townhome model home development, would the project: • Fully equip all model homes with greywater systems and rain barrels (or other rainwater capture systems); and, • Offer greywater systems and rain barrels (or other rainwater capture systems) as an add-on option for new homes. Non-Residential Projects: N/A Check "N/A" if the project is not a single-family or townhome model home development; or if the project does not propose any construction activities.	☐	☐	☒
Please substantiate how the project satisfies question 8:			
9. Tree Planting (Measure C-9.1) All Projects: Would the project plant trees consistent with the following requirements? • Would the project plant a minimum of one tree for every four new parking spaces and/or demonstrate 50% canopy coverage in parking areas? Residential Projects: In addition to the planting requirements above for all projects, would the project be consistent with the following requirement? • Would the project plant a minimum of one tree per dwelling unit or pay an in-lieu fee? Check "N/A" only if the project is not proposing any landscaping; or if the City's landscape ordinance would not apply to the project.	☐	☐	☒
Please substantiate how the project satisfies question 9:			

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Air District
Region: San Diego County APCD
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Trips	Energy Consumption	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	Total VMT	Total VMT	Miles Per Gallon	Vehicle Class
San Diego County APCD	2024	HHDT	Aggregate	Aggregate	Gasoline	8.191687392	163.8992813	0	0.135558299	135.5582988	332093.3955	492.454592	1934574.872	**5.83**	**HHDT**
San Diego County APCD	2024	HHDT	Aggregate	Aggregate	Diesel	14731.68364	220550.9135	0	317.7018708	317701.8708		1859684.668			
San Diego County APCD	2024	HHDT	Aggregate	Aggregate	Electricity	45.31523961	621.5857161	8983.105391	0	0		4872.602649			
San Diego County APCD	2024	HHDT	Aggregate	Aggregate	Natural Gas	1074.442881	6690.792697	0	14.2559664	14255.9664		69525.14659			
San Diego County APCD	2024	LDA	Aggregate	Aggregate	Gasoline	1175418.459	5461506.034	0	1662.787767	1662787.767	1695205.087	46842847.47	51672446.94	**30.48**	**LDA**
San Diego County APCD	2024	LDA	Aggregate	Aggregate	Diesel	5631.047063	23871.34141	0	4.319999021	4319.999021		172212.5896			
San Diego County APCD	2024	LDA	Aggregate	Aggregate	Electricity	63266.94036	315006.529	1198824.717	0	0		3105099.584			
San Diego County APCD	2024	LDA	Aggregate	Aggregate	Plug-in Hybrid	32449.0861	134176.971	236849.6521	28.09732078	28097.32078		1552287.29			
San Diego County APCD	2024	LDT1	Aggregate	Aggregate	Gasoline	129009.4789	561038.5358	0	191.4651398	191465.1398	191618.635	4429822.548	4448573	**23.22**	**LDT1**
San Diego County APCD	2024	LDT1	Aggregate	Aggregate	Diesel	60.94873199	174.1573663	0	0.039474197	39.4741974		887.9331638			
San Diego County APCD	2024	LDT1	Aggregate	Aggregate	Electricity	244.5610238	1177.386863	4208.864218	0	0		10901.46236			
San Diego County APCD	2024	LDT1	Aggregate	Aggregate	Plug-in Hybrid	133.7236371	552.9472394	1164.418201	0.114021053	114.0210528		6961.056324			
San Diego County APCD	2024	LDT2	Aggregate	Aggregate	Gasoline	556633.3557	2594887.434	0	991.40203	991402.03	997723.8918	22430753.47	22829239.43	**22.88**	**LDT2**
San Diego County APCD	2024	LDT2	Aggregate	Aggregate	Diesel	2078.608268	9900.088755	0	2.93101705	2931.01705		87677.92127			
San Diego County APCD	2024	LDT2	Aggregate	Aggregate	Electricity	2965.092503	15170.82141	43744.46336	0	0		113303.3988			
San Diego County APCD	2024	LDT2	Aggregate	Aggregate	Plug-in Hybrid	3943.058244	16304.54584	31841.34365	3.390844726	3390.844726		197504.6365			
San Diego County APCD	2024	LHDT1	Aggregate	Aggregate	Gasoline	42013.60568	625940.1243	0	172.8674945	172867.4945	247169.8777	1671762.223	2878002.462	**11.64**	**LHDT1**
San Diego County APCD	2024	LHDT1	Aggregate	Aggregate	Diesel	30083.46369	378412.1282	0	74.30238324	74302.38324		1194852.754			
San Diego County APCD	2024	LHDT1	Aggregate	Aggregate	Electricity	144.7508655	2022.077924	7409.426327	0	0		11387.48492			
San Diego County APCD	2024	LHDT2	Aggregate	Aggregate	Gasoline	5983.018214	89138.05669	0	26.98225132	26982.25132	63225.95693	231444.1973	717485.9131	**11.35**	**LHDT2**
San Diego County APCD	2024	LHDT2	Aggregate	Aggregate	Diesel	11684.10547	146971.3483	0	36.24370561	36243.70561		483249.1016			
San Diego County APCD	2024	LHDT2	Aggregate	Aggregate	Electricity	37.4660505	495.9370223	1787.419819	0	0		2792.614199			
San Diego County APCD	2024	MCY	Aggregate	Aggregate	Gasoline	70199.56619	140399.1324	0	11.02982364	11029.82364	11029.82364	430235.858	430235.858	**39.01**	**MCY**
San Diego County APCD	2024	MDV	Aggregate	Aggregate	Gasoline	333953.2218	1535373.209	0	707.062898	707062.898	719693.5197	13160207.11	13641622.31	**18.95**	**MDV**
San Diego County APCD	2024	MDV	Aggregate	Aggregate	Diesel	5837.03882	27174.05573	0	10.45956853	10459.56853		235562.3085			
San Diego County APCD	2024	MDV	Aggregate	Aggregate	Electricity	3228.869597	16518.07709	47629.13114	0	0		123365.1535			
San Diego County APCD	2024	MDV	Aggregate	Aggregate	Plug-in Hybrid	2430.386414	10049.64782	19343.1337	2.171053211	2171.053211		122487.7345			
San Diego County APCD	2024	MH	Aggregate	Aggregate	Gasoline	10135.55459	1013.960881	0	21.13678274	21136.78274	25355.08113	93222.28885	132824.1961	**5.24**	**MH**
San Diego County APCD	2024	MH	Aggregate	Aggregate	Diesel	4094.619648	409.4619648	0	4.218298391	4218.298391		39601.90723			
San Diego County APCD	2024	MHDT	Aggregate	Aggregate	Gasoline	3473.007275	69487.92956	0	41.45910634	41459.10634	132018.9544	196459.3898	962526.7276	**7.29**	**MHDT**
San Diego County APCD	2024	MHDT	Aggregate	Aggregate	Diesel	17479.19095	202508.1165	0	88.58979522	88589.79522		748443.1077			
San Diego County APCD	2024	MHDT	Aggregate	Aggregate	Electricity	56.78967375	740.7263793	3700.213972	0	0		3311.055182			
San Diego County APCD	2024	MHDT	Aggregate	Aggregate	Natural Gas	322.18244	3826.372909	0	1.970052797	1970.052797		14313.17488			
San Diego County APCD	2024	OBUS	Aggregate	Aggregate	Gasoline	1164.517152	23299.65917	0	11.88069266	11880.69266	19693.32536	56792.68216	110158.1043	**5.59**	**OBUS**
San Diego County APCD	2024	OBUS	Aggregate	Aggregate	Diesel	595.4995039	7617.744619	0	7.009053046	7009.053046		47363.04896			
San Diego County APCD	2024	OBUS	Aggregate	Aggregate	Electricity	2.222469648	44.46717273	243.6407097	0	0		219.6377739			
San Diego County APCD	2024	OBUS	Aggregate	Aggregate	Natural Gas	93.90306301	835.7372608	0	0.803579657	803.5796575		5782.73537			
San Diego County APCD	2024	SBUS	Aggregate	Aggregate	Gasoline	272.9945972	1091.978389	0	1.588112369	1588.112369	7261.004003	15743.27221	61754.07177	**8.50**	**SBUS**
San Diego County APCD	2024	SBUS	Aggregate	Aggregate	Diesel	2130.750933	30853.27351	0	5.595751568	5595.751568		45339.0525			
San Diego County APCD	2024	SBUS	Aggregate	Aggregate	Electricity	7.190218958	91.34139144	224.9767415	0	0		213.5607268			
San Diego County APCD	2024	SBUS	Aggregate	Aggregate	Natural Gas	17.70253776	256.3327467	0	0.077140066	77.14006558		458.186335			
San Diego County APCD	2024	UBUS	Aggregate	Aggregate	Gasoline	135.233433	540.933732	0	1.570833898	1570.833898	22195.45749	13564.69797	126624.3401	**5.70**	**UBUS**
San Diego County APCD	2024	UBUS	Aggregate	Aggregate	Electricity	25.45475467	101.8190187	5500.705862	0	0		3155.442088			
San Diego County APCD	2024	UBUS	Aggregate	Aggregate	Natural Gas	894.3814307	3577.525723	0	20.62462359	20624.62359		109904.2			

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Air District
Region: San Diego County APCD
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Trips	Energy Consumption	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	Total VMT	Total VMT	Miles Per Gallon	Vehicle Class
San Diego County APCD	2025	HHDT	Aggregate	Aggregate	Gasoline	7.033691582	140.7301012	0	0.127142395	127.1423953	330857.5006	477.7265269	1965628.762	**5.94**	**HHDT**
San Diego County APCD	2025	HHDT	Aggregate	Aggregate	Diesel	15090.82986	226484.8998	0	315.9430507	315943.0507		1880530.877			
San Diego County APCD	2025	HHDT	Aggregate	Aggregate	Electricity	102.6559953	1358.118339	21173.04359	0	0		11480.72009			
San Diego County APCD	2025	HHDT	Aggregate	Aggregate	Natural Gas	1140.659532	7065.205246	0	14.78730755	14787.30755		73139.4388			
San Diego County APCD	2025	LDA	Aggregate	Aggregate	Gasoline	1163596.254	5402698.045	0	1619.328593	1619328.593	1652860.327	46599752.27	52068883.66	**31.50**	**LDA**
San Diego County APCD	2025	LDA	Aggregate	Aggregate	Diesel	5162.279972	21728.71347	0	3.852391775	3852.391775		154640.3509			
San Diego County APCD	2025	LDA	Aggregate	Aggregate	Electricity	71862.9683	356557.5327	1403024.913	0	0		3634002.546			
San Diego County APCD	2025	LDA	Aggregate	Aggregate	Plug-in Hybrid	35220.43208	145636.4867	262596.401	29.67934248	29679.34248		1680488.486			
San Diego County APCD	2025	LDT1	Aggregate	Aggregate	Gasoline	124744.8402	541305.6888	0	182.6902753	182690.2753	182883.7779	4295869.365	4320829.856	**23.63**	**LDT1**
San Diego County APCD	2025	LDT1	Aggregate	Aggregate	Diesel	55.09345602	154.4302365	0	0.034897891	34.89789073		785.5598347			
San Diego County APCD	2025	LDT1	Aggregate	Aggregate	Electricity	297.7872042	1445.409003	5483.437801	0	0		14202.76058			
San Diego County APCD	2025	LDT1	Aggregate	Aggregate	Plug-in Hybrid	192.0900699	794.292439	1707.487207	0.158604684	158.6046841		9972.171201			
San Diego County APCD	2025	LDT2	Aggregate	Aggregate	Gasoline	557048.7736	2595042.569	0	973.1802547	973180.2547	979997.3921	22572000.61	23044891.9	**23.52**	**LDT2**
San Diego County APCD	2025	LDT2	Aggregate	Aggregate	Diesel	2113.282108	10026.40996	0	2.911661021	2911.661021		88769.84974			
San Diego County APCD	2025	LDT2	Aggregate	Aggregate	Electricity	3968.968637	20224.03865	58165.20614	0	0		150654.8495			
San Diego County APCD	2025	LDT2	Aggregate	Aggregate	Plug-in Hybrid	4694.722502	19412.67755	38497.64337	3.905476369	3905.476369		233466.5831			
San Diego County APCD	2025	LHDT1	Aggregate	Aggregate	Gasoline	41448.06348	617514.3882	0	169.6785024	169678.5024	244161.5599	1670644.364	2902433.135	**11.89**	**LHDT1**
San Diego County APCD	2025	LHDT1	Aggregate	Aggregate	Diesel	30080.41385	378373.765	0	74.48305755	74483.05755		1202470.55			
San Diego County APCD	2025	LHDT1	Aggregate	Aggregate	Electricity	399.0752686	5579.210824	19080.59775	0	0		29318.22009			
San Diego County APCD	2025	LHDT2	Aggregate	Aggregate	Gasoline	5937.831977	88464.84909	0	26.54097829	26540.97829	63269.83936	231177.6845	732029.5692	**11.57**	**LHDT2**
San Diego County APCD	2025	LHDT2	Aggregate	Aggregate	Diesel	11919.52487	149932.628	0	36.72886108	36728.86108		493662.1828			
San Diego County APCD	2025	LHDT2	Aggregate	Aggregate	Electricity	103.0284867	1366.259336	4604.092935	0	0		7189.70188			
San Diego County APCD	2025	MCY	Aggregate	Aggregate	Gasoline	69656.62848	139313.257	0	10.86795731	10867.95731	10867.95731	425156.8058	425156.8058	**39.12**	**MCY**
San Diego County APCD	2025	MDV	Aggregate	Aggregate	Gasoline	332056.3528	1526242.735	0	690.8533817	690853.3817	703387.5846	13179760.11	13719278.9	**19.50**	**MDV**
San Diego County APCD	2025	MDV	Aggregate	Aggregate	Diesel	5727.051143	26509.81906	0	9.99375868	9993.75868		228362.4913			
San Diego County APCD	2025	MDV	Aggregate	Aggregate	Electricity	4296.125349	21882.65987	62897.49301	0	0		162912.0392			
San Diego County APCD	2025	MDV	Aggregate	Aggregate	Plug-in Hybrid	2943.229581	12170.25432	24127.00101	2.540444272	2540.444272		148244.2547			
San Diego County APCD	2025	MH	Aggregate	Aggregate	Gasoline	9552.961706	955.678289	0	19.98954525	19989.54525	24140.36478	88181.20735	127139.5404	**5.27**	**MH**
San Diego County APCD	2025	MH	Aggregate	Aggregate	Diesel	4060.707663	406.0707663	0	4.150819528	4150.819528		38958.33302			
San Diego County APCD	2025	MHDT	Aggregate	Aggregate	Gasoline	3413.785275	68303.01579	0	40.94711107	40947.11107	131529.808	196476.0298	972677.286	**7.40**	**MHDT**
San Diego County APCD	2025	MHDT	Aggregate	Aggregate	Diesel	17786.84546	206359.3853	0	88.59393965	88593.93965		752420.1333			
San Diego County APCD	2025	MHDT	Aggregate	Aggregate	Electricity	162.4972231	2102.442811	10323.26594	0	0		9323.889988			
San Diego County APCD	2025	MHDT	Aggregate	Aggregate	Natural Gas	332.0274424	3939.342103	0	1.988757248	1988.757248		14457.2329			
San Diego County APCD	2025	OBUS	Aggregate	Aggregate	Gasoline	1125.440188	22517.80728	0	11.20384251	11203.84251	18970.99522	54073.79901	108026.6773	**5.69**	**OBUS**
San Diego County APCD	2025	OBUS	Aggregate	Aggregate	Diesel	616.3950387	7916.939486	0	6.985140897	6985.140897		47739.06253			
San Diego County APCD	2025	OBUS	Aggregate	Aggregate	Electricity	5.45561073	109.1558595	590.2838669	0	0		532.1304253			
San Diego County APCD	2025	OBUS	Aggregate	Aggregate	Natural Gas	95.31022775	848.261027	0	0.782011812	782.0118117		5681.685306			
San Diego County APCD	2025	SBUS	Aggregate	Aggregate	Gasoline	272.4022615	1089.609046	0	1.576317931	1576.317931	7195.301208	15799.40207	61894.19743	**8.60**	**SBUS**
San Diego County APCD	2025	SBUS	Aggregate	Aggregate	Diesel	2123.719469	30751.45791	0	5.537353145	5537.353145		45117.86263			
San Diego County APCD	2025	SBUS	Aggregate	Aggregate	Electricity	15.74407402	200.1287897	515.2299047	0	0		489.0855481			
San Diego County APCD	2025	SBUS	Aggregate	Aggregate	Natural Gas	18.98534761	274.9078334	0	0.081630132	81.63013202		487.8471802			
San Diego County APCD	2025	UBUS	Aggregate	Aggregate	Gasoline	139.8797631	559.5190523	0	1.460164559	1460.164559	22624.61847	14033.31187	131004.4936	**5.79**	**UBUS**
San Diego County APCD	2025	UBUS	Aggregate	Aggregate	Electricity	31.98417083	127.9366833	6885.463998	0	0		3949.799069			
San Diego County APCD	2025	UBUS	Aggregate	Aggregate	Natural Gas	919.7023559	3678.809423	0	21.16445391	21164.45391		113021.3827			

GANDDINI GROUP INC.

714.795.3100 | ganddini.com

APPENDIX B

Historic Resources

APPENDIX B.1

Historic Structure Assessment

HISTORIC STRUCTURE ASSESSMENT FOR 503 WEST MISSION AVENUE

ESCONDIDO, CALIFORNIA

APN 229-171-29

Submitted to:

City of Escondido
201 North Broadway
Escondido, California 92025

Prepared for:

In and Out Burger
13502 Hamburger Lane
Baldwin Park, California 91706

Prepared by:

Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064

Signature

July 7, 2022

Archaeological Database Information

Author(s):	Irem Oz, Ph.D., Architectural Historian, and Brian F. Smith, M.A., Consulting Historian
Consulting Firm:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064 (858) 679-8218
Report Date:	July 7, 2022
Report Title:	Historic Structure Assessment for 503 West Mission Avenue, Escondido, California (APN 229-171-29)
Prepared for:	In and Out Burger 13502 Hamburger Lane Baldwin Park, California 91706
Submitted to:	City of Escondido 201 North Broadway Escondido, California 92025
USGS Quadrangles:	*Escondido*, *California* (7.5 minute)
Study Area:	503 West Mission Avenue
Key Words:	USGS *Escondido, California* topographic quadrangle; City of Escondido; historic structure evaluation; 1962 Googie-style restaurant building has been determined to be eligible for listing on the CRHR under Criterion 3 and the City of Escondido Register under Criteria 2 and 5; preservation and integration into the project design or Level I or II HABS documentation recommended.

Table of Contents

Page

I. EXECUTIVE SUMMARY 1
II. INTRODUCTION 1
Report Organization 1
Project Area 2
Project Personnel 2
III. PROJECT SETTING 2
Physical Project Setting 2
Historical Overview 2
IV. METHODS AND RESULTS 5
Archival Research 5
History of the Property: Ownership and Development 5
Field Survey 14
Description of Surveyed Resource 14
V. SIGNIFICANCE EVALUATIONS 38
CRHR Evaluation 46
City of Escondido Register Evaluation 53
VI. FINDINGS AND CONCLUSIONS 62
VII. BIBLIOGRAPHY 62
VIII. APPENDICES 66
Appendix A: Site Record Form
Appendix B: Building Development Information
Appendix C: Ownership and Occupant Information
Appendix D: Maps
Appendix E: Preparers' Qualifications

Plates

Page

Plate 1 1960 Aerial Photograph 7
Plate 2 1963 Aerial Photograph 8
Plate 3 James and Fotine Tweddell.....9
Plate 4 Danny's Donuts, the original donut stand opened by Butler and Jezak 10
Plate 5 Louis Armet and Eldon Davis's design/prototype for Danny's Coffee Shop 10
Plate 6 Louis Armet and Eldon Davis's design/prototype for Denny's Coffee Shop 11
Plate 7 Vernon Titcomb, Sr. in 1967 12
Plate 8 Johnny R's #2 Family Restaurant at 503 West Mission Avenue in 1988 13
Plate 9 Cheers Family Restaurant at 503 West Mission Avenue in 1993 13
Plate 10 El Galeón Mexican Restaurant at 503 West Mission Avenue in 2007.....13
Plate 11 North Corner of the Building, Facing South.....16
Plate 12 North Corner of the Building Showing Entry to the Front Walkway, Facing East.....17
Plate 13 North Corner of the Building Showing the Front Walkway, Facing South.....18
Plate 14 Northeast Façade of the Building, Facing Southwest.....19
Plate 15 Northeast Façade of the Building, Facing West 20
Plate 16 Southeast Façade of the Building, Facing Northwest.....21
Plate 17 Northwest Façade of the Building, Facing Southeast.....22
Plate 18 Northwest Façade Showing the Metal Door, Facing Southeast 23
Plate 19 Northwest Façade of the Building Showing the Signs on the Boomerang End of the Roof, Facing Southeast.....24
Plate 20 Southeast Façade of the Building Showing the Masonry Wall Extending Southwest, Facing Northwest 25
Plate 21 South Corner of the Building, Facing North.....26
Plate 22 Northwest Façade of the Building Showing Masonry Wall Detailing, Facing Northeast.....27

Plates (continued)

Page

Plate 23 West Corner of the Building, Facing East 28
Plate 24 West Corner of the Building, Facing East 29
Plate 25 Southwest Façade of the Building, Facing Northeast 30
Plate 26 Southwest Façade of the Building, Facing Northeast 31
Plate 27 Current Aerial Photograph 32
Plate 28 Landscaped Area Northeast of the Building, Facing West 33
Plate 29 Landscaped Area and Signage Northeast of the Building, Facing South 34
Plate 30 May 2008 (Top) and March 2009 (Bottom) Views of the Building, Facing West 35
Plate 31 January 2012 (Top) and April 2014 (Bottom) Views of the Building, Facing West 36
Plate 32 November 2016 View of the building, Facing West 37
Plate 33 1964 Aerial Photograph 40
Plate 34 1967 Aerial Photograph 41
Plate 35 1978 Aerial Photograph 42
Plate 36 1986 Aerial Photograph 43
Plate 37 1987 Aerial Photograph 44
Plate 38 Denny's Restaurants in Pasadena (Top, Built 1963), Los Angeles (Middle), and Palm Springs (Bottom, Built 1965) 49
Plate 39 510 West Mission Avenue Building Constructed Between 1953 and 1964 56
Plate 40 1953 Aerial Photograph 57
Plate 41 810 North Broadway Building Constructed Between 1953 and 1964 58
Plate 42 2680 South Escondido Boulevard Building Constructed in 1969 59
Plate 43 Sign at West Mission Avenue and North Escondido Boulevard Erected Between 1967 and 1978 60

Tables

Page

Table 1 Title Records for 503 West Mission Avenue.....13

I. EXECUTIVE SUMMARY

The property located at 503 West Mission Avenue in the city of Escondido, San Diego County, is proposed to be redeveloped and Brian F. Smith and Associates, Inc. (BFSA) was retained to conduct a historic survey of the restaurant building constructed within the property in 1962. The purpose of this evaluation is to determine if the building constitutes a historic resource and whether or not its proposed removal will constitute an adverse impact, as defined by the California Environmental Quality Act (CEQA). This project is identified as Assessor's Parcel Number (APN) 229-171-29 and is situated within Township 12 South, Range 2 West, in an unsectioned portion of the Rincon del Diablo Rancho, on the U.S. Geological Survey, 7.5-minute *Valley Center, California* topographic quadrangle map. The legal description of the property is described as "That portion of Lot 15, in Block 148 of Escondido, in the City of Escondido, County of San Diego, State of California, according to Map thereof No. 349 by O. N. Sanford filed in the office of the County Recorder of San Diego County, July 10, 1886."

The 503 West Mission Avenue building meets the minimum age threshold (50 years old) to be considered a historic structure, and therefore, the building is subject to further evaluation of its integrity and architectural and historic significance. BFSA evaluated the architectural and historic significance of the historic building in conformance with CEQA and City of Escondido Municipal Code (Ordinance 87-43: Article 40 Historical Resources, Section 33-794) criteria. As a result of the current evaluation, City of Escondido Municipal Code and CEQA criteria indicate that the 1962 Googie-style restaurant building is historically and architecturally significant under California Register of Historical Resources (CRHR) Criterion 3 and City of Escondido Local Register of Historic Places (City of Escondido Register) Criteria 2 and 5. It is therefore recommended that the original building be preserved and integrated into the design of the project. In the event that the building cannot be incorporated into the design of the project and there are no redesign or relocation alternatives available based upon financial constraints and the requirements necessary to achieve project feasibility, it is recommended that Level I or II Historic American Building Survey (HABS) documentation (or equivalent) of the building be conducted in order to achieve mitigation by exhausting the research potential of the resource.

II. INTRODUCTION

Report Organization

The purpose of this study is to evaluate the building located at 503 West Mission Avenue in the city of Escondido, California. Since the owner proposes to demolish the building for future redevelopment of the property, the City of Escondido required an evaluation of the existing structure to determine if it is historically important and to determine whether or not it should be listed as a historic resource. Because this project requires approval from the City of Escondido, CEQA and City of Escondido Municipal Code (Ordinance 87-43: Article 40 Historical Resources,

Section 33-794) criteria were used for this evaluation. Therefore, criteria for listing on the CRHR and City of Escondido Register were used to measure the significance of the building.

Project Area

The building evaluated in this study is entirely within APN 229-171-29. The parcel is located at 503 West Mission Avenue, southwest of the intersection of West Mission Avenue and Centre City Parkway, in the city of Escondido, San Diego County, California. The parcel is flat and currently occupied by the restaurant Pho Truc Xanh. The property includes a single-story building located at the northwest portion of the lot and associated hardscape and landscaping.

Project Personnel

This evaluation was conducted by Irem Oz and Brian Smith (Appendix E). Word processing, editing, and graphics production services were provided by BFSA staff.

III. PROJECT SETTING

Physical Project Setting

Geographically, this general area is part of the coastal foothills physiographic unit. The area is geologically mapped as older Pleistocene alluvial river deposits (younger than 500,000 years) of moderately consolidated sediments composed of silty sand with gravel and clay (Tan and Kennedy 1999). Prehistorically, the Escondido area was occupied by Native Americans associated with Luiseño and Kumeyaay tribes. Escondido Creek and its associated streams have been sources of fresh water for humans in the Escondido area for thousands of years. The most important food source for prehistoric Native American groups in the area were acorns and hunted animal species included deer, rabbit, hare, woodrat, ground squirrel, antelope, quail, duck, and freshwater fish. The area was used for ranching and farming following the Spanish occupation of the region. Native American cultures that have been identified in the general vicinity of the project consist of a possible Paleo Indian manifestation of the San Dieguito Complex, the Archaic and Early Milling Stone Horizons represented by the La Jolla Complex, and the Late Prehistoric Luiseño and Kumeyaay cultures.

Historical Overview

The subject property is located inside the Rincón del Diablo Land Grant issued to Juan Bautista Alvarado by Mexican Governor Manuel Micheltorena in 1843. Alvarado was prominent in Los Angeles and San Diego, holding office as a councilman in both cities in the 1830s. When he died in 1850, the rancho was sold to Oliver S. Witherby, a judge and member of California's first state legislature. Witherby farmed and raised cattle, and in the early 1860s, began to mine for gold (Fark 2016). In 1868, Witherby sold the rancho to Edward McGeary and the three Wolfskill brothers.

In 1886, 13 businessmen formed the Escondido Land and Town Company (ELTC) and bought the former Rincón del Diablo, subdividing the land to plant more vineyards and citrus groves (Fark 2016). During the 1886 survey for a new rail line that was to extend from the coastal city of Oceanside to Escondido, a former cow path was turned into a 100-foot street and named Grand Avenue (City of Escondido 1990). The railroad line was constructed to Escondido in 1887 because the ELTC needed to move their agricultural products. In 1888, the ELTC was influential in getting the town incorporated and drilled several wells to provide water for the surrounding farms and new city. The incorporation of the city also led to the widening of Grand Avenue and the addition of board sidewalks and hitching posts. Escondido continued to grow and Grand Avenue quickly became home to the Escondido Bank, the *Escondido Times,* a post office, general stores, a meat market, a drug store, a bakery, a barber, a smithy, a cobbler-harness maker, and a laundry (City of Escondido 1990).

"About 1891, the Escondido Irrigation District was organized and bonds in the amount of $350,000 were issued … to Henry W. Putnam of San Diego, for the construction of the Escondido Reservoir, late[r] named Lake Wohlford" (Whetstone 1963). The Escondido Irrigation District was reorganized and named the Escondido Mutual Water Company (Moyer 1969), after which:

> A period of depression followed, and many people were not able to pay their irrigation taxes; finally, a compromise was worked out, whereby the land would be released from the bonded indebtedness upon payment of 43% of the amount due. The burning of the bonds was the occasion for a joyful celebration on Admission Day, September 9, 1905, and a crowd of three thousand people gathered at the Lime Street school grounds in what is now Grape Day Park. When the papers went up in flames, men tossed their hats into the air and women waved their handkerchiefs; judge J. N. Turrentine gave the speech of the day, which was loudly applauded.
>
> On September 9, 1908, the people of Escondido started holding an annual celebration in remembrance of the burning of the bonds. It was called "Grape Day" because grapes were then one of the most important agricultural products of the valley, and each yearly celebration, tons of free grapes were distributed to the crowds. W. L. Ramey of the Escondido Lumber Hay and Grain Company, and Sig Steiner, early store owner and civic leader, were the originators of Grape Day, the community's largest event for many years. (Whetstone 1963)

Visitors came from all over and stayed in the Escondido Hotel, centrally located on Grand Avenue, which was the main shopping street (Fark 2016). "Later, as horse drawn wagons were replaced by automobiles, surfaced streets began to crisscross the County and by the 1940s, motor courts and motels became economical 'homes away from home' for families seeing the country" (Escondido History Center 2019).

As Escondido flourished, houses were constructed that would represent the time period. "Many were Victorian cottages which had Queen Anne and Colonial Revival phases. These smaller Victorians were often decorated almost as elaborately as their larger sisters, but some were plain hip-roof boxes" (City of Escondido 1990:17). Through the early 1900s, Classical Revival, Mission (Moorish) Revival, Craftsman, American Foursquare, and Prairie homes were also constructed in Escondido (City of Escondido 1990:18). In the early 1900s, Craftsman-style homes were prominent. Craftsman architecture, which was part of the Arts and Crafts movement of 1876 to 1916, rejected the ornamental architecture of the Victorian home:

> The [Arts and Crafts] movement was a response to a call for the return to simple, natural, and honest lifestyles and products. It addressed social, industrial, and political issues and included the fine arts, literature, bookbinding, printing, furniture and textile design, as well as architecture. (City of Escondido 1990:19)

Grapes continued to be an important agricultural product for Escondido throughout the first half of the twentieth century. In 1909, W.E. Alexander purchased 2,000 acres of the remaining McCoy ranch, south of downtown. He first subdivided the western portion of the land into 10-acre parcels, which became known as the first Homeland Acres Addition to Escondido (Berk and Covey 2010). In 1911:

> Between 600 and 700 acres of muscatel grapes were set out in Escondido … by the Escondido Valley Land and Planting Company [EVLPC], of which … W.E. Alexander [was] the president.
>
> The planting was done on the Homeland Acres, and with the acreage planted in 1910 makes a total of between 1,000 and 1,100 acres. (Jeffery and Ferguson 1912)

"Between 300 and 400 acres" were to be planted in 1912 (Jeffery and Ferguson 1912). The EVLPC planted and cared for the vineyards for three years then turned them over to the owners. Although the grapes were "planted on rolling ground no irrigation" was used, nor was any necessary. Instead, "the Campbell system of dry farming [was used], of which Mr. Alexander [was] an ardent advocate" (Jeffery and Ferguson 1912). Utilizing these grapes, several wineries opened in Escondido. "Before the prohibition era there were at least a dozen wineries in Escondido, but only the Ferrara Winery survived beyond that time and it continued to operate until 2011" (Fox and Rea 2020).

By 1914, "an electric railroad from the county seat at San Diego, thirty-five miles southerly [of Escondido], via El Cajon" was "assured … to eventually be extended to Los Angeles, 100 miles to the north," but the railroad was never completed (Jeffery and Ferguson 1912). In 1916, Homeland Acres Addition to Escondido No. 2 was platted to the east of the original Homeland

Acres Addition. Both Homeland Acres additions were part of the 2,000-acre McCoy Tract located in the northern portion of the original San Bernardo Land Grant, south of the city of Escondido. "The town of Bernardo flourished for a time, then declined and disappeared by the early 1920s. Its demise was hastened by the growth of the city of Escondido … and the completion of the Lake Hodges Dam and Reservoir in 1919" (Rancho Bernardo Historical Society 2020).

Prior to the 1950s, the main thoroughfare between Escondido and San Diego was San Diego Boulevard, which was later renamed Escondido Boulevard. The boulevard was home to sparse development including gas stations, small stores, motor courts, and rural single-family residences (Stropes and Smith 2020). With the construction of Highway 395 in the late 1940s, however, the city of Escondido experienced a building boom. Highway 395 was realigned in 1947 from further east to its current location, which follows the route of Centre City Parkway (previously called Pine Street or the Escondido Expressway), passing through downtown Escondido. Changing a major travel route to provide a north to south connection in San Diego County allowed travel-related businesses, especially motel accommodations and restaurants, to be established along the route (Price 2017).

Highway 395 linked Escondido to San Diego, making the city a good choice for commuters. Around this time, many agricultural fields that were previously dedicated to citrus and grapes were developed into subdivisions to house workers in the defense industry. In 1960, the lemon packing house, previously famed to be the largest facility of its kind in the world, closed its doors. Citrus fields gave way to more subdivisions, and some were converted into avocado crops (Fark 2016). Escondido can still be described as a commuter city. It has some fame because of the San Diego Zoo Safari Park, breweries, wineries, the auto mall, and the California Center for the Arts, Escondido, which was constructed in 1994.

IV. METHODS AND RESULTS

Archival Research

Records relating to the ownership and developmental history of this property were sought with a view to not only fulfill the requirements of this report, but to identify any associated historic or architectural significance. Records located at the BFSA research library, those of the San Diego Assessor/Recorder/County Clerk, and the Escondido History Center were consulted. Title records for the property were also obtained. Appendix D contains maps of the property, including a general location map, historic and current USGS maps, the original subdivision map, and the current Assessor's parcel map. Sanborn Fire Insurance maps were not reviewed for the property as it is located outside of the coverage area.

History of the Property: Ownership and Development

The 503 West Mission Avenue property was originally owned by George P. and Anna M. Timmons, Ralph and Mona E. Petreny, and James and Fotine Twedell, who were doing business

as Mt. Vernon Motels. Historic aerial photographs (Plates 1 and 2) and archival research indicate that Mt. Vernon Inn was constructed south of 503 West Mission Avenue between 1960 and 1961 and was listed in city directories for the first time in 1962 (Ancestry.com 2011). The motel and the 503 West Mission Avenue building were located within the same building block. The construction of the 503 West Mission Avenue building was completed in 1962 by R.E Mauer Construction, a construction company operating in Chula Vista, San Diego, Clairemont, and National City (*Chula Vista Star-News* 1954; *San Diego Union* 1960, 1963; *National City Star-News* 1954).

On April 17, 1962, ownership of the 503 West Mission Avenue property was passed to Mt. Vernon Motels, Inc. before the construction of the building was completed on May 31, 1962. The ownership of the property was once again transferred to Ralph and Mona Petreny and James and Fotine Twedell, as equal shareholders, on June 4, 1962, and finally transferred to Aircraft Mobilehomes, Inc. on the same day.

George Perkins Timmons and Anne Myrtle Timmons were originally from Kansas. George and Anna Timmons were born in 1907 and 1906, respectively (Ancestry.com 2002). They married and moved to California between 1915 and 1930 and resided in Long Beach (Ancestry.com 2012). The Long Beach City Directory indicates that George Timmons worked as a driver in 1940, a shipyard worker in 1942, and a painting contractor in 1951 before starting his own business, Timmons Painting and Engineering Company, in 1952 (Ancestry.com 2011). Records indicate that George Timmons passed away in 1978 (Ancestry.com 2000).

Ralph and Mona Petreny were natives of Canada and arrived in Blaine, Washington, in 1952 when Ralph (Rudolph) Petreny was 31 and Mona Ellen Petreny was 28. Ralph Petreny's Naturalization Record indicates that they lived in Long Beach in 1952 (Ancestry.com 2010a).

James and Fotine Tweddell are also natives of Canada and arrived in Blaine, Washington, in 1952, when both were 32. That same year, they resided in Garden Grove, California (Ancestry.com 2010a). James Tweddell's border crossing document indicates that he worked as a glass cutter before he moved to the United States (Ancestry.com 2010b) and the 1954 directory shows that he continued to work at the Grove Glass Company (Ancestry.com 2011). James Tweddell passed away in 1985 and Fotine Malinos (after her divorce from Tweddell) passed away in 1993 (Ancestry.com 2014) (Plate 3).

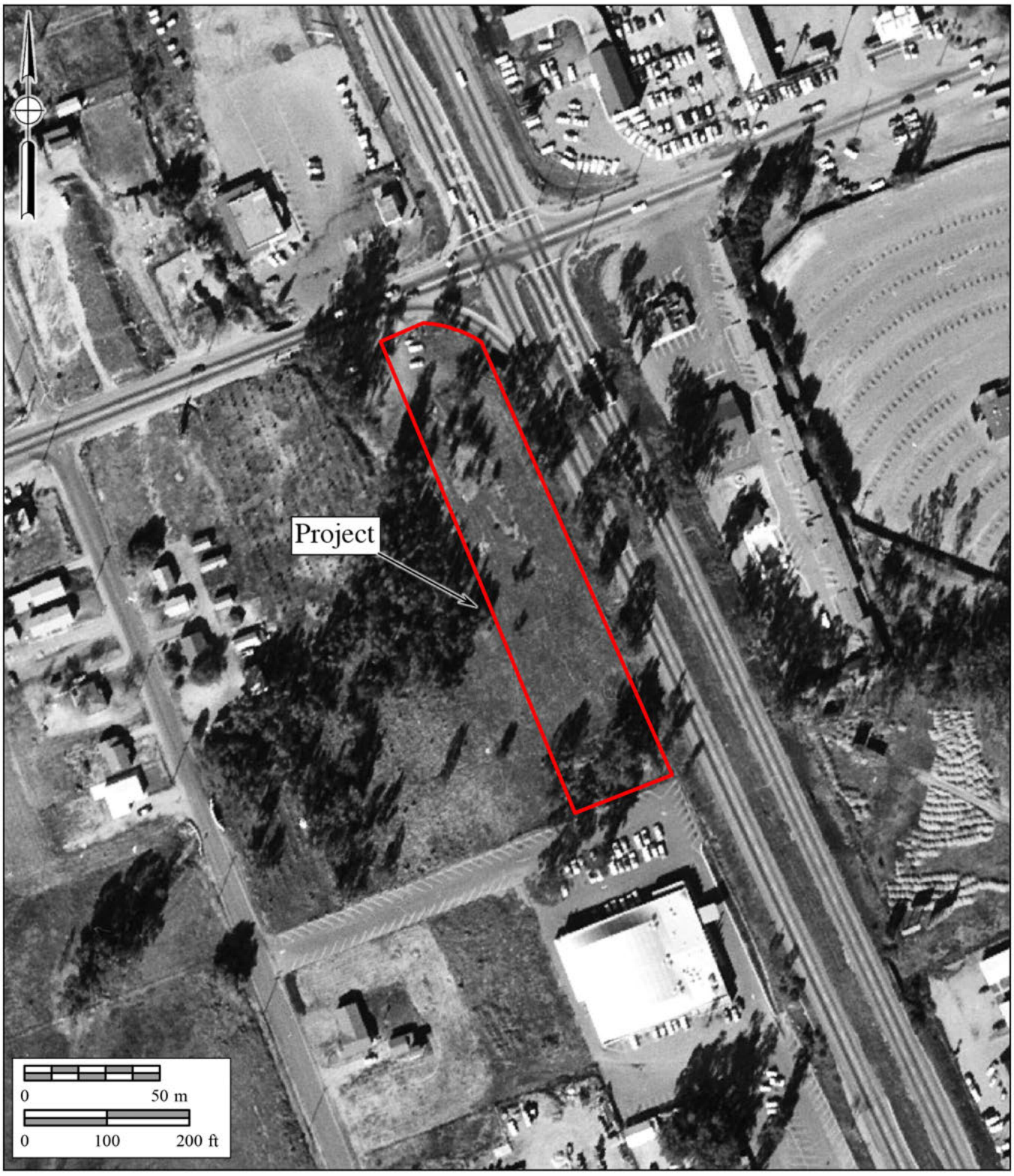


Plate 1

1960 Aerial Photograph

503 West Mission Avenue

Plate 2

1963 Aerial Photograph

503 West Mission Avenue

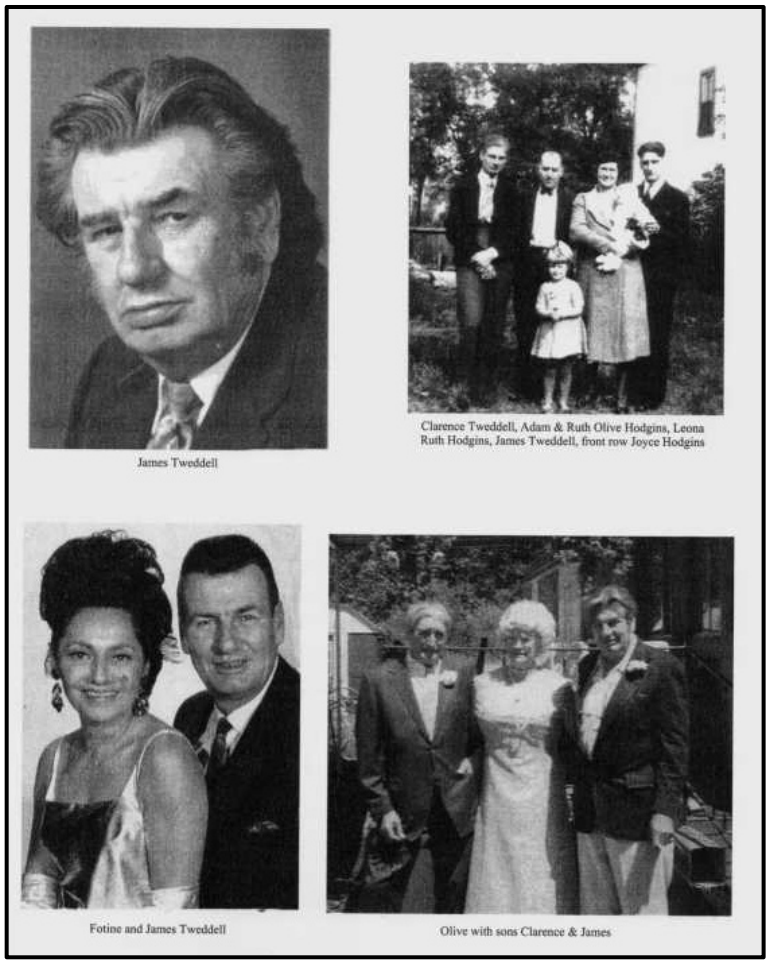


Plate 3: James and Fotine Tweddell.
(Image courtesy of Ancestry.com)

The 503 West Mission Avenue building was constructed as a Denny's Restaurant right before the property was purchased by Aircraft Mobilehomes, Inc. Denny's was established by Harold Butler and Richard Jezak, who opened a donut stand in Lakewood, California in 1953 and called it "Danny's Donuts" (Plate 4). By 1956, Danny's Donuts had become a six-store chain. When Jezak left the partnership, Butler changed the concept from a donut shop to a coffee shop and rebranded the small franchise as 24-hour "Danny's Coffee Shops" (Denny's 2022). In the 1950s, Los Angeles architects Louis Armet and Eldon Davis, who are credited with construction of over 4,000 Googie-style restaurants (Edward Cella Art & Architecture 2022), created a prototype building for Danny's Coffee Shops, which would later become a model for stores built all over the United States. This prototype included a boomerang-shaped roof and large signage, since most of the later stores were built around freeways (Hess 2004) (Plates 5 and 6). The name of the franchise was changed to "Denny's Coffee Shops" in 1959 to avoid confusion with Coffee

Plate 4: Danny's Donuts, the original donut stand opened by Butler and Jezak. ***(Photograph courtesy of Denny's 2022)***

Dan's in Los Angeles and eventually became just "Denny's" in 1961 (Denny's 2022). The business quickly grew and by 1981, there were over 1,000 restaurants in the United States. The business purchased many of the old Sambo's restaurants and used their similar designs to their advantage (*New York Times* 1988).

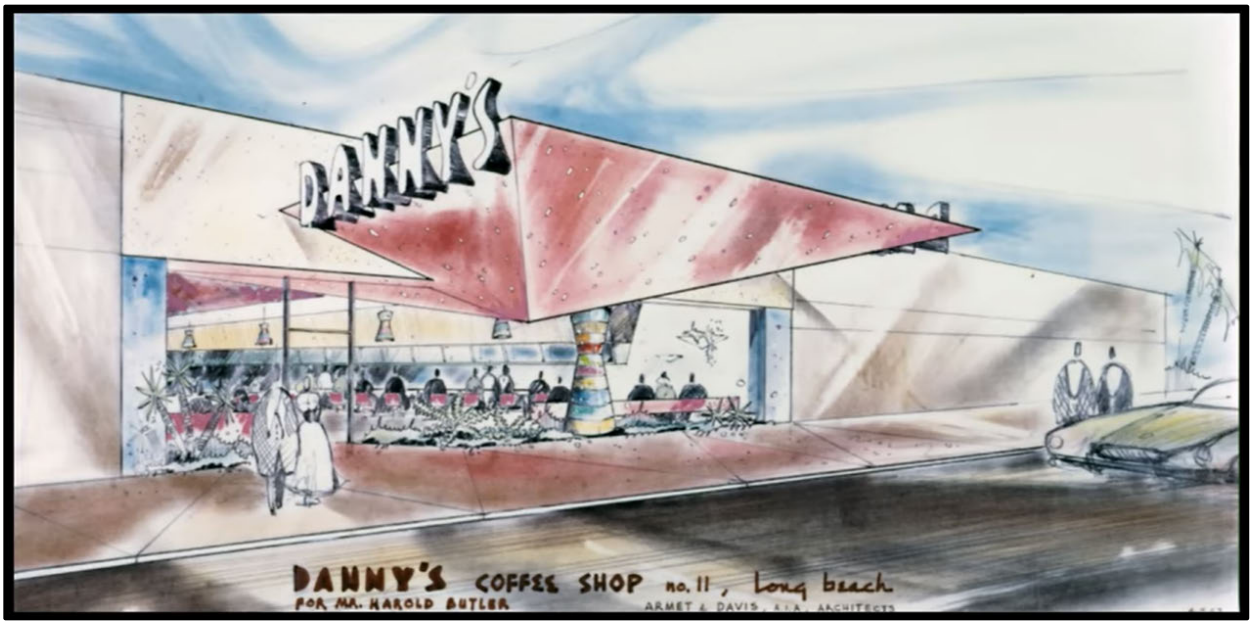


Plate 5: Louis Armet and Eldon Davis's design/prototype for Danny's Coffee Shop. ***(Image courtesy of Getty Research Institute 2013)***

Plate 6: Louis Armet and Eldon Davis's design/prototype for Denny's Coffee Shop. ***(Image courtesy of Getty Research Institute 2013)***

Aircraft Mobilehomes, Inc. was established in 1946 in Hartford, Connecticut, by Vernon Titcomb, Sr. and his sons Vernon Titcomb, Jr. and Ellwood Titcomb (*Times-Advocate* 1963a). "The family operated an FBO [fixed-base operators] the Brainard Field [Airport] in East Hartford, Connecticut. At the same time the family was operating a war-time trailer camp for factory workers at Pratt & Whitney" (Titcomb 2017). The trailer park was named Aircraft Trailer Park, Inc., which was changed to Aircraft Mobilehomes, Inc. in the 1960s, Amicorp, Inc. in the 1980s, and finally Amicorp Enterprises, Inc. in 2003 (Titcomb 2017). In 1962, they expanded operations by purchasing the land where Mt. Vernon Inn and Denny's were located and they built Mount Vernon Apartments, a luxury living apartment complex, on the lot south of the motel and the restaurant (*Times-Advocate* 1963a). The apartment complex is still extant and operates under the name "Quince Park Apartment."

Ellwood, Vernon Jr., and Vernon Sr. Titcomb were all licensed pilots (*Times-Advocate* 1965). Vernon, Jr. and his wife Jean died in a plane crash when their twin-engine plane crashed in New Hampshire. Titcomb, Jr. served in the United States Air Corps during World War II as a flight instructor and worked for Eastern Air Lines in Florida before moving to California. Before his death, he served as the director of the Escondido Chamber of Commerce for three years and he was a member of the Ambassadors Club for five years. He was also the director of the North County Bank of Escondido. He and his wife were active members of the First Baptist Church in Encinitas (*Times-Advocate* 1974). Vernon Titcomb, Sr. passed away in 1977 (*Times-Advocate* 1977). In 1967, when he was 81 years old, he solo piloted a small plane coast to coast (*Los Angeles*

Times 1967) (Plate 7). After his father and brother passed away, Ellwood Titcomb continued with the development business until he retired and moved to Florida in 1979. After he retired, the 503 West Mission Avenue property remained in the possession of Amicorp Enterprises, Inc. until 2004, when it was sold to Trinity Capital Investments. He passed away in 2011 (Dignity Memorial 2011).

NEVER TOO OLD — Vernon Titcomb Sr. observed his 78th birthday Wednesday by piloting this four-seat Cessna for a 45-minute flight over the North County. He didn't take up flying until he was 65. Titcomb, who lives in Cardiff, is a partner with his two sons (Vernon Jr. and Ellwood) in the corporation that owns the Mount Vernon Motel and the Mount Vernon Apartments in Escondido. — Photo by John Daly.

Plate 7: Vernon Titcomb, Sr. in 1967.
(*Photograph courtesy of Los Angeles Times 1967)*

While the 503 West Mission Avenue property was owned by Americorp Enterprises, Inc., it was operated as a Denny's until 1982. In 1963, the *Times-Advocate* referred to the 503 West Mission Avenue Denny's as one of the best coffee shops in Escondido (*Times-Advocate* 1963b). That year, the 503 West Mission Avenue Denny's served as a meeting place for a group of Mexican lawmakers, who stopped in Escondido as a part of a three-day tour through San Diego to observe private enterprise operations, and Bob Hale of the San Diego Chamber of Commerce and president of the Balboa Mortgage Company (*Times-Advocate* 1963c). In 1964, the 503 West Mission Avenue Denny's was given the "Golden Cup' award by the Coffee Brewing Institute for the quality and brewing excellence of the coffee it serves" (*Times-Advocate* 1964). In 1970, another Denny's was opened at 2680 South Escondido Boulevard (*Times-Advocate* 1970). The 1983 City Directory shows that Denny's stopped operating at 503 West Mission Avenue and moved to 510 West Mission Avenue that year. The 510 West Mission Avenue address appears for the first time in 1982 (*Times-Advocate* 1982a).

An article from 1982 mentions that three Greek Covina restauranteurs, Pete Tsokas, Alex Lazinos, and Pete Polytarhos, leased the 503 West Mission Avenue Denny's building, which was remodeled between 1982 and 1983 (*Times-Advocate* 1982b; see building record in Appendix A). In 1983, the 503 West Mission Avenue building had become a restaurant called Burger Stop Family Restaurant (*Times-Advocate* 1983a) and appeared on the *Times-Advocate's* best hamburger list as the second runner-up (*Times-Advocate* 1983b). The name of the restaurant changed one more time in 1983 to the Family Stop Restaurant, still run by Tsokas, Lazinos, and Polytarhos (*Times-Advocate* 1983c). In 1986, it became the Escondido Café (*Times-Advocate* 1986), in 1988, it became Johnny R's #2 Family Restaurant run by Johnny Raizian (Mock 1988) (Plate 8), in 1991, it became Cheers Family Restaurant (Ancestry.com 2011; *Times-Advocate* 1993) (Plate 9), and in

2001, it became El Galeón Mexican Restaurant.

Plate 8: Johnny R's #2 Family Restaurant at 503 West Mission Avenue in 1988. (*Photograph courtesy of Times-Advocate 1988)*

Plate 9: Cheers Family Restaurant at 503 West Mission Avenue in 1993. (*Photograph courtesy of Times-Advocate 1993)*

In 2004, the 503 West Mission Avenue property was purchased by Menketh Akram Yalda and Azhar T. Elias Yalda and remained in their possession until 2013. While owned by the Yaldas, the 503 West Mission Avenue building continued to operate as El Galeón Mexican Restaurant (Plate 10). In 2013, ownership was passed to Menaz, LLC, for which Menketh Yalda was listed as an agent. The restaurant then became Pho Truc Anh, a Vietnamese restaurant that still uses the building. In 2019, the property was purchased by the current owner, 503 West Mission, LLC. The full ownership records for the property are provided in Table 1, below.

Plate 10: El Galeón Mexican Restaurant at 503 West Mission Avenue in 2007. (*Image courtesy of Google Street View)*

Table 1

Title Records for 503 West Mission Avenue

Seller	Buyer	Year
Ralph Trustman and Blossom Trustman, Peter T. Rice and Colleen Rice	George P. Timmons and Anna M. Timmons	1959

Seller	Buyer	Year
George P. Timmons and Anna M. Timmons	George P. Timmons and Anna M. Timmons, Ralph Petreny and Mona E. Petreny, James Tweddell and Fotine Tweddell, doing business as Mt. Vernon Motels	1961
George P. Timmons and Anna M. Timmons, Ralph Petreny and Mona E. Petreny, James Tweddell and Fotine Tweddell	Mt. Vernon Motel, Inc.	1962
Mt. Vernon Motel, Inc.	Ralph Petreny and Mona E. Petreny, James Tweddell and Fotine Tweddell	1962
Ralph Petreny and Mona E. Petreny, James Tweddell and Fotine Tweddell	Aircraft Mobilehomes, Incorporated	1962
Amicorp, Inc., formerly known as Aircraft Mobile Homes, Inc.	Amicorp Enterprises, Inc.	2003
Amicorp Enterprises, Inc.	Trinity Capital Investments 1	2004
Trinity Capital Investments 1	Menketh Akram Yalda and Azhar T. Elias Yalda, Co-Trustees	2004
Menketh Akram Yalda and Azhar T. Elias Yalda, Co-Trustees	Menaz, LLC	2013
Menaz, LLC	503 West Mission, LLC	2019

Field Survey

BFSA conducted a field assessment on June 24, 2022. Preparation of architectural descriptions was conducted in the field and supplemented using the photographic documentation. Additional information was drawn from supplemental research efforts and incorporated into this report.

Description of Surveyed Resource

The historic building identified at the 503 West Mission Avenue property includes a single-story restaurant structure and associated landscape and hardscape. According to the Notice of Completion, the building was constructed in 1962 and it has not been previously evaluated. The 503 West Mission Avenue building was constructed in the Googie architectural style, a style closely associated with southern California (City of Olympia 2008).

The building is rectangular in plan and glass, stucco, and stone are used as the principal building materials. The building has a reinforced concrete foundation and metal frame. The design is dominated by a boomerang roofline, which shelters the building's northeast, southeast, and southwest façades, which are visible from the road (Plate 11). The building record indicates that the original roof cover was built-up; however, this was replaced by insulated metal sheets at an

unknown date. The main entrance is located on the southeastern portion of the northeast façade and features an aluminum-framed glass door. Two floor-to-ceiling window units are located on both sides of the entrance door. The northwest portion of this façade features large window units located above a short, stucco-clad wall. A random rubble masonry wall separates the southeast and northwest portions of the northeast façade. This masonry wall has a trapezoid shape with a thicker base and a narrower upper part (Plates 12 and 13). There is no direct access to the main entrance on the northeast façade due to the curved form of the northern edge of the lot as it rounds the sharp turn from West Mission Avenue to Centre City Parkway. The access to this entrance is provided indirectly through the space behind the structure that is used for parking. A walkway that runs along the northwest and northeast façades also provides access to the main entrance (Plates 14 and 15).

The northwest and southeast façades of the 503 West Mission Avenue building are similar due to the boomerang view of the roof. While both the northwest and southeast façades feature large windows placed above stucco-clad walls (Plates 16 and 17), the northwest façade differs as it features a metal door (Plate 18) with a small concrete ramp in front. Both façades exhibit large signs on the boomerang-shaped ends of the roof (Plate 19). The southwest ends of both façades include random rubble masonry walls. While the masonry wall on the southeast façade extends southwest and envelopes the southern corner of the building (Plates 20 and 21), the one on the northwest façade is much narrower and separates the front part of the building from the recessed back section (Plates 22 and 23). All of the windows are aluminum-framed.

The rear of the building features a recessed projection that is a structural building element and an enclosure that provides a storage/service area (Plate 24). The recessed projection has a rectangular footprint, is clad in stucco, and features a service door on its southwest façade (Plate 25). The service area is enclosed by a brick wall and features wood access gates (Plate 26). The building record indicate that this enclosure was added to the building in 1962 after the initial construction. The property includes an outdoor area on its northeast side (Plate 27). This landscaped area is enclosed by a short metal fence and includes trees, plants, bushes, and a large sign (Plates 28 and 29).

Modifications and alterations to the original building include:

- Service area enclosure added to the southwest part of the building in 1962 (see Plate 2)
- Remodel that primarily included replacing existing insulated metal panels in 1983
- Building painted blue and white and the signage on the northwest and southeast boomerang ends of the roof added between 2008 and 2009 (Plate 30)
- Building painted white and green, northwest and southeast signage and the free-standing sign changed between 2012 and 2014 (Plates 31 and 32)
- Built-up roof cover replaced with metal sheets at an unknown date

Plate 11

North Corner of the Building, Facing South

503 West Mission Avenue

Plate 12

North Corner of the Building Showing Entry to the Front Walkway, Facing East

503 West Mission Avenue

Plate 13

North Corner of the Building Showing the Front Walkway, Facing South

503 West Mission Avenue

Plate 14

Northeast Façade of the Building, Facing Southwest

503 West Mission Avenue

Plate 15

Northeast Façade of the Building, Facing West

503 West Mission Avenue

Plate 16

Southeast Façade of the Building, Facing Northwest

503 West Mission Avenue

Plate 17

Northwest Façade of the Building, Facing Southeast

503 West Mission Avenue

Plate 18

Northwest Façade Showing the Metal Door, Facing Southeast

503 West Mission Avenue

Plate 19

Northwest Façade of the Building Showing the Signs on the Boomerang End of the Roof, Facing Southeast

503 West Mission Avenue

Plate 20

Southeast Façade of the Building Showing the Masonry Wall Extending Southwest, Facing Northwest

503 West Mission Avenue

Plate 21

South Corner of the Building, Facing North

503 West Mission Avenue

Plate 22

Northwest Façade of the Building Showing Masonry Wall Detailing, Facing Northeast

503 West Mission Avenue

Plate 23

West Corner of the Building, Facing East

503 West Mission Avenue

Plate 24

West Corner of the Building, Facing East

503 West Mission Avenue

Plate 25

Southwest Façade of the Building, Facing Northeast

503 West Mission Avenue

Plate 26

Southwest Façade of the Building, Facing Northeast

503 West Mission Avenue

Plate 27

Current Aerial Photograph

503 West Mission Avenue

Plate 28

Landscaped Area Northeast of the Building, Facing West

503 West Mission Avenue

Plate 29

Landscaped Area and Signage

Northeast of the Building, Facing South

503 West Mission Avenue

Plate 30

May 2008 (Top) and March 2009 (Bottom)

Views of the Building, Facing West

503 West Mission Avenue

(Images courtesy of Google Street View)

Plate 31

January 2012 (Top) and April 2014 (Bottom)
Views of the Building, Facing West

503 West Mission Avenue

(Images courtesy of Google Street View)

Plate 32

November 2016 View of the Building, Facing West

503 West Mission Avenue

(Image courtesy of Google Street View)

V. SIGNIFICANCE EVALUATIONS

When evaluating a historic resource, integrity is the authenticity of the resource's physical identity clearly indicated by the retention of characteristics that existed during its period of significance. It is important to note that integrity is not the same as condition. Integrity directly relates to the presence or absence of historic materials and character-defining features, while condition relates to the relative state of physical deterioration of the resource. In most instances, integrity is more relevant to the significance of a resource than condition; however, if a resource is in such poor condition that original materials and features may no longer be salvageable, then the resource's integrity may be adversely impacted. For the 503 West Mission Avenue building, seven aspects of integrity were used for the evaluation, as recommended in the *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (Andrus and Shrimpton 2002):

1. **Integrity of Location** *[refers to] the place where the historic property was constructed or the place where the historic event occurred* (Andrus and Shrimpton 2002). Integrity of location was assessed by reviewing historical records and aerial photographs in order to determine if the building had always existed at its present location or if it had been moved, rebuilt, or its footprint significantly altered. Historical research reveals that the single-story building was constructed in its current location in 1962 and has not been moved. Therefore, the building retains integrity of location.

2. **Integrity of Design** *[refers to] the combination of elements that create the form, plan, space, structure, and style of the property* (Andrus and Shrimpton 2002). Integrity of design was assessed by evaluating the spatial arrangement of the building, identifying any unique architectural features present, and determining if those features are original or if they have been modified. The 503 West Mission Avenue building was originally constructed between in 1962 in the Googie style. The Escondido Historic Context Statement does not cover Googie-style architecture; however, the period of significance for the Googie style is defined as between 1950 and 1965 by the San Diego Modernism Historic Context Statement (City of San Diego 2007) and the construction of the 503 West Mission Avenue Building falls within this timeframe. The modifications made to building include: a service area enclosure was added to the southwest part of the building in 1962; a remodel that primarily included replacing existing insulated metal panels in 1983; the building was painted blue and white and the signage on the northwest and southeast boomerang ends of the roof was added between 2008 and 2009; the building was painted white and green and the northwest and southeast signage and the free-standing sign were changed between 2012 and 2014; and the built-up roof cover was replaced with metal sheets at an unknown date. These

modifications did not alter the plan and space of the building and did not change the overall form, structure, design, or style of the building. The building still possesses most of the Primary character-defining features of the Googie style it has exhibited since its conception. Therefore, the building retains integrity of design.

3. **Integrity of Setting** *[refers to] the physical environment of a historic property. Setting includes elements such as topographic features, open space, viewshed, landscape, vegetation, and artificial features* (Andrus and Shrimpton 2002). Integrity of setting was assessed by inspecting the elements of the property. It has been determined that the setting of the 503 West Mission Avenue property has drastically changed since the completion of the building in 1962. The 1963 aerial photograph (see Plate 2) shows that some development had begun in the lots surrounding the subject property. The traffic junction located one block north of the property, which is formed by the intersection of Centre City Parkway and State Route 78, was transformed into a large cloverleaf interchange between 1964 and 1967 (Plates 33 and 34), changing the overall viewshed and character of the area. During this time, within the 503 West Mission Avenue parcel, the landscaping and infrastructure around Reidy Creek were changed. Additionally, the "Escondido World Marketplace" was constructed southwest of the property. West Mission Avenue, running northwest of the property, was widened between 1967 and 1978 (see Plates 34 and 35).

   When constructed in 1962, the lot north of the 503 West Mission Avenue property included an "L"-shaped structure that was demolished between 1967 and 1978 (see Plates 34 and 35). The lot east of the property included a large open area and three commercial buildings. While two of these buildings are still extant, the rest of the building lot now includes two large structures, a strip mall, a charter school, and three smaller office buildings. An apartment complex was constructed south of the property between 1986 and 1987 (Plates 36 and 37). The lot north of the property included several small structures; however, none of these buildings are currently extant and instead several restaurant and office buildings and a department store were constructed on the northeast lot between 1967 and 1978 (see Plates 34 and 35).

   The western portion of the subject property has changed as a result of the application of new landscaping around Reidy Creek and the construction of additional structures between 1967 and 1978 (see Plates 34 and 35). The motel building and associated pool were constructed south of the property between 1960 and 1963 (see Plates 1 and 2) and they are still extant in their original locations.

Plate 33

1964 Aerial Photograph

503 West Mission Avenue

Plate 67

1967 Aerial Photograph

503 West Mission Avenue

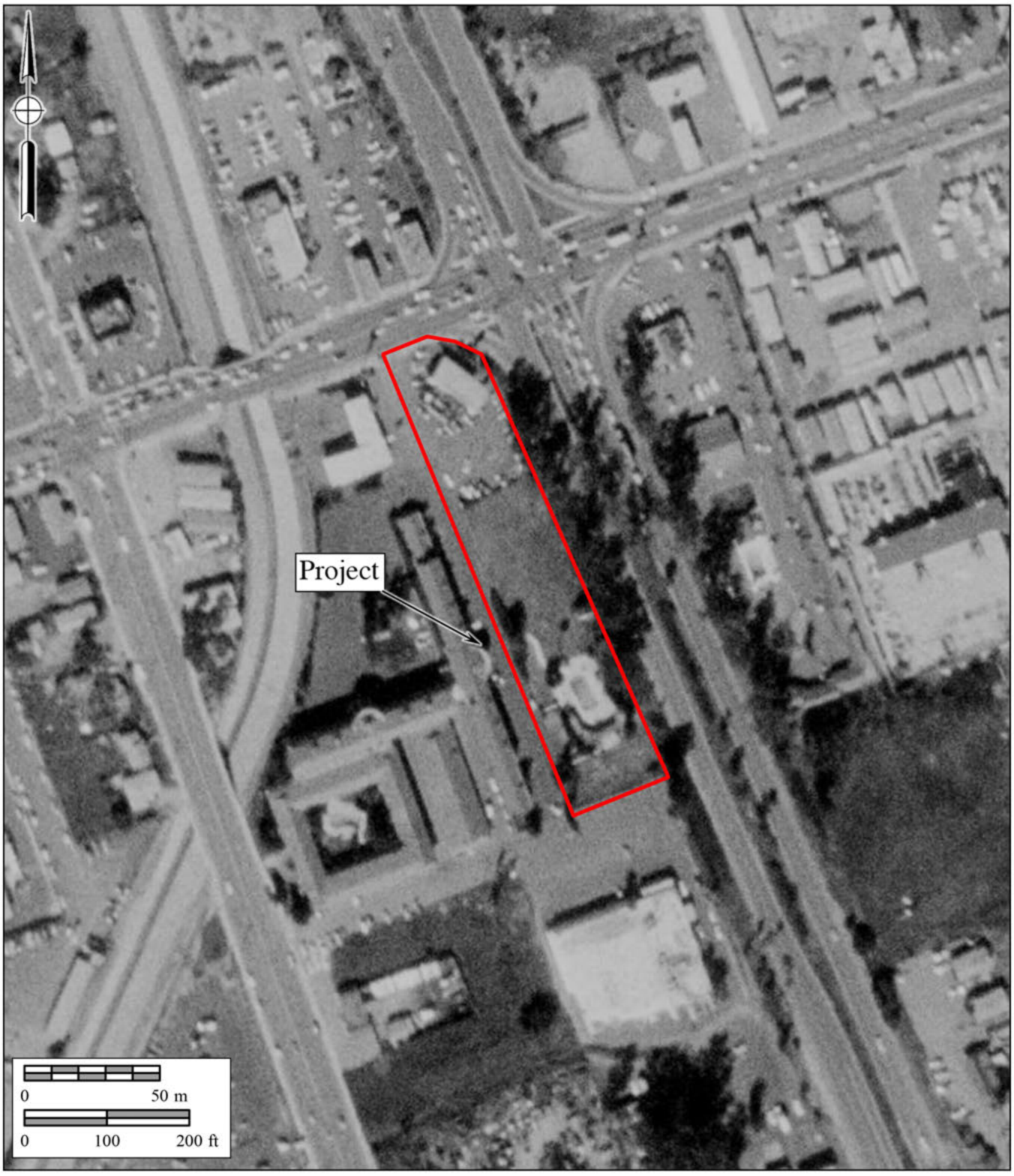


Plate 35

1978 Aerial Photograph

503 West Mission Avenue

Plate 36

1986 Aerial Photograph

503 West Mission Avenue

Plate 37

1987 Aerial Photograph

503 West Mission Avenue

As the surrounding area transformed from being semi-developed to a well developed commercial center, it can be concluded that the 503 West Mission Avenue property does not retain integrity of setting.

4. **Integrity of Materials** *[refers to] the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property* (Andrus and Shrimpton 2002). Integrity of materials was assessed by determining the presence or absence of original building materials and the possible introduction of materials that may have altered the architectural design of the building. The 503 West Mission Avenue building was originally constructed in 1962 in the Googie style. The modifications made to building include: a service area enclosure was added to the southwest part of the building in 1962; a remodel that primarily included replacing existing insulated metal panels in 1983; the building was painted blue and white and the signage on the northwest and southeast boomerang ends of the roof was added between 2008 and 2009; the building was painted white and green and the northwest and southeast signage and the free-standing sign were changed between 2012 and 2014; and the built-up roof cover was replaced with metal sheets at an unknown date. These modifications did not alter the plan and space of the building and did not alter or replace the original materials used in the construction of the building. Therefore, the building retains integrity of materials.

5. **Integrity of Workmanship** *[refers to] the physical evidence of the labor and skill of a particular culture or people during any given time period in history* (Andrus and Shrimpton 2002). Integrity of workmanship was assessed by evaluating the quality of the architectural features present in the building. The 503 West Mission Avenue building was constructed in 1962 by R.E Mauer Construction utilizing a great quality of workmanship according to the building record (see Appendix A). The subsequent modifications include: a service area enclosure was added to the southwest part of the building in 1962; a remodel that primarily included replacing existing insulated metal panels in 1983; the building was painted blue and white and the signage on the northwest and southeast boomerang ends of the roof was added between 2008 and 2009; the building was painted white and green and the northwest and southeast signage and the free-standing sign were changed between 2012 and 2014; and the built-up roof cover was replaced with metal sheets at an unknown date. However, these modifications did not impact the original workmanship and the building retains integrity of workmanship.

6. **Integrity of Feeling** *[refers to] a property's expression of the aesthetic or historic sense of a particular period of time* (Andrus and Shrimpton 2002). Integrity of feeling was assessed by evaluating whether or not the building's features, in combination with its setting, convey a historic sense of the property from the period of significance. Although the 503 West Mission Avenue building still retains integrity of design and materials, it no longer retains integrity of setting due to the transformation of the surrounding area. Due to this loss of setting, the 503 West Mission Avenue building no longer represents an aesthetic or historic sense of when it was constructed in the early 1960s. Therefore, the building does not retain integrity of feeling.

7. **Integrity of Association** *[refers to] the direct link between an important historic event or person and a historic property* (Andrus and Shrimpton 2002). Integrity of association was assessed by evaluating the building's data or information and its ability to answer any research questions relevant to the history of the city of Escondido or the state of California. Historical research indicates that the building is not associated with any significant persons or events. None of the companies, businesses, or individuals who owned or utilized the building were found to be significant and no known important events occurred at the property. Therefore, the 503 West Mission Avenue building has never possessed integrity of association.

The 503 West Mission Avenue building was determined to meet four of the seven categories of the integrity analysis (location, design, materials, and workmanship). The building lacks integrity of setting, feeling, and association due to the substantial changes that have occurred around the property since the 1960s and its lack of association with significant individuals or events.

Because this project requires approval from the City of Escondido, CEQA and City of Escondido Municipal Code (Ordinance 87-43: Article 40 Historical Resources, Section 33-794) criteria were used for this evaluation. Therefore, criteria for listing on the CRHR and the City of Escondido Register were used to measure the significance of the building.

CRHR Evaluation

To be eligible for designation on the CRHR, a historic resource must be significant at the local, state, or national level, under one or more of the following criteria:

- **CRHR Criterion 1:**
  It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

  In order to evaluate the 503 West Mission Avenue building under Criterion 1, BFSA

took the following steps as recommended by the *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (Andrus and Shrimpton 2002):

1) Identify the event(s) with which the structure is associated through the review of the archaeological record, historic records, and oral histories.

    - It was discovered through historical research that no significant events could be associated with the 503 West Mission Avenue building. As the building cannot be associated with any specific events that have made a significant contribution to the broad patterns of California's history, the 503 West Mission Avenue building is not eligible for designation under CRHR Criterion 1.

- **CRHR Criterion 2:**
  It is associated with the lives of persons important in our past.

  In order to evaluate the 503 West Mission Avenue building under Criterion 2, BFSA took the following steps as recommended by the *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (Andrus and Shrimpton 2002):

  1) Identify any important persons associated with the structure through the investigation of the archaeological record, historic records, and oral histories.

      - It was discovered that no historically significant persons are associated with the 503 West Mission Avenue building. Because the building could not be associated with any historically important persons, it is not eligible for designation under CRHR Criterion 2.

- **CRHR Criterion 3:**
  It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.

  In order to evaluate the 503 West Mission Avenue building under Criterion 3, BFSA took the following steps as recommended by the *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (Andrus and Shrimpton 2002):

  1) Identify the distinctive characteristics of the type, period, or method of construction, master or craftsman, or the high artistic value of the structure.

This will be done by examining the pattern of features common to the particular class of resource that the site or features may embody, the individuality or variation of features that occur within the class, and the evolution of that class, or the transition between the classes of resources.

- The 503 West Mission Avenue building was originally constructed in the Googie style by R.E Mauer Construction while the property was owned by George P. and Anna M. Timmons, Ralph and Mona E. Petreny, and James and Fotine Tweddell. While historical research could not identify the architect of the building, it is possible that the building was constructed following the theme and boomerang-roofed prototype created by architects Louis Armet and Eldon Davis in the 1950s. Their designs included two Googie-style prototypes: the boomerang-roofed design that became a model for Denny's restaurants built all over the United States and the zigzag-roofed restaurant structure. Their designs enabled the Googie style to spread across the country (Hess 2004) (Plate 38).

  As the City of Escondido does not have a historic context statement that addresses the Googie style, the most relevant context statements can be found in the San Diego Modernism Historic Context Statement (City of San Diego 2007) and the Los Angeles Citywide Historic Context Statement (City of Los Angeles 2021). According to the City of San Diego:

  > The Futurist style of Modern architecture began after World War II as Americans became entranced with technology and the Space Age. At that time, America was also being transformed by a car culture. As automobile use increased, roadside architecture evolved. It was intended to attract the consumer with bright colors, oversized lighted signage, and exaggerated forms. In short, the building was the billboard. The Futurist style was used overwhelmingly on coffee shops, gas stations, motels, restaurants, and retail buildings. The name "Googie" comes from the well-known coffee shop in Los Angeles called Googies, which was designed by renowned Modernist architect John Lautner in 1949 …

Plate 38

Denny's Restaurants in Pasadena (Top, Built 1963), Los Angeles (Middle), and Palm Springs (Bottom, Built 1965)

503 West Mission Avenue

(Photographs courtesy of RoadsideArchitecture.com)

> Futurist architectural design often incorporates sharp angles, boomerang or flying saucer shapes, large expanses of glass, exposed steel structural elements, and dramatic roof overhangs. The basic form and size of Futurist buildings varies significantly from building to building. An abstract arrangement of shapes and textures is typical. (City of San Diego 2007)

However:

> … the Googie style had fallen out of favor by the late 1960s. By this time, the nation's architectural culture had changed. The American public was no longer as captivated by ideas like space travel and nuclear energy, and aspects of the future that had once engendered excitement among the public were now seen as mundane and effete. (Novak 2012 in City of Los Angeles 2021:187).

The style was not used after the 1970s.

The 503 West Mission Avenue building was constructed in 1962, during the period in which the Googie style was most popular (City of San Diego 2007).

Primary Character Defining Features: According to the San Diego Modernism Historic Context Statement (City of San Diego 2007), there are four "Primary" character-defining features of Futurist – Googie construction, which have been specifically applied to the property, accordingly:

1. *Abstract, angular, or curved shapes:* The 503 West Mission Avenue building features an abstract and curved roof. Therefore, the building <u>does possess</u> this Primary character-defining feature of Googie-style construction.

2. *Expressive roof forms (flat, gabled, upswept, butterfly, parabolic, boomerang, or folded):* The 503 West Mission Avenue building features an abstract, angular, boomerang-shaped roof. Therefore, the building <u>does possess</u> this Primary character-defining feature of

Googie-style construction.

3. *Large windows (aluminum-framed):* The 503 West Mission Avenue building features large, aluminum-framed, fixed-pane windows on its northeast, northwest, and southeast façades. Therefore, the building does possess this Primary character-defining feature of Googie-style construction.

4. *Prominent signage (neon or lighted):* The 503 West Mission Avenue building features "Pho Truc Xanh & Chinese Cuisine" signs on the northwest and southeast façades at the roofline. The signs are not original and are not as prominent as the original pole sign located in the parking lot north of the building. However, while the pole and metal frame of the pole sign are original, the sign itself has been changed as the building was used by different businesses. As such, the building does not possess this Primary character-defining feature of Googie-style construction.

Of the four Primary character-defining features of Futurist – Googie construction expressed in the San Diego Modernism Historic Context Statement, the 503 West Mission Avenue building possesses three.

Secondary Character Defining Features: According to the San Diego Modernism Historic Context Statement (City of San Diego 2007), there are five "Secondary" character-defining features of Futurist – Googie construction, which have been specifically applied to the property, accordingly:

1. *Variety of exterior finishes including stucco, concrete block, brick, stone, plastic, and wood siding:* The 503 West Mission Avenue building features a stucco exterior with a random rubble masonry wall on its northwest and southeast façades. Therefore, the building does possess this Secondary character-defining feature of Googie-style construction.

2. *Bright colors:* The original colors of the 503 West Mission Avenue building are unknown; however, historic images show that the building was painted blue and white between 2008 and 2009, and white and green color between 2012 and 2014. The building still features the white and green colors. Since the color scheme of the

exterior of the building has significantly changed since 1962, the building does not possess this Secondary character-defining feature of Googie-style construction.

3. *Screen block and shadow block accents:* The 503 West Mission Avenue building never featured any sunshades, screens, or shadow block accents. Therefore, the building does not possess this Secondary character-defining feature of Googie-style construction.

4. *Building as billboard:* The large signage located east of the 503 West Mission Avenue building was altered for different businesses over time. The signs on the northwest and southeast rooflines are not original. Therefore, the building does not possess this Secondary character-defining feature of Googie-style construction.

5. *Asymmetrical façades:* The 503 West Mission Avenue building does feature an asymmetrical primary façade. Therefore, the building does possess this Secondary character-defining feature of Googie-style construction.

Of the five Secondary character-defining features of Futurist – Googie construction expressed in the San Diego Modernism Historic Context Statement, the 503 West Mission Avenue building possesses two.

The San Diego Modernism Historic Context Statement states that "In order to be eligible for designation, Googie style buildings should retain the primary character defining features of the style. Secondary character defining features which may have been lost due to tenant improvements and commercial remodeling are not as critical to conveying the style" (City of San Diego 2007). The 503 West Mission Avenue building retains integrity of location, design, materials, and workmanship and features a majority of the Primary character-defining features of the Googie style. Therefore, the building is considered a representative example of a Googie-style restaurant constructed during its period of significance between 1950 and 1965. Therefore, the building is eligible for designation under CRHR Criterion 3 with a period of significance of 1962.

- **CRHR Criterion 4:**
  It has yielded, or may be likely to yield, information important in prehistory or history.

It is unlikely that the 503 West Mission Avenue building, as it presently exists, could contribute additional information beyond that presented in this report, which could be considered important to the history of the local area or the state. The building could not be associated with any specific events or persons, and therefore, further research would not provide any additional information pertinent to the history of the city of Escondido or the state of California. Therefore, the building is not eligible for designation under CRHR Criterion 4.

City of Escondido Register Evaluation

According to Escondido Municipal Code, Chapter 33, Article 40, Section 33-794(c):

> Prior to granting a resource local register or historical landmark status, the HPC [Historic Preservation Commission] shall consider the definitions for historical resources and historical districts and shall find that the resource conforms to one (1) or more of the criteria listed in this section. A structural resource proposed for the local register shall be evaluated against criteria number one (1) through seven (7) and must meet at least two (2) of the criteria. Signs proposed for the local register shall meet at least one (1) of the criteria numbered eight (8) through ten (10). Landscape features proposed for the local register shall meet criterion number eleven (11). Archaeological resources shall meet criterion number twelve (12). Local register resources proposed for local landmark designation shall be evaluated against criterion number thirteen (13). The criteria are as follows:

- **City of Escondido Criterion 1:**
  The historic resource is strongly identified with a person or persons who significantly contributed to the culture, history, prehistory, or development of the city of Escondido, the region, the state, or the nation.

  As stated previously in the CRHR Criterion 2 evaluation, the 503 West Mission Avenue building is not associated with a person or persons who significantly contributed to the culture, history, prehistory, or development of the city of Escondido, the region, the state, or the nation. Therefore, the building is not eligible for designation under City of Escondido Criterion 1.

- **City of Escondido Criterion 2:**
  The historic resource embodies distinguishing characteristics of an architectural type or specimen or is representative of a recognized architect's work and has not been substantially altered.

As stated previously in the CRHR Criterion 3 evaluation, while the 503 West Mission Avenue building is not representative of a recognized architect's work, it embodies distinguishing characteristics of the Googie architectural style and is a representative example of the style. The modifications did not alter the overall style, form, space, or materials used in the original construction of the building. Therefore, the building is eligible for designation under City of Escondido Criterion 2.

- **City of Escondido Criterion 3:**
  The historic resource is connected with a business or use that was once common but is now rare.

  The 503 West Mission Avenue building was originally constructed as a Denny's and at the time of its construction it was the only Denny's in the Escondido area; however, it was not the first or last restaurant, diner, or coffee shop in Escondido. There are four diners operating in the blocks surrounding 503 West Mission Avenue. In addition, after closing their restaurant at 503 West Mission Avenue, Denny's opened two other locations at 510 West Mission Avenue and 2680 South Escondido Boulevard in Escondido. While the Escondido Boulevard restaurant has since closed, the 510 West Mission Avenue location still operates as a Denny's. As the 503 West Mission Avenue building is not connected to a business that was once common but is now rare, it is not eligible for designation under City of Escondido Criterion 3.

- **City of Escondido Criterion 4:**
  The historic resource is a site of significant historic events.

  No significant historic events are known to have occurred at the 503 West Mission Avenue building. Therefore, the building is not eligible for designation under City of Escondido Criterion 4.

- **City of Escondido Criterion 5:**
  The historic resource is 50 years old or has achieved historical significance within the past 50 years.

  The 503 West Mission Avenue building is over 50 years old. Therefore, the building is eligible for designation under City of Escondido Criterion 5.

- **City of Escondido Criterion 6:**
  The historic resource is an important key focal point in the visual quality or character of a neighborhood, street, area, or district.

While the 503 West Mission Avenue building is located at the corner of West Mission Avenue and Centre City Parkway, due to its scale, it fails to be perceived as a key focal point in the visual quality of the area and cannot be considered a key focal point of the neighborhood. Therefore, the building is not eligible for designation under City of Escondido Criterion 6.

- **City of Escondido Criterion 7:**
  The historic resource is one of the few remaining examples in the city possessing distinguishing characteristics of an architectural type.

  The 503 West Mission Avenue building possesses characteristics of the Googie style and is eligible for designation under CRHR Criterion 3 and City of Escondido Criterion 2 as it possesses *distinguishing* characteristics of the Googie style. While the Escondido Historic Context Statement (City of Escondido 1990) does not mention whether Googie-style buildings are common in Escondido, field research identified several examples of Googie-style architecture close to the 503 West Mission Avenue building. The document titled "Escondido's Marvelous Mid-Centuries: 1945-1969" prepared by the City of Escondido (2016) mentions that the Denny's building at 510 Mission Avenue (Plate 39), across the street from 503 West Mission Avenue, constructed between 1953 and 1964 (see Plates 33 and 40) is an excellent example of a Mid-Century, Googie-style commercial building. Two other Googie-style buildings and one sign were identified at 810 North Broadway (Plate 41), constructed between 1953 and 1964 (see Plates 33 and 40), 2680 South Escondido Boulevard (Plate 41), constructed in 1969, and the northwest corner of West Mission Avenue and North Escondido Boulevard (Plate 43), erected between 1967 and 1978 (see Plates 34 and 35). Since the 503 West Mission Avenue building is among several examples of the Googie style in the city possessing distinguishing features of the architectural style, it is not eligible for designation under City of Escondido Criterion 7.

- **City of Escondido Criterion 8:**
  The historic resource is a sign that is exemplary of technology, craftsmanship, or design of the period when it was constructed and used historical sign materials and is not significantly altered.

  The sign associated with the 503 West Mission Avenue property was installed when the building was constructed in 1962. However, it is not exemplary of technology, craftsmanship, or design of the period and it has been significantly altered. Therefore, the signage is not eligible for designation under City of Escondido Criterion 8.

Plate 39

510 West Mission Avenue Building Constructed Between 1953 and 1964

503 West Mission Avenue

(Image courtesy of Google Street View)

Plate 40

1953 Aerial Photograph

503 West Mission Avenue

Plate 41

810 North Broadway Building Constructed Between 1953 and 1964

503 West Mission Avenue

(Image courtesy of Google Street View)

Plate 42

2680 South Escondido Boulevard Building Constructed in 1969

503 West Mission Avenue

(Image courtesy of Google Street View)

Plate 43

Sign at West Mission Avenue and North Escondido Boulevard Erected Between 1967 and 1978

503 West Mission Avenue

(Image courtesy of Google Street View)

- **City of Escondido Criterion 9:**
  The historic resource is a sign that is integrated into the architecture of the building, such as the sign pylons on buildings constructed in the Modern style and later styles.

  The sign associated with the 503 West Mission Avenue property was installed when the building was constructed in 1962. However, it is not integrated into the architecture of the building. Therefore, the signage is not eligible for designation under City of Escondido Criterion 9.

- **City of Escondido Criterion 10:**
  The historic resource is a sign that demonstrates extraordinary aesthetic quality, creativity, or innovation.

  The sign associated with the 503 West Mission Avenue property was installed when the building was constructed in 1962. However, it does not demonstrate extraordinary aesthetic quality, creativity, or innovation. Therefore, the signage is not eligible for designation under City of Escondido Criterion 10.

- **City of Escondido Criterion 11:**
  The historic resource is an Escondido landscape feature that is associated with an event or person of historical significance to the community or warrants special recognition due to size, condition, uniqueness, or aesthetic qualities.

  No landscape features associated with an event or person of historic significance to the community, or that warrant special recognition due to size, condition, uniqueness, or aesthetic qualities, occur on the property. In addition, none of the landscaping on the property associated with the 503 West Mission Avenue building is historic in age. Therefore, no landscape features are eligible for designation under City of Escondido Criterion 11.

- **City of Escondido Criterion 12:**
  The historic resource is an archaeological site that has yielded, or may be likely to yield, information important in prehistory.

  No archaeological resources have been identified within the property, nor have any been documented in previous studies. Therefore, no archaeological resources are eligible for designation under City of Escondido Criterion 12.

- **City of Escondido Criterion 13:**
  The historic resource has an outstanding rating of the criteria used to evaluate local register requests.

  The 503 West Mission Avenue building does not have an outstanding rating of the criteria used to evaluate local register requests, and therefore, is not eligible for designation under City of Escondido Criterion 13.

VI. FINDINGS AND CONCLUSIONS

The assessment of the 503 West Mission Avenue building has concluded that the building is eligible for designation on the City of Escondido Register under eligibility Criteria 2 and 5 and the CRHR under eligibility Criterion 3. While this building was designed by an unknown architect, it was built according to the prototypes created for Denny's by architects Louis Armet and Eldon Davis and it retains integrity of location, design, materials, and workmanship. It is therefore recommended, if possible, that the original building be preserved, renovated, and integrated into the design of the project. In the event that the building cannot be incorporated into the design of the project and there are no redesign or relocation alternatives available based upon financial constraints and the requirements necessary to achieve project feasibility, it is recommended that Level I or II HABS documentation (or equivalent) of the building be conducted in order to achieve mitigation by exhausting the research potential of the resource, after which the building could be demolished.

VII. BIBLIOGRAPHY

Ancestry.com

2000 *California, U.S., Death Index, 1940-1997* (database online). Ancestry.com Operations, Inc. Provo, Utah.

2002 *1930 United States Federal Census* (database online). Ancestry.com Operations, Inc. Provo, Utah.

2010a *U.S., Naturalization Records, 1840-1957* (database online). Ancestry.com Operations, Inc. Lehi, Utah.

2010b *U.S., Border Crossings from Canada to U.S., 1895-1960* (database online). Ancestry.com Operations, Inc. Lehi, Utah.

2011 *U.S., City Directories, 1822-1995* (database online). Ancestry.com Operations, Inc. Provo, Utah.

2012 *1940 United States Federal Census* (database online). Ancestry.com Operations, Inc. Provo, Utah.

2014 U.S., Social Security Death Index, 1935-2014 (database online). Ancestry.com Operations, Inc. Provo, Utah.

Andrus, Patrick W. and Rebecca H. Shrimpton
2002 *National Register Bulletin: How to Apply the National Register Criteria for Evaluation.* U.S. Department of the Interior, National Park Service.

Berk, Lucy Jones and Stephen A. Covey
2010 *Postcards of America: Escondido Grape Day Festivals.* Arcadia Publishing, Charleston, South Carolina.

Chula Vista Star-News
1954 Renovation and extension of the turf club… 9 December:4. Chula Vista, California.

City of Escondido
1987 Municipal Code, Ordinance 87-43: Article 40 Historical Resources, Section 33-794.

1990 Escondido Context Statement. Electronic document, https://www.escondido.org/Data/Sites/1/media/pdfs/Planning/EscondidoContextStatement.pdf, accessed May 7, 2020.

2016 Escondido's Marvelous Mid-Centuries: 1945-1969. Electronic document, https://www.escondido.org/Data/Sites/1/media/pdfs/2016MidCenturyawardsPP.pdf, accessed July 5, 2022.

City of Los Angeles
2021 SurveyLA Los Angeles Historic Resources Survey: Los Angeles Citywide Historic Context Statement. Electronic document, https://planning.lacity.org/odocument/4f67bd39-631a-4f26-9a52-cd5809a66655/LA_Modernism_1919-1980.pdf, accessed June 2, 2022.

City of Olympia
2008 Mid-Twentieth Century Olympia: A Context Statement on Local History and Modern Architecture, 1945-1975. Report on file at the City of Olympia, Olympia, California.

City of San Diego
2007 San Diego Modernism Historic Context Statement. Submitted to the State of California Office of Historic Preservation.

Denny's
2022 Since 1953: Our History. Electronic document, https://www.dennys.com/company, accessed July 5, 2022.

Dignity Memorial
2011 Obituary: Ellwood A. Titcomb. Electronic document, https://www.dignitymemorial.com/obituaries/orange-city-fl/ellwood-titcomb-4924147, accessed July 5, 2022.

Edward Cella Art & Architecture
2022 Louis Armét, Eldon Davis (American, B. 1914 / 1917). Electronic document, https://www.edwardcella.com/artists/49-louis-armet%2C-eldon-davis/, accessed July 5, 2022.

Escondido History Center
2019 Commerce. Electronic document, https://www.escondidohistory.org/commerce, accessed August 6, 2020.

Fark, Bill
2016 A Brief History of Escondido. Escondido History Center. Electronic document, http://escondidohistory.com/#!history, accessed October 27, 2016.

Fox, Robin and Carol Rea
2020 *Escondido: A Pictorial History of the Hidden Valley.* HPNbooks/Ledge Media, Jackson, Wyoming.

Getty Research Institute
2013 Victor Newlove on Googie Architecture (Modern Architecture in Los Angeles). Electronic document, https://www.youtube.com/watch?v=bxQY8b4FGBc, accessed July 5, 2022.

Hess, Alan
2004 *Googie Redux: Ultramodern Roadside Architecture.* Chronicle Books.

Jeffery, J.B. and C.E. Ferguson
1912 San Diego County Back Country. *The Overland Monthly* January-June:280–281. The Overland Monthly Co., San Francisco, California.

Los Angeles Times
1967 The News of the Day: Southland. 23 April:2. Escondido, California.

Mock, Karen
1988 Table Talk. *Times-Advocate* 1 September:90. Escondido, California.

Moyer, Cecil C.
1969 *Historic Ranchos of San Diego.* Edited by Richard F. Pourade (4 Volumes). University of California Press, Berkeley.

National City Star-News

1954 Renovation and extension of the turf club… 9 December:16. National City, California.

New York Times

1988 Diner Chain Has to Buy Locks for First Holiday Closing. 20 December. New York City, New York.

Price, Harry J.

2017 Historic Building Evaluation of the Palm Tree Motor Lofge and the Wagon Wheel Restaurant at 425 West Mission Avenue in Escondido, California. RECON. Electronic document, https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/CityCentre/AppendixB-HistoricBuildingEvaluation.pdf, accessed July 5, 2022.

Rancho Bernardo Historical Society

2020 The History of Rancho Bernardo. Electronic document, https://rbhistory.org/about-us/history/, accessed February 23, 2021.

San Diego Union

1960 Contract OKd For Center In Clairemont. 13 October:a34. San Diego, California.

1963 Open House At Del Mar Apartment Project Today. 12 May:f17. San Diego, California.

Stropes, J.R.K. and Brian F. Smith

2020 Historic Structure Assessment for 1405 South Escondido Boulevard, Escondido, California (APN 236-172-15). Brian F. Smith and Associates, Inc. Submitted to the City of Escondido, Escondido, California.

Tan, Siang S. And Michael P. Kennedy

1999 Geologic Map of the Escondido 7.5' Quadrangle, San Diego, California: A Digital Database. California Department of Conservation Division of Mines and Geology: 1 sheet (scale 1:24,000).

Times-Advocate

1963a Mount Vernon Motel Built By Father And Sons. 7 October:26. Escondido, California.

1963b The President of Denny's chain of coffee shops … 4 June:1. Escondido, California.

1963c Mexican Legislators Due Here. 20 August:1. Escondido, California.

1964 Coffee Award Is Given To Denny's. 11 August:16. Escondido, California.

1965 Business Reports. 16 December:7. Escondido, California.

1970 Restaurant chain opens new outlet. 12 July:23. Escondido, California.

1974 Escondido businessman, wife dead in plane crash. 26 August:1. Escondido, California.

1977 North County Deaths. 11 May:36. Escondido, California.

1982a Denny's Contest Advertisement. 18 November:72. Escondido, California.

1982b Family restaurant due in old Denny's building. 22 November:15. Escondido, California.

1983a Fictitious Business Name Statement, File No. 83-11233. 26 June:8. Escondido, California.

1983b Second runner-up. 29 May:33. Escondido, California.

1983c Fictitious Business Name Statement, File No. 83-25596. 26 December:22. Escondido, California.

1986 Escondido Café Advertisement. 21 December:68. Escondido, California.

1993 Cheers contest. 21 May:15. Escondido, California.

Titcomb, Kent

2017 Why I Choose to Fly a Twin Commander. Electronic document, https://flightlevelsonline.com/2017/winter-2017/why-i-choose-to-fly-a-twin-commander/, accessed July 5, 2022.

Whetstone, Margie L.

1963 The Escondido Story. In *The Journal of San Diego History* 9(3). San Diego Historical Society Quarterly, San Diego, California.

VIII. APPENDICES

Appendix A: Site Record Form
Appendix B: Building Development Information
Appendix C: Ownership and Occupant Information
Appendix D: Maps
Appendix E: Preparers' Qualifications

APPENDIX A

Site Record Form

State of California – The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI #**

PRIMARY RECORD

Trinomial
NRHP Status Code 5S3; 3CS

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #:** 503 West Mission Avenue

P1. Other Identifier:

***P2. Location:** ■ **Not for Publication** ☐ **Unrestricted** ***a. County:** San Diego

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *Valley Center, California* **Date:** 1996, digital map **T** 12 S; **R** 2 W Projected; M.D. **B.M.** San Bernardino

c. Address: 503 West Mission Avenue City: Escondido Zip: 92025

d. UTM: Zone: mE/ mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) The building is located on Assessor's Parcel Number (APN) 229-171-29 and includes "That portion of Lot 15, in Block 148 of Escondido, in the City of Escondido, County of San Diego, State of California, according to Map thereof No. 349 by O. N. Sanford filed in the office of the County Recorder of San Diego County, July 10, 1886." The building is located southwest of the intersection of West Mission Avenue and Centre City Parkway in the city of Escondido, San Diego County, California.

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

The building is rectangular in plan and glass, stucco, and stone are used as the principal building materials. The building has a reinforced concrete foundation and metal frame. The design is dominated by a boomerang roofline, which shelters the building's northeast, southeast, and southwest façades, which are visible from the road. The building record indicates that the original roof cover was built-up; however, this was replaced by insulated metal sheets at an unknown date. The main entrance is located on the southeastern portion of the northeast façade and features an aluminum-framed glass door. Two floor-to-ceiling window units are located on both sides of the entrance door. The northwest portion of this façade features large window units located above a short, stucco-clad wall. A random rubble masonry wall separates the southeast and northwest portions of the northeast façade. This masonry wall has a trapezoid shape with a thicker base and a narrower upper part. There is no direct access to the main entrance on the northeast façade due to the curved form of the northern edge of the lot as it rounds the sharp turn from West Mission Avenue to Centre City Parkway. The access to this entrance is provided indirectly through the space behind the structure that is used for parking. A walkway that runs along the northwest and northeast façades also provides access to the main entrance.

The northwest and southeast façades of the 503 West Mission Avenue building are similar due to the boomerang view of the roof. While both the northwest and southeast façades feature large windows placed above stucco-clad walls, the northwest façade differs as it features a metal door with a small concrete ramp in front. Both façades exhibit large signs on the boomerang-shaped ends of the roof. The southwest ends of both façades include random rubble masonry walls. While the masonry wall on the southeast façade extends southwest and envelopes the southern corner of the building, the one on the northwest façade is much narrower and separates the front part of the building from the recessed back section. All of the windows are aluminum-framed.

P5a. Photo or Drawing

***P3b. Resource Attributes:** (List attributes and codes)
HP2: Commercial property

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

P5b. Description of Photo: (View, date, accession #)
Overview of the building, facing northwest, June 2022

***P6. Date Constructed/Age and Sources:**
1962/Notice of Completion
■Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Michelle Bennett
13502 Hamburger Lane
Baldwin Park, California 91706

***P8. Recorded by:** (Name, affiliation, and address)
Irem Oz
Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064

***P9. Date Recorded:** 7/7/22

***P10. Survey Type:** (Describe) Historic structure assessment

***P11. Report Citation:** (Cite survey report and other sources, or enter "none") Oz, Irem and Brian F. Smith, 2022, Historic Structure Assessment for 503 West Mission Avenue, Brian F. Smith and Associates, Inc., report in progress

***Attachments:** ☐NONE ■Location Map ☐Sketch Map ■Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

***Recorded by:** Irem Oz ***Date:** 7/7/22 ■ Continuation ☐ Update

The rear of the building features a recessed projection that is a structural building element and an enclosure that provides a storage/service area. The recessed projection has a rectangular footprint, is clad in stucco, and features a service door on its southwest façade. The service area is enclosed by a brick wall and features wood access gates. The building record indicate that this enclosure was added to the building in 1962 after the initial construction. The property includes an outdoor area on its northeast side. This landscaped area is enclosed by a short metal fence and includes trees, plants, bushes, and a large sign.

Modifications and alterations to the original building include:

- Service area enclosure added to the southwest part of the building in 1962
- Remodel that primarily included replacing existing insulated metal panels in 1983
- Building painted blue and white and the signage on the northwest and southeast boomerang ends of the roof added between 2008 and 2009
- Building painted white and green, northwest and southeast signage and the free-standing sign changed between 2012 and 2014
- Built-up roof cover replaced with metal sheets at an unknown date

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code**: 5S3; 3CS

***Resource Name or #:** 503 West Mission Avenue

B1. Historic Name: Denny's
B2. Common Name: N/A
B3. Original Use: Commercial restaurant
B4. Present Use: Commercial restaurant
***B5. Architectural Style:** Googie
***B6. Construction History:** (Construction date, alterations, and date of alterations) Constructed in **1962;** addition of the enclosure to the southwest part of the building in **1962;** replacement of existing insulated metal panels in **1983;** painting of the building to a blue and white color and addition of the signage on the northwest and southeast boomerang ends of the roof **between 2008 and 2009;** painting of the building to a white and green color, changing the signage on the northwest and southeast boomerang ends of the roof, and changing the free-standing sign northeast to the building **between 2012 and 2014;** replacement of the built-up roof cover with metal sheets at an **unknown date.**
***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** N/A **Original Location:** Same
***B8. Related Features:** None
B9a. Architect: Unknown
b. Builder: R.E. Mauer Construction
***B10. Significance:** Architectural design **Theme:** Googie-style architecture **Area:** Escondido
Period of Significance: 1962 **Property Type:** Commercial **Applicable Criteria:** CRHR Criterion 3/City of Escondido Register Criteria 2 and 5
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The historic building identified within the 503 West Mission Avenue property includes a single-story restaurant structure and its associated landscape and hardscape. According to the Notice of Completion, the building was constructed in 1962. The restaurant building has not been previously evaluated. The 503 West Mission Avenue building was constructed in the Googie style, which emerged in southern California and started to gain popularity after World War II, when Americans became more interested in technology and the space age. With the exploding car culture, the Googie style became popular, especially in commercial construction (City of San Diego 2007). The City of San Diego identifies the period of significance for this style as between 1950 and 1965 (City of San Diego 2007). This architecture incorporates sharp angles, boomerang or flying saucer shapes, large expanses of glass, exposed structural steel elements, and dramatic roof overhangs (City of San Diego 2007). The Primary character-defining features of this style are abstract, angular or curved shapes, expressive roof forms (flat, gabled, upswept, butterfly, parabolic, boomerang, or folded), large windows (aluminum-framed), and prominent signage (neon or lighted). The Secondary character-defining features include a variety of exterior finishes including stucco, concrete block, brick, stone, plastic and wood siding, bright colors, screen block and shadow block accents, buildings as billboards, and asymmetrical façades.

The 503 West Mission Avenue building was constructed within the period of significance for the Googie style in 1962 and currently features three out of four Primary character-defining features and two out of five Secondary character-defining features of the style. Since the building has not undergone many alterations since its original construction, it still retains four out of seven aspects of original integrity. The San Diego Modernism Historic Context Statement mentions that due to their commercial uses, many examples of the Googie style involved frequent tenant changes and related tenant remodels (City of San Diego). For this reason, good examples of this style that retain a high degree of integrity are rare. In order for buildings to be eligible for designation, Googie-style buildings should retain Primary character-defining features of the style, but the retention of the Secondary character-defining features is not critical as it is common for buildings to undergo tenant improvements. Since the 503 West Mission Avenue building was constructed over 50 years ago, retains a high degree of integrity, and features a majority of the Primary character-defining features, it is eligible for designation under California Register of Historical Resources Criterion 3 and City of Escondido Local Register of Historic Places Criteria 2 and 5.

B11. Additional Resource Attributes (List attributes and codes): None
***B12. References:** See Oz and Smith (2022)
B13. Remarks: None
***B14. Evaluator:** Irem Oz
***Date of Evaluation:** 7/7/22

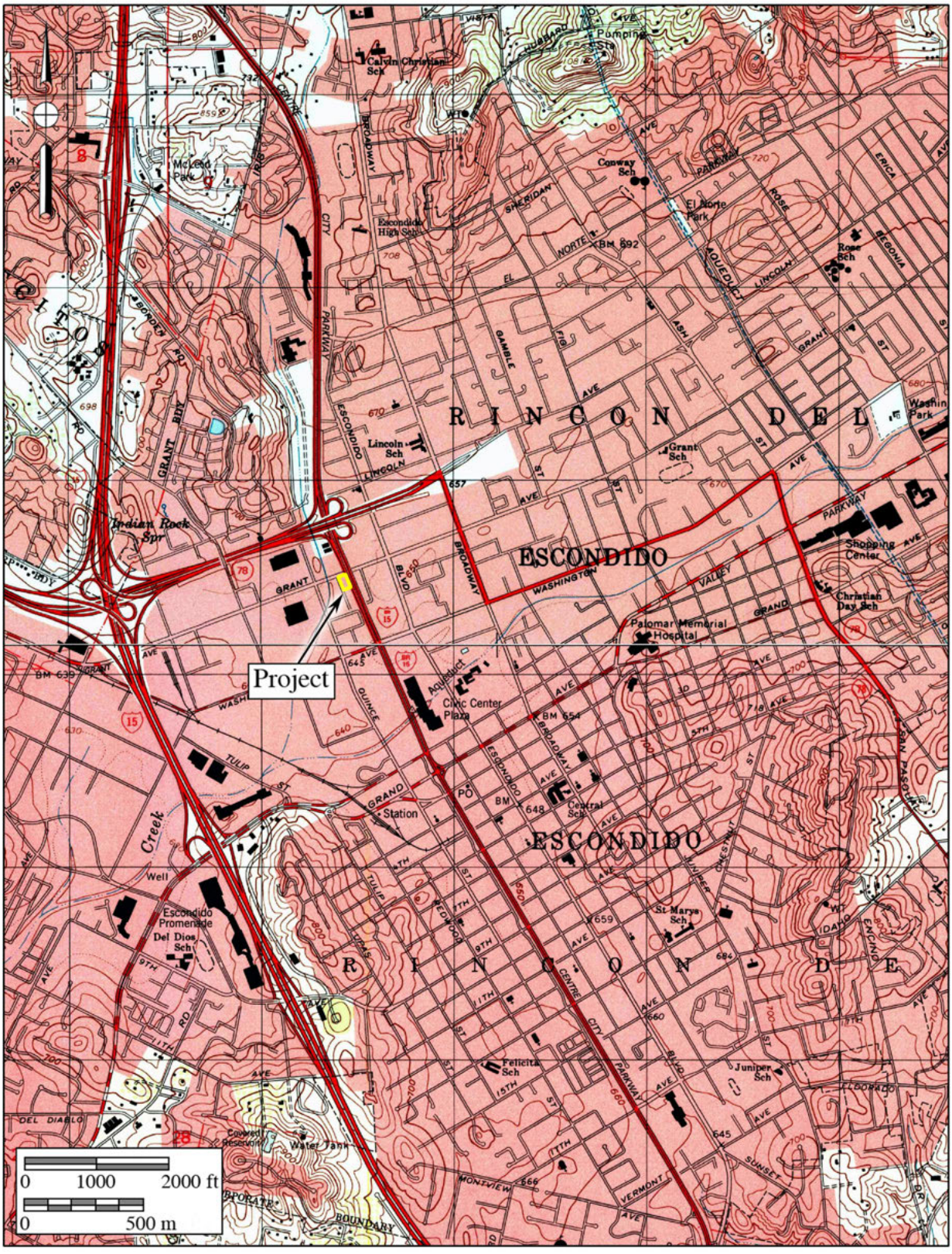
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI #
Trinomial

***Resource Name or #:** 503 West Mission Avenue

***Map Name:** USGS *Valley Center* and *Escondido, California* quadrangles (7.5-minute series) ***Scale:** 1:24,000 ***Date of Map: NA (Digital)**



*Required information

APPENDIX B

Building Development Information

COMMERCIAL-INDUSTRIAL BUILDING RECORD

Account No. 64C 5190 (R-3689) 2291712900

ASSESSOR, SAN DIEGO COUNTY

Parcel No. 229-171-XX-29

NAME ~~Denny's Coffee Shop~~ EL GALEON COFFEE SHOP ADDRESS 503 (E.) MISSION (GRAND) AVE. WEST ESCONDIDO SHEET 1 OF 2

CLASS & SHAPE	FRAME	TRUSSES	EXT. FINISH	ROOF	LIGHTING	FRONT
D5.0	Wood	Light / Heavy	F L R B	x Flat	x Standard	Type
Stories 1	Concrete Reinf.	Wood / Steel	x x x Stucco	Shed	Below Standard	
Bsmt Mezz	x Steel	' Span Spaced '	Metal	Arch		
USE / DESIGN	No Frame	FLOORS	x Veneer Stone	x Gable	FIXTURES	x Glass in
Garage	F L R B WALLS 1/4	x Concrete "	Wood	Wood	Fluorescent	✓ Metal / Wood
Store	x x x x Wood	Wood	x x Glass	Metal	✓ Incandescent	2 Glass Doors
Office	Brick "	Sub-Floor	Unfinished	Concrete		Auto / No.
Factory	Conc.Blk "	Elevation			Quality G+	x Bulkhead Stone Trim
Warehouse	Metal			ROOF COVER	Quantity G.	Back Trim
x Restaurant	Tilt Up	FOUNDATION	WINDOWS	Composition	PLUMBING	Lighting
	Pilasters	x Concrete Reinf.	x Metal	x Built-Up	56 + 2 FLDRS. Fixtures	Drop Ceiling
	Party	Masonry	Wood	Metal	Quality G	Disp.Platform
					Sprinklers	Quality G-E

INTERIOR CONSTRUCTION

NUMBER OF ROOMS						MATERIALS					
Desc.	B	M	1	2	3	FLOORS	GD	WALLS	GD	CEILING	GD
All DINING			x			TERR.	G.	GLASS STONE	G.	JOINTS T.	A+
REARREA			x			COLORED CONC	G.	PL+ PAT	G.	PL+ PAT	A+
Office											
Lobby											
Hall											
Bath											
Rest room			2			TERR	G	TILE	G	TILE	G.

BR *0413*

CONSTRUCTION RECORD

Permit No.	Permit For	Amount	Date	EFFEC. YEAR	APPR. YEAR	NORMAL % GOOD Age	Rem. Life	Table	%	RATING (E,G,A,F,P) Cond.	Arch. Attr.	Func. Plan	Ade-quacy	Wkm-ship
4178	COFFEE SHOP	16000	1-8-62		1962	0	45	OR 45	100	G	G	A	A	G.
6261	TRASH ENCL.	900	12/6/77	1962	1963									
28441	Remodel	13000	11-24-82	1962	1964	2	43	OR 45	99	G	G	A	—	G.
				1962	1968	6	34	OR 40	93	A+				
					1978	16	24	40	73					

SPECIAL FEATURES

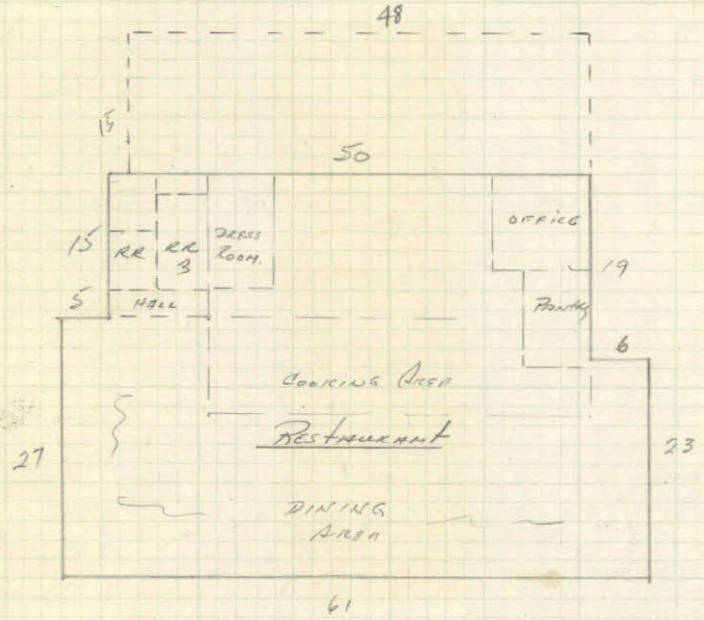
ITEM	NO.-CAPACITY	MATERIAL OR TYPE	QUAL.
Air Cond.	AC & HTG.	EST 10 TONS.	
Doors			
Sky-Lites			
Elevator			

Appraiser and Date

UNIT	AREA/ UNIT	4-5-62 UNIT COST	4-5-62 COST	9-11-62 UNIT COST	9-11-62 COST	4-23-63 UNIT COST	4-23-63 COST	J. TIPTON 11-6-67 UNIT COST	J. TIPTON 11-6-67 COST	W. HUNT 12-28-78 UNIT COST	W. HUNT 12-28-78 COST	Bmy 4-83 UNIT COST	Bmy 4-83 COST	UNIT COST	COST
Restaurant	2373	FHA	3000	15.45	36663	16.10	38205	18.70	44375	45.00	106785				
AC.					3750		5000		5000						
FLAT-ASP.	± 1500			0.15	2250		2250	.20	3000	40	6000				
83 Block-up Conc Block enclosure	720												+1500		
TOTAL		Unf	3000		42663		45455		52375		112785				
NORMAL % GOOD		unf			100		.99		93		.73				
R.C.L.N.D.		Unf.	3000.	✓	42663		45000	~	48709		82333				
CHECKED															
REVIEWED															

A-21 (1-58)

Scale: 1" = 20 Ft.



MISCELLANEOUS STRUCTURES

STRUCTURE	FOUND.	FLOOR	CONST.	EXT.	ROOF	DIM.	AREA/UNIT
enclosure.	conc	conc	8" conc BLOCK	& 3 wood gates		6'hi	720+

COMPUTATIONS

AREA: 61 x 23 = 1403
55 x 4 = 220
50 x 15 = 750
2373

PER = 26
Ht = ± 14'

1968: TYPE III c 6.5
C.F. = 1870

B.F.	=	10.90
PART	=	1.00
ELEC	=	1.50
PLMG.	=	.23
TERR.	=	.40
OVERHNG	=	.62
FRONT	=	.80
		15.45

1964

B.F	=	10.90
PART	=	1.00
ELEC	=	1.50
PLMG	=	.23
TERR.	=	.40
OHNG	=	.95
FRONT	=	1.10
		16.08

REMARKS:
(1) '83 Remodel - mostly replacement of existing imps. 4-83 Insp.

...d by T...e Insurance ... accommodation only. It ... as to its execution or as ... affect upon the title.
RECORDING REQUESTED BY

WHEN RECORDED MAIL TO
SAN DIEGO FEDERAL SAVINGS & LOAN ASSOCIATION
P. O. Box 2592 1265 Sixth Avenue
... California

ORDER NO
ESCROW NO

169 MM 28746

FILE/PAGE NO. 93058
RECORDED AT REQUEST OF
TITLE INSURANCE AND TRUST COMPANY

MAY 31 1962
AT 16 MINUTES PAST 3
SERIES 3 BOOK 1962
OFFICIAL RECORDS
SAN DIEGO COUNTY, CALIFORNIA
A. S. GRAY, COUNTY RECORDER

12491

SPACE ABOVE THIS LINE FOR RECORDER'S USE

595 12-59

Loan No. 26501

NOTICE OF COMPLETION (BEFORE EXECUTION, REFER TO REQUIREMENTS STATED ON REVERSE SIDE)

THIS FORM FURNISHED COURTESY OF UNION TITLE INSURANCE COMPANY

Notice is hereby given that:

1. The undersigned is owner of the interest or estate stated below in the property hereinafter described.
2. The FULL NAME of the undersigned is Ralph Petrany and Nona E. Petrany and James Tweddell and Fotine Tweddell dba MT. VERNON MOTELS, a co-partnership
3. The FULL ADDRESS of the undersigned is 10721 Claussen Street, Garden Grove, California
4. The NATURE OF THE TITLE of the undersigned is: In fee.
(IF OTHER THAN FEE, STRIKE "IN FEE" AND INSERT, FOR EXAMPLE, "PURCHASER UNDER CONTRACT OF PURCHASE" OR "LESSEE")
5. The FULL NAMES and FULL ADDRESSES OF ALL PERSONS, if any, who hold title with the undersigned as joint tenants or as tenants in common are
NAMES ADDRESSES
6. The names of the PREDECESSORS in interest of the undersigned, if the property was transferred subsequent to the commencement of the work of improvement herein referred to are: (If no transfer made, insert "none".)
NAMES ADDRESSES
7. A work of improvement on the property hereinafter described was COMPLETED on May 23, 1962
8. The name of the CONTRACTOR, if any, for such work of improvement was: (If no contractor for work of improvement as a whole, insert "none".)
R. E. Maurer Construction, Inc.
9. The property on which said work of improvement was completed is in the City of Escondido
County of San Diego, State of California, and is described as follows:

PARCEL 1:

That portion of Lot 15, in Block 148, of Escondido, in the City of Escondido, County of San Diego, State of California, according to Map thereof No. 349 by O. N. Sanford, filed in the Office of the County Recorder of San Diego County, July 10, 1886, described as follows:

Beginning at the most Southerly corner of said Lot 15; thence North 69° 43' 56" East along the Southeasterly line of said Lot a distance of 221.61 feet to the intersection with a line drawn parallel with and distant 80 feet Westerly at right angles from the center line of the Department of Public Works Survey Road XI-SD 77-B,C as said center line is described in Deed to the State of California, recorded May 14, 1948 in Book 2797, page 217 of Official Records; thence along said parallel line North 23° 23' West 573.41 feet; thence from a tangent which bears North 52° 32' 46" West along a curve to the left with a radius of 115 feet through an angle of 34° 58' 59" a distance of 70.22 feet to a line parallel with and distant 10 feet South of the North line of said Lot 15; thence along said last mentioned line South 69° 39' 30" West 138.67 feet to the Westerly line of said Lot 15; thence South 20° 22' 42" East along the Southwesterly line of said Lot 15 to the point of beginning.

12501

RCM

PARCEL 2:

Easement and right of way to lay, construct, maintain, operate and repair a 6 inch sewer line for sewer disposal over the Southeasterly 14 feet of Lot 16, Block 143 of Escondido, in the City of Escondido, County of San Diego, State of California, according to Map thereof No. 349, filed in the Office of the County Recorder of San Diego County, July 10, 1886.

...Insurance
...ation only. It
...as to its execution or as
...ct upon the title.
RECORDING REQUESTED BY

WHEN RECORDED MAIL TO
SAN DIEGO FEDERAL SAVINGS & LOAN ASSOCIATION
P.O. Box 2592 1265 Sixth Avenue
... California

ORDER NO
ESCROW NO

FILE/PAGE NO.....
RECORDED AT REQUEST OF
TITLE INSURANCE AND TRUST COMPANY

MAY 31 1962
AT 16 MINUTES PAST 3
SERIES 3 BOOK 1962
OFFICIAL RECORDS
SAN DIEGO COUNTY CALIFORNIA
A. S. GRAY, COUNTY RECORDER

SPACE ABOVE THIS LINE FOR RECORDER'S USE

01

NO

TITLE INSURANCE COMPANY

1
2
3
4
5
6
7.
8.
9.

...id Fotine
...ommon are
...of the work of
...insert none")

10. The street address of said property is (If no street address has been assigned, insert "none".)
U. S. 395 at State 78

Dated May 31, 1962

James Tweddell
(SIGNATURE OF OWNER NAMED IN PARAGRAPH 2 ALSO SIGN VERIFICATION AT RIGHT AT X)

SUBSCRIBED AND SWORN TO BEFORE ME
on , 19
(SEAL)
(NOTARY'S SIGNATURE)
NOTARY'S NAME
(TYPE OR PRINT)
NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE

532 P Partnership (Verification)

State of California } ss.
County of San Diego }

(VERIFICATION)

STATE OF CALIFORNIA } ss.
COUNTY OF San Diego

The undersigned, being duly sworn, says: That he is one of the partners of the partnership that executed the foregoing notice as owner of the aforesaid estate or interest in the land described in the foregoing notice; that he makes this verification on behalf of said partnership, that he has read said notice and knows the contents thereof, and that the facts therein stated are true.

James Tweddell

Subscribed and Sworn to before me this
31st day of May 1962

Hattie R. Dickinson
Notary Public in and for said County and State

APPENDIX C

Ownership and Occupant Information

City Directory
503 West Mission Avenue

Year	Name
1960	Address Not Listed
1961	
1962	
1963	
1964	
1965	Denny's Coffee Shop
1966	
1967	Book Not Available
1968	
1969	
1970	
1971	
1972	
1973	Denny's Coffee Shop
1974	
1975	
1976	Dennys Restaurant
1977	
1978	
1979	
1980	Book Not Available
1981	Dennys Restaurant
1982	
1983	Burger Stop Fmly
1984	
1985	Family Stop Rest
1986	
1987	Book Not Available
1988	Escondo Cafe
1989	XXX
1990	Johnny RS Fmly Rest
1991	Cheers Family Rest
1992	
1993	
1994	
1995	
1996	
1997	
1998	
1999	
2000	

Year	Name
2001	El Galeon Mexican Restaurant
2002	
2003	
2004	
2005	
2006	
2007	
2008	
2009	
2010	Book Not Available
2011	El Galeon Mexican Restaurant
2012	XXX
2013	Pho Truc Anh
2014	
2015	
2016	
2017	
2018	
2019-2020	Address Not Listed
2021	

120 74912

RECORDING REQUESTED BY

WHEN RECORDED MAIL TO

Hardy and Williams
9656 Garden Grove Blvd.
Garden Grove, California

FILE/PAGE No. 65098
RECORDED REQUEST OF
TITLE INSURANCE & TRUST CO.
APR 17 9:00 AM '62
SERIES 3 BOOK 1962
OFFICIAL RECORDS
SAN DIEGO COUNTY, CALIF.
A. S. GRAY, RECORDER
2.80
2

SPACE ABOVE THIS LINE FOR RECORDER

AFFIX I.R.S. $ 46.75 IN THIS SPACE

Grant Deed

THIS FORM FURNISHED BY FARMERS & MERCHANTS BANK

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
George P. Timmons and Anna M. Timmons, husband and wife, and Ralph Petreny and Mona E. Petreny, husband and wife, and James Tweddell and Fotine Tweddell, husband and wife
hereby GRANT(S) to

Mt Vernon Motel, Inc., a California Corporation.

the following described real property in the county of San Diego, state of California:

PARCEL 1:
That portion of Lot 15, in Block 148 of Escondido, in the City of Escondido, County of San Diego, State of California, according to Map thereof No. 349 by O. N. Sanford, filed in the office of the County Recorder of San Diego County, July 10, 1886, described as follows:

Beginning at the most Southerly corner of said Lot 15; thence North 69° 43' 56" East along the Southeasterly line of said Lot a distance of 221.61 feet to the intersection with a line drawn parallel with and distant 80 feet Westerly at right angles from the center line of the Department of Public Works Survey Road XI-SD 77°EAS as said center line is described in Deed to the State of California, recorded May 14, 1948 in Book 2797, page 217 of Official Records; thence along said parallel line North 23° 23' West 573.41 feet; thence from a tangent which bears North 52° 32' 46" West along a curve to the left with a radius of 115 feet through an angle of 34° 58' 59" a distance of 70.22 feet to a line parallel with and distant 10 feet South of the North line of said Lot 15: thence along said last mentioned line South 69° 39' 30" West 138.87 feet to the Westerly line of said Lot 15; thence South 20° 22' 42" East along the Southwesterly line of said Lot 15 to the point of beginning.

PARCEL 2:
Easement and right of way to lay, construct, maintain, operate and repair a 6 inch sewer line for sewer disposal on the Southeasterly 1½ feet of Lot 16 in Block 148 of Escondido, in the City of Escondido, County of San Diego, State of California, according to Map thereof No. 349 filed in the office of the County Recorder of San Diego County July 10, 1886.

James Tweddell and Fotine Tweddell

STATE OF CALIFORNIA, COUNTY OF San Diego } ss.
On April 16, 1962 before me, the undersigned, a Notary Public in and for said County and State, personally appeared James Tweddell and Fotine Tweddell, known to me to be the person s whose name s are subscribed to the within instrument and acknowledged that they executed the same.
WITNESS my hand and official seal.
(Seal) Bertha D. Meyer
Notary Public in and for said County and State
BERTHA D. MEYER
My Commission Expires July 12, 1965
If executed by a Corporation the Corporation Form of Acknowledgment must be used.

Title Order No.

Escrow No.

Dated: March 12, 1962

George P. Timmons
Anna M. Timmons
Ralph Petreny
Mona E. Petreny
James Tweddell
Fotine Tweddell

STATE OF CALIFORNIA
COUNTY OF Orange } SS.

On March 12, 1962 before me, the undersigned, a Notary Public in and for said County and State, personally appeared George P. Timmons
Anna M. Timmons
Ralph Petreny and Mona E. Petreny
James Tweddell and
Fotine Tweddell known to me to be the person s whose name s are subscribed to the within instrument and acknowledged that they executed the same.

WITNESS my hand and official seal.

(Seal) Bertha D. Meyer
Notary Public in and for said County and State
BERTHA D. MEYER
My Commission Expires July 12, 1964

If executed by a Corporation the Corporation Form of Acknowledgment must be used.

Title Order No.

Escrow No.

APPENDIX D

Maps

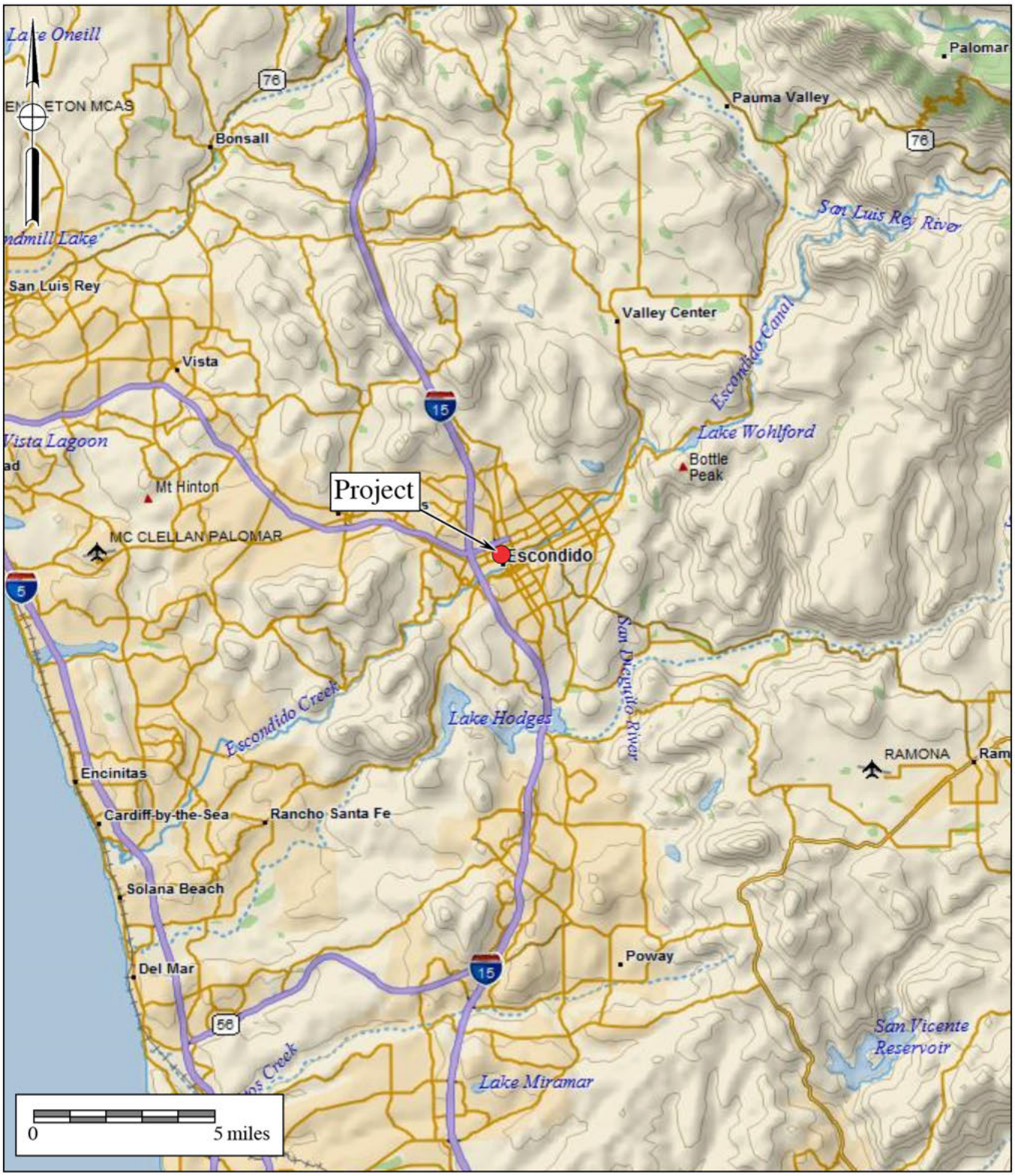


Figure 1

General Location Map

503 West Mission Avenue

DeLorme (1:250,000)

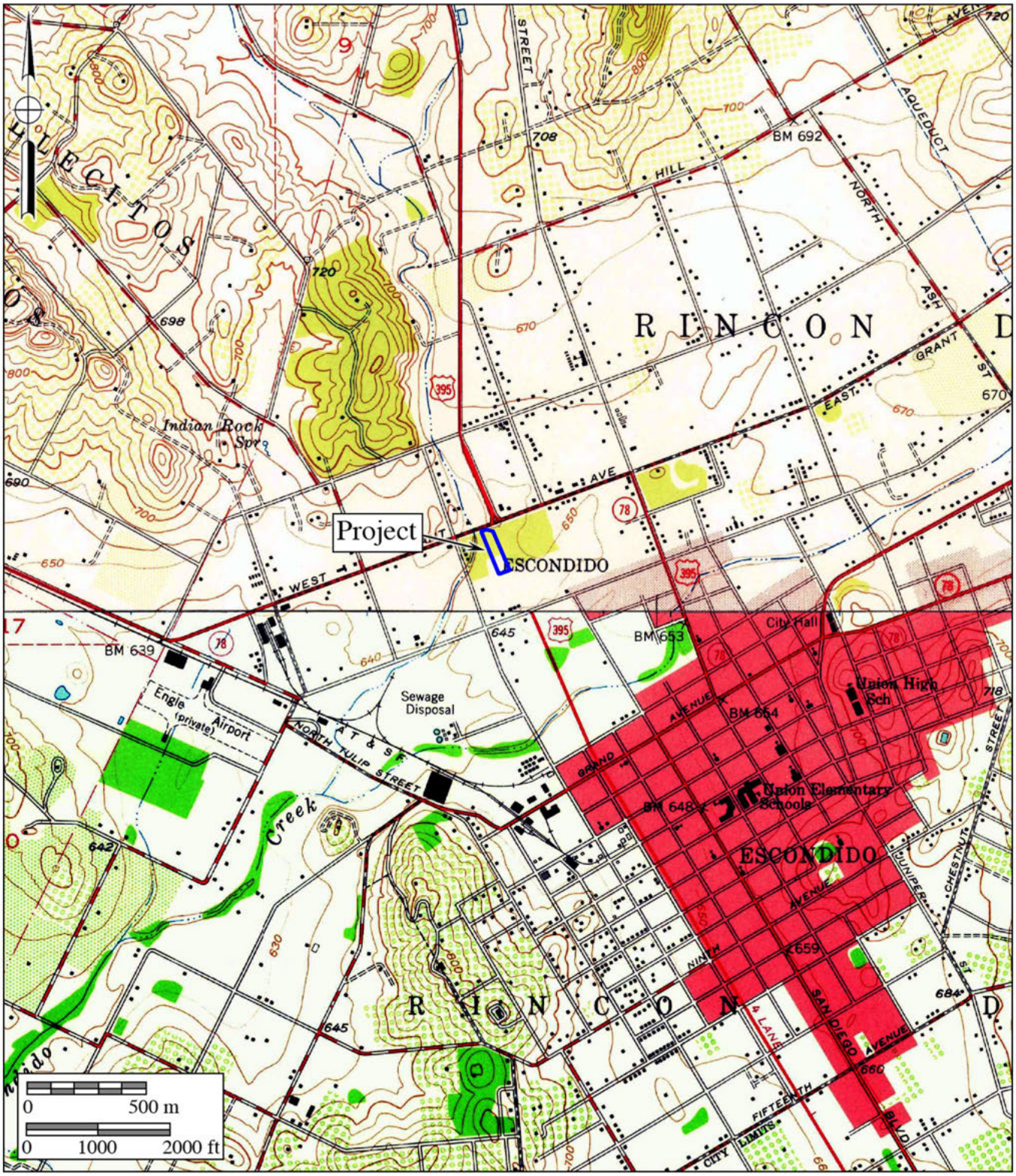


Figure 2

1948 USGS Map

503 West Mission Avenue

USGS *Valley Center* and *Escondido* Quadrangles (7.5-minute series)

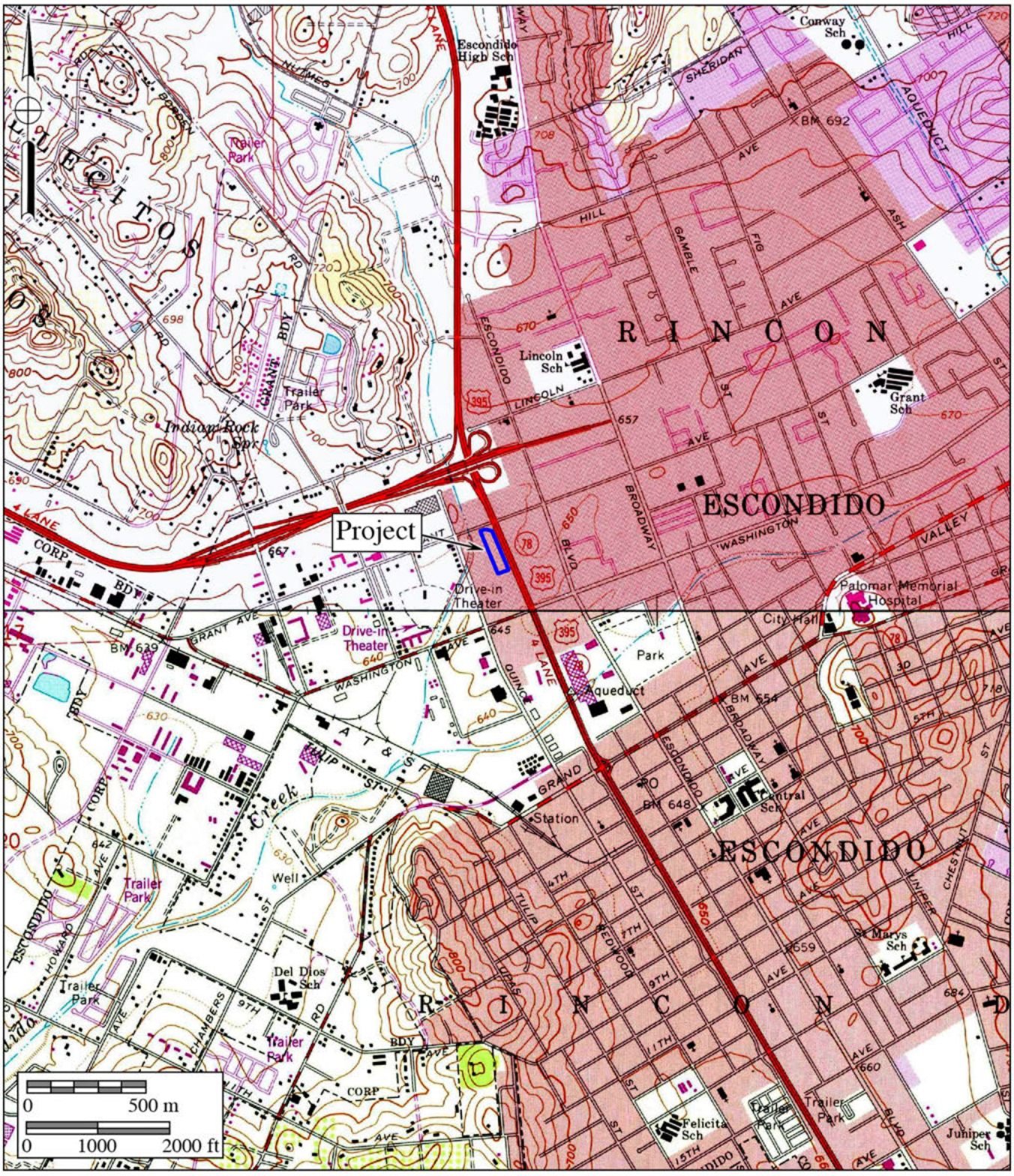


Figure 3

1968 USGS Map

503 West Mission Avenue

USGS *Valley Center* and *Escondido* Quadrangles (7.5-minute series)

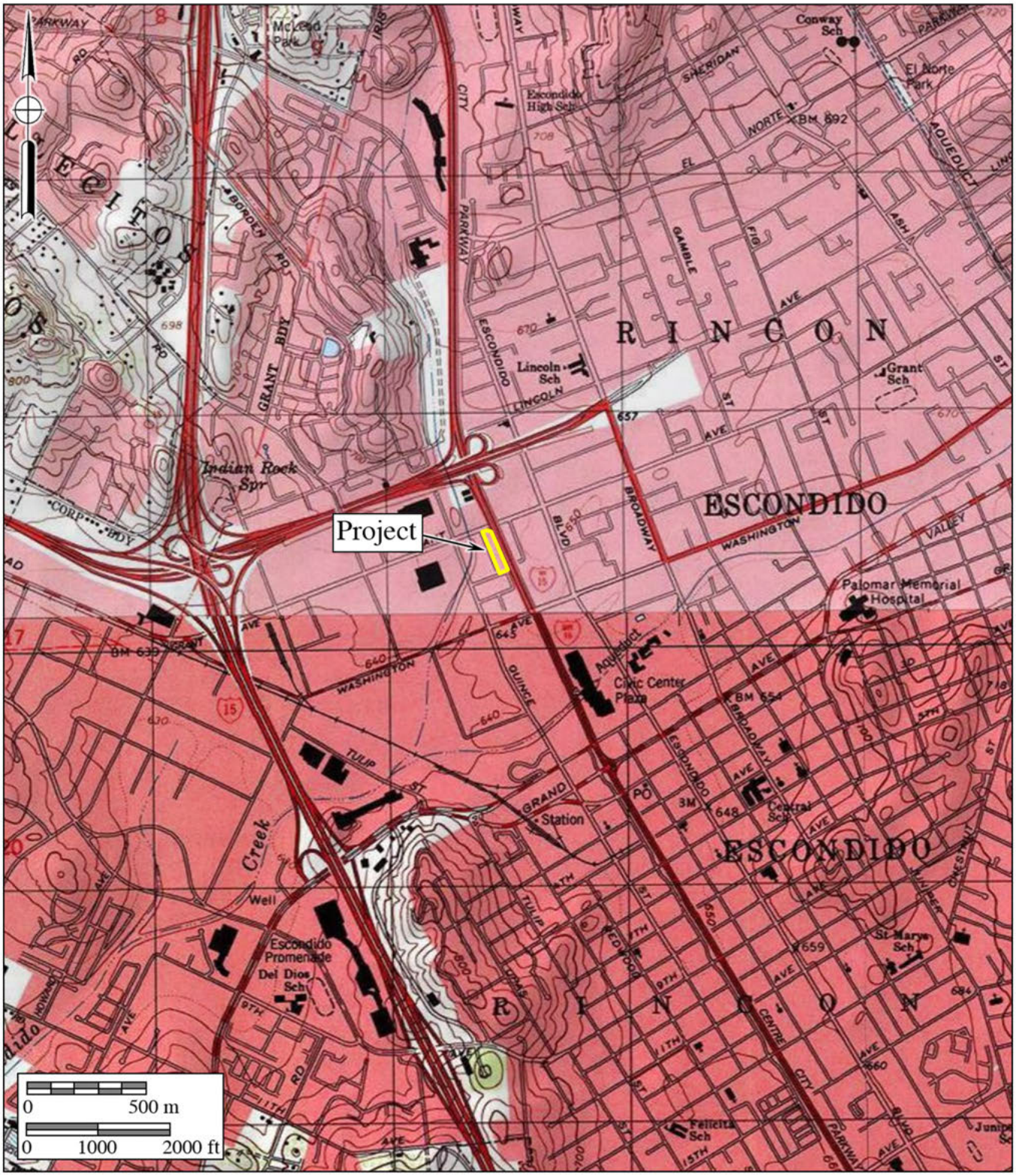


Figure 4

Current USGS Map

503 West Mission Avenue

USGS *Valley Center* and *Escondido* Quadrangles (7.5-minute series)

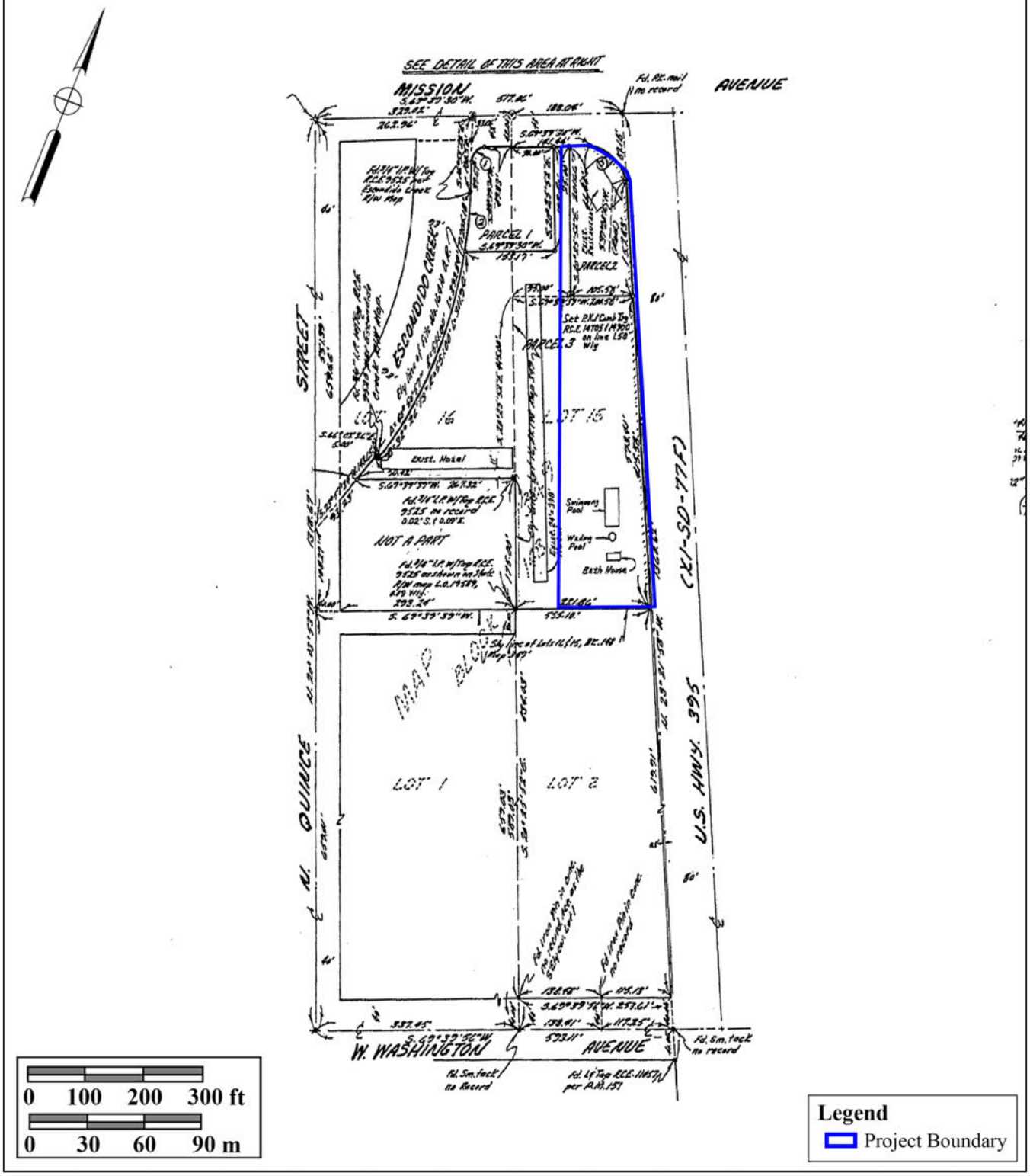


Figure 5

Original Subdivision Map

503 West Mission Avenue

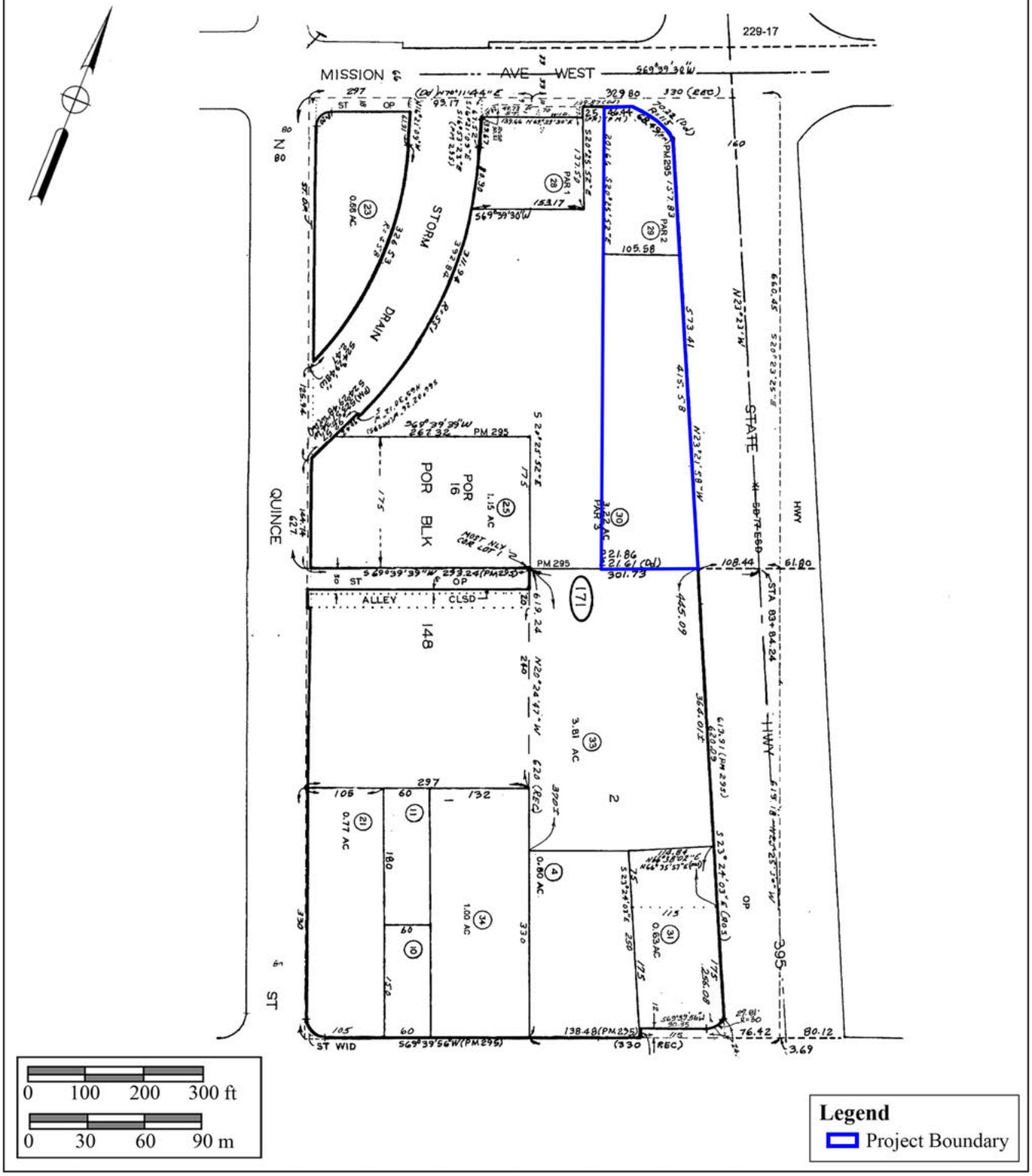


Figure 6

Current Assessor's Parcel Map

503 West Mission Avenue

APPENDIX E

Preparers' Qualifications

Brian F. Smith, MA

Owner, Principal Investigator

Brian F. Smith and Associates, Inc.
14010 Poway Road • Suite A •
Phone: (858) 679-8218 • Fax: (858) 679-9896 • E-Mail: bsmith@bfsa-ca.com

Education

Master of Arts, History, University of San Diego, California **1982**

Bachelor of Arts, History, and Anthropology, University of San Diego, California **1975**

Professional Memberships

Society for California Archaeology

Experience

Principal Investigator **1977–Present**
Brian F. Smith and Associates, Inc. **Poway, California**

Brian F. Smith is the owner and principal historical and archaeological consultant for Brian F. Smith and Associates. Over the past 32 years, he has conducted over 2,500 cultural resource studies in California, Arizona, Nevada, Montana, and Texas. These studies include every possible aspect of archaeology from literature searches and large-scale surveys to intensive data recovery excavations. Reports prepared by Mr. Smith have been submitted to all facets of local, state, and federal review agencies, including the US Army Corps of Engineers, the Bureau of Land Management, the Bureau of Reclamation, the Department of Defense, and the Department of Homeland Security. In addition, Mr. Smith has conducted studies for utility companies (Sempra Energy) and state highway departments (CalTrans).

Professional Accomplishments

These selected major professional accomplishments represent research efforts that have added significantly to the body of knowledge concerning the prehistoric life ways of cultures once present in the southern California area and historic settlement since the late 18th century. Mr. Smith has been principal investigator on the following select projects, except where noted.

Downtown San Diego Mitigation and Monitoring Reporting Programs: Large numbers of downtown San Diego mitigation and monitoring projects, some of which included Broadway Block (2019), 915 Grape Street (2019), 1919 Pacific Highway (2018), Moxy Hotel (2018), Makers Quarter Block D (2017), Ballpark Village (2017), 460 16th Street (2017), Kettner and Ash (2017), Bayside Fire Station (2017), Pinnacle on the Park (2017), IDEA1 (2016), Blue Sky San Diego (2016), Pacific Gate (2016), Pendry Hotel (2015), Cisterra Sempra Office Tower (2014), 15th and Island (2014), Park and G (2014), Comm 22 (2014), 7th and F Street Parking (2013), Ariel Suites (2013), 13th and Marker (2012), Strata (2008), Hotel Indigo (2008), Lofts at 707 10th Avenue Project (2007), Breeza (2007), Bayside at the Embarcadero (2007), Aria (2007), Icon (2007), Vantage Pointe (2007), Aperture (2007), Sapphire Tower (2007), Lofts at 655 Sixth Avenue (2007), Metrowork (2007), The Legend (2006), The Mark (2006), Smart Corner (2006), Lofts at 677 7th Avenue (2005), Aloft on Cortez Hill (2005), Front and Beech Apartments (2003), Bella Via Condominiums (2003), Acqua Vista Residential Tower (2003), Northblock Lofts (2003), Westin Park Place Hotel (2001), Parkloft

Apartment Complex (2001), Renaissance Park (2001), and Laurel Bay Apartments (2001).

1900 and 1912 Spindrift Drive: An extensive data recovery and mitigation monitoring program at the Spindrift Site, an important prehistoric archaeological habitation site stretching across the La Jolla area. The project resulted in the discovery of over 20,000 artifacts and nearly 100,000 grams of bulk faunal remains and marine shell, indicating a substantial occupation area (2013-2014).

San Diego Airport Development Project: An extensive historic assessment of multiple buildings at the San Diego International Airport and included the preparation of Historic American Buildings Survey documentation to preserve significant elements of the airport prior to demolition (2017-2018).

Citracado Parkway Extension: A still-ongoing project in the city of Escondido to mitigate impacts to an important archaeological occupation site. Various archaeological studies have been conducted by BFSA resulting in the identification of a significant cultural deposit within the project area.

Westin Hotel and Timeshare (Grand Pacific Resorts): Data recovery and mitigation monitoring program in the city of Carlsbad consisted of the excavation of 176 one-square-meter archaeological data recovery units which produced thousands of prehistoric artifacts and ecofacts, and resulted in the preservation of a significant prehistoric habitation site. The artifacts recovered from the site presented important new data about the prehistory of the region and Native American occupation in the area (2017).

The Everly Subdivision Project: Data recovery and mitigation monitoring program in the city of El Cajon resulted in the identification of a significant prehistoric occupation site from both the Late Prehistoric and Archaic Periods, as well as producing historic artifacts that correspond to the use of the property since 1886. The project produced an unprecedented quantity of artifacts in comparison to the area encompassed by the site, but lacked characteristics that typically reflect intense occupation, indicating that the site was used intensively for food processing (2014-2015).

Ballpark Village: A mitigation and monitoring program within three city blocks in the East Village area of San Diego resulting in the discovery of a significant historic deposit. Nearly 5,000 historic artifacts and over 500,000 grams of bulk historic building fragments, food waste, and other materials representing an occupation period between 1880 and 1917 were recovered (2015-2017).

Archaeology at the Padres Ballpark: Involved the analysis of historic resources within a seven-block area of the "East Village" area of San Diego, where occupation spanned a period from the 1870s to the 1940s. Over a period of two years, BFSA recovered over 200,000 artifacts and hundreds of pounds of metal, construction debris, unidentified broken glass, and wood. Collectively, the Ballpark Project and the other downtown mitigation and monitoring projects represent the largest historical archaeological program anywhere in the country in the past decade (2000-2007).

4S Ranch Archaeological and Historical Cultural Resources Study: Data recovery program consisted of the excavation of over 2,000 square meters of archaeological deposits that produced over one million artifacts, containing primarily prehistoric materials. The archaeological program at 4S Ranch is the largest archaeological study ever undertaken in the San Diego County area and has produced data that has exceeded expectations regarding the resolution of long-standing research questions and regional prehistoric settlement patterns.

Charles H. Brown Site: Attracted international attention to the discovery of evidence of the antiquity of man in North America. Site located in Mission Valley, in the city of San Diego.

Del Mar Man Site: Study of the now famous Early Man Site in Del Mar, California, for the San Diego Science Foundation and the San Diego Museum of Man, under the direction of Dr. Spencer Rogers and Dr. James R. Moriarty.

Old Town State Park Projects: Consulting Historical Archaeologist. Projects completed in the Old Town State Park involved development of individual lots for commercial enterprises. The projects completed in Old Town include Archaeological and Historical Site Assessment for the Great Wall Cafe (1992), Archaeological Study for the Old Town Commercial Project (1991), and Cultural Resources Site Survey at the Old San Diego Inn (1988).

Site W-20, Del Mar, California: A two-year-long investigation of a major prehistoric site in the Del Mar area of the city of San Diego. This research effort documented the earliest practice of religious/ceremonial activities in San Diego County (circa 6,000 years ago), facilitated the projection of major non-material aspects of the La Jolla Complex, and revealed the pattern of civilization at this site over a continuous period of 5,000 years. The report for the investigation included over 600 pages, with nearly 500,000 words of text, illustrations, maps, and photographs documenting this major study.

City of San Diego Reclaimed Water Distribution System: A cultural resource study of nearly 400 miles of pipeline in the city and county of San Diego.

Master Environmental Assessment Project, City of Poway: Conducted for the City of Poway to produce a complete inventory of all recorded historic and prehistoric properties within the city. The information was used in conjunction with the City's General Plan Update to produce a map matrix of the city showing areas of high, moderate, and low potential for the presence of cultural resources. The effort also included the development of the City's Cultural Resource Guidelines, which were adopted as City policy.

Draft of the City of Carlsbad Historical and Archaeological Guidelines: Contracted by the City of Carlsbad to produce the draft of the City's historical and archaeological guidelines for use by the Planning Department of the City.

The Mid-Bayfront Project for the City of Chula Vista: Involved a large expanse of undeveloped agricultural land situated between the railroad and San Diego Bay in the northwestern portion of the city. The study included the analysis of some potentially historic features and numerous prehistoric

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Audie Murphy Ranch, Riverside County, California: Project manager/director of the investigation of 1,113.4 acres and 43 sites, both prehistoric and historic—included project coordination; direction of field crews; evaluation of sites for significance based on County of Riverside and CEQA guidelines; assessment of cupule, pictograph, and rock shelter sites, co-authoring of cultural resources project report. February- September 2002.

Cultural Resources Evaluation of Sites Within the Proposed Development of the Otay Ranch Village 13 Project, San Diego County, California: Project manager/director of the investigation of 1,947 acres and 76 sites, both prehistoric and historic—included project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of San Diego and CEQA guidelines; co-authoring of cultural resources project report. May-November 2002.

Cultural Resources Survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County: Project manager/director for a survey of 29 individual sites near the U.S./Mexico Border for proposed video surveillance camera locations associated with the San Diego Border barrier Project—project coordination and budgeting; direction of field crews; site identification and recordation; assessment of potential impacts to cultural resources; meeting and coordinating with U.S. Army Corps of Engineers, U.S. Border Patrol, and other government agencies involved; co-authoring of cultural resources project report. January, February, and July 2002.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee West GPA, Riverside County, California: Project manager/director of the investigation of nine sites, both prehistoric and historic—included project coordination and budgeting; direction of field crews; assessment of sites

for significance based on County of Riverside and CEQA guidelines; historic research; co-authoring of cultural resources project report. January-March 2002.

Cultural Resources Survey and Test of Sites Within the Proposed French Valley Specific Plan/EIR, Riverside County, California: Project manager/director of the investigation of two prehistoric and three historic sites—included project coordination and budgeting; survey of project area; Native American consultation; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee Ranch, Riverside County, California: Project manager/director of the investigation of one prehistoric and five historic sites—included project coordination and budgeting; direction of field crews; feature recordation; historic structure assessments; assessment of sites for significance based on CEQA guidelines; historic research; co-authoring of cultural resources project report. February-June 2000.

Salvage Mitigation of a Portion of the San Diego Presidio Identified During Water Pipe Construction for the City of San Diego, California: Project archaeologist/director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Tyrian 3 Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Lamont 5 Project, Pacific Beach, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Reiss Residence Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. March-April 2000.

Salvage Mitigation of a Portion of Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project and Caltrans, Carlsbad, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. December 1999-January 2000.

Survey and Testing of Two Prehistoric Cultural Resources for the Airway Truck Parking Project, Otay Mesa, California: Project archaeologist/director—included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; authoring of cultural resources project report, in prep. December 1999-January 2000.

Cultural Resources Phase I and II Investigations for the Tin Can Hill Segment of the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for a survey and testing of a prehistoric quarry site along the border—NRHP eligibility assessment; project coordination and budgeting; direction of field crews; feature recordation; meeting and coordinating with U.S. Army Corps of Engineers; co-authoring of cultural resources project report. December 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Westview High School Project for the City of San Diego, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. October 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Otay Ranch SPA-One West Project for the City of Chula Vista, California: Project archaeologist/director—included direction of field crews; development of data recovery program; management of artifact collections cataloging and curation; assessment of site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report, in prep. September 1999-January 2000.

Monitoring of Grading for the Herschel Place Project, La Jolla, California: Project archaeologist/ monitor—included monitoring of grading activities associated with the development of a single- dwelling parcel. September 1999.

Survey and Testing of a Historic Resource for the Osterkamp Development Project, Valley Center, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program; budget development; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Testing of a Prehistoric Cultural Resource for the Proposed College Boulevard Alignment Project, Carlsbad, California: Project manager/director —included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report, in prep. July-August 1999.

Survey and Evaluation of Cultural Resources for the Palomar Christian Conference Center Project, Palomar Mountain, California: Project archaeologist—included direction of field crews; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Evaluation of Cultural Resources at the Village 2 High School Site, Otay Ranch, City of Chula Vista, California: Project manager/director —management of artifact collections cataloging and curation; assessment of site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report. July 1999.

Cultural Resources Phase I, II, and III Investigations for the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for the survey, testing, and mitigation of sites along border—supervision of multiple field crews, NRHP eligibility assessments, Native American consultation, contribution to Environmental Assessment document, lithic and marine shell analysis, authoring of cultural resources project report. August 1997- January 2000.

Phase I, II, and II Investigations for the Scripps Poway Parkway East Project, Poway California: Project archaeologist/project director—included recordation and assessment of multicomponent prehistoric and historic sites; direction of Phase II and III investigations; direction of laboratory analyses including prehistoric and historic collections; curation of collections; data synthesis; coauthorship of final cultural resources report. February 1994; March-September 1994; September-December 1995.

Irem Oz, Ph.D.

Architectural Historian
Brian F. Smith and Associates, Inc.
14010 Poway Road • Suite A •
Phone: (858) 484-0915 • Fax: (858) 679-9896 • E-Mail: irem@bfsa-ca.com

Education

Doctor of Philosophy, Architecture **2022**

The Pennsylvania State University, University Park, Pennsylvania

Master of Arts, Archaeology and Art History **2014**

Koc University, Istanbul, Turkey

Bachelor of Science, City and Regional Planning **2010**

Middle East Technical University, Ankara, Turkey

Research Interests

History of Architecture

Historic Structure Significance Eligibility

Cultural Heritage Management

Archival Research

Ethnography

Qualitative Research

Experience

Architectural Historian **March 2022–Present**
Brian F. Smith and Associates, Inc.

Writing, editing, and producing cultural resource reports for both California Environmental Quality Act and National Environmental Policy Act compliance; recording and evaluating historic resources, including historic structure significance eligibility evaluations, Historical Resource Research Reports, Historical Resource Technical Reports, and Historic American Buildings Survey/Historic American Engineering Record preparation.

On-Call Architectural Historian **September 2021–March 2022**
Stell Environmental Enterprises, Inc.

Writing, editing, and producing cultural resource reports; recording and evaluating historic resources, including historic structure significance eligibility evaluations, Historical Resource Research Reports, Historical Resource Technical Reports, and Historic American Buildings Survey/Historic American Engineering Record preparation.

Research and Teaching Assistant/Ph.D. Candidate **August 2015–December 2021**
The Pennsylvania State University

Conducting literature reviews and research on various large-scale urban planning projects; teaching history of architecture and urban planning (ARCH 100) to non-specialist groups of 150+ students per semester; acting as a jury in architectural design studios; developing and conducting comprehensive qualitative research projects with clearly stated scope of work, cultural and scientific significance, and expected outcomes; analyzing and synthesizing spatial and socio-cultural data; producing 3-D models, site plans, section drawings and synthesis plans; preparing interview and focus group protocols, conducting expert, in-depth and walkalong interviews and moderating focus groups; writing grant applications.

Research Assistant **March 2013–November 2014**
UNESCO Mudurnu Cultural Heritage Management Plan Project

Conducting literature reviews and archival research on the history of the town of Mudurnu in Turkey; conducting field surveys and interviews to identify local tangible and intangible cultural heritage; developing a conservation action plan; preparing and digitizing conservation implementation plan proposals

Project Supervisor **January 2000-December 2001**
Taksim Yapi, Istanbul

Conducting literature reviews and archival research on the architectural heritage in Istabul; developing conservation projects for the Molla Çelebi and Hüseyin Ağa Mosques in Istanbul through rigorous archival research and interviews; managing a team of 50 workers and contractors during the implementation of conservation projects; preparing and submitted fiscal reports and memos on project progress.

Scholarly Works

Oz, I. and Staub, A.
2020 The Performance of Gender and Ethnic Identity in the Diaspora Mosque in The Architect and the City. *Proceedings of the ARCC 15th International Conference.*

Oz, I. and Staub, A.
2019 Fieldwork in-between Architecture and Anthropology: The Case of Marxloh, Duisburg in *Future Praxis: Applied Research as a Bridge between the Theory and Praxis. Proceedings of the ARCC 14th International Conference.*

Oz, I. and Staub, A.
2018 The Tale of Two Mosques: Marxloher Merkez Mosque vs. Cologne Central Mosque in Architectural Research for a Global Community. *Proceedings of the EAEE ARCC 13th International Conference.*

Oz, I.
2018 The Tale of Marxloher Merkez Mosque: The Miracle of Duisburg or an Illusion of Miracle?. *Archi-DOCT, 10.*

Oz, I. and Staub, A.
2016 Integration of Turkish Migrants in Germany: A Case Study in Polarities in Architectural Research Addressing Societal Challenges*. Proceedings of the EAAE ARCC 11th International Conference.*

Oz, I.

2015 Spatial Representations of Ideology and Politics in Urban Scene: Keçiören Example. *Journal of Ankara Studies,* 2, 131-158.

2015 Yıldırım, A. E., Nalbant, K., Aydın, B., Güzelsarı, S., Onur, F., Oz, I., …, Moralı, Y. (2014). *Mudurnu Cultural Heritage Area Management Plan, Mudurnu, Turkey: Municipality of Mudurnu*

Technical Reports

Oz, Irem

2022 *History of the Poultry Research Facilities at the Beltsville Agricultural Research Center.* Prepared for Stelle Environmental Enterprises, Inc to be submitted to the United States Army Corps of Engineers and the Bureau of Engravings. Report under revision.

Oz, Irem and Sarah Steinkraus

2022 *Historic Structure Assessment for 401 Avery Street, Walla Walla County, Washington. Parcel Numbers 350724440024, 360730220010* and *360730220029.* Prepared for Gram Northwest, LLC.

2021 *Historic Structure Assessment for 2121 Keene Road, Benton County, Washington. Parcel Number 122983000001009.* Prepared for Gram Northwest, LLC.

Yıldırım, A. E., Nalbant, K., Aydın, B., Güzelsarı, S., Onur, F., Oz, I, Moralı, Y.

2014 *Mudurnu Cultural Heritage Area Management Plan, Mudurnu, Turkey: Municipality of Mudurnu*

APPENDIX B.2

Historic American Buildings Survey

BUILDING DOCUMENTATION

DENNY'S RESTAURANT
(503 W. Mission Ave.)

Location: 503 W. Mission Ave., Escondido, San Diego County, California

Present Owner/ Occupant: 503 West Mission, LLC

Present Use: Vacant

Significance: The 503 W. Mission Ave. building was previously evaluated as eligible for local designation under California Register of Historical Resources (CRHR) Criterion 3 and City of Escondido Local Register of Historic Places (City of Escondido Register) Criteria 2 and 5.[1] The building is significant under CRHR Criterion 1 and City of Escondido Register Criterion 2 for its 1962 Googie-style architecture, examples of which are not common in Escondido. The building is significant under City of Escondido Register Criterion 5 since it is over 50 years of age. The period of significance for the building is 1962, its date of construction.

Historians: Irem Oz, Ph.D., Architectural Historian, Jennifer R.K. Stropes, M.S., Senior Historian, and Elena C. Goralogia, B.A of BFSA Environmental Services, a Perennial Company. Photography by Bob Hill of Photo Dark Room. This report was completed on February 22, 2023.

PART I: HISTORICAL INFORMATION

A. Physical History

1. **Date of erection:** According to the Notice of Completion, construction of the building was completed in 1962 by R.E Mauer Construction, a construction company operating in Chula Vista, San Diego, Clairemont, and National City.[2]

2. **Architects:** The identity of the original architect could not be ascertained.

3. **Original and subsequent owners, occupants, uses:** The 503 W. Mission Ave. property was originally owned by George Perkins and Anna Myrtle Timmons, Ralph and Mona E. Petreny, and James and Fotine Twedell, who were doing business as Mt.

[1] Irem Oz and Brian F. Smith, Historic Structure Assessment for 503 West Mission Avenue, Escondido, California, prepared for the City of Escondido, 2022.
[2] *Chula Vista Star-News,* Renovation and Extension of the Turf Club, Chula Vista, California (December 9, 1954); *San Diego Union,* Contract OKd for Center in Clairemont, San Diego, California (October 13, 1960); *National City Star-News,* Renovation and Extension of the Turf Club, National City, California (December 9, 1954).

Vernon Motels. Historic aerial photographs and archival research indicate that Mt. Vernon Inn was constructed south of 503 W. Mission Ave. between 1960-61 and was listed in city directories for the first time in 1962.[3] The motel and 503 W. Mission Ave building were located within the same building block.

On April 17, 1962, ownership of the 503 West Mission Ave. property passed to Mt. Vernon Motels, Inc. before construction of the building was completed on May 31, 1962, as a Denny's Restaurant. Ownership of the property was once again transferred to Ralph and Mona Petreny and James and Fotine Tweddell as equal shareholder, on June 4, 1962, and to Aircraft Mobilehomes, Inc. on the same day.

George and Anne Timmons were born in 1907 and 1906, respectively, in Kansas.[4] They married and moved to California between 1915-30 and resided in Long Beach.[5] The Long Beach City Directory indicates that George Timmons worked as a driver in 1940, a shipyard worker in 1942, and a painting contractor in 1951 before starting his own business, Timmons Painting and Engineering Company, in 1952.[6] Records indicate that George Timmons passed away in 1978.[7]

Canadians Ralph (Rudolph) and Mona Ellen Petreny moved to Blaine, Washington, in 1952 when Ralph Petreny was 31 and Mona Petreny was 28. Ralph Petreny's naturalization record indicates that they lived in Long Beach in 1952.[8]

Canadians James and Fotine Tweddell also moved to Blaine, Washington, in 1952, when both were 32. That same year, they resided in Garden Grove, California.[9] James Tweddell's border crossing document indicates that he worked as a glass cutter before he moved to the United States[10] and the 1954 directory shows that he continued to work at the Grove Glass Company.[11] James Tweddell passed away in 1985 and Fotine Malinos (after her divorce from Tweddell) passed away in 1993.[12]

Aircraft Mobilehomes, Inc. was established in 1946 in Hartford, Connecticut, by Vernon Titcomb, Sr. and his sons, Vernon Titcomb, Jr. and Ellwood Titcomb.[13] "The family operated an FBO [fixed-base operators] the Brainard Field [Airport] in East Hartford, Connecticut. At the same time the family was operating a war-time trailer

---

[3] Ancestry.com, *U.S., City Directories, 1822-1995* (database online), Lehi, UT, USA: Ancestry.com Operations, Inc., 2011.
[4] Ancestry.com, *1930 United States Federal Census* (database online), Provo, UT, USA: Ancestry.com Operations, Inc., 2002.
[5] Ancestry.com, *1940 United States Federal Census* (database online), Provo, UT, USA: Ancestry.com Operations, Inc., 2012.
[6] Ancestry.com, *1930,* 2002.
[7] Ancestry.com, *California, U.S., Death Index, 1940-1997* (database online), Provo, UT, USA: Ancestry.com Operations, Inc., 2000.
[8] Ancestry.com, *U.S., Naturalization Records, 1840-1957* (database online), Lehi, UT, USA: Ancestry.com Operations, Inc., 2010.
[9] Ancestry.com, *Naturalization,* 2010.
[10] Ancestry.com, *U.S., Border Crossings from Canada to U.S., 1895-1960* (database online), Lehi, UT, USA: Ancestry.com Operations, Inc., 2010.
[11] Ancestry.com, *Directories,* 2011.
[12] Ancestry.com, *U.S., Social Security Death Index, 1935-2014* (database online), Provo, UT, USA: Ancestry.com Operations, Inc., 2014.
[13] *Times-Advocate,* Mount Vernon Motel Built by Father and Sons, Escondido, California (October 7, 1963).

camp for factory workers at Pratt & Whitney."[14] The trailer park was initially named Aircraft Trailer Park, Inc. and changed to Aircraft Mobilehomes, Inc. in the 1960s, Amicorp, Inc. in the 1980s, and finally Amicorp Enterprises, Inc. in 2003.[15] In 1962, they expanded operations by purchasing the land where Mt. Vernon Inn and the Denny's Restaurant (at 503 W. Mission Ave.) were located and they built Mount Vernon Apartments, a luxury living apartment complex, on the lot south of the motel and restaurant.[16] The apartment complex is still extant and operates under the name "Quince Park Apartment."

Ellwood, Vernon Jr., and Vernon Sr. Titcomb were all licensed pilots.[17] Vernon, Jr. and his wife Jean died in a plane crash when their twin-engine plane crashed in New Hampshire. Titcomb, Jr. served in the United States Air Corps during World War II as a flight instructor and worked for Eastern Air Lines in Florida before moving to California. Before his death, he served as director of the Escondido Chamber of Commerce for three years and he was a member of the Ambassadors Club for five years. He was also the director of the North County Bank of Escondido. He and his wife were active members of the First Baptist Church in Encinitas.[18] Vernon Titcomb, Sr. passed away in 1977.[19] In 1967, when he was 81 years old, he solo-piloted a small plane across the United States from coast to coast.[20] After his father and brother passed away, Ellwood Titcomb continued with the development business until he retired and moved to Florida in 1979. After he retired, the 503 W. Mission Ave. property remained in the possession of Amicorp Enterprises, Inc. until 2004, when it was sold to Trinity Capital Investments. He passed away in 2011.[21]

While the 503 W. Mission Ave. property was owned by Americorp Enterprises, Inc., it was operated as a Denny's until 1982. In 1963, the *Times-Advocate* referred to the 503 W. Mission Ave. Denny's as one of the best coffee shops in Escondido.[22] That year, the 503 W. Mission Ave. Denny's served as a meeting place for a group of Mexican lawmakers, who stopped in Escondido as a part of a three-day tour through San Diego to observe private enterprise operations, and Bob Hale, who served on the San Diego Chamber of Commerce and as president of the Balboa Mortgage Company.[23] In 1964, the 503 W. Mission Ave. Denny's was given the "'Golden Cup' award by the Coffee Brewing Institute for the quality and brewing excellence of the coffee it serves."[24] In 1970, another Denny's was opened at 2680 S. Escondido Blvd. in Escondido.[25] The 1983 city directory shows that Denny's stopped operating

[14] Kent Titcomb, "Why I Choose to Fly a Twin Commander," https://flightlevelsonline.com/2017/winter-2017/why-i-choose-to-fly-a-twin-commander/ (May 5, 2018).
[15] Kent Titcomb, Commander, 2018.
[16] *Times-Advocate,* Motel, 26.
[17] *Times-Advocate,* Business Reports, Escondido, California (December 16, 1965).
[18] *Times-Advocate,* Escondido Businessman, Wife Dead in Plane Crash, Escondido, California (August 26, 1974).
[19] *Times-Advocate,* North County Deaths, Escondido, California (May 11, 1977).
[20] *Los Angeles Times,* The News of the Day: Southland, Los Angeles, California (April 23, 1967).
[21] Dignity Memorial "Obituary: Ellwood A. Titcomb," https://www.dignitymemorial.com/obituaries/orange-city-fl/ellwood-titcomb-4924147 (December 29, 2011).
[22] *Times-Advocate,* The President of Denny's chain of coffee shops …, Escondido, California (June 1, 1963).
[23] *Times-Advocate,* Mexican Legislators Due Here, Escondido, California (August 20, 1963).
[24] *Times-Advocate,* Coffee Award Is Given To Denny's, Escondido, California (August 11, 1964).
[25] *Times-Advocate,* Restaurant chain opens new outlet, Escondido, California (July 12, 1970).

at 503 W. Mission Ave. and moved to 510 W. Mission Ave. that year. The 510 W. Mission Ave. address appears for the first time in 1982.[26]

An article from 1982 mentions that three Greek Covina restauranteurs, Pete Tsokas, Alex Lazinos, and Pete Polytarhos, leased the 503 W. Mission Ave. Denny's building, which was remodeled between 1982 and 1983.[27] In 1983, the 503 W. Mission Ave. building had become a restaurant called Burger Stop Family Restaurant[28] and appeared on the *Times-Advocate's* best hamburger list as the second runner-up.[29] The name of the restaurant changed in 1983 to the Family Stop Restaurant, still run by Tsokas, Lazinos, and Polytarhos.[30] In 1986, it became the Escondido Café,[31] in 1988, it became Johnny R's #2 Family Restaurant run by Johnny Raizian,[32] in 1991, it became Cheers Family Restaurant,[33] and in 2001, it became El Galeón Mexican Restaurant.

4. **Builder, contractor, suppliers:** The construction of the building was completed in 1962 by R.E. Mauer Construction, a construction company operating in Chula Vista, San Diego, Clairemont, and National City.[34]

5. **Original plans and construction:** Although no original plans for the building could be located, the 503 W. Mission Ave. building was designed as a Googie-style Denny's restaurant. The design is dominated by a boomerang roofline that shelters the building's northeast, southeast, and southwest façades, which are visible from the road. The building record indicates that the original roof cover was built-up; however, this was replaced by insulated metal sheets at an unknown date.

6. **Alterations and additions:** A service area enclosure was added to the southwest part of the building in 1962 after the original construction. The building record indicates that the building was remodeled in 1983, which primarily included replacing existing insulated metal panels. The building was painted blue and white and the signage on the northwest and southeast boomerang ends of the roof was added between 2008 and 2009. The building was painted white and green and the northwest and southeast signage and free-standing sign were changed between 2012 and 2014. The built-up roof cover was replaced with metal sheets at an unknown date.

B. Historical Context

The subject property is located inside the Rincón del Diablo Land Grant issued to Juan Bautista Alvarado by Mexican Governor Manuel Micheltorena in 1843. Alvarado was a prominent figure in Los Angeles and San Diego, holding office as a councilman in both cities

[26] *Times-Advocate,* Denny's Contest Advertisement, Escondido, California (November 18, 1982).
[27] *Times-Advocate,* Family restaurant due in old Denny's building, Escondido, California (November 22, 1982).
[28] *Times-Advocate,* Fictitious Business Name Statement, File No. 83-11233, Escondido, California (June 26, 1983).
[29] *Times-Advocate,* Second runner-up, Escondido, California (May 29, 1983).
[30] *Times-Advocate,* Fictitious, 22.0
[31] *Times-Advocate,* Escondido Café Advertisement, Escondido, California (December 21, 1986).
[32] Karen Mock, Table Talk, *Times-Advocate,* Escondido, California (September 1, 1988).
[33] Ancestry.com, *Directories*, 2011; *Times-Advocate,* Cheers Contest, Escondido, California (May 21, 1993).
[34] *Chula Vista Star-News,* Renovation, 4; *San Diego Union,* Contract, a34; *National City Star-News,* Extension, 16.

in the 1830s. When he died in 1850, the rancho was sold to Oliver S. Witherby, a judge and member of California's first state legislature. Witherby farmed and raised cattle, and in the early 1860s, began to mine for gold.[35] In 1868, Witherby sold the rancho to Edward McGeary and the three Wolfskill brothers.

In 1886, 13 businessmen formed the Escondido Land and Town Company (ELTC) and bought the former Rincón del Diablo, subdividing the land to plant more vineyards and citrus groves.[36] During the 1886 survey for a new rail line that was to extend from the coastal city of Oceanside to Escondido, a former cow path was turned into a 100-foot street and named Grand Avenue.[37] The railroad line was constructed to Escondido in 1887 because the ELTC needed to move their agricultural products. In 1888, the ELTC was influential in getting the town incorporated and drilled several wells to provide water for the surrounding farms and new city. The incorporation of the city also led to the widening of Grand Avenue and the addition of board sidewalks and hitching posts. Escondido continued to grow and Grand Avenue quickly became home to the Escondido Bank, the *Escondido Times,* a post office, general stores, a meat market, a drug store, a bakery, a barber, a smithy, a cobbler-harness maker, and a laundry.[38]

"About 1891, the Escondido Irrigation District was organized and bonds in the amount of $350,000 were issued … to Henry W. Putnam of San Diego, for the construction of the Escondido Reservoir, late[r] named Lake Wohlford."[39] The Escondido Irrigation District was reorganized and named the Escondido Mutual Water Company,[40] after which:

> A period of depression followed, and many people were not able to pay their irrigation taxes; finally, a compromise was worked out, whereby the land would be released from the bonded indebtedness upon payment of 43% of the amount due. The burning of the bonds was the occasion for a joyful celebration on Admission Day, September 9, 1905, and a crowd of three thousand people gathered at the Lime Street school grounds in what is now Grape Day Park. When the papers went up in flames, men tossed their hats into the air and women waved their handkerchiefs; judge J. N. Turrentine gave the speech of the day, which was loudly applauded.
>
> On September 9, 1908, the people of Escondido started holding an annual celebration in remembrance of the burning of the bonds. It was called "Grape Day" because grapes were then one of the most important agricultural products of the valley, and each yearly celebration, tons of free grapes were distributed to the crowds. W. L. Ramey of the Escondido Lumber Hay and Grain Company, and Sig Steiner, early store owner and civic leader, were the

[35] Bill Fark, "A Brief History of Escondido," http://escondidohistory.com/#!history (October 27, 2016).
[36] Bill Fark, History, 2016.
[37] City of Escondido, "Escondido Context Statement," https://www.escondido.org/data/Sites/1/media/pdfs/Planning/Escondido ContextStatement.pdf (May 7, 2020).
[38] City of Escondido, Context, 15.
[39] Margie L. Whetstone, The Escondido Story, *The Journal of San Diego History* 9(3), San Diego Historical Society Quarterly, San Diego, California, 1963.
[40] Cecil C. Moyer, *Historic Ranchos of San Diego,* edited by Richard F. Pourade, University of California Press, 1969.

> originators of Grape Day, the community's largest event for many years.[41]

Visitors came from all over and stayed in the Escondido Hotel, centrally located on Grand Avenue, which was the main shopping street.[42] "Later, as horse drawn wagons were replaced by automobiles, surfaced streets began to crisscross the County and by the 1940s, motor courts and motels became economical 'homes away from home' for families seeing the country."[43]

As Escondido flourished, houses were constructed that would represent the time period. "Many were Victorian cottages which had Queen Anne and Colonial Revival phases. These smaller Victorians were often decorated almost as elaborately as their larger sisters, but some were plain hip-roof boxes."[44] Through the early 1900s, Classical Revival, Mission (Moorish) Revival, Craftsman, American Foursquare, and Prairie homes were also constructed in Escondido.[45] In the early 1900s, Craftsman-style homes were prominent. Craftsman architecture, which was part of the Arts and Crafts movement of 1876 to 1916, rejected the ornamental architecture of the Victorian home:

> The [Arts and Crafts] movement was a response to a call for the return to simple, natural, and honest lifestyles and products. It addressed social, industrial, and political issues and included the fine arts, literature, bookbinding, printing, furniture and textile design, as well as architecture.[46]

Grapes continued to be an important agricultural product for Escondido throughout the first half of the twentieth century. In 1909, W.E. Alexander purchased 2,000 acres of the remaining McCoy ranch, south of downtown. He first subdivided the western portion of the land into 10-acre parcels, which became known as the first Homeland Acres Addition to Escondido.[47] In 1911:

> Between 600 and 700 acres of muscatel grapes were set out in Escondido … by the Escondido Valley Land and Planting Company [EVLPC], of which … W.E. Alexander [was] the president.
>
> The planting was done on the Homeland Acres, and with the acreage planted in 1910 makes a total of between 1,000 and 1,100 acres.[48]

"Between 300 and 400 acres" were to be planted in 1912.[49] The EVLPC planted and cared for the vineyards for three years then turned them over to the owners. Although the grapes

---

[41] Margie L. Whetstone, Escondido, 1963.
[42] Bill Fark, History, 2016.
[43] Escondido History Center, "Commerce," https://www.escondidohistory.org/commerce (August 6, 2019).
[44] City of Escondido, Context, 17.
[45] City of Escondido, Context, 18.
[46] City of Escondido, Context, 19.
[47] Lucy Jones Berk and Stephen A. Covey, *Postcards of America: Escondido Grape Day Festivals,* Arcadia Publishing, Charleston, South Carolina, 2010.
[48] J.B. Jeffery and C.E. Ferguson, "San Diego County Back Country," *The Overland Monthly* January-June:280–281, the Overland Monthly Co., San Francisco, California, 1912.
[49] J.B. Jeffery and C.E. Ferguson, Back Country, 280–281.

were "planted on rolling ground no irrigation" was used, nor was any necessary. Instead, "the Campbell system of dry farming [was used], of which Mr. Alexander [was] an ardent advocate."[50] Utilizing these grapes, several wineries opened in Escondido. "Before the prohibition era there were at least a dozen wineries in Escondido, but only the Ferrara Winery survived beyond that time and it continued to operate until 2011."[51]

By 1914, "an electric railroad from the county seat at San Diego, thirty-five miles southerly [of Escondido], via El Cajon" was "assured … to eventually be extended to Los Angeles, 100 miles to the north," but the railroad was never completed.[52] In 1916, Homeland Acres Addition to Escondido No. 2 was platted to the east of the original Homeland Acres Addition. Both Homeland Acres additions were part of the 2,000-acre McCoy Tract located in the northern portion of the original San Bernardo Land Grant, south of the city of Escondido. "The town of Bernardo flourished for a time, then declined and disappeared by the early 1920s. Its demise was hastened by the growth of the city of Escondido … and the completion of the Lake Hodges Dam and Reservoir in 1919."[53]

Prior to the 1950s, the main thoroughfare between Escondido and San Diego was San Diego Boulevard, which was later renamed Escondido Boulevard. The boulevard was home to sparse development including gas stations, small stores, motor courts, and rural single-family residences.[54] With the construction of Highway 395 in the late 1940s, however, the city of Escondido experienced a building boom. Highway 395 was realigned in 1947 from further east to its current location, which follows the route of Centre City Parkway (previously called Pine Street or the Escondido Expressway), passing through downtown Escondido. Changing a major travel route to provide a north to south connection in San Diego County allowed travel-related businesses, especially motel accommodations and restaurants, to be established along the route.[55]

Highway 395 linked Escondido to San Diego, making the city a good choice for commuters. Around this time, many agricultural fields that were previously dedicated to citrus and grapes were developed into subdivisions to house workers in the defense industry. In 1960, the lemon packing house, previously famed to be the largest facility of its kind in the world, closed its doors. Citrus fields gave way to more subdivisions, and some were converted into avocado crops.[56] Escondido can still be described as a commuter city. It has some fame because of the San Diego Zoo Safari Park, breweries, wineries, the auto mall, and the California Center for the Arts, Escondido, which was constructed in 1994.

---

[50] J.B. Jeffery and C.E. Ferguson, Back Country, 280–281.
[51] Robin Fox and Carol Rea, *Escondido: A Pictorial History of the Hidden Valley,* HPNbooks/Ledge Media, Jackson, Wyoming, 2020.
[52] J.B. Jeffery and C.E. Ferguson, Back Country, 280–281.
[53] Rancho Bernardo Historical Society, "The History of Rancho Bernardo," https://rbhistory.org/about-us/history, 2020.
[54] J.R.K. Stropes and Brian F. Smith, Historic Structure Assessment for 1405 South Escondido Boulevard, Escondido, California, prepared for the City of Escondido, 2020.
[55] Harry J. Price, "Historic Building Evaluation of the Palm Tree Motor Lodge and the Wagon Wheel Restaurant at 425 West Mission Avenue in Escondido," https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/CityCentre/AppendixB-HistoricBuildingEvaluation.pdf, 2017.
[56] Bill Fark, History, 2016.

The 503 W. Mission Ave. building was constructed as a Denny's right before the property was purchased by Aircraft Mobilehomes, Inc. Denny's was established by Harold Butler and Richard Jezak, who opened a donut stand in Lakewood, California in 1953 and called it "Danny's Donuts." By 1956, Danny's Donuts had become a six-store chain. When Jezak left the partnership, Butler changed the concept from a donut shop to a coffee shop and rebranded the small franchise as 24-hour "Danny's Coffee Shops."[57] The name of the franchise was changed to "Denny's Coffee Shops" in 1959 to avoid confusion with Coffee Dan's in Los Angeles and eventually became just "Denny's" in 1961.[58] The business quickly grew and by 1981, there were over 1,000 restaurants in the United States. The business purchased many of the old Sambo's restaurants and used their similar designs to their advantage.[59]

PART II: ARCHITECTURAL INFORMATION

A. General Statement

1. Architectural character: The 503 W. Mission Ave. building was originally constructed in the Googie style by R.E Mauer Construction while the property was owned by George P. and Anna M. Timmons, Ralph and Mona E. Petreny, and James and Fotine Tweddell.

While historical research could not identify the architect, it is possible that the building was constructed following the theme and boomerang-roofed prototype created by architects Louis Armét and Eldon Davis in the 1950s, who are credited with construction of over 4,000 Googie-style restaurants.[60] Armét and Davis created a prototype building for Danny's Coffee Shops, which would later become a model for stores built all over the United States. Their designs included two Googie-style prototypes: the boomerang-roofed design that became a model for Denny's restaurants built all over the United States and the zigzag-roofed restaurant structure. Their designs enabled the Googie style to spread across the country.[61] The 503 W. Mission Ave. building was constructed as an example of the boomerang-shaped roof prototype and included large signage, since most of the later stores were built around freeways.[62]

The emergence of the Googie style is explained as follows by San Diego Modernism Historic Context Statement and the Los Angeles Citywide Historic Context Statement:

> The Futurist style of Modern architecture began after World War II as Americans became entranced with technology and the Space Age. At

[57] Denny's, "Since 1953: Our History," https://www.dennys.com/company (July 5, 2022).
[58] Denny's, 1953, 2022.
[59] *New York Times,* Diner Chain Has to Buy Locks for First Holiday Closing, New York, New York (December 20, 1988).
[60] Edward Cella Art & Architecture, "Louis Armét, Eldon Davis (American, B. 1914 / 1917),"
https://www.edwardcella.com/artists/49-louis-armet%2C-eldon-davis (July 5, 2022).
[61] Alan Hess, *Googie Redux: Ultramodern Roadside Architecture,* Chronicle Books, 2004.
[62] Alan Hess, *Googie,* 126.

> that time, America was also being transformed by a car culture. As automobile use increased, roadside architecture evolved. It was intended to attract the consumer with bright colors, oversized lighted signage, and exaggerated forms. In short, the building was the billboard. The Futurist style was used overwhelmingly on coffee shops, gas stations, motels, restaurants, and retail buildings. The name "Googie" comes from the well-known coffee shop in Los Angeles called Googies, which was designed by renowned Modernist architect John Lautner in 1949 …
>
> Futurist architectural design often incorporates sharp angles, boomerang or flying saucer shapes, large expanses of glass, exposed steel structural elements, and dramatic roof overhangs. The basic form and size of Futurist buildings varies significantly from building to building. An abstract arrangement of shapes and textures is typical.[63]

However:

> … the Googie style had fallen out of favor by the late 1960s. By this time, the nation's architectural culture had changed. The American public was no longer as captivated by ideas like space travel and nuclear energy, and aspects of the future that had once engendered excitement among the public were now seen as mundane and effete.[64]

The style was not used after the 1970s. The 503 W. Mission Ave. building was constructed in 1962, during the period in which the Googie style was most popular.[65]

Identifying features associated with the Googie style, as described by the City of San Diego, include:

> Abstract, angular, or curved shapes; expressive roof forms (flat, gabled, upswept, butterfly, parabolic, boomerang, or folded); large windows (aluminum-framed); prominent signage (neon or lighted); variety of exterior finishes (including stucco, concrete block, brick, stone, plastic, and wood siding); bright colors; screen block and shadow block accents; building as billboard and asymmetrical façade.[66]

Identifying features associated with the Googie style present in the 503 W. Mission Ave. building include an abstract and angular roof, an expressive boomerang-shaped roof form, aluminum-framed large windows, a variety of exterior finishes, and an asymmetrical façade. However, although the building features both a pole sign and

---

[63] City of San Diego, San Diego Modernism Historic Context Statement, submitted to the State of California Office of Historic Preservation, 2007.
[64] City of Los Angeles, SurveyLA Los Angeles Historic Resources Survey: Los Angeles Citywide Historic Context Statement, https://planning.lacity.org/odocument/4f67bd39-631a-4f26-9a52-cd5809a66655/LA_Modernism_1919-1980.pdf, 2021.
[65] City of San Diego, Modernism, 61.
[66] City of San Diego, Modernism, 62.

prominent signs on its northwest and southeast façades, they are not original and have been altered multiple times. While the building features bright colors, the color scheme was changed at least twice in the past. The building does not possess screen block or shadow block accents and cannot be considered a "billboard building."

2. **Condition of fabric:** The condition of the original materials used to construct the building is generally average to poor. Some windowpanes are missing and have been replaced with compressed wood boards. The paint is peeling off the walls at some places. Much of the exterior wood trim used at the fascia of the roof has been damaged by weather. The condition of the dining areas within the restaurant is average; however, some of the roof boards are missing. The back area of the building, where service areas and the kitchen are located, is in poor condition, mostly due to the damage caused by heat released from cooking and frying.

B. Description of Exterior

1. **Overall dimensions:** The 503 W. Mission Ave. building features a rectangular-planned northwest portion and a smaller rectangular-planned southwest portion that are attached to each other on their long ends. The northwest portion measures 61'-7" x 27'-4" and the southwest building measures 15'-0" x 49'-6". The building features an enclosed back patio that measures 15'-0" x 47'-6". The building measures approximately 2,400 square feet without the enclosed patio and 3,100 square feet with the patio.

2. **Foundations:** The building features a reinforced concrete foundation.

3. **Walls:** The building features standard frame walls clad in stucco. All façades exhibit partial fieldstone veneer walls.

4. **Structural system, framing:** The northwest portion of the building was constructed using steel frame construction. The steel columns are visible on the northeast, northwest, and southeast façades of the southwest portion, which feature windows. The southwest portion of the building was constructed using standard frame construction.

5. **Openings:**

    a. **Doorways and doors:** The aluminum-framed, glass front entry door is located on the southeast side of the northeast façade of the northeast portion of the building. This door is not original and was installed at an unknown date. Additional doors are located on the northwest façade of the northeast portion of the building and the southwest façade of the southwest portion of the building. The original door on the northwest façade is metal. There are three doors on the southwest façade: the northwest side provides access to the southwest portion of the restaurant and is a simple wood door with a metal screen; the other doors are simple wood doors. While the southeast door

provides access to the heating, ventilation, and air conditioning (HVAC) room, the middle door provides access to the small storage room. The outdoor service/storage area located southwest of the building also features wood gates on its southwest façade.

b.ĀWindows and shutters: The northeast portion of the building features large horizontal bands of aluminum-framed windows on top of short walls.

6.ĀRoof:

a.ĀShape, covering: The northeast portion of the building features a boomerang-shaped roof that shelters the building's northeast, southeast, and southwest façades, which are visible from the road. The building record indicates that the original roof cover was built-up; however, this was replaced by insulated metal sheets at an unknown date. The roof exhibits wide eave overhangs with enclosed rafters. The southwest portion of the building features a flat roof with rolled roofing.

C. Description of Interior

1.ĀFloor plans: The main entrance to the building is located on the northeast façade and leads into the main dining area. The northeast portion of the building consists of three nested areas. The outermost area is the main dining area, which is a large, rectangular space with an open plan that measures 60'-9". The southeast portion of the dining area is larger and measures 26'-2" and the northwest portion measures 20'-9". The middle section of the northeast portion of the building is separated from the dining area by counters that measure 2'-1" x 12'-11" and 17'-1" x 3'-5" on the southeast side and a short wall that measures 23'-2" x 3'-10" on the northwest side. This middle section was used as a serving/preparation area and features a counter on its east corner that measures 2'-1" x 6'-2" x 6'-3". The area southeast of this counter measures 6'-2" x 14'-11" and the area northwest of the counter measures 5'-9" x 29'-5". The innermost space, located on the southwest part of the northeast portion of the building, is used as the main kitchen. The kitchen space measures 5'-9" x 29'-5" and features a large counter space on its southwest side that measures 16'-11" x 4'-7".

The southwest portion of the building is attached to the northeast portion on its southwest side. Two door openings on the southwest façade of the northeast portion provide access to the southwest portion. The southeast doorway opens to a short, southeast-northwest, 3'-0" x 11'-11" corridor. Two lavatories that measure 8'-2" x 4'-8" and 10'-6" x 4'-7" and a small storage room that measures 8'-2" x 5'-0" are located southwest of this short corridor, opening to a larger service/cleaning area. This cleaning service area consists of a smaller 5'-5" x 11'-10" rectangular area on the east and a larger 8'-8" x 17'-8" rectangular area on the west. A large, 13'-5" x 8'-7" refrigeration room is located northeast of this service/cleaning area. A small, southwest-northeast, 3'-4" x 17'-10" corridor connects the service/cleaning area to the northwest opening between the two portions of the building. Two storage rooms that

measure 6'-2" x 12'-9" and 7'-10" x 6'-1" are located northwest of this corridor.

An outdoor service/storage area is located southwest of the southwest portion of the building. This area features a 7'-4" x 13'-8" outdoor refrigeration area on its northwest side. Access to this area is provided through a door located on the northwest side of the service/storage area. A 7'-6" x 14'-2" platform is located southeast of this entrance door.

2. Stairways: The building does not feature any interior stairways.

3. Flooring: Ceramic tiles were used for the entirety of the flooring. While the dining area features white, 12" x 12" ceramic tiles with grey grout, reddish-brown, 6" x 6" ceramic tiles with grey grout are present in the rest of the building.

4. Wall and ceiling finish: Interior walls in the northeast portion of the building consist of drywall that has been painted white, orange, and green. The northwest side of the southwest façade of the northeast portion of the building features a wall painting. The northwest portion of the building features a drop ceiling covered with smooth-finished panels. The interior walls in the southwest portion of the building consist of drywall that has been painted white, orange, and green. The walls of the refrigeration room feature wood wainscoting. The ceilings in this area are finished drywall that has been painted white.

5. Openings:

a. Doorways and doors: Interior doorways are trimmed with rough wood beams. Most of the interior doors have been removed except for the lavatory doors, the refrigeration room door, and the door located northwest of the narrow corridor between the lavatories and the service area. The lavatory doors are simple, four-panel wood doors that are painted white and green. The other doors are metal.

b. Windows: There are no interior windows in the building. A window opening is located on the wall that separates the kitchen from the serving/preparation area.

6. Decorative features and trim: The northeast portion of the building, which includes the dining area, features decorative features. The dining area-facing walls of the counters feature a grey stone veneer finish. The northwest side of the southwest façade of the northeast portion of the building features a wall painting.

7. Hardware: Interior door hardware consists of brass doorknobs.

8. Mechanical equipment:

a. Heating, air conditioning, ventilation: The building features a HVAC

system. Wall and ceiling vents are present throughout the building for delivery. The kitchen space includes additional pipes for gas and ventilation. Additional ventilation hoods are located over the counters.

b. Lighting: Non-original, oil-rubbed, bronze chandeliers are present in the dining areas. The rest of the areas feature fluorescent lamp panels. The fluorescent panels consist of 4'-0"-long, surface-mounted fluorescent lamps.

c. Plumbing: The men's and women's restrooms each contain two toilets and a sink. Additional sinks are located in the serving area within the northeast portion of the building. A large sink is located in the service area in the southwest portion of the building.

9. Original furnishings: The building does not contain any original furnishings.

D. Site

1. Historic landscape design: Historic photographs do not depict any associated landscaping.

PART III: SOURCES OF INFORMATION

A. Architectural drawings:

1. First Floor Plan, Denny's Restaurant (503 W. Mission Ave.) – 1962 (Sheet No. 1, February 21, 2023)
2. First Floor Plan, Denny's Restaurant (503 W. Mission Ave.) – 1962 (Sheet No. 2, February 21, 2023)
3. Northeast Plan View, Denny's Restaurant (503 W. Mission Ave.) – 1962 (Sheet No. 3, February 21, 2023)
4. Northwest Plan View, Denny's Restaurant (503 W. Mission Ave.) – 1962 (Sheet No. 4, February 21, 2023)
5. Southeast Plan View, Denny's Restaurant (503 W. Mission Ave.) – 1962 (Sheet No. 5, February 21, 2023)

B. Early views:

1. Denny's: View of a Danny's Donut, the original donut stand opened by Butler and Kezak, available at https://www.dennys.com/company.

2. Getty Research Institute, Los Angeles, California: Louis Armét and Eldon Davis's Design/Prototype for Danny's Coffee Shop, available at https://www.getty.edu/research/library/.

3. Getty Research Institute, Los Angeles, California: Louis Armét and Eldon Davis's Design/Prototype for Denny's Coffee Shop, available at

https://www.getty.edu/research/library/.

4. *Times-Advocate,* **Escondido, California:** "Table Talk," article by Karen Mock showing Johnny R's #2 Family Restaurant at 503 W. Mission Ave. in 1988, available at http://www.newspapers.com/image/570267708, 1 September:90.

5. *Times-Advocate,* **Escondido, California:** "Cheers Contest," photograph by Dan Rios showing Cheers Family Restaurant at 503 W. Mission Ave. in 1993, available at http://www.newspapers.com/image/571839487, 21 May:B3.

6. **Google Street View:** Street view image of the El Galeón Restaurant at 503 W. Mission Ave. in 2007, available at https://www.google.com/maps.

7. **University of California at Santa Barbara Library Geospatial Collection:** Aerial photograph of 503 W. Mission Ave. in 1963, available at https://www.library.ucsb.edu/geospatial/aerial-photography.

8. **University of California at Santa Barbara Library Geospatial Collection:** Aerial photograph of 503 W. Mission Ave. in 1978, available at https://www.library.ucsb.edu/geospatial/aerial-photography.

9. **University of California at Santa Barbara Library Geospatial Collection:** Aerial photograph of 503 W. Mission Ave. in 1987, available at https://www.library.ucsb.edu/geospatial/aerial-photography.

10. **Google Earth:** Aerial photograph of 503 W. Mission Ave. in 2022, available at https://earth.google.com/web/.

11. **Google Street View:** Street view image of the El Galeón Restaurant at 503 W. Mission Ave. in May 2008, available at https://www.google.com/maps.

12. **Google Street View:** Street view image of the El Galeón Restaurant at 503 W. Mission Ave. in March 2009, available at https://www.google.com/maps.

13. **Google Street View:** Street view image of the restaurant building at 503 W. Mission Ave. in January 2012, available at https://www.google.com/maps.

14. **Google Street View:** Street view image of the restaurant building at 503 W. Mission Ave. in April 2014, available at https://www.google.com/maps.

15. **Google Street View:** Street view image of the Pho Truc Anh Vietnamese Restaurant at 503 W. Mission Ave. in November 2016, available at https://www.google.com/maps.

16. **RoadsideArchitecture.com:** Denny's Restaurants in Pasadena (1963), Los Angeles, and Palm Springs (1965), available at https://www.roadarch.com/eateries/

dennys.html.

C. Interviews: No interviews were conducted.

D. Selected sources:

1.ĀPrimary Sources:

Ancestry.com, *California, U.S., Death Index, 1940-1997* (database online). Provo, UT, USA: Ancestry.com Operations, Inc., 2000.

Ancestry.com, *1930 United States Federal Census* (database online). Provo, UT, USA: Ancestry.com Operations, Inc., 2002.

Ancestry.com, *U.S., Naturalization Records, 1840-1957* (database online). Lehi, UT, USA: Ancestry.com Operations, Inc., 2010.

Ancestry.com, *U.S., Border Crossings from Canada to U.S., 1895-1960* (database online). Lehi, UT, USA: Ancestry.com Operations, Inc., 2010.

Ancestry.com, *U.S., City Directories, 1822-1995* (database online). Lehi, UT, USA: Ancestry.com Operations, Inc., 2011.

Ancestry.com, *1940 United States Federal Census* (database online). Provo, UT, USA: Ancestry.com Operations, Inc., 2012.

Ancestry.com, *U.S., Social Security Death Index, 1935-2014* (database online). Provo, UT, USA: Ancestry.com Operations, Inc., 2014.

Lucy Jones Berk and Stephen A. Covey, *Postcards of America: Escondido Grape Day Festivals,* Arcadia Publishing, Charleston, South Carolina, 2010.

Chula Vista Star-News, "Renovation and Extension of the Turf Club," Chula Vista, California (December 9, 1954).

City of Escondido, "Escondido Context Statement," accessible at https://www.escondido.org/data/Sites/1 /media/pdfs/Planning/EscondidoContextStatement.pdf, accessed May 7, 2020.

City of Los Angeles, SurveyLA Los Angeles Historic Resources Survey: Los Angeles Citywide Historic Context Statement, accessible at https://planning.lacity.org/odocument/4f67bd39-631a-4f26-9a52-cd5809a66655/LA_Modernism_1919-1980.pdf, 2021.

City of San Diego, San Diego Modernism Historic Context Statement, submitted to the State of California Office of Historic Preservation, 2007.

Denny's, "Since 1953: Our History," accessible at https://www.dennys.com/company, accessed July 5, 2022.

Dignity Memorial "Obituary: Ellwood A. Titcomb," accessible at https://www.dignitymemorial.com/obituaries/orange-city-fl/ellwood-titcomb-4924147 (December 29, 2011).

Edward Cella Art & Architecture, "Louis Armét, Eldon Davis (American, B. 1914 / 1917)," accessible at https://www.edwardcella.com/artists/49-louis-armet%2C-eldon-davis, accessed July 5, 2022.

Escondido History Center, "Commerce," accessible at https://www.escondidohistory.org/commerce, accessed August 6, 2019.

Fark, Bill, "A Brief History of Escondido," accessible at http://escondidohistory.com/#!history, accessed October 27, 2016.

Fox, Robin and Carol Rea, *Escondido: A Pictorial History of the Hidden Valley,* HPNbooks/Ledge Media, Jackson, Wyoming, 2020.

Alan Hess, *Googie Redux: Ultramodern Roadside Architecture,* Chronicle Books, 2004.

Jeffery, J.B. and C.E. Ferguson, "San Diego County Back Country," *The Overland Monthly* January-June:280–281, the Overland Monthly Co., San Francisco, California, 1912.

Los Angeles Times, "The News of the Day: Southland," Los Angeles, California (April 23, 1967).

Mock, Karen, "Table Talk" *Times-Advocate*, Escondido, California (September 1, 1988).

Moyer, Cecil C., *Historic Ranchos of San Diego,* edited by Richard F. Pourade, University of California Press, 1969.

National City Star-News, "Renovation and Extension of the Turf Club," National City, California (December 9, 1954).

New York Times, "Diner Chain Has to Buy Locks for First Holiday Closing," New York, New York (December 20, 1988).

Oz, Irem and Brian F. Smith, "Historic Structure Assessment for 503 West Mission Avenue, Escondido, California," Brian F. Smith and Associates, Inc., prepared for the City of Escondido, 2022.

Price, Harry J., "Historic Building Evaluation of the Palm Tree Motor Lodge and the Wagon Wheel Restaurant at 425 West Mission Avenue in Escondido," accessible at https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/CityCentre/AppendixB-HistoricBuildingEvaluation.pdf, 2017.

Rancho Bernardo Historical Society, "The History of Rancho Bernardo," accessible at https://rbhistory.org/about-us/history, 2020.

San Diego Union, "Contract OKd for Center in Clairemont," San Diego, California (October 13, 1960).

Stropes, J.R.K. and Brian F. Smith, "Historic Structure Assessment for 1405 South Escondido Boulevard, Escondido, California," Brian F. Smith and Associates, Inc., prepared for the City of Escondido, 2020.

Times-Advocate, "The President of Denny's chain of coffee shops …," Escondido, California (June 1, 1963).

Times-Advocate, "Mexican Legislators Due Here," Escondido, California (August 20, 1963).

Times-Advocate, "Mount Vernon Motel Built by Father and Sons," Escondido, California (October 7, 1963).

Times-Advocate, "Coffee Award Is Given To Denny's," Escondido, California (August 11, 1964).

Times-Advocate, "Business Reports," Escondido, California (December 16, 1965).

Times-Advocate, "Restaurant chain opens new outlet," Escondido, California (July 12, 1970).

Times-Advocate, "Escondido Businessman, Wife Dead in Plane Crash," Escondido, California (August 26, 1974).

Times-Advocate, "North County Deaths," Escondido, California (May 11, 1977).

Times-Advocate, "Denny's Contest Advertisement," Escondido, California (November 18, 1982).

Times-Advocate, "Family restaurant due in old Denny's building," Escondido, California (November 22, 1982).

Times-Advocate, "Second runner-up," Escondido, California (May 29, 1983).

Times-Advocate, "Fictitious Business Name Statement, File No. 83-11233," Escondido, California (June 26, 1983).

Times-Advocate, "Escondido Café Advertisement," Escondido, California (December 21, 1986).

Times-Advocate, "Cheers Contest," Escondido, California (May 21, 1993).

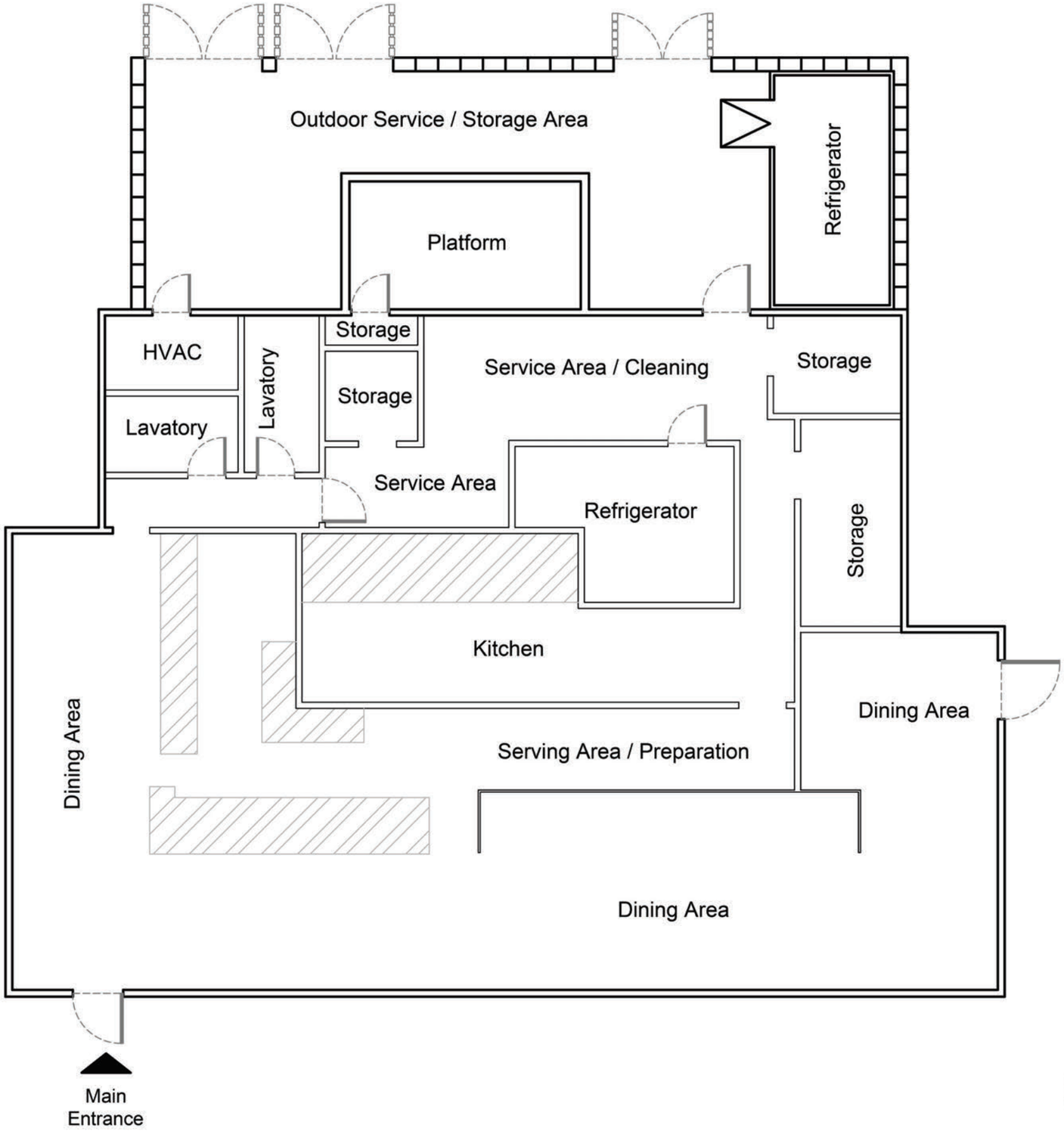
Titcomb, Kent, "Why I Choose to Fly a Twin Commander," available from https://flightlevelsonline.com/2017/winter-2017/why-i-choose-to-fly-a-twin-commander/, accessed May 5, 2018.

Whetstone, Margie L., The Escondido Story, *The Journal of San Diego History* 9(3), San Diego Historical Society Quarterly, San Diego, California, 1963.

2. Secondary Sources: None.

E. Likely sources not yet investigated: There are no known sources to be investigated.

F. Supplemental material: None.



BFSA Environmental Services
A Perennial Company

0 1 2 3 4 5 10 15
FEET
1/4"=1'-0"

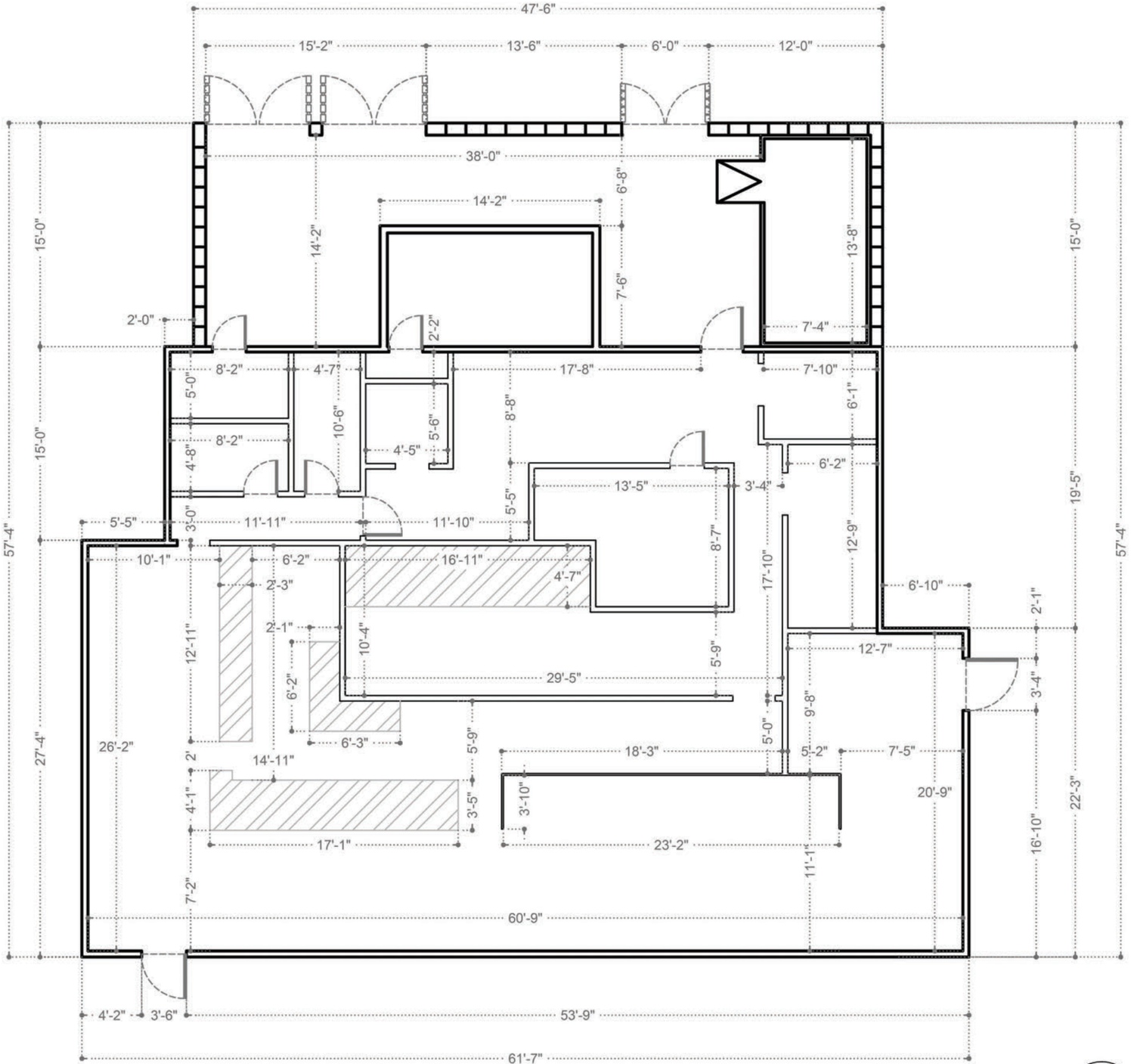
LIBRARY OF CONGRESS NUMBER

HISTORIC AMERICAN BUILDING RECORD

SHEET 1 of 6

DENNY'S RESTAURANT – 1962
503 W. Mission Ave.
SAN DIEGO COUNTY
CALIFORNIA
ESCONDIDO

FIRST FLOOR PLAN
DRAWN ON FEBRUARY 21, 2023



BFSA Environmental Services
A Perennial Company

LIBRARY OF CONGRESS NUMBER

HISTORIC AMERICAN BUILDING RECORD

SHEET
2 of 6

DENNY'S RESTAURANT – 1962
503 W. Mission Ave.
SAN DIEGO COUNTY
CALIFORNIA
ESCONDIDO

FIRST FLOOR PLAN
DRAWN ON FEBRUARY 21, 2023

BFSA Environmental Services
A Perennial Company

0 1 2 3 4 5 10 15
FEET
1/4"=1'-0"

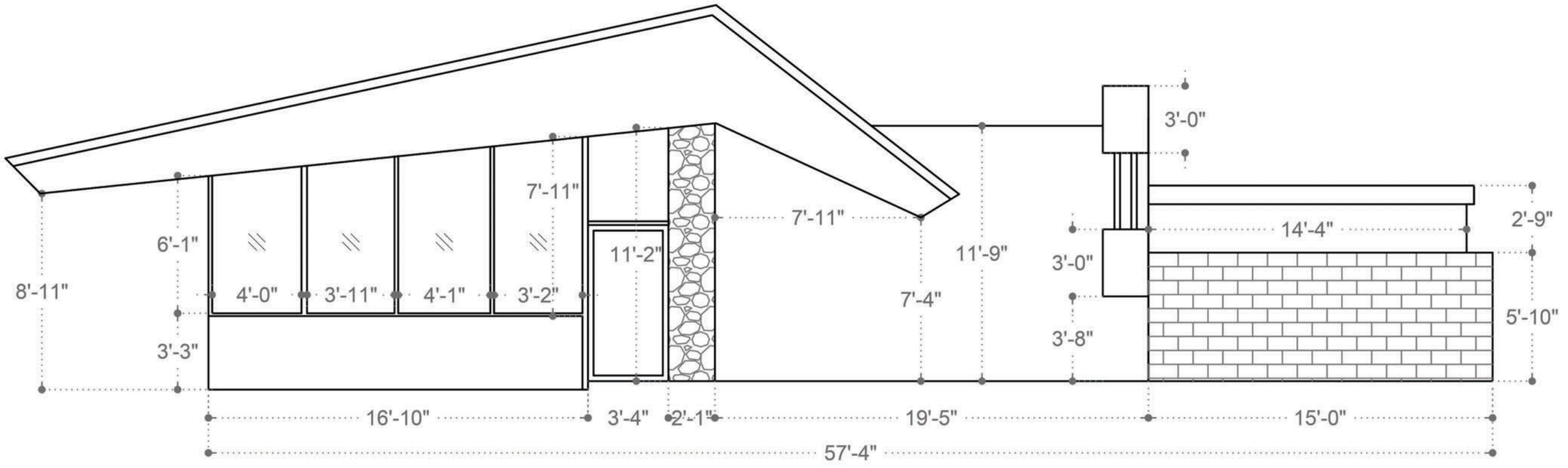
LIBRARY OF CONGRESS NUMBER

HISTORIC AMERICAN BUILDING RECORD

SHEET
3 of 6

DENNY'S RESTAURANT – 1962
503 W. Mission Ave.
SAN DIEGO COUNTY
CALIFORNIA
ESCONDIDO

NORTHEAST PLAN VIEW
DRAWN ON FEBRUARY 21, 2023



BFSA Environmental Services
A Perennial Company

0 1 2 3 4 5 10 15
FEET
1/4"=1'-0"

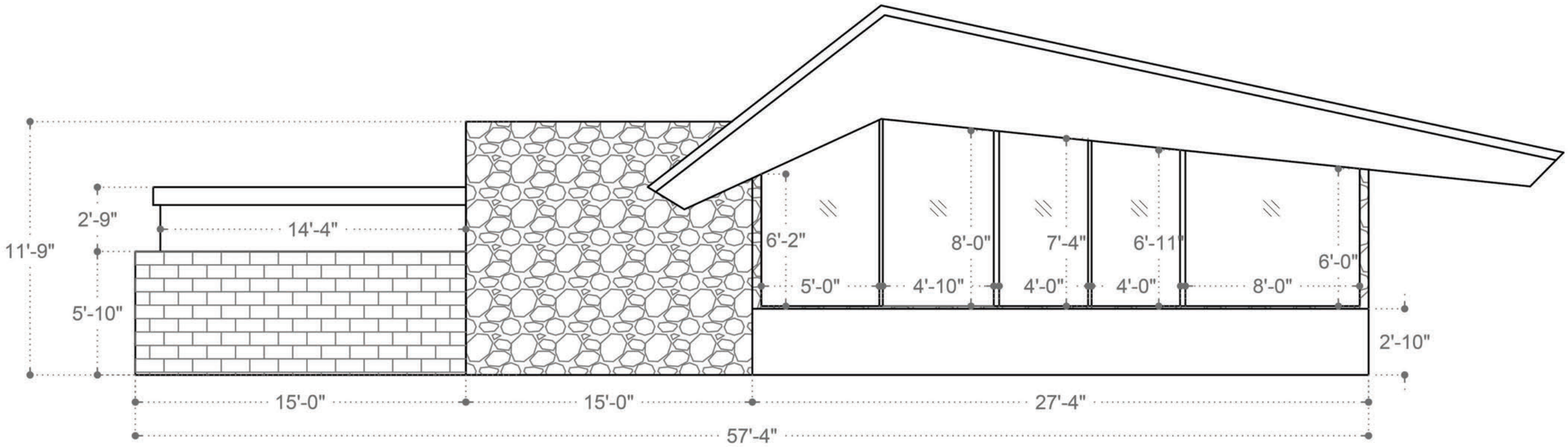
NORTHWEST PLAN VIEW
DRAWN ON FEBRUARY 21, 2023

DENNY'S RESTAURANT – 1962
503 W. Mission Ave.
SAN DIEGO COUNTY
CALIFORNIA
ESCONDIDO

SHEET
4 of 6

HISTORIC AMERICAN BUILDING RECORD

LIBRARY OF CONGRESS NUMBER



BFSA Environmental Services
A Perennial Company

0 1 2 3 4 5 10 15
FEET
1/4"=1'-0"

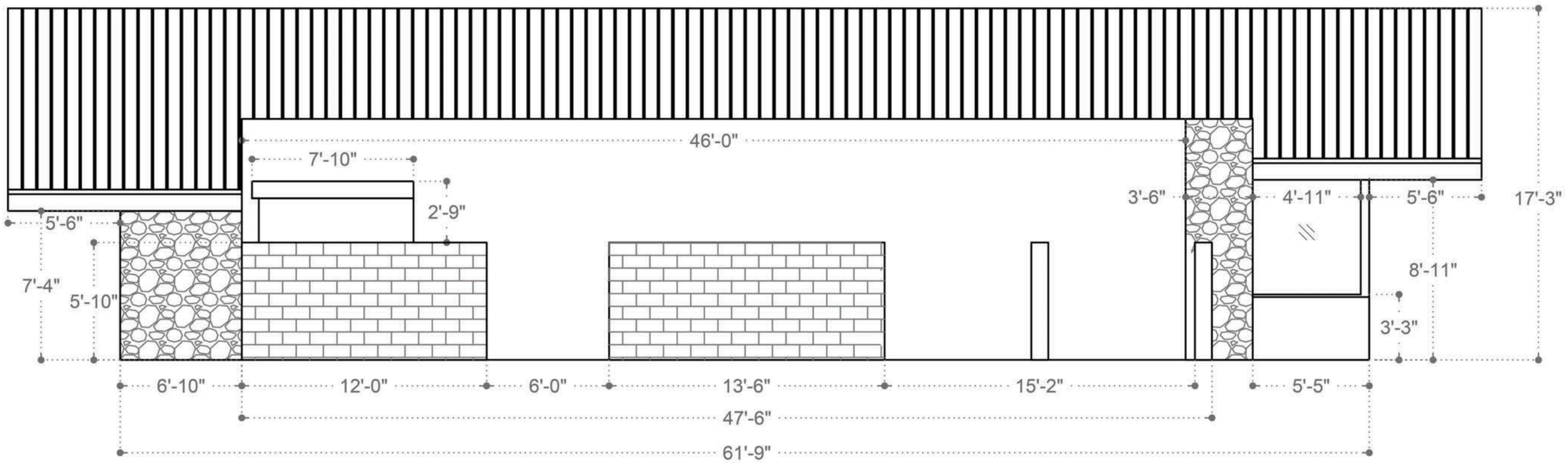
SOUTHEAST PLAN VIEW
DRAWN ON FEBRUARY 21, 2023

DENNY'S RESTAURANT – 1962
503 W. Mission Ave.
SAN DIEGO COUNTY
CALIFORNIA
ESCONDIDO

SHEET
5 of 6

HISTORIC AMERICAN BUILDING RECORD

LIBRARY OF CONGRESS NUMBER



BFSA Environmental Services
A Perennial Company

0 1 2 3 4 5 10 15
FEET
1/4"=1'-0"

LIBRARY OF CONGRESS NUMBER

HISTORIC AMERICAN BUILDING RECORD

SHEET 6 of 6

DENNY'S RESTAURANT – 1962
503 W. Mission Ave.
SAN DIEGO COUNTY
CALIFORNIA
ESCONDIDO

SOUTHWEST PLAN VIEW
DRAWN ON FEBRUARY 21, 2023

BFSA Environmental Services
A Perennial Company

Danny's Donuts, the Original Donut Stand Opened by Butler and Jezak

503 W. Mission Ave.

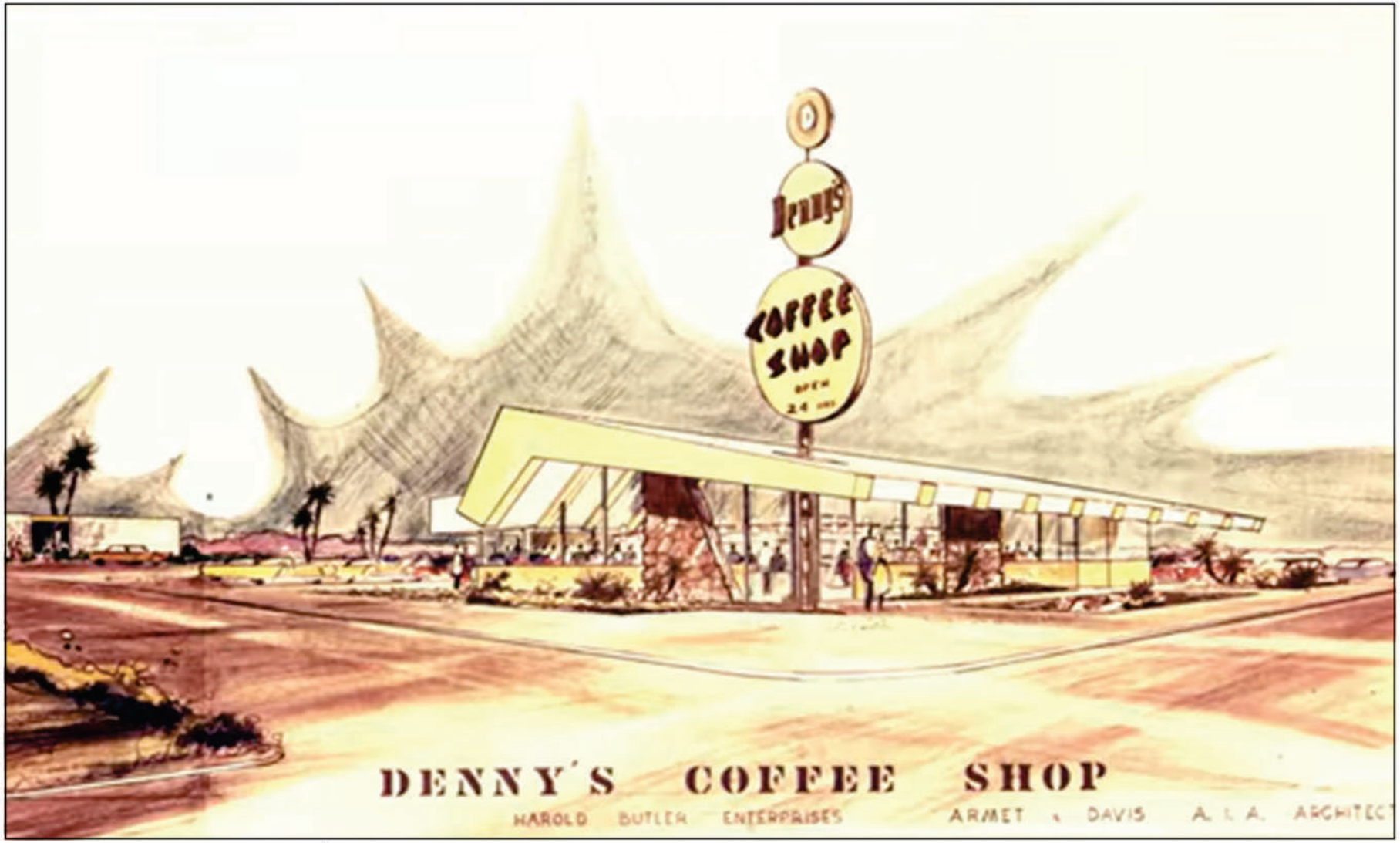
(Photograph courtesy of Denny's 2022)

BFSA Environmental Services
A Perennial Company

Louis Armét and Eldon Davis's Design/Prototype for Danny's Coffee Shop

503 W. Mission Ave.

(Photograph courtesy of Getty Research Institute 2013)



BFSA Environmental Services
A Perennial Company

Louis Armét and Eldon Davis's Design/Prototype for Denny's Coffee Shop

503 W. Mission Ave.

(Photograph courtesy of Getty Research Institute 2013)

BFSA Environmental Services
A Perennial Company

Johnny R's #2 Family Restaurant at 503 W. Mission Ave. in 1988

503 W. Mission Ave.

(Photograph courtesy of Mock 1988)

BFSA Environmental Services
A Perennial Company

Cheers Family Restaurant at 503 W. Mission Ave. in 1993

503 W. Mission Ave.

(Photograph courtesy of Times-Advocate 1993)

BFSA Environmental Services
A Perennial Company

El Galeón Mexican Restaurant at 503 W. Mission Ave. in 2007

503 W. Mission Ave.

(Photograph courtesy of Google Street View)

APPENDIX C

Geotechnical Engineering Investigation

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED COMMERCIAL DEVELOPMENT
ESCONDIDO
SWC CENTRE CITY PARKWAY & MISSION AVENUE
ESCONDIDO, CALIFORNIA

PROJECT NO. 112-24075
JULY 1, 2024

PREPARED FOR:

503 WEST MISSION LLC
503 MISSION AVENUE
ESCONDIDO, CALIFORNIA 92025

ATTENTION: **MR. PATRICK COX**

PREPARED BY:

KRAZAN & ASSOCIATES, INC.
1100 OLYMPIC DRIVE, SUITE 103
CORONA, CALIFORNIA 92881
(951) 273-1011

Offices Serving the Western United States

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

July 1, 2024 KA Project No. 112-24075

Mr. Patrick Cox
503 West Mission LLC
503 Mission Avenue
Escondido, California 92025
jpcvalueadd@gmail.com

RE: GEOTECHNICAL ENGINEERING INVESTIGATION
Proposed Commercial Development Escondido
SWC Centre City Parkway & Mission Avenue
Escondido, California

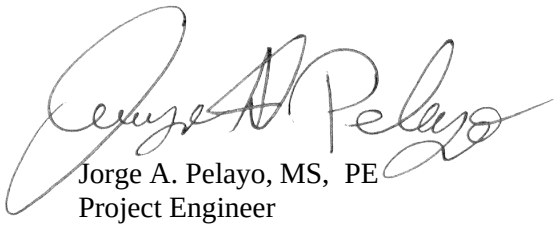
Dear Mr. Cox:

In accordance with your request and authorization, we have completed our Geotechnical Engineering Investigation for the above-referenced site. This report summarizes the results of our field investigation, laboratory testing and engineering analyses. Based on the data obtained, our understanding of the proposed project and our engineering analyses, it is our opinion that it is feasible to develop the site as planned.

As noted in our report, Krazan & Associates should be retained to review project plans and specifications prior to the start of construction, and to observe and test earthwork and foundation construction. Observation and testing services should also be performed by our field staff during construction activities will allow us to compare conditions exposed during construction with those encountered during our investigation and to present supplemental recommendations if warranted by different site conditions.

If you have any questions regarding the information or recommendations presented in our report, or if we may be of further assistance, please contact our Ontario, California office at (951) 273-1011.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.



Jorge A. Pelayo, MS, PE
Project Engineer
RCE No. 91269

cc: Addressee (2)

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED COMMERCIAL DEVELOPMENT ESCONDIDO
SWC CENTRE CITY PARKWAY & MISSION AVENUE
ESCONDIDO, CALIFORNIA

TABLE OF CONTENTS

INTRODUCTION **1**

PURPOSE AND SCOPE OF SERVICES **1**

PROPOSED CONSTRUCTION **2**

SITE LOCATION AND SITE DESCRIPTION **2**

GEOLOGIC SETTING **3**

SITE COEFFICIENT 4
FIELD AND LABORATORY INVESTIGATIONS 5

SOIL PROFILE AND SUBSURFACE CONDITIONS **5**

GROUNDWATER **6**

INFILTRATION TESTING 7
SOIL CORROSIVITY 7

CONCLUSIONS AND RECOMMENDATIONS **7**

ADMINISTRATIVE SUMMARY 7
GROUNDWATER INFLUENCE ON STRUCTURES/CONSTRUCTION 8
SEISMIC CONSIDERATIONS 9
Ground Shaking 9
Soil Liquefaction 9
Seismic Induced Settlement 10
EARTHWORK 10
Site Preparation – Clearing and Stripping 10
Overexcavation and Recompaction 10
Fill Placement 11
ENGINEERED FILL 11
FOUNDATION 12
Settlement 12
Seismic Induced Settlement 12
Static Settlement 12
Lateral Load Resistance 12
FLOOR SLABS AND EXTERIOR FLATWORK 13
RETAINING WALLS 13
TEMPORARY EXCAVATION STABILITY 14
UTILITY TRENCH LOCATION, CONSTRUCTION AND BACKFILL 15
COMPACTED MATERIAL ACCEPTANCE 15
SURFACE DRAINAGE AND LANDSCAPING 15
PAVEMENT DESIGN 16
INFILTRATION TESTING 17
SOIL CORROSIVITY 17

ADDITIONAL SERVICES 17

LIMITATIONS 18

FIGURES:

FIGURE 1	**VICINITY MAP**
FIGURE 2	**SITE MAP**
FIGURE 3	**LIQUEFACTION: COUNTY OF SAN DIEGO HAZARD MITIGATION PLANING MAP**
FIGURE 4	**GEOLOGIC MAP**
APPENDIX A	**BORING LOGS**
	LABORATORY TEST RESULTS
APPENDIX B	**GENERAL EARTHWORK SPECIFICATIONS**
APPENDIX C	**GENERAL PAVEMENT SPECIFICATIONS**
APPENDIX D	**LIQUEFACTION ANALYSIS**

July 1, 2024 KA Project No. 112-24075

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED COMMERCIAL DEVELOPMENT ESCONDIDO
SWC CENTRE CITY PARKWAY & MISSION AVENUE
ESCONDIDO, CALIFORNIA

INTRODUCTION

This report presents the results of our Geotechnical Engineering Investigation for the proposed development that will include construction of a commercial development consisting of 3 pads with drive-thru lanes. It is anticipated that the proposed construction will include patio areas, trash enclosures, associated parking and drive areas, and localized landscaped areas. Discussions regarding site conditions are presented herein, together with conclusions and recommendations pertaining to site preparation, grading, utility trench backfill, drainage and landscaping, foundations, concrete floor slabs and exterior concrete flatwork, retaining walls, soil corrosivity, and pavement design.

A Vicinity Map showing the location of the site is presented on Figure 1. A Site Plan showing the approximate boring locations is presented on Figure 2. Descriptions of the field and laboratory investigations, boring log legend, and boring logs are presented in Appendix A. Appendix A contains a description of the laboratory-testing phase of this study, along with the laboratory test results. Appendices B and C contain guide specifications for earthwork and flexible pavements, respectively. If conflicts in the text of the report occur with the general specifications in the appendices, the recommendations in the text of the report have precedence.

PURPOSE AND SCOPE OF SERVICES

This geotechnical investigation was conducted to evaluate subsurface soil and groundwater conditions at the project site. Engineering analysis of the field and laboratory data was performed for the purpose of developing and providing geotechnical recommendations for use in the design and construction of the earthwork, foundation and pavement aspects of the project.

Our scope of services was outlined in our proposal dated April 15, 2024 (KA Proposal No. G24061CAC) and included the following:

- A site reconnaissance by a member of our engineering staff to evaluate the surface conditions at the project site.
- Review of selected published geologic maps, reports and literature pertinent to the site and surrounding area.

- A field investigation from previous drilling consisting of a total of nine (9) borings to depths ranging from approximately ten (10) to fifty (40) feet below the existing ground surface or auger refusal, for evaluation of the subsurface conditions at the project site.

- Performance of two (2) infiltration tests at the subject site in order to determine an estimated infiltration rate for the near surface soil conditions.

- Performance of laboratory tests on representative soil samples obtained from the borings to evaluate the physical and index properties of the subsurface soils.

- Evaluation of the data obtained from the investigation and engineering analyses of the data with respect to the geotechnical aspects of structural design, site grading and paving.

- Preparation of this report summarizing the findings, results, conclusions and recommendations of our investigation.

Environmental services, such as a chemical analysis of soil and groundwater for possible environmental contaminates, were not in our scope of services.

PROPOSED CONSTRUCTION

Based on our review of the site plan and our discussions with the project representative, we understand that the proposed development will include construction of three single-story building pads. Pad A will be approximately 1,750 square feet, Pad B will be approximately 2,300 square feet, and Pad V will be approximately 2,350 square feet. The proposed buildings are anticipated to be of wood frame/stucco construction with a slab-on-grade floor. The proposed development will include drive-thru lanes, patio areas, trash enclosures, associated parking and drive area, and localized landscaped areas. It is anticipated that the proposed structures will be supported on shallow foundation systems.

In the event these structural or grading details are inconsistent with the final design criteria, we should be notified so that we can evaluate the potential impacts of the changes on the recommendations presented in this report and provide an updated report as necessary.

SITE LOCATION AND SITE DESCRIPTION

The site is roughly a rectangular shaped parcel associated with the existing development. The site is located at the southwest corner of Centre City Parkway and Mission Avenue in the city of Escondido, California. The overall site occupies an area of approximately 3.3 acres. The site is bound to the north by West Mission Avenue and commercial buildings beyond, to the west by an auto repair shop and a hotel and a water channel beyond, to the south by an apartment complex and commercial developments and a hotel beyond, and to the east by Centre City Parkway and commercial developments beyond.

The site is currently occupied by an active restaurant, a dirt lot in the southeastern section of the site, localized asphaltic concrete pavement, and localized landscaped areas. The site topography is relatively flat and level with an approximate elevation of 650 feet above mean sea level. The latitude and longitude of the site is 33.127817° and -117.091774°.

GEOLOGIC SETTING

The subject site is located within the Peninsular Ranges Geomorphic Province (CGS Note 36). The Peninsular Ranges are a series of ranges that are separated by northwest trending valleys, subparallel to faults branching from the San Andreas Fault. The trend of topography is similar to the Coast Ranges, but the geology is more like the Sierra Nevada, with granitic rock intruding the older metamorphic rocks. The Peninsular Ranges extend in to lower California and are bound on the east by the Colorado Desert. The Los Angeles Basin and the island group (Santa Catalina, Santa Barbara, and the distinctly terraced San Clemente and San Nicolas islands), together with the surrounding continental shelf (cut by deep submarine fault troughs), are included in this province.

Locally, the site is near the Escondido Creek; 15.5 miles southwest of the subject site is the Rose Canyon Fault Zone and the Pacific Ocean beyond. Approximately 15.5 miles northeast of the subject site is the Elsinore Fault zone and the Palomar Mountain beyond.

The near-surface deposits in the vicinity of the subject site generally consist of soil deposits that are fine to medium grained, silty sands and gravelly sands up to the explored depth of 35 feet below the ground surface. The bedrock underlying the near surface deposits is comprised of Mesozoic-age plutonic rocks (Map Symbol grMz) consisting of Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite, see the attached Geologic Map (Figure 4) and Boring Logs (Appendix A) for a description of the earth materials encountered during our investigation.

Numerous moderate to large earthquakes have affected the area of the subject site within historic time. Based on the proximity of several dominant active faults and seismogenic structures, as well as the historic seismic record, the area of the subject site is considered subject to relatively high seismicity. The area in consideration shows no mapped faults on-site according to maps prepared by the California Geologic Survey and published by the International Conference of Building Officials (ICBO). No evidence of surface faulting was observed on the property during our reconnaissance.

FAULT RUPTURE HAZARD ZONES

The Alquist-Priolo Geologic Hazards Zones Act went into effect in March, 1973. Since that time, the Act has been amended 11 times (Hart, 2007). The purpose of the Act, as provided in California Geologic Survey (CGS) Special Publication 42 (SP 42), is to prohibit the location of most structures for human occupancy across the traces of active faults and to mitigate thereby the hazard of fault-rupture". The Act was renamed the Alquist-Priolo Earthquake Fault Zoning Act in 1994, and at that time, the originally designated "Special Studies Zones" was renamed the "Earthquake Fault Zones."

The area of the subject site is not included on an Earthquake Fault Zones Map prepared by the CGS. The nearest fault is a portion of the Elsinore Fault Zone located approximately 15.5 miles away from the project site. The site is not located in an Earthquake Fault Zone.

SEISMIC HAZARDS ZONES

In 1990, the California State Legislature passed the Seismic Hazard Mapping Act to protect public safety from the effects of strong shaking, liquefaction, landslides, or other ground failure, and other hazards caused by earthquakes. The Act requires that the State Geologist delineate various seismic hazards zones on Seismic Hazards Zones Maps. Specifically, the maps identify areas where soil liquefaction and earthquake-induced landslides are most likely to occur. A site-specific geotechnical evaluation is required prior to permitting most urban developments within the mapped zones. The Act also requires sellers of real property within the zones to disclose this fact to potential buyers.

A State of California, Special Studies Zone Map has not been prepared for the subject site. Furthermore, based on the County of San Diego Hazard Mitigation Planning Map the subject site is located in an area designated as having liquefaction layers.

OTHER HAZARDS

Rockfall, Landslide, Slope Instability, Debris Flow: Both levels of the subject site are relatively flat and level. It is our understanding that there are no significant slopes proposed as part of the proposed development. Provided the recommendations presented in this report are implemented into the design and construction of the anticipated development, rockfalls, landslides, slope instability, and debris flows are not anticipated to pose a hazard to the subject site.

Seiches: Seiches are large waves generated within enclosed bodies of water. The site is not located in close proximity to any lakes or reservoirs. As such, seiches are not anticipated to pose a hazard to the subject site.

Hydroconsolidation: The near surface soils encountered at the subject site were found to be very medium dense to dense. Provided remedial grading recommendations presented in this report are incorporated in the design and construction, hydroconsolidation is not anticipated to be a significant concern for the subject site.

SITE COEFFICIENT

The site class, per Table 1613.5.2, 2022 CBC, is based upon the site soil conditions. It is our opinion that a Site Class D is appropriate for building design at this site. For seismic design of the structures, in accordance with the seismic provisions of the 2022 CBC, we recommend the following parameters:

2022 CALIFORNIA BUILDING CODE		
Seismic Item	**Value**	**CBC Reference**
Site Class	D	Section 1613.2.2
F_a	1.136	Table 1613.2.3 (1)
S_S	0.909	Section 1613.2.1
S_{MS}	1.033	Section 1613.2.3
S_{DS}	0.689	Section 1613.2.4
F_v	1.968	Table 1613.2.3 (2)
S_1	0.332	Section 1613.2.1
S_{M1}	0.653	Section 1613.2.3
S_{D1}	0.436	Section 1613.2.4
T_S	0.632	Section 1613.2
Peak Horizontal Acceleration	0.474	Figure 22.7

FIELD AND LABORATORY INVESTIGATIONS

Subsurface soil conditions were explored by drilling a total of nine (9) borings using a truck-mounted drill rig to depths ranging from approximately ten (10) to fifty (50) feet below existing site grades or auger refusal, whichever happens first. The borings were drilled using hollow stem augering equipment. In addition, bulk subgrade soil samples were also obtained for laboratory testing. The approximate boring and bulk sample locations are shown on the Site Plan, Figure2. These approximate boring and sample locations were estimated in the field based on pacing and measuring from the limits of existing site features. During drilling operations, penetration tests were performed at regular intervals to evaluate the soil consistency and to obtain information regarding the engineering properties of the subsurface soils. Soil samples were retained for laboratory testing. The soils encountered were continuously examined and visually classified in accordance with the Unified Soil Classification System. A more detailed description of the field investigation is presented in Appendix A.

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. The laboratory-testing program was formulated with emphasis on the evaluation of natural in-situ moisture and density, gradation, R-Value, maximum dry density, resistivity, pH value, sulfate and chloride contents of the materials encountered. Details of the laboratory-testing program are discussed in Appendix A. The results of the laboratory tests are presented on the boring logs or on the test reports, which are also included in Appendix A. This information, along with the field observations, was used to prepare the final boring logs in Appendix A.

SOIL PROFILE AND SUBSURFACE CONDITIONS

Based on our findings, the subsurface conditions encountered appear typical of those found in the geologic region of the site. Groundcover at the subject site consisted of approximately two (2) to three

(3) inches of asphalt underlain by approximately one (1) to four (4) inches of discernable base material. In general, the subsurface soils encountered consisted of medium dense to dense silty sands up to a depth of approximately 14 feet below existing grades. Below the silty sand material, very dense gravelly sand was encountered from a depth of approximately 14 feet below site grades to a depth of approximately 34 feet below current site grades. Below the gravelly sand, a very dense layer of silty sand was encountered at a depth of approximately 34 feet below site grades up to the maximum depth explored, 37 feet below site grades. Auger refusal was encountered at a depth of approximately 37 feet below site grades on weathered bedrock. Verification of any fill material (if any) should be determined during site grading.

Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. Penetration resistance, measured by the number of blows required to drive a Modified California sampler or a Standard Penetration Test (SPT) sampler, ranged from approximately 21 blows per foot to over 50 blows per foot. Dry densities ranged from approximately 101 to 120 pcf. A representative sample of the near surface soil was tested and found to have an angle of internal friction of 30 degrees with a cohesion value of 100 psf. Representative soil samples consolidated approximately 2.7 to 0.7 percent under a 2 ksf load when saturated.

The above is a general description of soil conditions encountered at the site in the borings drilled for this investigation. For a more detailed description of the soil conditions encountered, please refer to the boring logs in Appendix A.

EXPANSION POTENTIAL

The near-surface silty sand soils encountered at the site have been identified through laboratory testing and field observation as having a low expansion potential. Expansive soils have the potential to undergo volume change, or shrinkage and swelling, with changes in soil moisture. As expansive soils dry, the soil shrinks; when moisture is reintroduced into the soil, the soil swells.

GROUNDWATER

Test boring locations were checked for the presence of groundwater during and immediately following the drilling operations. Free groundwater was encountered during our field visit investigation at a depth of approximately 23 feet below site grades.

It should be recognized that water table elevation might fluctuate with time. The depth to groundwater can be expected to fluctuate both seasonally and from year to year. Fluctuations in the groundwater level may occur due to variations in precipitation, irrigation practices at the site and in the surrounding areas, climatic conditions, flow in adjacent or nearby canals, pumping from wells and possibly as the result of other factors that were not evident at the time of our investigation. Therefore, water level observations at the time of our field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report. Long-term monitoring in observation wells, sealed from the influence of surface water, is often required to more accurately define the potential range of groundwater conditions on a site.

INFILTRATION TESTING

Estimated infiltration rates were determined using the results of open borehole percolation testing performed at the subject site. The percolation testing indicated that the near surface soils were found to have infiltration rates of approximately 0.15 and 0.20 inch per hour.

In order to perform the infiltration tests, two borings were drilled to approximately five feet below existing site grades. Infiltration testing was performed at each boring location. Prior to infiltration testing, approximately four inches of gravel was placed at the bottom of each borehole. The boreholes were pre-soaked prior to testing using clean water. The depth of each borehole was measured at each reading to verify the overall depth. The depth of water in the borehole was measured using a water level indicator or well sounder. Infiltration rates have been calculated using the Inverse Borehole procedures.

Based on the very low infiltration rates, the subsurface conditions encountered at the subject site are not considered conducive to infiltration. Detailed results of the infiltration testing are included in Appendix A in tabular format.

SOIL CORROSIVITY

Corrosion tests were performed to evaluate the soil corrosivity to the buried structures. The tests results consisted of qualified corrosive soil with minimum sulfate and chloride contents. A qualified corrosion engineer should review the results. The results are provided below:

Parameter	Results	Test Method
pH Value	7.5	EPA 9045C
Resistivity	3,200 ohm-cm	CA 643
Sulfate	185 ppm	CA 417
Chloride	89 ppm	CA 422

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of our field and laboratory investigations, along with previous geotechnical experience in the project area, the following is a summary of our evaluations, conclusions, and recommendations.

ADMINISTRATIVE SUMMARY

In brief, the subject site and soil conditions, with the exception of the current development, appear to be conducive to the development of the project. Based on the data collected during this investigation and from a geotechnical engineering standpoint, it is our opinion that the proposed improvements may be

made as anticipated provided that the recommendations presented in this report are considered in the design and construction of the project.

To reduce post-construction soil movement, provide uniform support for the proposed building, and address anticipated disturbed material resulting from demolition activities, overexcavation and recompaction within the proposed building footprint area should be performed to a minimum depth of five (5) feet below existing grades or three (3) feet below the bottom of the proposed footings, whichever is deeper. The actual depth of the overexcavation and recompaction should be determined by our field representative during construction. The overexcavation and recompaction should also extend laterally five (5) feet beyond edges of the proposed footings or building limits. Any undocumented fill encountered during grading should be removed and replaced with Engineered Fill.

Within the proposed exterior flatwork and pavement areas, the overexcavation and recompaction should be performed to a depth of at least one (1) foot below existing grade or finish subgrade, whichever is deeper. This compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation.

Fill material should be compacted to a minimum of 95 percent of the maximum dry density based on ASTM Test Method D1557. All fill material should be moisture-conditioned to at least 2 percent above optimum moisture-content.

It is recommended that interior slabs-on-grade be designed at least five inches (5") in thickness. It is recommended that the slabs should be reinforced with a minimum of number three (#3) bars, eighteen inches (18") on center in both directions. It is recommended that exterior slabs-on-grade be designed at least five inches (5") in thickness. It is recommended that the slabs should be reinforced with a minimum of number three (#3) bars, eighteen inches (18") on center in both directions.

The proposed structures, including walls and other foundation elements may be supported on a shallow foundation system after the bottom of the footings have been moisture-conditioned to at least 2 percent above optimum moisture-content, and recompacted to a minimum of 95 percent of the maximum dry density based on ASTM Test Method D1557. Spread and continuous footings can be designed for a maximum allowable soil bearing pressure, dead plus live load, of 2,600 psf.

Infiltration rates were determined using the results of open borehole infiltration testing performed at the subject site. Infiltration testing performed on the near surface sandy clay soil indicate infiltration rates of approximately 0.15 and 0.20 inch per hour. Based on the very low infiltration rates, the subsurface conditions encountered at the site and not considered conducive to infiltration.

GROUNDWATER INFLUENCE ON STRUCTURES/CONSTRUCTION

Based on our findings and historical records, it is not anticipated that groundwater will rise within the zone of structural influence or affect the construction of foundations and pavements for the project. However, if earthwork is performed during or soon after periods of precipitation, the subgrade soils may become saturated, “pump,” or not respond to densification techniques. Typical remedial measures include: discing and aerating the soil during dry weather; mixing the soil with dryer materials; removing

and replacing the soil with an approved fill material; or mixing the soil with an approved lime or cement product. Our firm should be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations.

SEISMIC CONSIDERATIONS

Ground Shaking

Although ground rupture is not considered to be a major concern at the subject site, the site will likely be subject to at least one moderate to severe earthquake and associated seismic shaking during its lifetime, as well as periodic slight to moderate earthquakes. Some degree of structural damage due to stronger seismic shaking should be expected at the site, but the risk can be reduced through adherence to seismic design codes.

Soil Liquefaction

Soil liquefaction is a state of soil particle suspension caused by a complete loss of strength when the effective stress drops to zero. Liquefaction normally occurs under saturated conditions in soils such as sand in which the strength is purely frictional. However, liquefaction has occurred in soils other than clean sand. Liquefaction usually occurs under vibratory conditions such as those induced by seismic events. To evaluate the liquefaction potential of the site, the following items were evaluated:

1) Soil type
2) Groundwater depth
3) Relative density
4) Initial confining pressure
5) Intensity and duration of ground shaking

The site is located in a liquefaction layer zone as defined by the County of San Diego. The subsurface conditions encountered at the site consisted of medium dense to very dense soils. In addition, groundwater was encountered at a depth of approximately 23 feet below the existing site grades.

The potential for soil liquefaction during a seismic event was evaluated using the LiquefyPro computer program (version 5.8h) developed by CivilTech Software. For the analysis, a maximum earthquake magnitude of 6.5 M_w and a peak horizontal ground surface acceleration of 0.47g were considered appropriate for the liquefaction analysis. A groundwater depth of 23 feet was used for the analysis. The computer analysis indicates that the subsurface soil conditions encountered at the subject site are not conducive to liquefaction induced settlement.

Based on our findings, it is our opinion that the potential for seismic-induced soil liquefaction within the project site is low. Therefore, measures to mitigate liquefaction potential are not considered necessary.

Seismic Induced Settlement

One of the most common phenomena during seismic shaking accompanying any earthquake is the induced settlement of loose unconsolidated soils. Based on site subsurface conditions and the moderate to high seismicity of the region, any loose fill materials at the site could be vulnerable to this potential hazard. However, this hazard can be mitigated by following the design and construction recommendations of our Geotechnical Engineering Investigation (over-excavation and rework of the loose soils and/or fill). Based on the moderate penetration resistance measured, the native deposits underlying the surface materials do not appear to be subject to significant seismic settlement.

EARTHWORK

Site Preparation – Clearing and Stripping

General site clearing should include removal of vegetation and existing utilities, structures (footings and slabs); trees and associated root systems; rubble; rubbish; and any loose and/or saturated materials. Site stripping should extend to a minimum depth of 2 to 4 inches, or until all organics in excess of 3 percent by volume are removed. Deeper stripping may be required in localized areas. These materials will not be suitable for reuse as Engineered Fill. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas.

Any excavations that result from clearing operations should be backfilled with Engineered Fill. Krazan & Associates' field staff should be present during site clearing operations to enable us to locate areas where depressions or disturbed soils are present and to allow our staff to observe and test the backfill as it is placed. If site clearing and backfilling operations occur without appropriate observation and testing by a qualified geotechnical consultant, there may be the need to over-excavate the building area to identify uncontrolled fills prior to mass grading of the building pad.

As with site clearing operations, any buried structures encountered during construction should be properly removed and backfilled. The resulting excavations should be backfilled with Engineered Fill.

Overexcavation and Recompaction

To reduce post-construction soil movement and provide uniform support for the proposed buildings, overexcavation and recompaction within the proposed building footprint area and any other shallow foundation bearing areas should be performed to a minimum depth of five (5) feet below existing grades or three (3) feet below the bottom of any proposed foundation bearing grades, whichever is deeper. Overexcavation should be performed to remove and re-compact the existing fill soils, if present, in the building area. The actual depth of the overexcavation and recompaction should be determined by our field representative during construction. The exposed subgrade at the base of the overexcavation should then be scarified, moisture-conditioned as necessary, and compacted. The overexcavation and recompaction should also extend laterally five feet (5') beyond edges of the proposed footings or building limits. Any undocumented fill encountered during grading should be removed and replaced with Engineered Fill.

Within the proposed exterior flatwork and pavement areas, the overexcavation and recompaction should be performed to a depth of at least 12 inches below existing grade or finished subgrade, whichever is deeper. This compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation.

Fill Placement

Prior to placement of fill soils, the upper 8 inches of native subgrade soils should be scarified, moisture-conditioned to slightly above optimum moisture-content, and recompacted to a minimum of 95 percent of the maximum dry density based on ASTM D1557 Test Method. Fill material should be compacted to a minimum of 95 percent of the maximum dry density based on ASTM D1557 Test Method.

The upper soils, during wet winter months, may become very moist due to the absorptive characteristics of the soil. Earthwork operations performed during winter months may encounter very moist unstable soils, which may require removal to grade a stable building foundation. Project site winterization consisting of placement of aggregate base and protecting exposed soils during the construction phase should be performed.

ENGINEERED FILL

The organic-free, on-site, soils are predominately silty sands. These soils will be suitable for reuse as Engineered Fill, provided they are cleansed of excessive organics and debris.

The preferred materials specified for Engineered Fill are suitable for most applications with the exception of exposure to erosion. Project site winterization and protection of exposed soils during the construction phase should be the sole responsibility of the contractor, since he has complete control of the project site at that time.

Imported Fill material should be predominately non-expansive granular material. This material should be approved by the Geotechnical Engineer prior to use and should typically possess the following characteristics:

NON-EXPANSIVE FILL PROPERTIES	
Percent Passing No. 200 Sieve	10 to 50
Plasticity Index (PI)	12 maximum
Liquid Limit	35 maximum
UBC Standard 29-2 Expansion Index	20 maximum

Imported Fill should be free from rocks and clods greater than 4 inches in diameter. All Imported Fill material should be submitted to the Soils Engineer for approval at least 48 hours prior to delivery at the site. Fill soils should be placed in lifts approximately 6 inches thick, moisture-conditioned to near optimum moisture-content, and compacted to achieve at least 95 percent of maximum dry density as determined by ASTM D1557 Test Method. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.

FOUNDATION

The proposed structures may be supported on a shallow foundation system bearing on a minimum of three (3) feet of newly placed Engineered Fill. Spread and continuous footings can be designed for the following maximum allowable soil bearing pressures:

Load	Allowable Loading
Dead Load Only	1,950 psf
Dead-Plus-Live Load	2,600 psf
Total Load, including wind or seismic loads	3,450 psf

The footings should have a minimum depth of 18 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is deeper. Minimum footing widths should be 15 inches for continuous footings and 24 inches for isolated footings. The footing excavations should not be allowed to dry out any time prior to placement of concrete.

It is recommended that the foundation for the proposed structure be placed entirely within compacted fill materials or entirely within alluvium or bedrock. Footings shall not transition from one bearing material to another. It is recommended that all foundations contain steel reinforcement of at least two (2) number four (#4) bars, one (1) top and one (1) bottom. Final foundations designs should be determined by the project structural engineer.

Settlement

Seismic Induced Settlement

One of the most common phenomena during seismic shaking accompanying any earthquake is the induced settlement of loose unconsolidated soils. Based on site subsurface conditions and the moderate to high seismicity of the region, any loose or soft materials at the site could be vulnerable to this potential hazard. Although the soil conditions encountered are not considered subject to liquefaction induced settlement, seismic settlement due to seismic shaking is not expected to exceed 0.04 inch. The differential seismic settlement is anticipated to be less than 0.03 inch in 100 feet.

Static Settlement

Provided the site is prepared as recommended and that the foundations are designed and constructed in accordance with our recommendations, the static settlement due to foundation loads is not expected to exceed 1 inch. The differential settlement is anticipated to be less than ½ inch in 30 feet. Most of the settlement is expected to occur during construction as the loads are applied. However, additional post-construction settlement may occur if the foundation soils are flooded or saturated.

Lateral Load Resistance

Resistance to lateral footing displacement can be computed using an allowable friction factor of 0.25 acting between the base of foundations and the supporting subgrade. Where a vapor barrier material is used below concrete slabs-on-grade, a coefficient of friction should be provided by the vapor barrier

manufacturer. Lateral resistance for footings can alternatively be developed using an allowable equivalent fluid passive pressure of 200 pounds per cubic foot acting against the appropriate vertical footing faces. Where equivalent fluid pressure against the sides of the footings or embedded slab edge are to be used, the footing or slab edge must be cast directly against undisturbed soils or the soils surrounding the structure must be recompacted to the requirements for Engineered Fill presented above. The frictional and passive resistance of the soil may be combined without reduction in determining the total lateral resistance. A one-third increase in the value above may be used for short duration, wind, or seismic loads.

FLOOR SLABS AND EXTERIOR FLATWORK

The interior slabs on grade should be designed at least five inches (5") in thickness. It is recommended that the slabs be reinforced with at least number three (#3) bars, eighteen inches (18") on center in both directions.

Exterior slabs-on-grade should be designed at least five inches (5") in thickness. It is recommended that the slabs should be reinforced with at least number three (#3) bars, eighteen inches (18") on center in both directions. Exterior floors should be poured separately in order to act independently of the walls and foundation system. All fills required to bring the building pads to grade should be Engineered Fills.

It is recommended that the slabs be underlain by two to four inches (2-4") of clean sand with a minimum 15 mil polyolefin membrane vapor barrier (i.e. Stego Wrap or equivalent) placed with two inches (2") of clean sand on top of the vapor barrier.

Moisture within the structure may be derived from water vapors, which were transformed from the moisture within the soils. This moisture vapor can travel through the vapor membrane and penetrate the slab-on-grade. This moisture vapor penetration can affect floor coverings and produce mold and mildew in the structure. To minimize moisture vapor intrusion, it is recommended that a vapor retarder be installed in accordance with ASTM guidelines. It is recommended that the utility trenches within the structure be compacted, as specified in our report, to minimize the transmission of moisture through the utility trench backfill. Special attention to the immediate drainage and irrigation around the building is recommended. Positive drainage should be established away from the structure and should be maintained throughout the life of the structure. Ponding of water should not be allowed adjacent to the structure. Over-irrigation within landscaped areas adjacent to the structure should not be performed. In addition, ventilation of the structure (i.e. ventilation fans) is recommended to reduce the accumulation of interior moisture.

RETAINING WALLS

For retaining walls with level ground surface behind the walls, we recommend that retaining walls capable of deflecting a minimum of 0.1 percent of its height at the top be designed using an equivalent fluid active pressure of 40 pounds per square foot per foot of depth. Walls that are incapable of this deflection or walls that are fully constrained against deflection may be designed for an equivalent fluid at-rest pressure of 60 pounds per square foot per foot of depth. A passive lateral pressure of 200 pounds per square foot may be used to calculate sliding resistance. If walls are to be constructed above descending

slopes, our office should be contacted to discuss further reduction in allowable passive pressures for resistance of lateral forces, and for overall retaining wall foundation design.

The surcharge effect from loads adjacent to the walls should be included in the wall design. The surcharge load for walls capable of deflecting (cantilever walls), we recommend applying a uniform surcharge pressure equal to one-third of the applied load over the full height of the wall. Where walls are restrained the surcharge load should be based on one-half of the applied load above the wall, also distributed over the full height of the wall. For other surcharges, such as from adjacent foundations, point loads or line loads, Krazan & Associates should be consulted.

Expansive soils should not be used for backfill against walls. The zone of non-expansive backfill material should extend from the bottom of each retaining wall laterally back a distance equal to the height of the wall, to a maximum of five (5) feet.

The active and at-rest earth pressures do not include hydrostatic pressures. To reduce the build-up of hydrostatic pressures, drainage should be provided behind the retaining walls. Wall drains should consist of a minimum 12-inch wide zone of drainage material, such as ¾-inch by ½-inch drain rock wrapped in a non-woven polypropylene geotextile filter fabric such as Mirafi 140N or equivalent. Alternatively, drainage may be provided by the placement of a commercially produced composite drainage blanket, such as Miradrain, extending continuously up from the base of the wall. The drainage material should extend from the base of the wall to finished subgrade in paved areas and to within about 12 inches below the top of the wall in landscape areas. In landscape areas the top 12 inches should be backfilled with compacted native soil. A 4-inch minimum diameter, perforated, Schedule 40 PVC drain pipe should be placed with holes facing down in the lower portion of the wall drainage material, surrounded with drain rock wrapped in filter fabric. A solid drainpipe leading to a suitable discharge point should provide drainage outlet. As an alternative, weep holes may be used to provide drainage. If weep holes are used, the weep holes should be 3 inches in diameter and spaced about 8 feet on centers. The backside of the weep holes should be covered with a corrosion-resistant mesh to prevent loss of backfill and/or drainage material.

TEMPORARY EXCAVATION STABILITY

All excavations should comply with the current requirements of Occupational Safety and Health Administration (OSHA). All cuts greater than 5 feet in depth should be sloped or shored. Temporary excavations should be sloped at 1:1 (horizontal to vertical) or flatter, up to a maximum depth of 10 feet, and at 2:1 (horizontal to vertical) for temporary slopes greater than 10 feet in height. Heavy construction equipment, building materials, excavated soil, and vehicular traffic should not be allowed within five feet of the top (edge) of the excavation. Where sloped excavations are not feasible due to site constraints, the excavations may require shoring. The design of the shoring system is normally the responsibility of the contractor or shoring designer, and therefore, is outside the scope of this report. The design of the temporary shoring should take into account lateral pressures exerted by the adjacent soil, and, where anticipated, surcharge loads due to adjacent buildings and any construction equipment or traffic expected to operate alongside the excavation. Since the Contractor has the ultimate responsibility for excavation stability, he may design a different shoring system for the excavation.

The excavation/shoring recommendations provided herein are based on soil characteristics derived from our test borings within the area. Variations in soil conditions will likely be encountered during the excavations. Krazan & Associates, Inc. should be afforded the opportunity to provide field review to evaluate the actual conditions and account for field condition variations, not otherwise anticipated in the preparation of this recommendation.

UTILITY TRENCH LOCATION, CONSTRUCTION AND BACKFILL

To maintain the desired support for existing or new foundations, new utility trenches should be located such that the base of the trench excavation is located above an imaginary plane having an inclination of 1.0 horizontal to 1.0 vertical, extending downward from the bottom edge of the adjacent footing.

Utility trenches should be excavated according to accepted engineering practices following OSHA standards by a contractor experienced in such work. The responsibility for the safety of open trenches should be borne by the contractor. Traffic and vibration adjacent to trench walls should be kept to a minimum; cyclic wetting and drying of excavation side slopes should be avoided. Depending upon the location and depth of some utility trenches, groundwater flow into open excavations could be experienced, especially during or shortly following periods of precipitation. For purposes of this section of the report, backfill is defined as material placed in a trench starting one foot above the pipe; bedding and shading (also referred to as initial backfill) is all material placed in a trench below the backfill. With the exception of specific requirements of the local utility companies or building department, pipe bedding and shading should consist of clean medium-grained sand. The sand should be placed in a damp state and should be compacted by mechanical means prior to the placement of backfill soils. Above the pipe zone, underground utility trenches may be backfilled with either free-draining sand, on-site soil or imported soil. The trench backfill should be compacted to at least 95 percent relative compaction.

COMPACTED MATERIAL ACCEPTANCE

Compaction specifications are not the only criteria for acceptance of the site grading or other such activities. However, the compaction test is the most universally recognized test method for assessing the performance of the Grading Contractor. The numerical test results from the compaction test cannot be solely used to predict the engineering performance of the compacted material. Therefore, the acceptance of compacted materials will also be dependent upon the moisture-content and the stability of that material. The Geotechnical Engineer has the option of rejecting any compacted material regardless of the degree of compaction if that material is considered to be too dry or excessively wet, unstable or if future instability is suspected. A specific example of rejection of fill material passing the required percent compaction is a fill which has been compacted with in-situ moisture-content significantly less than optimum moisture. Where expansive soils are present, heaving of the soils may occur with the introduction of water. Where the material is a lean clay or silt, this type of dry fill (brittle fill) is susceptible to future settlement if it becomes saturated or flooded.

SURFACE DRAINAGE AND LANDSCAPING

The ground surface should slope away from building and pavement areas toward appropriate drop inlets or other surface drainage devices. We recommended that adjacent paved exterior grades be sloped a minimum of 2 percent for a minimum distance of 10 feet away from structures. Ideally, asphalt concrete

pavement areas should be sloped at a minimum of 2 percent. These grades should be maintained for the life of the project. Roof drains should be designed to avoid discharging into landscape areas adjacent to the building. Downspouts should be directed to discharge directly onto paved surfaces to allow for surface drainage into the on-site infiltration system or should be dispersed in a landscape area for percolation into the subgrade. However, any drainage dispersed into the landscape areas should be a minimum of ten feet from the building pad limits.

PAVEMENT DESIGN

One bulk soil sample was obtained from the project site for R-Value testing at the location shown on the attached site plan. The sample was tested in accordance with the State of California Materials Manual Test Designation 301. Results of the test are as follows:

Sample	Depth	Description	R-Value at Equilibrium
1	0-36"	Silty Sand (SM)	45

The test results are moderate and indicate great subgrade support characteristics under dynamic traffic loads. The following table shows the recommended pavement sections for various traffic indices.

Traffic Index	Asphaltic Concrete	Class II Aggregate Base*	Compacted Subgrade**
4.0	2.0"	4.0"	12.0"
4.5	2.5"	4.0"	12.0"
5.0	2.5"	4.0"	12.0"
5.5	3.0"	4.0"	12.0"
6.0	3.0"	5.0"	12.0"
6.5	3.5"	5.0"	12.0"
7.0	4.0"	5.5"	12.0"
7.5	4.0"	6.5"	12.0"

**** 95% compaction based on ASTM Test Method D1557 or CAL 216***
***** 95% compaction based on ASTM Test Method D1557 or CAL 216***

If traffic indices are not available, an estimated (typical value) index of 4.5 may be used for light automobile traffic and an index of 7.0 may be used for light truck traffic. Following grading operations, it is recommended additional R-Value testing be performed to verify the design R-Value.

The following recommendations are for light-duty and heavy-duty Portland Cement Concrete pavement sections.

PORTLAND CEMENT PAVEMENT
LIGHT DUTY

Traffic Index	Portland Cement Concrete***	Class II Aggregate Base*	Compacted Subgrade**
4.5	5.0"	5.0"	12.0"

HEAVY DUTY

Traffic Index	Portland Cement Concrete***	Class II Aggregate Base*	Compacted Subgrade**
7.0	6.5"	5.0"	12.0"

**** 95% compaction based on ASTM Test Method D1557 or CAL 216***
***** 95% compaction based on ASTM Test Method D1557 or CAL 216***
******Minimum compressive strength of 3000 psi***

INFILTRATION TESTING

The shallow soil conditions present at the subject site were evaluated by drilling shallow borings in the vicinity of the infiltration tests. The borings drilled at the site indicated the subsurface soil conditions consisted of medium dense to dense silty sand.

Infiltration rates were determined using the results of open borehole infiltration testing performed at the subject site. Infiltration testing performed on the near surface silty sand soils indicate infiltration rates of approximately 0.15 and 0.20 inch per hour. Based on the very low infiltration rates, the subsurface conditions encountered at the site and not considered conducive to infiltration. Detailed results of the percolation test and infiltration rate are attached in tabular format.

SOIL CORROSIVITY

Excessive sulfate in either the soil or native water may result in an adverse reaction between the cement in concrete (or stucco) and the soil. ACI 318-19 has developed a criteria for evaluation of sulfate levels and how they relate to cement reactivity with soil and/or water.

One soil sample was obtained from the site and tested in accordance with State of California Materials Manual Test Designation 417. The sulfate concentrations detected from these soil samples were 185 ppm, which classifies this material as Class S1 based on the ACI 318-19, Table 19.3.1.1. Therefore, it is recommended that concrete in contact with soil utilize Type II Cement with a minimum compressive strength of 4,000 psi and a maximum water to cement ratio of 0.50.

Electrical resistivity testing of the soils indicates that the onsite soils may have a severe potential for metal loss from electrochemical corrosion process. A qualified corrosion engineer may be consulted regarding mitigation of the corrosion effects of the onsite soils on underground metal utilities.

ADDITIONAL SERVICES

Krazan & Associates should be retained to review your final foundation and grading plans, and specifications. It has been our experience that this review provides an opportunity to detect misinterpretation or misunderstandings with respect to the recommendations presented in this report prior to the start of construction.

Variations in soil types and conditions are possible and may be encountered during construction. In order to permit correlation between the soil data obtained during this investigation and the actual soil conditions encountered during construction, a representative of Krazan & Associates, Inc. should be present at the site during the earthwork and foundation construction activities to confirm that actual subsurface conditions are consistent with those contemplated in our development of this report. This will allow us

the opportunity to compare actual conditions exposed during construction with those encountered in our investigation and to expedite supplemental recommendations if warranted by the exposed conditions. This activity is an integral part of our service, as acceptance of earthwork construction is dependent upon compaction testing and stability of the material. Krazan & Associates, Inc. will not be responsible for grades or staking, since this is the responsibility of the Prime Contractor.

All earthworks should be performed in accordance with the recommendations presented in this report, or as recommended by Krazan & Associates during construction. Krazan & Associates should be notified at least five working days prior to the start of construction and at least two days prior to when observation and testing services are needed. Krazan & Associates, Inc. will not be responsible for grades or staking, since this is the responsibility of the Prime Contractor.

The review of plans and specifications, and the observation and testing of earthwork related construction activities by Krazan & Associates are important elements of our services if we are to remain in the role of Geotechnical Engineer-Of-Record. If Krazan & Associates is not retained for these services, the client and the consultants providing these services will be assuming our responsibility for any potential claims that may arise during or after construction.

LIMITATIONS

Geotechnical Engineering is one of the newest divisions of Civil Engineering. This branch of Civil Engineering is constantly improving as new technologies and understanding of earth sciences advance. Although your site was analyzed using appropriate and current techniques and methods, undoubtedly there will be substantial future improvements in this branch of engineering. In addition to advancements in the field of Geotechnical Engineering, physical changes in the site due to site clearing or grading activities, new agency regulations, or possible changes in the proposed structure or development after issuance of this report will result in the need for professional review of this report. Updating or revisions to the recommendations report, and possibly additional study of the site may be required at that time. In light of this, the Owner should be aware that there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that two years be considered a reasonable time for the usefulness of this report.

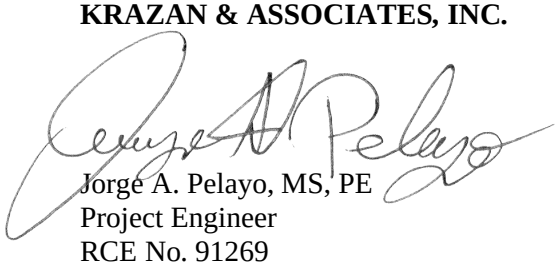
Foundation and earthwork construction is characterized by the presence of a calculated risk that soil and groundwater conditions have been fully revealed by the original foundation investigation. This risk is derived from the practical necessity of basing interpretations and design conclusions on limited sampling of the earth. The recommendations made in this report are based on the assumption that soil conditions do not vary significantly from those disclosed during our field investigation. The logs of the exploratory borings do not provide a warranty as to the conditions that may exist beneath the entire site. The extent and nature of subsurface soil and groundwater variations may not become evident until construction begins. It is possible that variations in soil conditions and depth to groundwater could exist beyond the points of exploration that may require additional studies, consultation, and possible design revisions. If conditions are encountered in the field during construction, which differ from those described in this report, our firm should be contacted immediately to provide any necessary revisions to these recommendations.

This report presents the results of our Geotechnical Engineering Investigation, which was conducted for the purpose of evaluating the soil conditions in terms of foundation and retaining wall design, and grading and paving of the site. This report does not include reporting of any services related to environmental studies conducted to assessment the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere, or the presence of wetlands. Any statements in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey professional judgment regarding the presence of potentially hazardous or toxic substances. Conversely, the absence of statements in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, does not constitute our rendering professional judgment regarding the absence of potentially hazardous or toxic substances.

The conclusions of this report are based on the information provided regarding the proposed construction. We emphasize that this report is valid for the project as described in the text of this report and it should not be used for any other sites or projects. The geotechnical engineering information presented herein is based upon our understanding of the proposed project and professional interpretation of the data obtained in our studies of the site. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. The Geotechnical Engineer should be notified of any changes to the proposed project so the recommendations may be reviewed and re-evaluated. The work conducted through the course of this investigation, including the preparation of this report, has been performed in accordance with the generally accepted standards of geotechnical engineering practice, which existed in geographic area of the project at the time the report was written. No other warranty, express or implied, is made. This report is issued with the understanding that the owner chooses the risk they wish to bear by the expenditures involved with the construction alternatives and scheduling that are chosen.

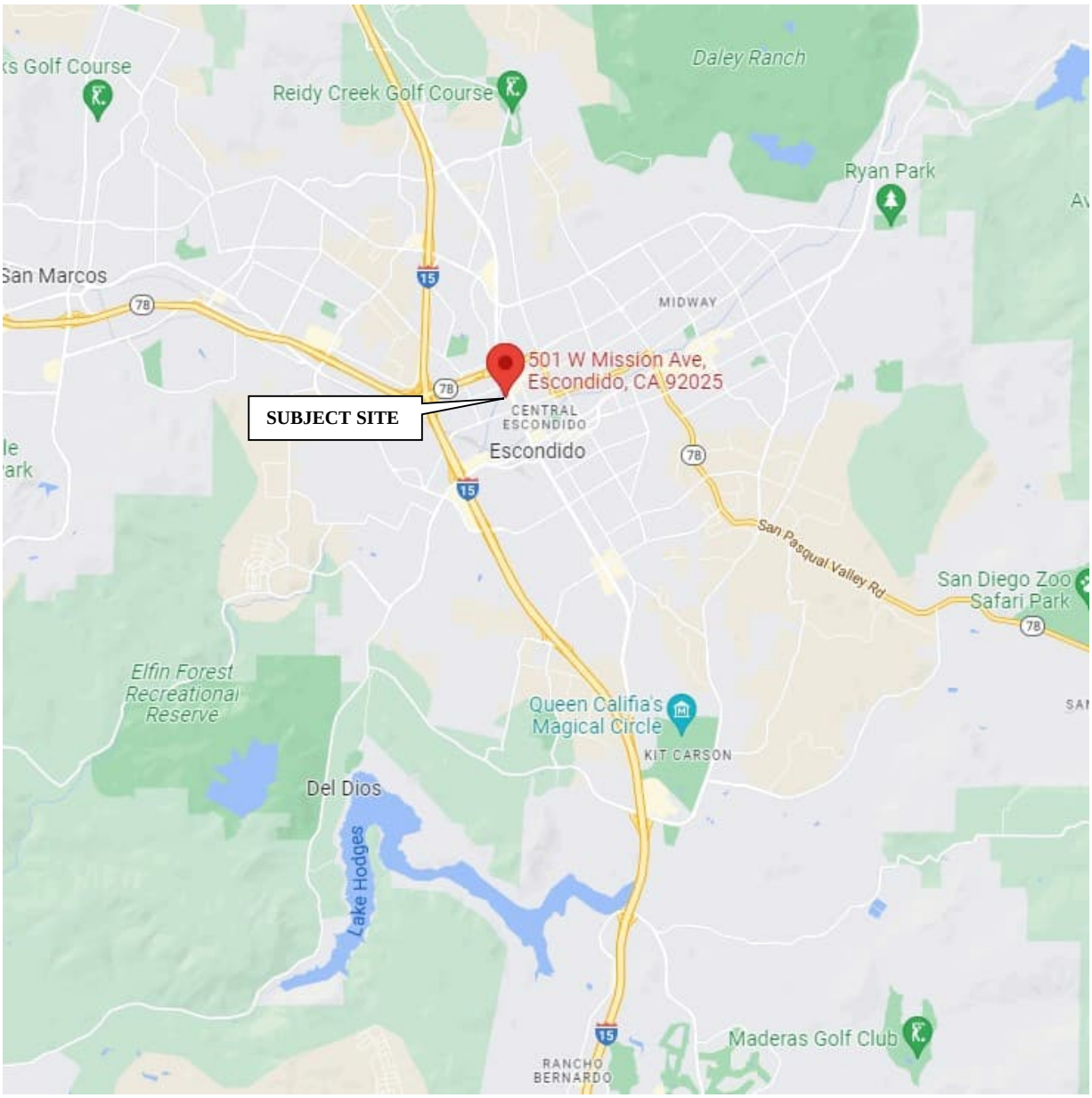
If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (951) 273-1011.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

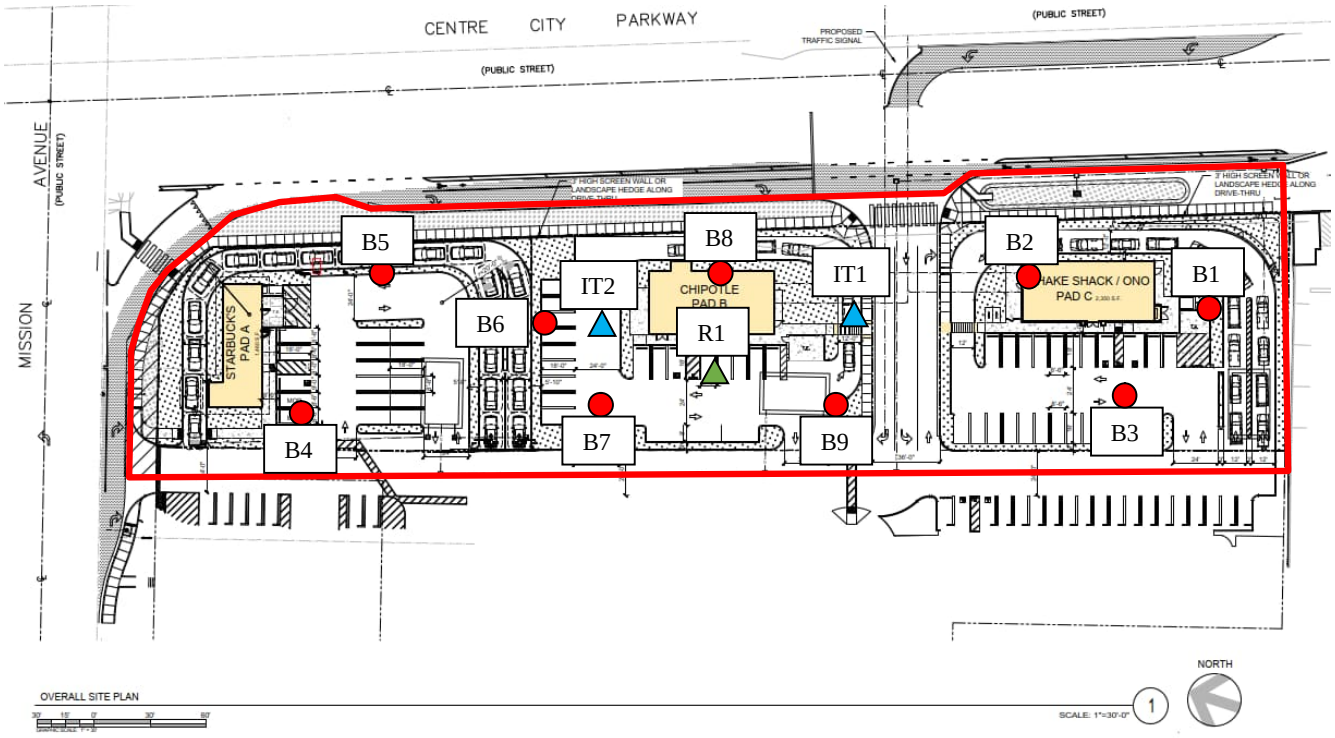


Jorge A. Pelayo, MS, PE
Project Engineer
RCE No. 91269

Figures

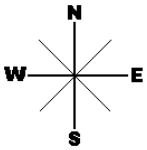


VICINITY MAP	Scale: NTS	Date: July, 2024	Krazan GEOTECHNICAL ENGINEERING
PROPOSED COMMERCIAL DEVELOPMENT SWC CENTRE CITY PARKWAY & MISSION AVENUE ESCONDIDO, CALIFORNIA	Drawn by: GR	Approved by: JP	
	Project No. 112-24075	Figure No. 1	



- APPROXIMATE BORING LOCATION
- APPROXIMATE R-VALUE LOCATION
- APPROXIMATE INFILTRATION TEST LOCATION

SITE MAP	**Scale:** As Shown	**Date:** July, 2024	Krazan GEOTECHNICAL ENGINEERING
PROPOSED COMMERCIAL DEVELOPMENT SWC CENTRE CITY PARKWAY & MISSION AVENUE ESCONDIDO, CALIFORNIA	**Drawn by:** GR	**Approved by:** JP	
	Project No. 112-24075	**Figure No.** 2	



LEGEND:

Earthquake Faults:
- Fault
- Zoned Earthquake Fault

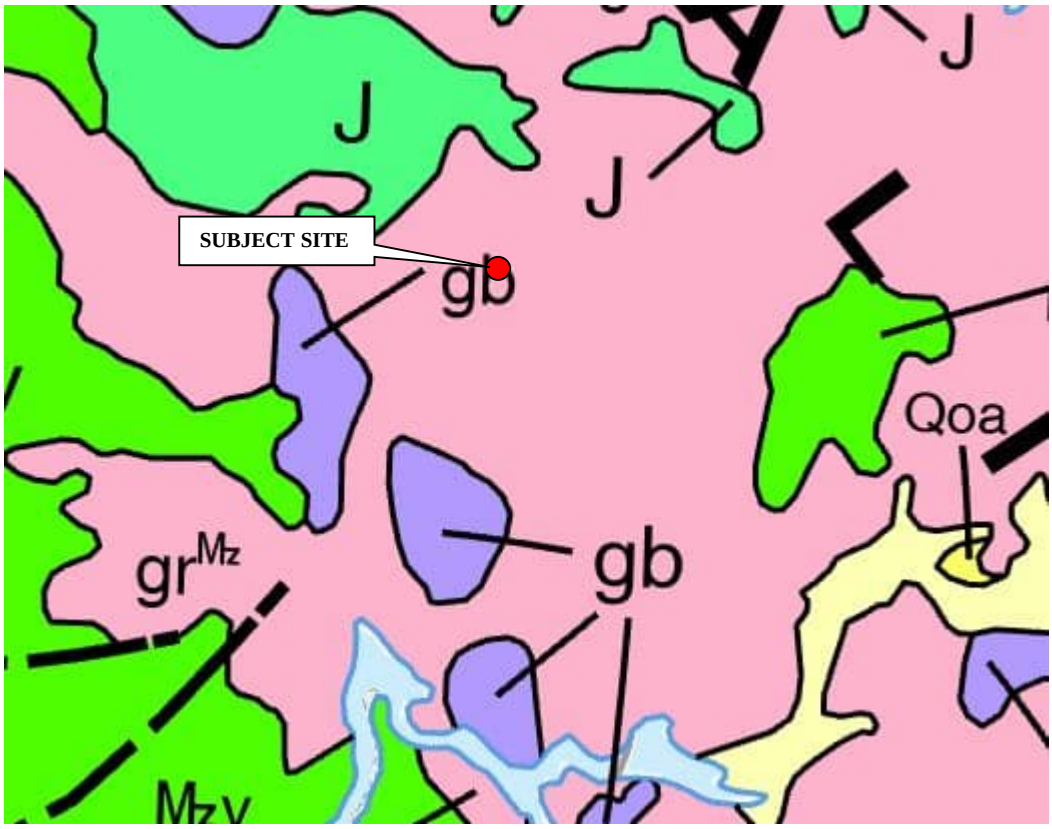
Liquefaction Layers
- Liquefaction Layers

Peak Ground Acceleration (2% in 50 yrs)
- 0.18 - 0.5 (Low Liquefaction Risk)
- 0.51 - 1.60 (High Liquefaction Risk)

Base Layers
- Incorporated City Boundary
- Freeways
- Major Roads
- Streams
- Lakes

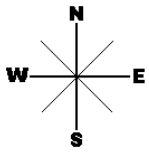
Source: SANGIS (Roads, Incorporated City Boundaries, Rivers, Lakes County of San Diego (Liquefaction Layers) USGS (Peak Ground Acceleration) State of California (Earthquake Faults)

LIQUEFACTION: COUNTY OF SAN DIEGO HAZARD MITIGATION PLANNING MAP	**Scale:** NTS	**Date:** July, 2024	Krazan GEOTECHNICAL ENGINEERING
PROPOSED COMMERCIAL DEVELOPMENT SWC CENTRE CITY PARKWAY & MISSION AVENUE ESCONDIDO, CALIFORNIA	**Drawn by:** GR	**Approved by:** JP	
	Project No. 112-24075	**Figure No.** 3	



Generalized Rock Types: grMz

General Lithology	plutonic rocks
Age	Mesozoic
Description	Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite.



Source: Department of Conservation: Geologic Map of California, 2015

GEOLOGIC MAP	**Scale:** NTS	**Date:** July, 2024	Krazan GEOTECHNICAL ENGINEERING
PROPOSED COMMERCIAL DEVELOPMENT SWC CENTRE CITY PARKWAY & MISSION AVENUE ESCONDIDO, CALIFORNIA	**Drawn by:** GR	**Approved by:** JP	
	Project No. 112-24075	**Figure No.** 4	

Appendix A

Log of Borings & Laboratory Testing

APPENDIX A

FIELD AND LABORATORY INVESTIGATIONS

Field Investigation

Our field investigation consisted of a surface reconnaissance and a subsurface exploration program consisted of drilling, logging and sampling a total of nine (9) borings. The depths of exploration ranged from approximately 10 feet to 50 feet below the existing site surface.

A member of our staff visually classified the soils in the field as the drilling progressed and recorded a continuous log of each boring. Visual classification of the soils encountered in our exploratory borings was made in general accordance with the Unified Soil Classification System (ASTM D2487). A key for the classification of the soil and the boring logs are presented in this Appendix.

During drilling operations, penetration tests were performed at regular intervals to evaluate the soil consistency and to obtain information regarding the engineering properties of the subsoils. Samples were obtained from the borings by driving either a 2.5-inch inside diameter Modified California tube sampler fitted with brass sleeves or a 2-inch outside diameter, 1-3/8-inch inside diameter Standard Penetration ("split-spoon") test (SPT) sampler without sleeves. Soil samples were retained for possible laboratory testing. The samplers were driven up to a depth of 18 inches into the underlying soil using a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler was recorded for each 6-inch penetration interval and the number of blows required to drive the sampler the last 12 inches are shown as blows per foot on the boring logs.

The approximate locations of our borings and bulk samples are shown on the Site Plan, Figure 2. These approximate locations were estimated in the field based on pacing and measuring from the limits of existing site features.

Laboratory Investigation

The laboratory investigation was programmed to determine the physical and mechanical properties of the soil underlying the site. The laboratory-testing program was formulated with emphasis on the evaluation of in-situ moisture, density, gradation, shear strength, consolidation potential, and R-Value of the materials encountered. In addition, chemical tests were performed to evaluate the soil/cement reactivity and corrosivity. Test results were used in our engineering analysis with respect to site and building pad preparation through mass grading activities, foundation and retaining wall design recommendations, pavement section design, evaluation of the materials as possible fill materials and for possible exclusion of some soils from use at the structures as fill or backfill.

Select laboratory test results are presented on the boring logs, with graphic or tabulated results of selected tests included in this Appendix. The laboratory test data, along with the field observations, was used to prepare the final boring logs presented in the Appendix.

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of 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 silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

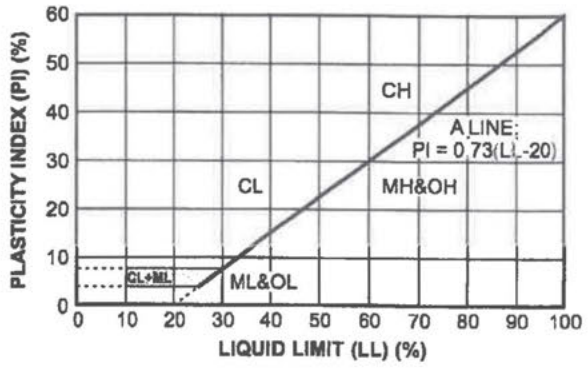
CONSISTENCY CLASSIFICATION

Description	Blows per Foot
Granular Soils	
Very Loose	< 5
Loose	5 – 15
Medium Dense	16 – 40
Dense	41 – 65
Very Dense	> 65
Cohesive Soils	
Very Soft	< 3
Soft	3 – 5
Firm	6 – 10
Stiff	11 – 20
Very Stiff	21 – 40
Hard	> 40

GRAIN SIZE CLASSIFICATION

Grain Type	*Standard Sieve Size*	*Grain Size in Millimeters*
Boulders	Above 12 inches	Above 305
Cobbles	12 to 13 inches	305 to 76.2
Gravel	3 inches to No. 4	76.2 to 4.76
Coarse-grained	3 to ¾ inches	76.2 to 19.1
Fine-grained	¾ inches to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
Coarse-grained	No. 4 to No. 10	4.76 to 2.00
Medium-grained	No. 10 to No. 40	2.00 to 0.042
Fine-grained	No. 40 to No. 200	0.042 to 0.074
Silt and Clay	Below No. 200	Below 0.074

PLASTICITY CHART



California Modified Split Spoon Sampler

Standard Penetration Split Spoon Sampler

Log of Boring B1

Project: Commercial Development Escondido

Project No: 112-24075

Client: 503 West Mission LLC

Figure No.: A-1

Location: SWC Centre City Parkway & Mission Avenue, Escondido, CA

Logged By: Gabriel Ramirez

Depth to Water> Not Encountered

Initial: N/A

At Completion: N/A

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
2		LANDSCAPING = 4 Inches ***SILTY SAND (SM)*** Medium dense, fine-grained; reddish-brown, moist, drills firmly below 12 inches	104.1	15.4		33
6			110.1	14.0		35
10			111.6	24.1		27
10		End of Borehole				
18		Water not encountered Boring backfilled with soil cuttings				

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Date: 11-1-22

Drill Rig: CME 75

Krazan and Associates

Hole Size: 8½ Inches

Driller: One Way Drilling, Inc.

Elevation: 10 Feet

Log of Boring B2

Project: Commercial Development Escondido

Project No: 112-24075

Client: 503 West Mission LLC

Figure No.: A-2

Location: SWC Centre City Parkway & Mission Avenue, Escondido, CA

Logged By: Gabriel Ramirez

Depth to Water> Not Encountered

Initial: N/A

At Completion: N/A

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0		Ground Surface						
0		***SILTY SAND (SM)*** Very loose, fine-grained; reddish-brown, moist, drills easily						
2		Medium dense and drills firmly below 12 inches						
4								
6			104.8	12.0	■	30	▲	■
8								
10			114.3	13.5	■	24	▲	■
12								
14		***GRAVELLY SAND (SP)*** Dense, fine- to coarse-grained; light brown, damp, drills firmly		6.0	◢	30	▲	■
16								
18		Becomes very dense below 18½ feet						
		Water not encountered						
20		Boring backfilled with soil cuttings		7.1	◢	50+	▲	■

Drill Method: Hollow Stem

Drill Date: 11-1-22

Drill Rig: CME 75

Krazan and Associates

Hole Size: 8½ Inches

Driller: One Way Drilling, Inc.

Elevation: 20 Feet

Sheet: 1 of 1

Log of Boring B3

Project: Commercial Development Escondido

Project No: 112-24075

Client: 503 West Mission LLC

Figure No.: A-3

Location: SWC Centre City Parkway & Mission Avenue, Escondido, CA

Logged By: Gabriel Ramirez

Depth to Water> Not Encountered

Initial: N/A

At Completion: N/A

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Penetration Test blows/ft (20 40 60)	Water Content (%) (10 20 30 40)
0		Ground Surface						
0		***SILTY SAND (SM)*** Very loose, fine-grained; reddish-brown, moist						
2		Medium dense and drills firmly below 12 inches						
4								
6			114.2	13.4		27	▲	■
8								
10			115.0	17.1		30	▲	■
10		End of Borehole						
12								
14								
16								
18		Water not encountered Boring backfilled with soil cuttings						
20								

Drill Method: Hollow Stem

Drill Date: 11-1-22

Drill Rig: CME 75

Krazan and Associates

Hole Size: 8½ Inches

Driller: One Way Drilling, Inc.

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B4

Project: Commercial Development Escondido

Project No: 112-24075

Client: 503 West Mission LLC

Figure No.: A-4

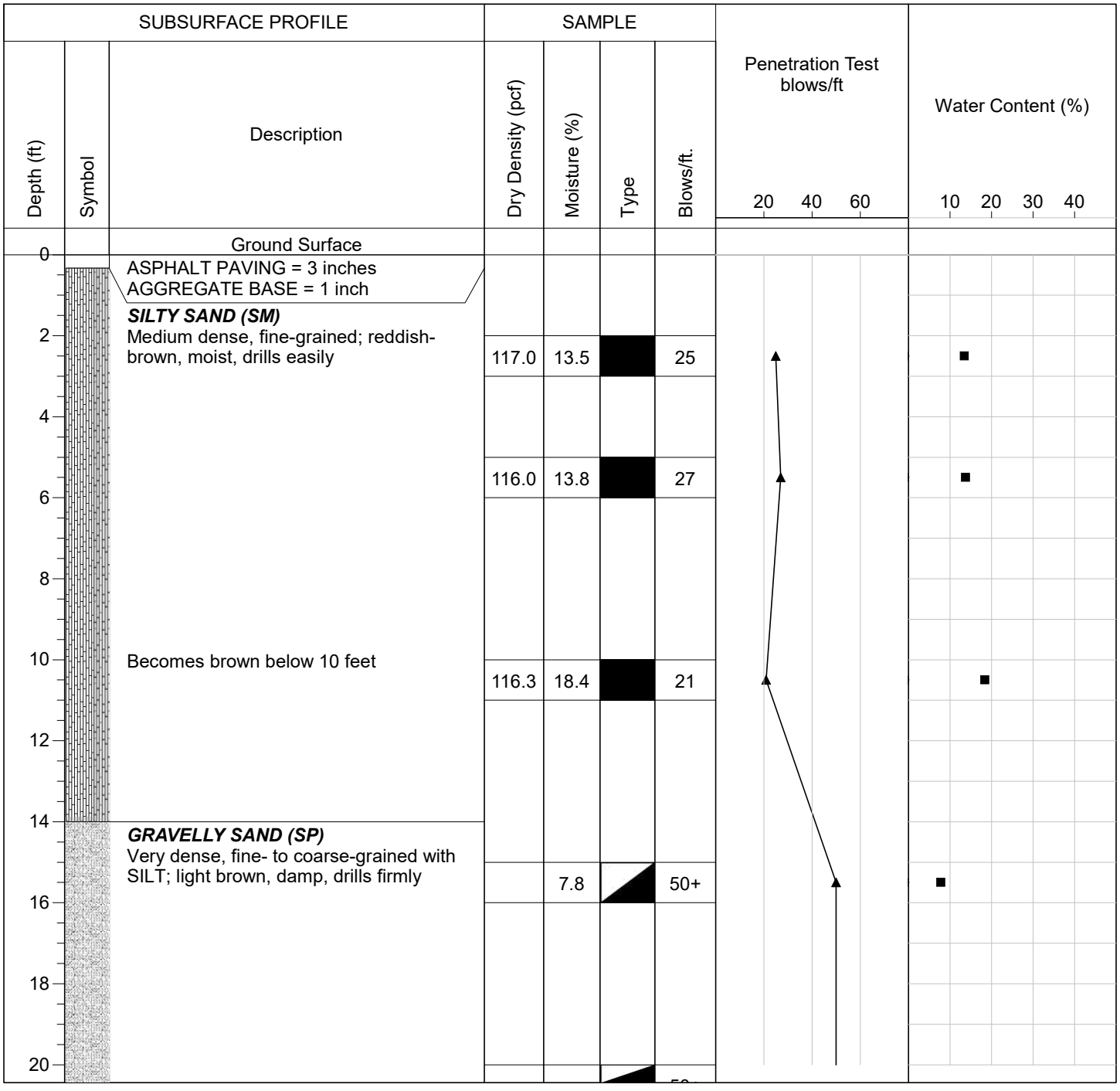
Location: SWC Centre City Parkway & Mission Avenue, Escondido, CA

Logged By: Gabriel Ramirez

Depth to Water> 23 Feet

Initial: 23 Feet

At Completion: 37 Feet



Drill Method: Hollow Stem

Drill Date: 1-28-22

Drill Rig: CME 75

Krazan and Associates

Hole Size: 8½ Inches

Driller: One Way Drilling, Inc.

Elevation: 37 Feet

Log of Boring B4

Project: Commercial Development Escondido

Project No: 112-24075

Client: 503 West Mission LLC

Figure No.: A-4

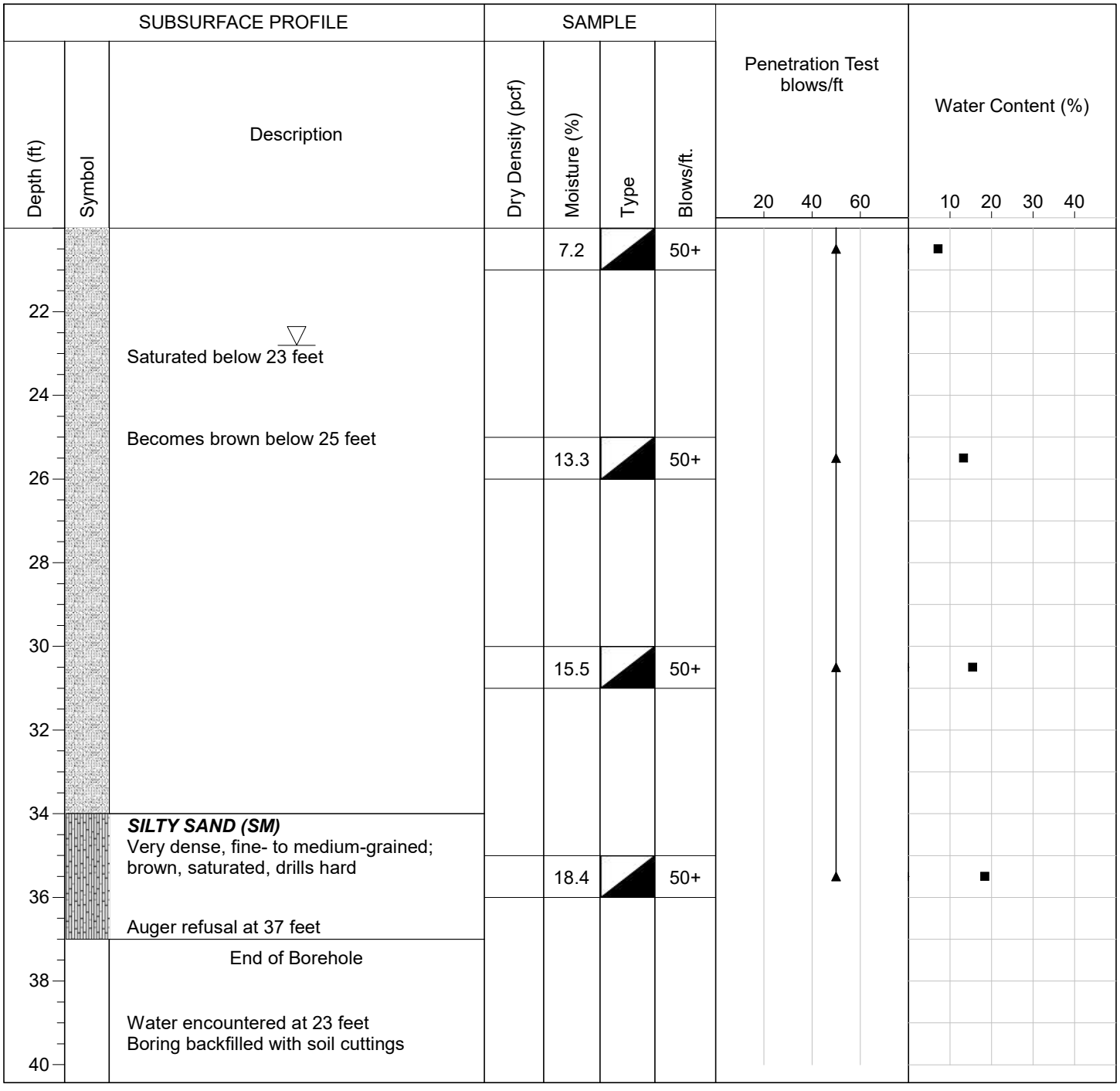
Location: SWC Centre City Parkway & Mission Avenue, Escondido, CA

Logged By: Gabriel Ramirez

Depth to Water> 23 Feet

Initial: 23 Feet

At Completion: 37 Feet



Drill Method: Hollow Stem

Drill Date: 1-28-22

Drill Rig: CME 75

Krazan and Associates

Hole Size: 8½ Inches

Driller: One Way Drilling, Inc.

Elevation: 37 Feet

Log of Boring B5

Project: Commercial Development Escondido

Project No: 112-24075

Client: 503 West Mission LLC

Figure No.: A-5

Location: SWC Centre City Parkway & Mission Avenue, Escondido, CA

Logged By: Gabriel Ramirez

Depth to Water> Not Encountered

Initial: N/A

At Completion: N/A

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		ASPHALT PAVING = 3 inches AGGREGATE BASE = 2 inches				
2		***SILTY SAND (SM)*** Medium dense, fine-grained; reddish-brown, moist, drills easily	101.5	13.6		27
6			107.5	18.3		29
10			106.6	22.0		25
10		End of Borehole				
18		Water not encountered Boring backfilled with soil cuttings				

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling, Inc.

Krazan and Associates

Drill Date: 1-28-22

Hole Size: 8½ Inches

Elevation: 10 Feet

Log of Boring B6

Project: Commercial Development Escondido

Project No: 112-24075

Client: 503 West Mission LLC

Figure No.: A-6

Location: SWC Centre City Parkway & Mission Avenue, Escondido, CA

Logged By: Gabriel Ramirez

Depth to Water> Not Encountered

Initial: N/A

At Completion: N/A

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0		Ground Surface						
0		***SILTY SAND (SM)*** Very loose, fine-grained; reddish-brown, moist, drills easily						
2		Medium dense below 12 inches						
4								
6			110.8	11.7	■	29		
8								
10			117.9	15.2	■	21		
12								
14		***GRAVELLY SAND (SP)*** Medium dense, fine- to coarse-grained; light brown, damp, drills easily		9.2	◢	23		
16								
18		Becomes very dense below 18½ feet						
		Water not encountered						
20		Boring backfilled with soil cuttings		7.0	◢	50+		

Drill Method: Hollow Stem

Drill Date: 1-28-22

Drill Rig: CME 75

Krazan and Associates

Hole Size: 8½ Inches

Driller: One Way Drilling, Inc.

Elevation: 20 Feet

Log of Boring B7

Project: Commercial Development Escondido

Project No: 112-24075

Client: 503 West Mission LLC

Figure No.: A-7

Location: SWC Centre City Parkway & Mission Avenue, Escondido, CA

Logged By: Gabriel Ramirez

Depth to Water> Not Encountered

Initial: N/A

At Completion: N/A

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine-grained; reddish-brown, moist, drills easily				
2		Medium dense below 12 inches				
4						
6			120.7	15.4		24
8						
10			116.9	19.1		25
10		End of Borehole				
12						
14						
16						
18		Water not encountered Boring backfilled with soil cuttings				
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Date: 1-28-22

Drill Rig: CME 75

Krazan and Associates

Hole Size: 8½ Inches

Driller: One Way Drilling, Inc.

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B8

Project: Commercial Development Escondido

Project No: 112-24075

Client: 503 West Mission LLC

Figure No.: A-8

Location: SWC Centre City Parkway & Mission Avenue, Escondido, CA

Logged By: Gabriel Ramirez

Depth to Water> Not Encountered

Initial: N/A

At Completion: N/A

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine-grained; reddish-brown, moist, drills easily Medium dense below 12 inches				
6			116.3	14.3		35
10			117.6	15.0		40
10		End of Borehole				
18		Water not encountered Boring backfilled with soil cuttings				

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Date: 1-28-22

Drill Rig: CME 75

Krazan and Associates

Hole Size: 8½ Inches

Driller: One Way Drilling, Inc.

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B9

Project: ICommercial Development Escondido

Project No: 112-24075

Client: 503 West Mission LLC

Figure No.: A-9

Location: SWC Centre City Parkway & Mission Avenue, Escondido, CA

Logged By: Gabriel Ramirez

Depth to Water> Not Encountered

Initial: N/A

At Completion: N/A

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine-grained; reddish-brown, moist, drills easily Medium dense below 12 inches				
6			113.8	14.3	■	26
8		Becomes dense below 8½ feet				
10			118.3	14.1	■	45
		End of Borehole				
18		Water not encountered Boring backfilled with soil cuttings				

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Date: 1-28-22

Drill Rig: CME 75

Krazan and Associates

Hole Size: 8½ Inches

Driller: One Way Drilling, Inc.

Elevation: 10 Feet

Sheet: 1 of 1

Sieve Analysis

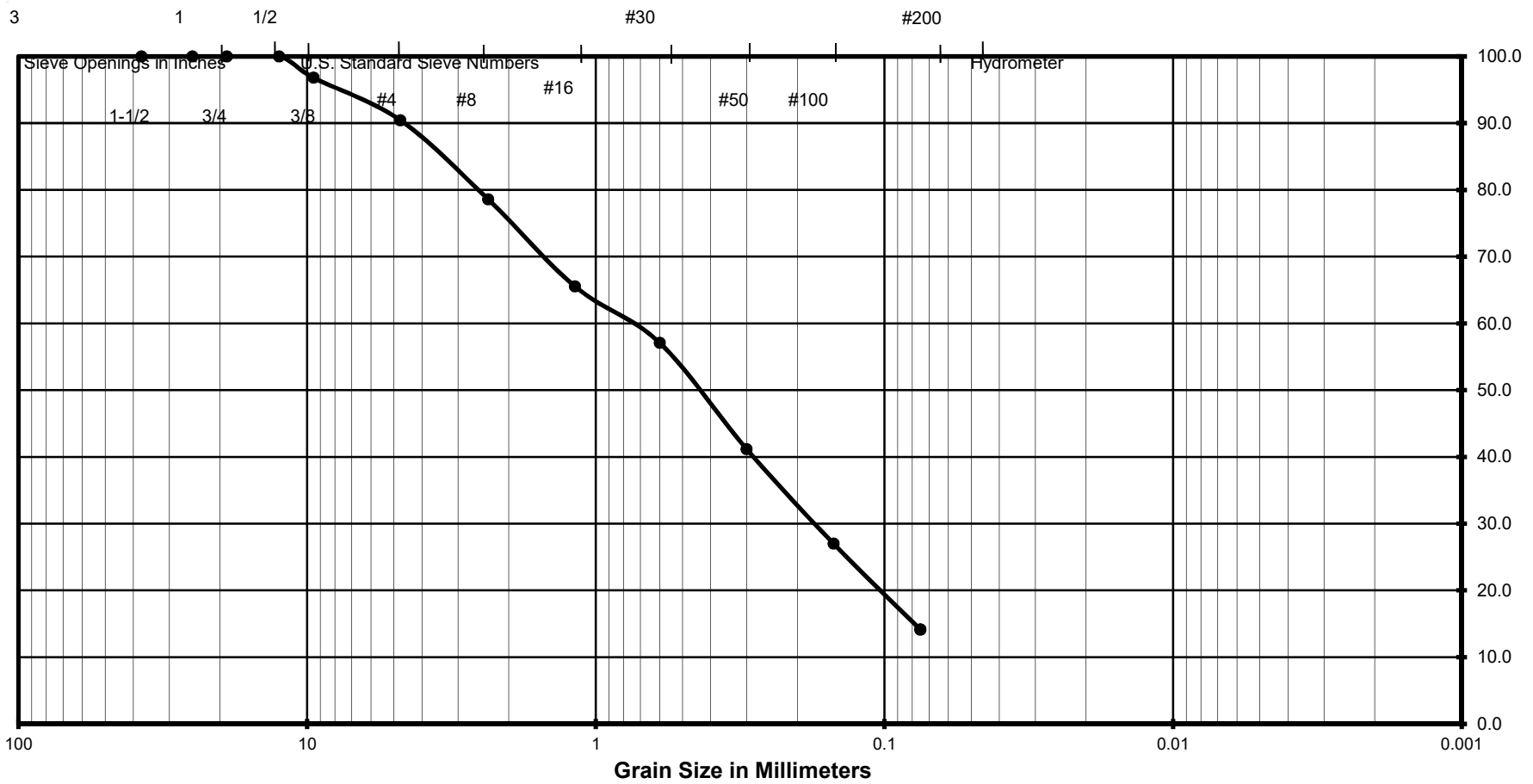
Project Number	: 11224075
Project Name	: Escondido
Date	: 2/21/2022
Sample Location	: B-1 @ 2'
Soil Classification	: SM

Wet Weight	:	385.00
Dry Weight	:	385.00
Moisture Content	:	0%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50	12.3	3.2	3.2	96.8
#4	4.75	24.5	6.4	9.6	90.4
#8	2.36	45.6	11.8	21.4	78.6
#16	1.18	50.3	13.1	34.5	65.5
#30	0.60	32.5	8.4	42.9	57.1
#50	0.30	61.3	15.9	58.8	41.2
#100	0.15	54.5	14.2	73.0	27.0
#200	0.08	49.6	12.9	85.9	14.1

Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Escondido
Project Number	11224075
Soil Classification	SM
Sample Number	B-1 @ 2'

Krazan Testing Laboratory

Sieve Analysis

Project Number	:	11224075
Project Name	:	Escondido
Date	:	2/21/2022
Sample Location	:	B-1 @ 5'
Soil Classification	:	SM

Wet Weight	:	725.30
Dry Weight	:	725.30
Moisture Content	:	0%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50	17.4	2.4	2.4	97.6
#4	4.75	25.6	3.5	5.9	94.1
#8	2.36	41.6	5.7	11.7	88.3
#16	1.18	69.5	9.6	21.2	78.8
#30	0.60	74.5	10.3	31.5	68.5
#50	0.30	58.6	8.1	39.6	60.4
#100	0.15	84.6	11.7	51.3	48.7
#200	0.08	121.5	16.8	68.0	32.0

Krazan Testing Laboratory

Grain Size Analysis

Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Escondido
Project Number	11224075
Soil Classification	SM
Sample Number	B-1 @ 5'

Krazan Testing Laboratory

Sieve Analysis

Project Number	:	11224075
Project Name	:	Escondido
Date	:	2/21/2022
Sample Location	:	B-1 @ 10'
Soil Classification	:	SM

Wet Weight	:	694.20
Dry Weight	:	694.20
Moisture Content	:	0%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50	12.3	1.8	1.8	98.2
#4	4.75	11.4	1.6	3.4	96.6
#8	2.36	36.5	5.3	8.7	91.3
#16	1.18	41.6	6.0	14.7	85.3
#30	0.60	68.4	9.9	24.5	75.5
#50	0.30	94.6	13.6	38.1	61.9
#100	0.15	58.6	8.4	46.6	53.4
#200	0.08	145.2	20.9	67.5	32.5

Krazan Testing Laboratory

Grain Size Analysis

Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Escondido
Project Number	11224075
Soil Classification	SM
Sample Number	B-1 @ 10'

Krazan Testing Laboratory

Sieve Analysis

Project Number	:	11224075
Project Name	:	Escondido
Date	:	2/21/2022
Sample Location	:	B-1 @ 15'
Soil Classification	:	SP

Wet Weight	:	672.50
Dry Weight	:	672.50
Moisture Content	:	0%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50	26.4	3.9	3.9	96.1
3/8"	9.50	45.6	6.8	10.7	89.3
#4	4.75	31.5	4.7	15.4	84.6
#8	2.36	55.8	8.3	23.7	76.3
#16	1.18	61.5	9.1	32.8	67.2
#30	0.60	65.3	9.7	42.5	57.5
#50	0.30	85.6	12.7	55.3	44.7
#100	0.15	74.6	11.1	66.4	33.6
#200	0.08	151.5	22.5	88.9	11.1

Krazan Testing Laboratory

Grain Size Analysis

Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Escondido
Project Number	11224075
Soil Classification	SP
Sample Number	B-1 @ 15'

Krazan Testing Laboratory

Sieve Analysis

Project Number	:	11224075
Project Name	:	Escondido
Date	:	2/21/2022
Sample Location	:	B-1 @ 20'
Soil Classification	:	SP

Wet Weight	:	487.10
Dry Weight	:	487.10
Moisture Content	:	0%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50	16.5	3.4	3.4	96.6
3/8"	9.50	31.4	6.4	9.8	90.2
#4	4.75	29.6	6.1	15.9	84.1
#8	2.36	41.2	8.5	24.4	75.6
#16	1.18	47.4	9.7	34.1	65.9
#30	0.60	63.5	13.0	47.1	52.9
#50	0.30	68.5	14.1	61.2	38.8
#100	0.15	74.5	15.3	76.5	23.5
#200	0.08	65.3	13.4	89.9	10.1

Krazan Testing Laboratory

Grain Size Analysis

Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Escondido
Project Number	11224075
Soil Classification	SP
Sample Number	B-1 @ 20'

Krazan Testing Laboratory

Sieve Analysis

Project Number	:	11224075
Project Name	:	Escondido
Date	:	2/21/2022
Sample Location	:	B-1 @ 25'
Soil Classification	:	SP

Wet Weight	:	487.50
Dry Weight	:	487.50
Moisture Content	:	0%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50	27.6	5.7	5.7	94.3
3/8"	9.50	19.6	4.0	9.7	90.3
#4	4.75	50.0	10.3	19.9	80.1
#8	2.36	61.3	12.6	32.5	67.5
#16	1.18	48.6	10.0	42.5	57.5
#30	0.60	55.5	11.4	53.9	46.1
#50	0.30	63.5	13.0	66.9	33.1
#100	0.15	42.8	8.8	75.7	24.3
#200	0.08	66.0	13.5	89.2	10.8

Krazan Testing Laboratory

Grain Size Analysis

Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Escondido
Project Number	11224075
Soil Classification	SP
Sample Number	B-1 @ 25'

Krazan Testing Laboratory

Sieve Analysis

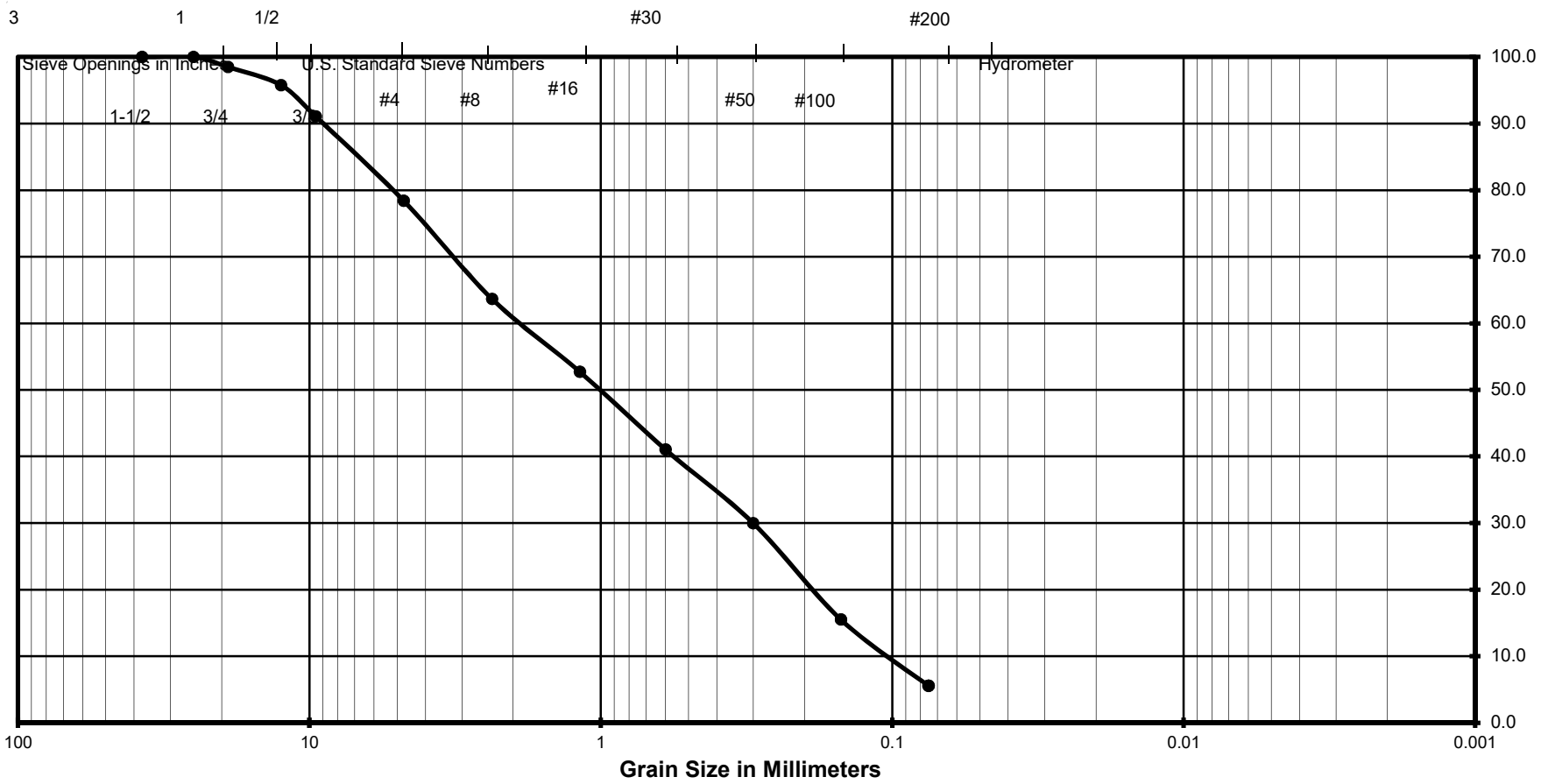
Project Number	:	11224075
Project Name	:	Escondido
Date	:	2/21/2022
Sample Location	:	B-1 @ 30'
Soil Classification	:	SP

Wet Weight	:	429.90
Dry Weight	:	429.90
Moisture Content	:	0%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00	6.5	1.5	1.5	98.5
1/2"	12.50	11.7	2.7	4.2	95.8
3/8"	9.50	20.3	4.7	9.0	91.0
#4	4.75	54.3	12.6	21.6	78.4
#8	2.36	63.5	14.8	36.4	63.6
#16	1.18	47.0	10.9	47.3	52.7
#30	0.60	50.2	11.7	59.0	41.0
#50	0.30	47.5	11.0	70.0	30.0
#100	0.15	62.3	14.5	84.5	15.5
#200	0.08	42.8	10.0	94.5	5.5

Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Escondido
Project Number	11224075
Soil Classification	SP
Sample Number	B-1 @ 30'

Krazan Testing Laboratory

Sieve Analysis

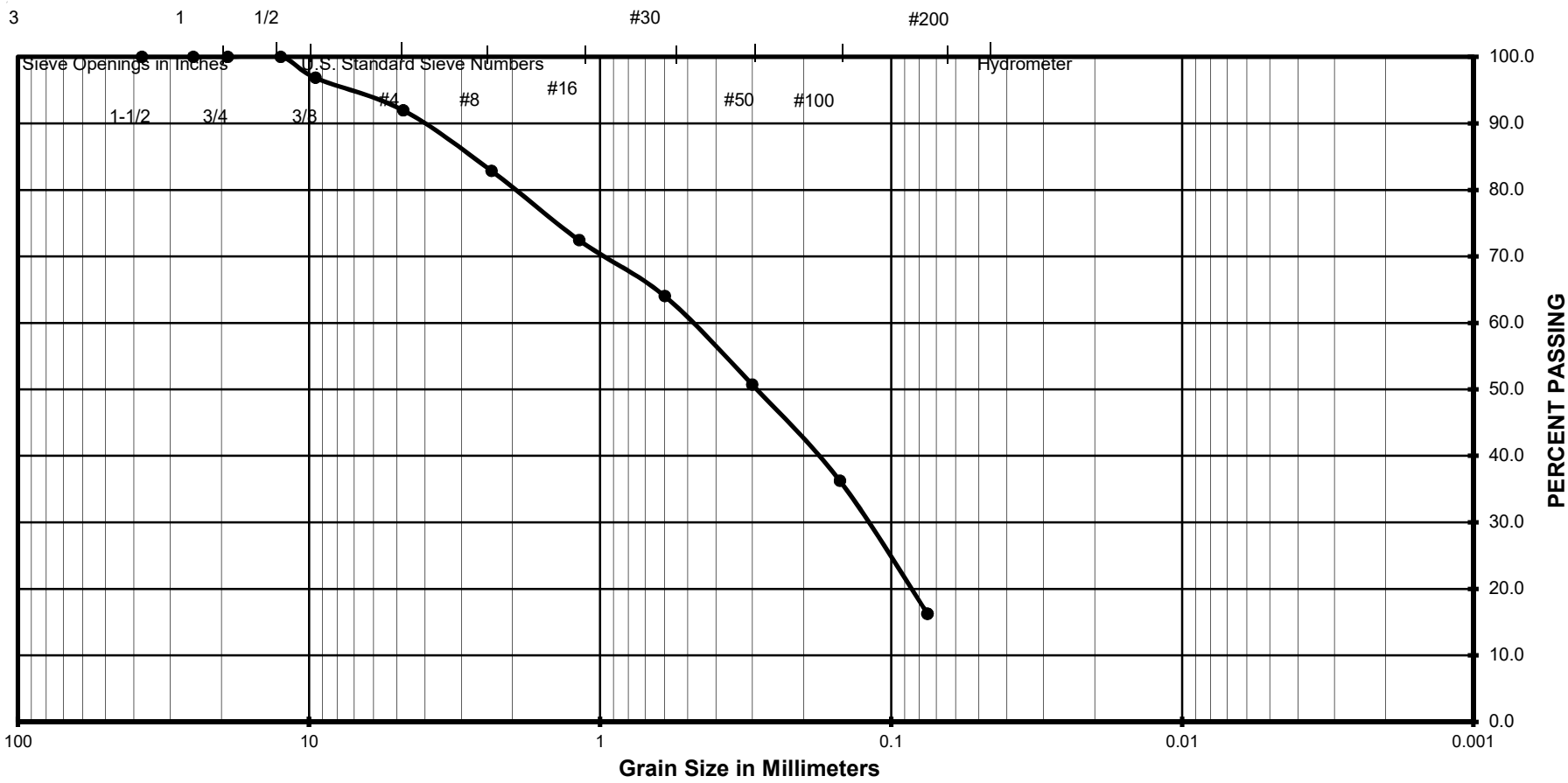
Project Number	:	11224075
Project Name	:	Escondido
Date	:	2/21/2022
Sample Location	:	B-1 @ 35'
Soil Classification	:	SM

Wet Weight	:	300.20
Dry Weight	:	300.20
Moisture Content	:	0%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50	9.5	3.2	3.2	96.8
#4	4.75	14.6	4.9	8.0	92.0
#8	2.36	27.4	9.1	17.2	82.8
#16	1.18	31.3	10.4	27.6	72.4
#30	0.60	25.2	8.4	36.0	64.0
#50	0.30	40.0	13.3	49.3	50.7
#100	0.15	43.4	14.5	63.8	36.2
#200	0.08	60.0	20.0	83.7	16.3

Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

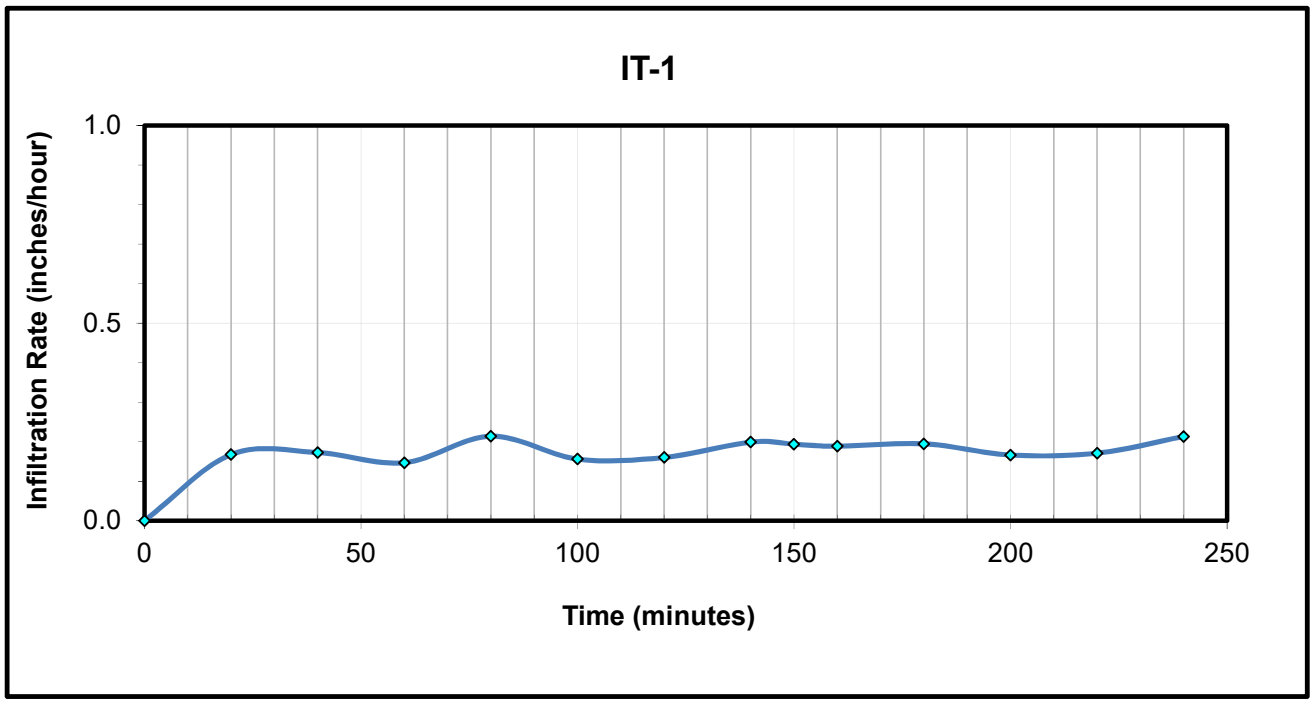
(Unified Soils Classification)

Project Name	Escondido
Project Number	11224075
Soil Classification	SM
Sample Number	B-1 @ 35'

Krazan Testing Laboratory

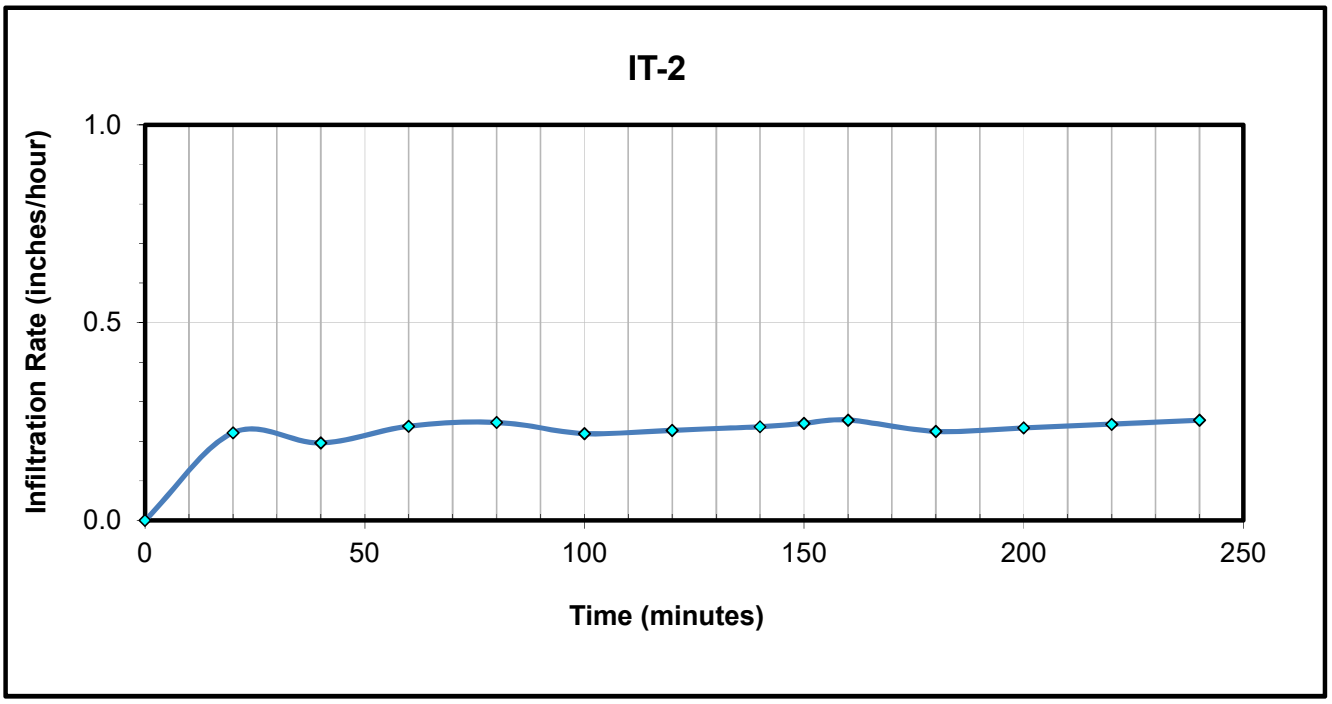
RESULTS OF INFILTRATION TESTS - REVERSE BOREHOLE						
Project #	**112-24075**				**Date**	**2/21/2022**
Project Name	Commercial Development Escondido					
Project Address	503 W. Mission Avenue, Escondido, CA					
Test No:	IT-1	**Total Depth (in.)**		60	**Test Size (in)**	8
Depth To Water	>50'	**Soil Classification**		SC		

Reading	Elasped Time(min.)	Incremental Time (min.)	Initial Depth To Water(in.)	Final Depth To Water(in.)	Incremental Fall of Water(in.)	Incremental Infiltration Rate (in/hr)
Start	0	0.00		6.00	--	--
1	20.00	20.00	6.00	7.50	1.50	0.17
2	40.00	20.00	7.50	9.00	1.50	0.17
3	60.00	20.00	9.00	10.25	1.25	0.15
4	80.00	20.00	10.25	12.00	1.75	0.21
5	100.00	20.00	12.00	13.25	1.25	0.16
6	120.00	20.00	13.25	14.50	1.25	0.16
7	140.00	20.00	14.50	16.00	1.50	0.20
Refill	150.00			12.00	1.50	0.19
8	160.00	20.00	12.00	13.50	1.50	0.19
9	180.00	20.00	13.50	15.00	1.50	0.19
10	200.00	20.00	15.00	16.25	1.25	0.17
11	220.00	20.00	16.25	17.50	1.25	0.17
12	240.00	20.00	17.50	19.00	1.50	0.21
	Infiltration Rate in Inches per Hour					**0.15**



RESULTS OF INFILTRATION TESTS - REVERSE BOREHOLE						
Project #	**112-24075**				**Date**	**2/21/2022**
Project Name	Commercial Development Escondido					
Project Address	503 W. Mission Avenue, Escondido, CA					
Test No:	IT-2	**Total Depth (in.)**		60	**Test Size (in)**	8
Depth To Water	>50'	**Soil Classification**		SC		

Reading	Elasped Time(min.)	Incremental Time (min.)	Initial Depth To Water(in.)	Final Depth To Water(in.)	Incremental Fall of Water(in.)	Incremental Infiltration Rate (in/hr)
Start	0	0.00		12.00	--	--
1	20.00	20.00	12.00	13.75	1.75	0.22
2	40.00	20.00	13.75	15.25	1.50	0.20
3	60.00	20.00	15.25	17.00	1.75	0.24
4	80.00	20.00	17.00	18.75	1.75	0.25
5	100.00	20.00	18.75	20.25	1.50	0.22
6	120.00	20.00	20.25	21.75	1.50	0.23
7	140.00	20.00	21.75	23.25	1.50	0.24
Refill	150.00			18.00	1.63	0.25
8	160.00	20.00	18.00	19.75	1.75	0.25
9	180.00	20.00	19.75	21.25	1.50	0.23
10	200.00	20.00	21.25	22.75	1.50	0.23
11	220.00	20.00	22.75	24.25	1.50	0.24
12	240.00	20.00	24.25	25.75	1.50	0.25
	Infiltration Rate in Inches per Hour					**0.20**



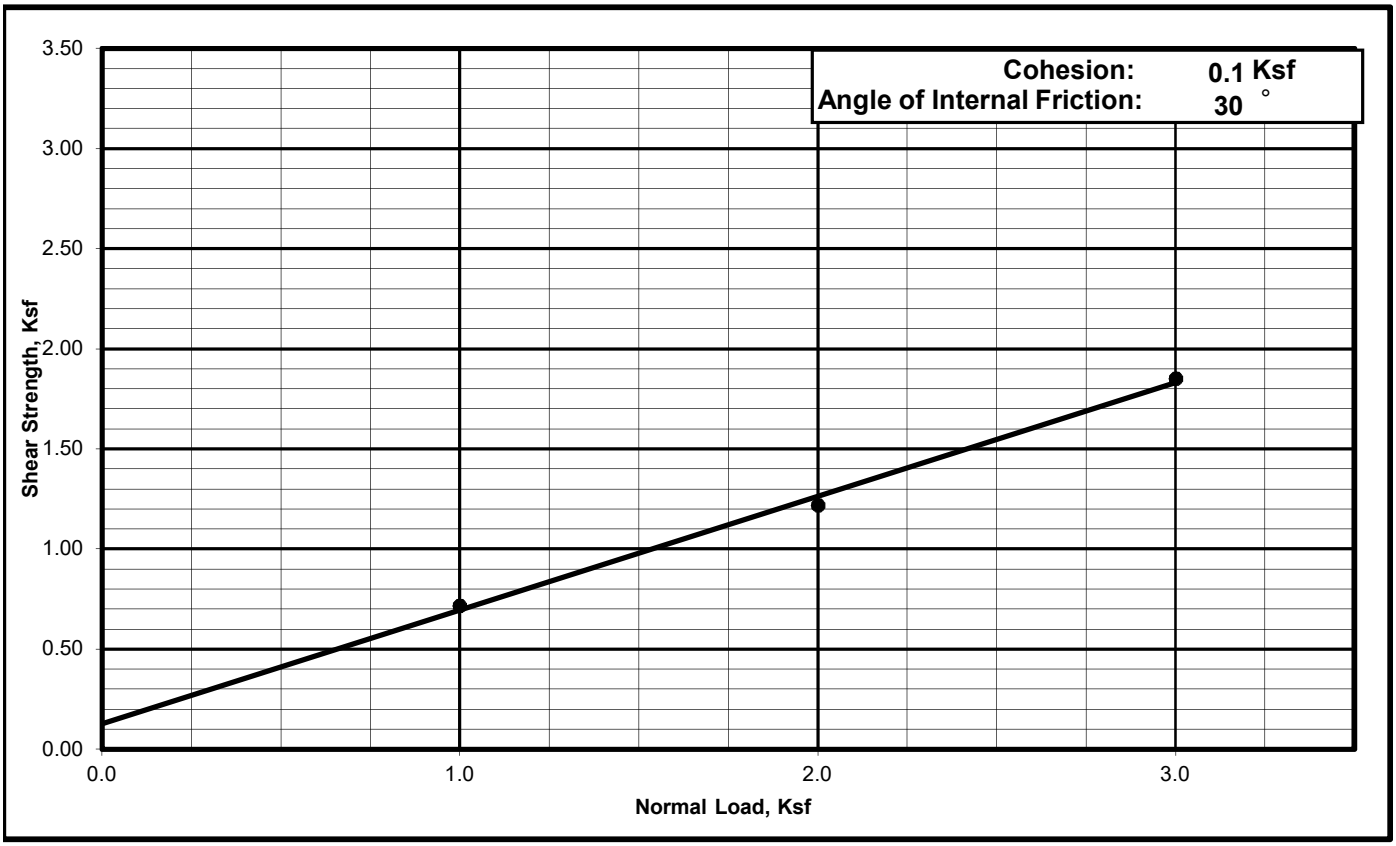
Direct Shear of Consolidated, Drained Soils
ASTM D - 3080 / AASHTO T - 236

Project Number	: 11224075
Project Name	: Escondido
Date	: 2/21/2022
Sample Location	: B-1 @ 2'
Soil Classification	: SM
Sample Surface Area	: 0.0289

STRESS DISPLACEMENT DATA

Lat. Disp. (in.)	Normal Load 1000	2000	3000
0	0	0	0
0.030	16.8	34.8	46.2
0.060	26.4	45.2	55.8
0.090	35.4	64.8	68.4
0.120	43.8	72.4	78.2
0.150	53.4	85.6	91.6
0.180	62	95	111.2
0.210		108.6	127.6
0.240			139.6
0.270			145.7
0.300			166
0.330			
0.360			

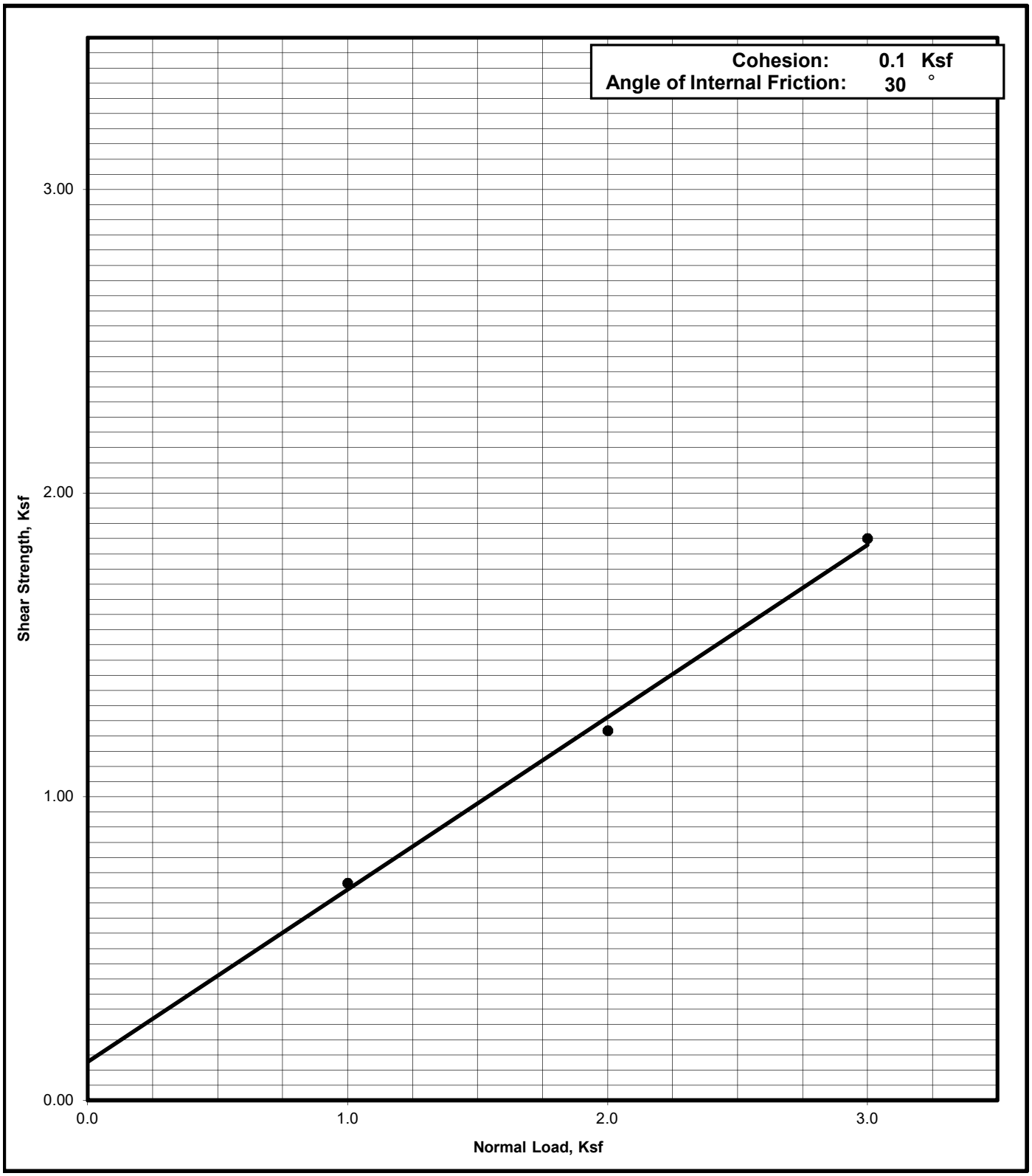
Normal Load psf	Shear force lbs	Shear Stress psf
1000	20.7	716
2000	35.2	1218
3000	53.5	1851



Krazan Testing Laboratory

Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

Project Number	Boring No. & Depth	Soil Type	Date
11224075	B-1 @ 2'	SM	2/21/2022



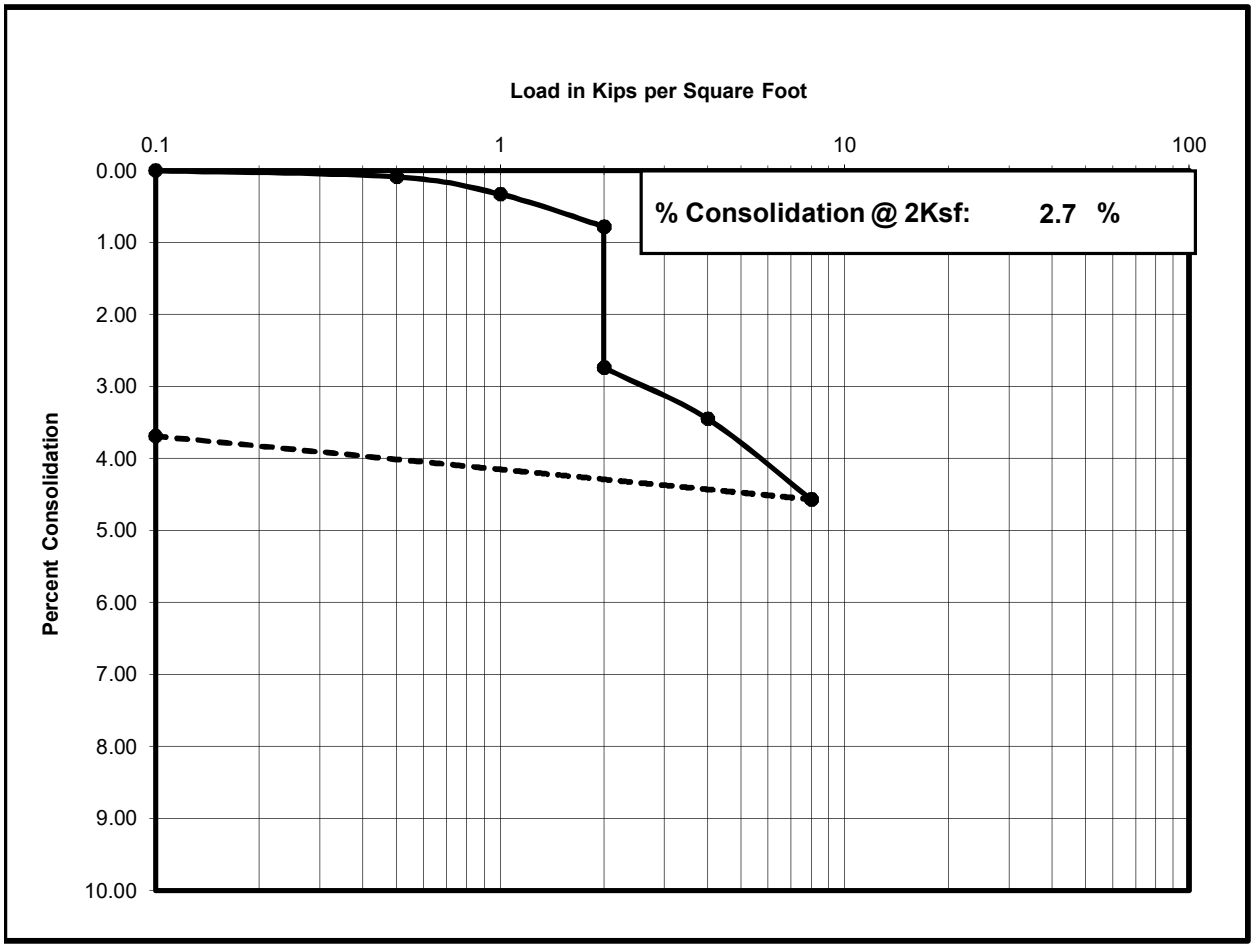
Krazan Testing Laboratory

One Dimensional Consolidation Properties of Soil

ASTM D - 2435 / AASHTO T - 216

Project Number : 11224075
Project Name : Escondido
Date : 2/21/2022
Sample Location : B-1 @ 2'
Soil Classification : SM
Sample Condition : Undisturbed

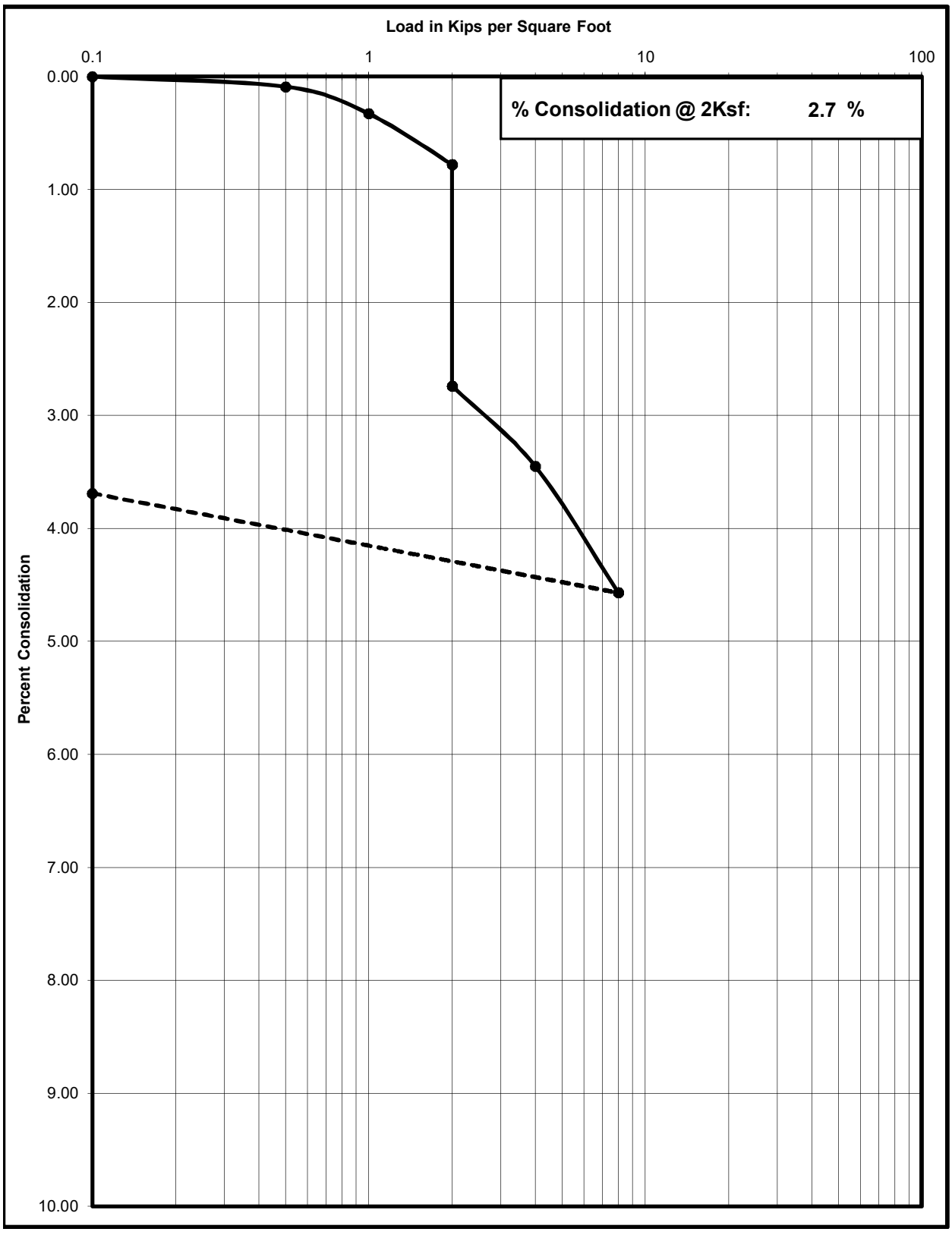
LOAD (ksf)	Reading	% Consolidation
0.1	0	--
0.5	0.0009	0.09
1	0.0033	0.33
2	0.0078	0.78
Satur.	0.0274	2.74
4	0.0345	3.45
8	0.0457	4.57
0.1	0.0369	3.69



Krazan Testing Laboratory

Consolidation Test

Project No	Boring No. & Depth	Date	Soil Classification
11224075	B-1 @ 2'	2/21/2022	SM



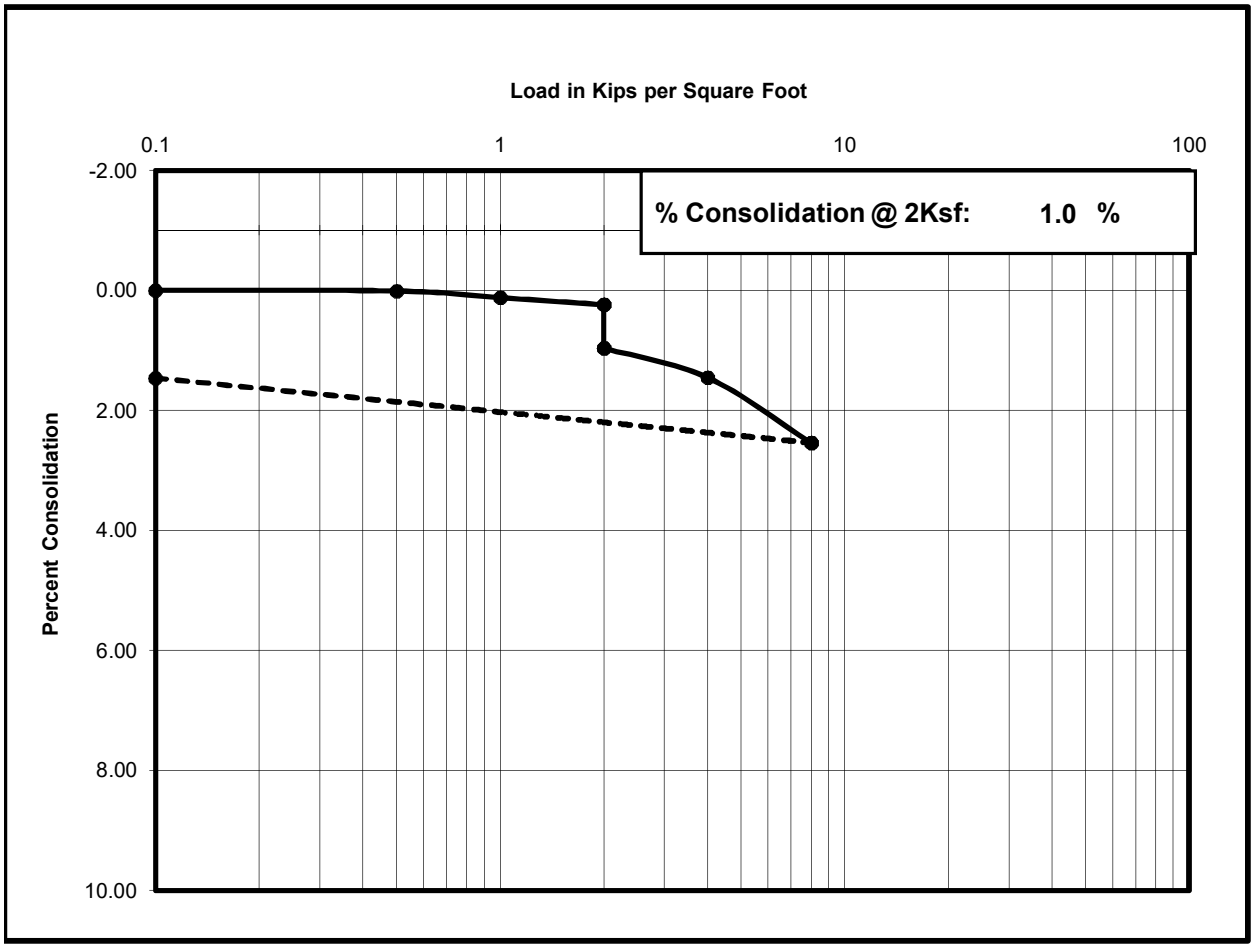
Krazan Testing Laboratory

One Dimensional Consolidation Properties of Soil

ASTM D - 2435 / AASHTO T - 216

Project Number : 11224075
Project Name : Escondido
Date : 2/21/2022
Sample Location : B-1 @ 5'
Soil Classification : SM
Sample Condition : Undisturbed

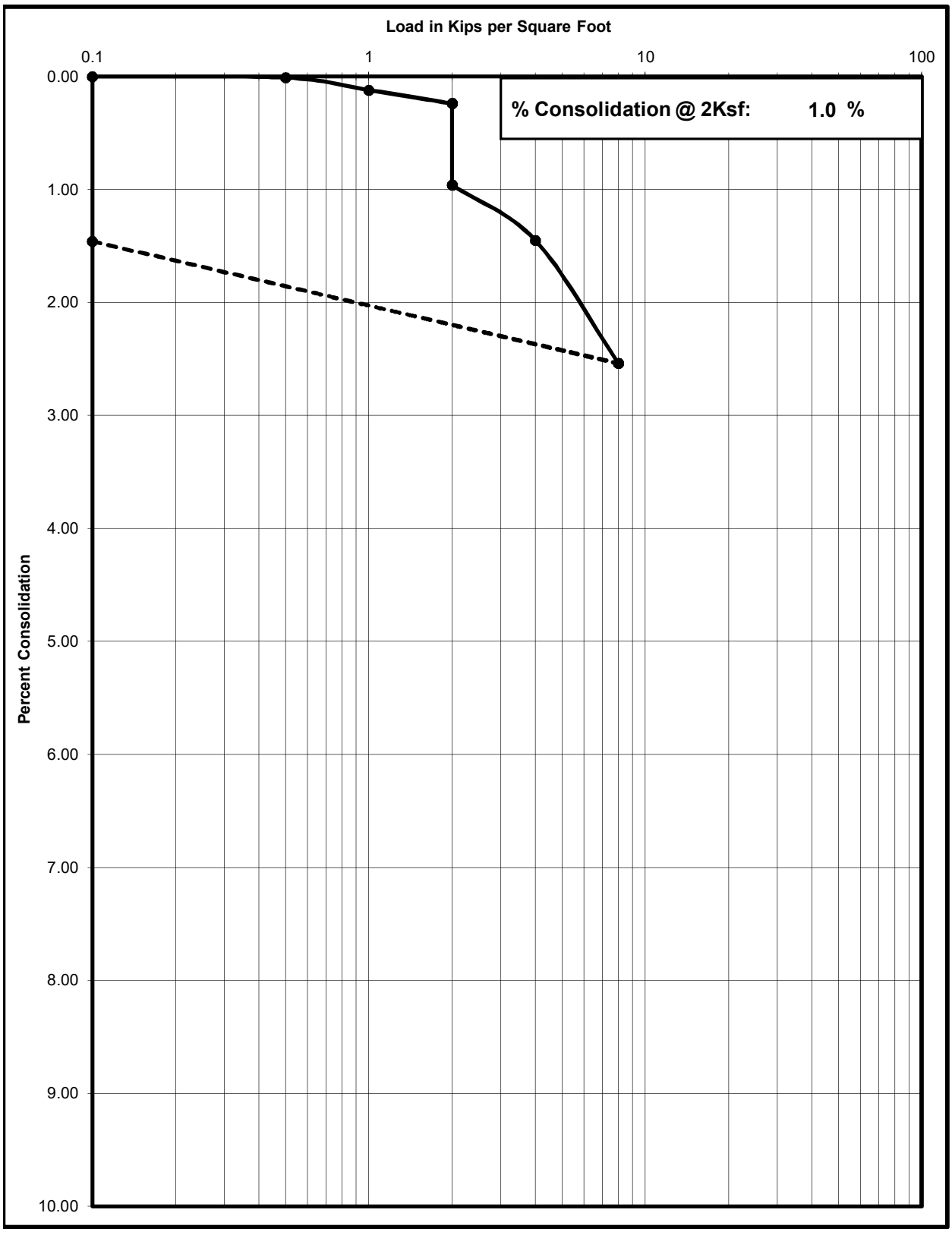
LOAD (ksf)	Reading	% Consolidation
0.1	0	--
0.5	0.0001	0.01
1	0.0012	0.12
2	0.0024	0.24
Satur.	0.0096	0.96
4	0.0145	1.45
8	0.0254	2.54
0.1	0.0146	1.46



Krazan Testing Laboratory

Consolidation Test

Project No	Boring No. & Depth	Date	Soil Classification
11224075	B-1 @ 5'	2/21/2022	SM



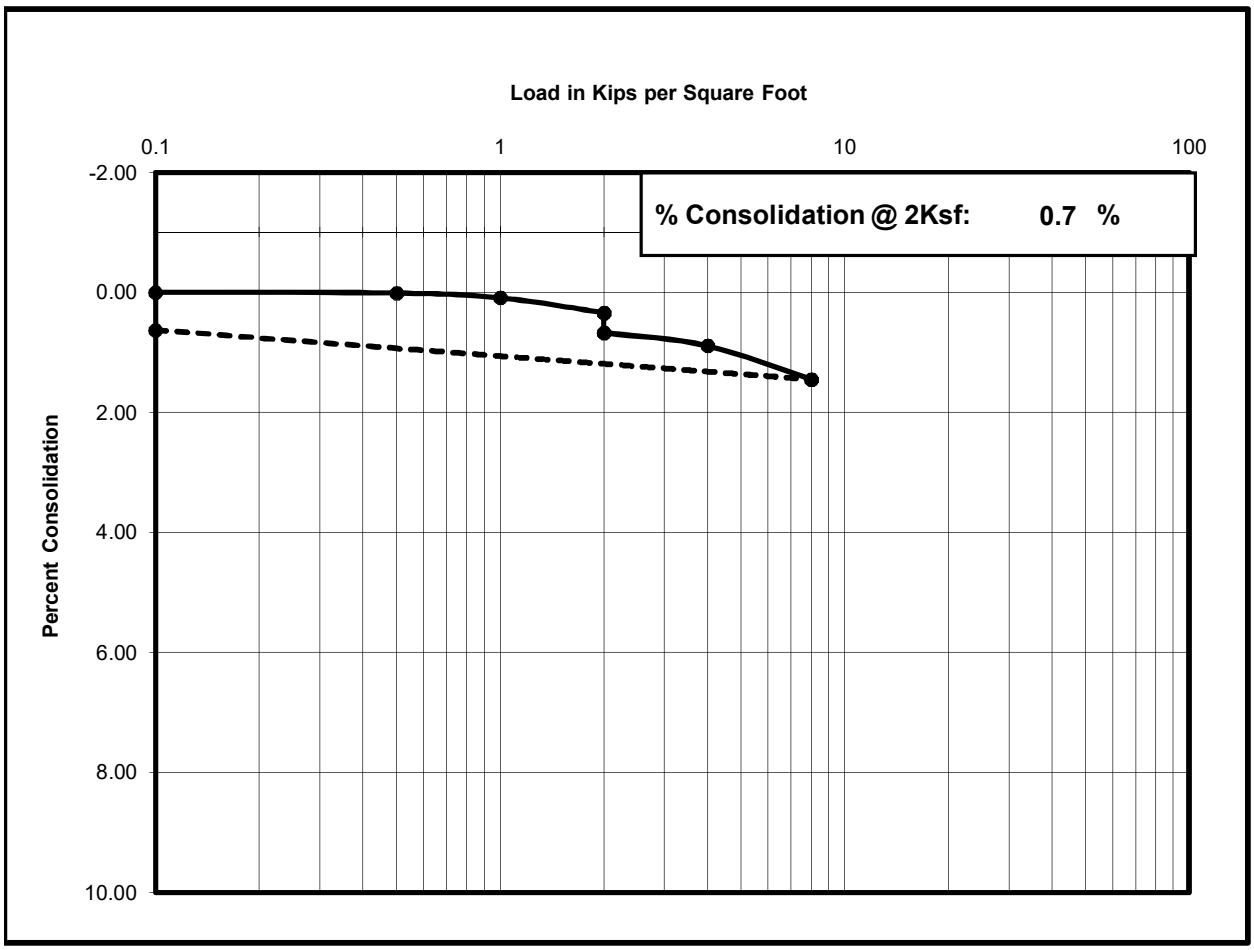
Krazan Testing Laboratory

One Dimensional Consolidation Properties of Soil

ASTM D - 2435 / AASHTO T - 216

Project Number : 11224075
Project Name : Escondido
Date : 2/21/2022
Sample Location : B-1 @ 10'
Soil Classification : SM
Sample Condition : Undisturbed

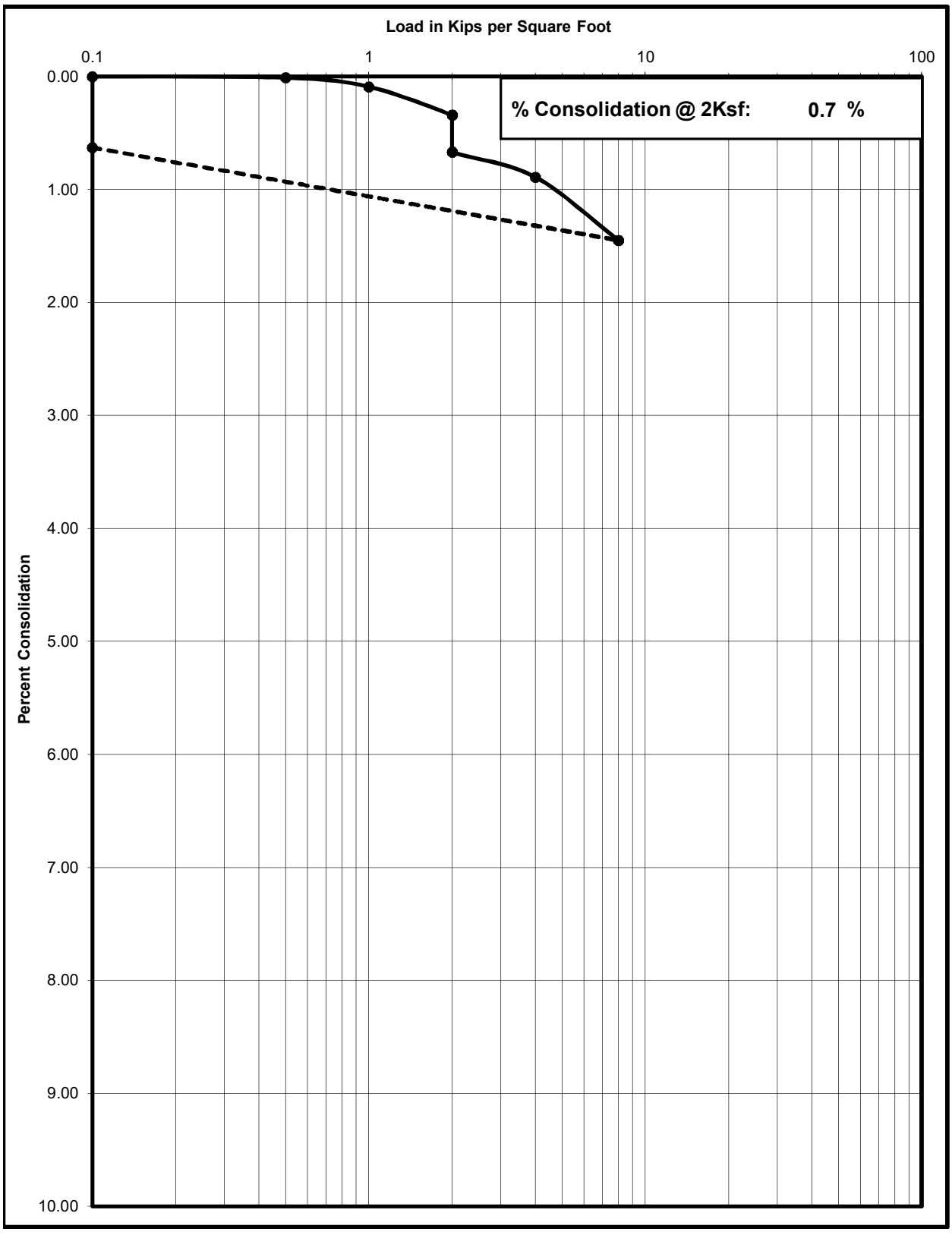
LOAD (ksf)	Reading	% Consolidation
0.1	0	--
0.5	0.0001	0.01
1	0.0009	0.09
2	0.0034	0.34
Satur.	0.0067	0.67
4	0.0089	0.89
8	0.0145	1.45
0.1	0.0063	0.63



Krazan Testing Laboratory

Consolidation Test

Project No	Boring No. & Depth	Date	Soil Classification
11224075	B-1 @ 10'	2/21/2022	SM



Krazan Testing Laboratory

ANAHEIM TEST LAB, INC

196 Technology Drive, Unit D
Irvine, CA 92618
Phone (949)336-6544

Krazan & Associates, Inc.
1100 Olympic Drive, Ste. 103
Corona, CA 92888

P.O. NO: Verbal

LAB NO: C-5595

SPECIFICATION: CTM-643/417/422

MATERIAL: Soil

Sample ID: B-1 @ 0-5'

ANALYTICAL REPORT

CORROSION SERIES
SUMMARY OF DATA

pH	MIN. RESISTIVITY per CT. 643 ohm-cm	SOLUBLE SULFATES per CT. 417 ppm	SOLUBLE CHLORIDES per CT. 422 ppm
7.5	3,200	185	89

RESPECTFULLY SUBMITTED

WES BRIDGER LAB MANAGER

Appendix B

General Earthwork Specifications

APPENDIX B

EARTHWORK SPECIFICATIONS

GENERAL

When the text of the report conflicts with the general specifications in this appendix, the recommendations in the report have precedence.

SCOPE OF WORK: These specifications and applicable plans pertain to and include all earthwork associated with the site rough grading, including, but not limited to, the furnishing of all labor, tools and equipment necessary for site clearing and grubbing, stripping, preparation of foundation materials for receiving fill, excavation, processing, placement and compaction of fill and backfill materials to the lines and grades shown on the project grading plans and disposal of excess materials.

PERFORMANCE: The Contractor shall be responsible for the satisfactory completion of all earthworks in accordance with the project plans and specifications. This work shall be inspected and tested by a representative of Krazan and Associates, Incorporated, hereinafter referred to as the Geotechnical Engineer and/or Testing Agency. Attainment of design grades, when achieved, shall be certified by the project Civil Engineer. Both the Geotechnical Engineer and the Civil Engineer are the Owner's representatives. If the Contractor should fail to meet the technical or design requirements embodied in this document and on the applicable plans, he shall make the necessary adjustments until all work is deemed satisfactory as determined by both the Geotechnical Engineer and the Civil Engineer. No deviation from these specifications shall be made except upon written approval of the Geotechnical Engineer, Civil Engineer, or project Architect.

No earthwork shall be performed without the physical presence or approval of the Geotechnical Engineer. The Contractor shall notify the Geotechnical Engineer at least 2 working days prior to the commencement of any aspect of the site earthwork.

The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify and hold the Owner and the Engineers harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of the Owner or the Engineers.

TECHNICAL REQUIREMENTS: All compacted materials shall be densified to the minimum relative compaction of 95 percent. Soil moisture-content requirements presented in the Geotechnical Engineer's report shall also be complied with. The maximum laboratory compacted dry unit weight of each soil placed as fill shall be determined in accordance with ASTM Test Method D1557-00 (Modified Proctor). The optimum moisture-content shall also be determined in accordance with this test method. The terms "relative compaction" and "compaction" are defined as the in-place dry density of the compacted soil divided by the laboratory compacted maximum dry density as determined by ASTM Test Method D1557-00, expressed as a percentage as specified in the technical portion of the Geotechnical Engineer's report. The location and frequency of field density tests shall be as determined by the Geotechnical Engineer. The results of these tests and compliance with these specifications shall be the basis upon which the Geotechnical Engineer will judge satisfactory completion of work.

SOILS AND FOUNDATION CONDITIONS: The Contractor is presumed to have visited the site and to have familiarized himself with existing site conditions and the contents of the data presented in the Geotechnical Engineering Investigation report.

The Contractor shall make his own interpretation of the data contained in the Geotechnical Engineering Investigation report and the Contractor shall not be relieved of liability under the Contract for any loss sustained as a result of any variance between conditions indicated by or deduced from said report and the actual conditions encountered during the progress of the work.

DUST CONTROL: The work includes dust control as required for the alleviation or prevention of any dust nuisance on or about the site or the borrow area, or off-site if caused by the Contractor's operation either during the performance of the earthwork or resulting from the conditions in which the Contractor leaves the site. The Contractor shall assume all liability, including court costs of codefendants, for all claims related to dust or wind-blown materials attributable to his work.

SITE PREPARATION

Site preparation shall consist of site clearing and grubbing, over-excavation of the proposed building pad areas, preparation of foundation materials for receiving fill, construction of Engineered Fill including the placement of non-expansive fill where recommended by the Geotechnical Engineer.

CLEARING AND GRUBBING: The Contractor shall accept the site in this present condition and shall demolish and/or remove from the area of designated project earthwork all structures, both surface and subsurface, trees, brush, roots, debris, organic matter and all other matter determined by the Geotechnical Engineer to be deleterious. Site stripping to remove organic materials and organic-laden soils in landscaped areas shall extend to a minimum depth of 2 inches or until all organic-laden soil with organic matter in excess of 3 percent of the soils by volume are removed. Such materials shall become the property of the Contractor and shall be removed from the site.

Tree root systems in proposed building areas should be removed to a minimum depth of 3 feet and to such an extent that would permit removal of all roots greater than 1 inch in diameter. Tree roots removed in parking areas may be limited to the upper 1½ feet of the ground surface. Backfill of tree root excavation should not be permitted until all exposed surfaces have been inspected and the Geotechnical Engineer is present for the proper control of backfill placement and compaction. Burning in areas that are to receive fill materials shall not be permitted.

Excavations required to achieve design grades, depressions, soft or pliant areas, or areas disturbed by demolition activities extending below planned finished subgrade levels should be excavated down to firm, undisturbed soil and backfilled with Engineered Fill. The resulting excavations should be backfilled with Engineered Fill.

EXCAVATION: Following clearing and grubbing operations, the proposed building pad area shall be over-excavated to a depth of at least five feet below existing grades or two feet below the deepest existing structure foundation within the limits of each of the building pads. The remaining areas of the building and adjoining exterior concrete flatwork or pavements at the building perimeter shall be over-excavated to a depth of at least one foot below existing grade. The areas of over-excavation and recompaction beneath footings and slabs shall extend out laterally a minimum of five feet beyond the perimeter of these elements.

All excavation shall be accomplished to the tolerance normally defined by the Civil Engineer as shown on the project grading plans. All over-excavation below the grades specified shall be backfilled at the Contractor's expense and shall be compacted in accordance with the applicable **TECHNICAL REQUIREMENTS**.

SUBGRADE PREPARATION: Surfaces to receive Engineered Fill or to support structures directly, shall be scarified to a depth of 8 inches, moisture-conditioned as necessary and compacted in accordance with the **TECHNICAL REQUIREMENTS**, above.

Loose soil areas and/or areas of disturbed soil shall be should be excavated down to firm, undisturbed soil, moisture-conditioned as necessary and backfilled with Engineered Fill. All ruts, hummocks, or other uneven surface features shall be removed by surface grading prior to placement of any fill materials. All areas that are to receive fill materials shall be approved by the Geotechnical Engineer prior to the placement of any of the fill material.

FILL AND BACKFILL MATERIAL: No material shall be moved or compacted without the presence of the Geotechnical Engineer. Material from the required site excavation may be utilized for construction of site fills, with the limitations of their use presented in the Geotechnical Engineer's report, provided the Geotechnical Engineer gives prior approval. All materials utilized for constructing site fills shall be free from vegetation or other deleterious matter as determined by the Geotechnical Engineer, and shall comply with the requirements for non-expansive fill, aggregate base or aggregate subbase as applicable for its proposed used on the site as presented in the Geotechnical Engineer's report.

PLACEMENT, SPREADING AND COMPACTION: The placement and spreading of approved fill materials and the processing and compaction of approved fill and native materials shall be the responsibility of the Contractor. Fill materials should be placed and compacted in horizontal lifts, each not exceeding 8 inches in uncompacted thickness. Due to equipment limitations, thinner lifts may be necessary to achieve the recommended level of compaction. Compaction of fill materials by flooding, ponding, or jetting shall not be permitted unless specifically approved by local code, as well as the Geotechnical Engineer. Additional lifts should not be placed if the previous lift did not meet the required dry density (relative compaction) or if soil conditions are not stable. The compacted subgrade in pavement areas should be non-yielding when proof-rolled with a loaded ten-wheel truck, such as a water truck or dump truck, prior to pavement construction.

Both cut and fill shall be surface-compacted to the satisfaction of the Geotechnical Engineer prior to final acceptance.

SEASONAL LIMITS: No fill material shall be placed, spread, or rolled while it is frozen or thawing, or during unfavorable wet weather conditions. When the work is interrupted by heavy rains, fill operations shall not be resumed until the Geotechnical Engineer indicates that the moisture-content and density of previously placed fill is as specified.

Appendix C

General Paving Specifications

APPENDIX C

PAVEMENT SPECIFICATIONS

1. DEFINITIONS - The term "pavement" shall include asphaltic concrete surfacing, untreated aggregate base, and aggregate subbase. The term "subgrade" is that portion of the area on which surfacing, base, or subbase is to be placed.

The term “Standard Specifications”: hereinafter referred to is the 2018 Standard Specifications of the State of California, Department of Transportation, and the "Materials Manual" is the Materials Manual of Testing and Control Procedures, State of California, Department of Public Works, Division of Highways. The term "relative compaction" refers to the field density expressed as a percentage of the maximum laboratory density as defined in the applicable tests outlined in the Materials Manual.

2. SCOPE OF WORK - This portion of the work shall include all labor, materials, tools, and equipment necessary for, and reasonably incidental to the completion of the pavement shown on the plans and as herein specified, except work specifically notes as "Work Not Included."

3. PREPARATION OF THE SUBGRADE - The Contractor shall prepare the surface of the various subgrades receiving subsequent pavement courses to the lines, grades, and dimensions given on the plans. The upper 12 inches of the soil subgrade beneath the pavement section shall be compacted to a minimum relative compaction of 90 percent. The finished subgrades shall be tested and approved by the Soils Engineer prior to the placement of additional pavement courses.

4. UNTREATED AGGREGATE BASE - The aggregate base material shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate base material shall conform to the requirements of Section 26 of the Standard Specifications for Class 2 material, 1½ inches maximum size. The aggregate base material shall be compacted to a minimum relative compaction of 95 percent. The aggregate base material shall be spread and compacted in accordance with Section 26 of the Standard Specifications. The aggregate base material shall be spread in layers not exceeding 6 inches and each layer of aggregate material course shall be tested and approved by the Soils Engineer prior to the placement of successive layers.

5. AGGREGATE SUBBASE - The aggregate subbase shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate subbase material shall conform to the requirements of Section 25 of the Standard Specifications for Class 2 material. The aggregate subbase material shall be compacted to a minimum relative compaction of 95 percent, and it shall be spread and compacted in accordance with Section 25 of the Standard Specifications. Each layer of aggregate subbase shall be tested and approved by the Soils Engineer prior to the placement of successive layers.

6. ASPHALTIC CONCRETE SURFACING - Asphaltic concrete surfacing shall consist of a mixture of mineral aggregate and paving grade asphalt, mixed at a central mixing plant and spread and compacted on a prepared base in conformity with the lines, grades, and dimensions shown on the plans. The viscosity grade of the asphalt shall be PG 64-10. The mineral aggregate shall be Type B, ½ inch maximum size, medium grading, and shall conform to the requirements set forth in Section 39 of the Standard Specifications. The drying, proportioning, and mixing of the materials shall conform to Section 39.

The prime coat, spreading and compacting equipment, and spreading and compacting the mixture shall conform to the applicable chapters of Section 39, with the exception that no surface course shall be placed when the atmospheric temperature is below 50 degrees F. The surfacing shall be rolled with a combination steel-wheel and pneumatic rollers, as described in Section 39-6. The surface course shall be placed with an approved self-propelled mechanical spreading and finishing machine.

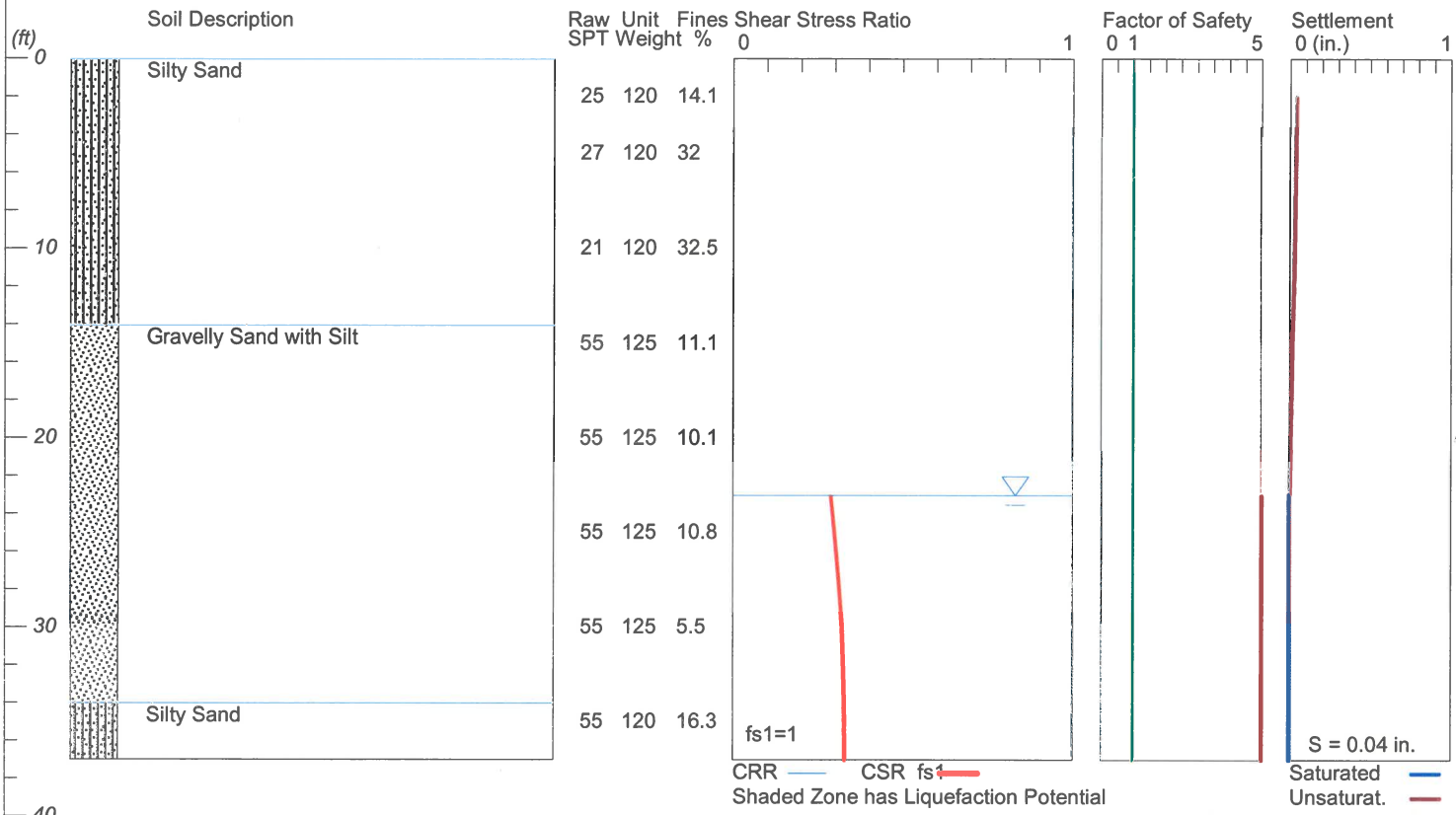
7. FOG SEAL COAT - The fog seal (mixing type asphaltic emulsion) shall conform to and be applied in accordance with the requirements of Section 37.

Appendix D

LIQUEFACTION ANALYSIS

Hole No.=B-1 Water Depth=23 ft

Magnitude=6.5
Acceleration=0.47g



****

LIQUEFACTION ANALYSIS SUMMARY

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 2/21/2022 2:54:17 PM

Input File Name: UNTITLED
Title: Escondido
Subtitle:

Surface Elev.=
Hole No.=B-1
Depth of Hole= 37.00 ft
Water Table during Earthquake= 23.00 ft
Water Table during In-Situ Testing= 23.00 ft
Max. Acceleration= 0.47 g
Earthquake Magnitude= 6.50

Input Data:
Surface Elev.=
Hole No.=B-1
Depth of Hole=37.00 ft
Water Table during Earthquake= 23.00 ft
Water Table during In-Situ Testing= 23.00 ft
Max. Acceleration=0.47 g
Earthquake Magnitude=6.50
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Tokimatsu/Seed
3. Fines Correction for Liquefaction: Idriss/Seed
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.25
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=1)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	25.00	120.00	14.10
5.00	27.00	120.00	32.00
10.00	21.00	120.00	32.50
15.00	55.00	125.00	11.10
20.00	55.00	125.00	10.10
25.00	55.00	125.00	10.80
30.00	55.00	125.00	5.50
35.00	55.00	120.00	16.30

Output Results:

Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.04 in.
Total Settlement of Saturated and Unsaturated Sands=0.04 in.
Differential Settlement=0.020 to 0.027 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
2.00	2.88	0.30	5.00	0.00	0.04	0.04
2.05	2.88	0.30	5.00	0.00	0.04	0.04
2.10	2.88	0.30	5.00	0.00	0.04	0.04
2.15	2.88	0.30	5.00	0.00	0.04	0.04
2.20	2.88	0.30	5.00	0.00	0.04	0.04
2.25	2.88	0.30	5.00	0.00	0.04	0.04
2.30	2.88	0.30	5.00	0.00	0.04	0.04
2.35	2.88	0.30	5.00	0.00	0.04	0.04
2.40	2.88	0.30	5.00	0.00	0.04	0.04
2.45	2.88	0.30	5.00	0.00	0.04	0.04
2.50	2.88	0.30	5.00	0.00	0.04	0.04
2.55	2.88	0.30	5.00	0.00	0.04	0.04
2.60	2.88	0.30	5.00	0.00	0.04	0.04
2.65	2.88	0.30	5.00	0.00	0.04	0.04
2.70	2.88	0.30	5.00	0.00	0.04	0.04
2.75	2.88	0.30	5.00	0.00	0.04	0.04
2.80	2.88	0.30	5.00	0.00	0.04	0.04
2.85	2.88	0.30	5.00	0.00	0.04	0.04
2.90	2.88	0.30	5.00	0.00	0.04	0.04
2.95	2.88	0.30	5.00	0.00	0.04	0.04
3.00	2.88	0.30	5.00	0.00	0.04	0.04
3.05	2.88	0.30	5.00	0.00	0.04	0.04
3.10	2.88	0.30	5.00	0.00	0.04	0.04
3.15	2.88	0.30	5.00	0.00	0.04	0.04
3.20	2.88	0.30	5.00	0.00	0.04	0.04
3.25	2.88	0.30	5.00	0.00	0.04	0.04
3.30	2.88	0.30	5.00	0.00	0.04	0.04
3.35	2.88	0.30	5.00	0.00	0.04	0.04
3.40	2.88	0.30	5.00	0.00	0.04	0.04
3.45	2.88	0.30	5.00	0.00	0.04	0.04
3.50	2.88	0.30	5.00	0.00	0.04	0.04
3.55	2.88	0.30	5.00	0.00	0.04	0.04
3.60	2.88	0.30	5.00	0.00	0.04	0.04
3.65	2.88	0.30	5.00	0.00	0.04	0.04
3.70	2.88	0.30	5.00	0.00	0.04	0.04
3.75	2.88	0.30	5.00	0.00	0.04	0.04
3.80	2.88	0.30	5.00	0.00	0.04	0.04
3.85	2.88	0.30	5.00	0.00	0.04	0.04
3.90	2.88	0.30	5.00	0.00	0.04	0.04
3.95	2.88	0.30	5.00	0.00	0.04	0.04
4.00	2.88	0.30	5.00	0.00	0.04	0.04
4.05	2.88	0.30	5.00	0.00	0.04	0.04
4.10	2.88	0.30	5.00	0.00	0.04	0.04
4.15	2.88	0.30	5.00	0.00	0.04	0.04
4.20	2.88	0.30	5.00	0.00	0.04	0.04
4.25	2.88	0.30	5.00	0.00	0.04	0.04
4.30	2.88	0.30	5.00	0.00	0.04	0.04
4.35	2.88	0.30	5.00	0.00	0.04	0.04
4.40	2.88	0.30	5.00	0.00	0.04	0.04
4.45	2.88	0.30	5.00	0.00	0.04	0.04
4.50	2.88	0.30	5.00	0.00	0.04	0.04
4.55	2.88	0.30	5.00	0.00	0.04	0.04
4.60	2.88	0.30	5.00	0.00	0.04	0.04
4.65	2.88	0.30	5.00	0.00	0.04	0.04

4.70	2.88	0.30	5.00	0.00	0.04	0.04
4.75	2.88	0.30	5.00	0.00	0.04	0.04
4.80	2.88	0.30	5.00	0.00	0.04	0.04
4.85	2.88	0.30	5.00	0.00	0.04	0.04
4.90	2.88	0.30	5.00	0.00	0.04	0.04
4.95	2.88	0.30	5.00	0.00	0.04	0.04
5.00	2.88	0.30	5.00	0.00	0.04	0.04
5.05	2.88	0.30	5.00	0.00	0.04	0.04
5.10	2.88	0.30	5.00	0.00	0.04	0.04
5.15	2.88	0.30	5.00	0.00	0.04	0.04
5.20	2.88	0.30	5.00	0.00	0.04	0.04
5.25	2.88	0.30	5.00	0.00	0.04	0.04
5.30	2.88	0.30	5.00	0.00	0.04	0.04
5.35	2.88	0.30	5.00	0.00	0.04	0.04
5.40	2.88	0.30	5.00	0.00	0.04	0.04
5.45	2.88	0.30	5.00	0.00	0.04	0.04
5.50	2.88	0.30	5.00	0.00	0.04	0.04
5.55	2.88	0.30	5.00	0.00	0.04	0.04
5.60	2.88	0.30	5.00	0.00	0.04	0.04
5.65	2.88	0.30	5.00	0.00	0.04	0.04
5.70	2.88	0.30	5.00	0.00	0.04	0.04
5.75	2.88	0.30	5.00	0.00	0.04	0.04
5.80	2.88	0.30	5.00	0.00	0.04	0.04
5.85	2.88	0.30	5.00	0.00	0.04	0.04
5.90	2.88	0.30	5.00	0.00	0.04	0.04
5.95	2.88	0.30	5.00	0.00	0.04	0.04
6.00	2.88	0.30	5.00	0.00	0.04	0.04
6.05	2.88	0.30	5.00	0.00	0.04	0.04
6.10	2.88	0.30	5.00	0.00	0.04	0.04
6.15	2.88	0.30	5.00	0.00	0.04	0.04
6.20	2.88	0.30	5.00	0.00	0.04	0.04
6.25	2.88	0.30	5.00	0.00	0.04	0.04
6.30	2.88	0.30	5.00	0.00	0.04	0.04
6.35	2.88	0.30	5.00	0.00	0.04	0.04
6.40	2.88	0.30	5.00	0.00	0.04	0.04
6.45	2.88	0.30	5.00	0.00	0.04	0.04
6.50	2.88	0.30	5.00	0.00	0.04	0.04
6.55	2.88	0.30	5.00	0.00	0.04	0.04
6.60	2.88	0.30	5.00	0.00	0.04	0.04
6.65	2.88	0.30	5.00	0.00	0.03	0.03
6.70	2.88	0.30	5.00	0.00	0.03	0.03
6.75	2.88	0.30	5.00	0.00	0.03	0.03
6.80	2.88	0.30	5.00	0.00	0.03	0.03
6.85	2.88	0.30	5.00	0.00	0.03	0.03
6.90	2.88	0.30	5.00	0.00	0.03	0.03
6.95	2.88	0.30	5.00	0.00	0.03	0.03
7.00	2.88	0.30	5.00	0.00	0.03	0.03
7.05	2.88	0.30	5.00	0.00	0.03	0.03
7.10	2.88	0.30	5.00	0.00	0.03	0.03
7.15	2.88	0.30	5.00	0.00	0.03	0.03
7.20	2.88	0.30	5.00	0.00	0.03	0.03
7.25	2.88	0.30	5.00	0.00	0.03	0.03
7.30	2.88	0.30	5.00	0.00	0.03	0.03
7.35	2.88	0.30	5.00	0.00	0.03	0.03
7.40	2.88	0.30	5.00	0.00	0.03	0.03
7.45	2.88	0.30	5.00	0.00	0.03	0.03
7.50	2.88	0.30	5.00	0.00	0.03	0.03
7.55	2.88	0.30	5.00	0.00	0.03	0.03
7.60	2.88	0.30	5.00	0.00	0.03	0.03
7.65	2.88	0.30	5.00	0.00	0.03	0.03
7.70	2.88	0.30	5.00	0.00	0.03	0.03
7.75	2.88	0.30	5.00	0.00	0.03	0.03
7.80	2.88	0.30	5.00	0.00	0.03	0.03

7.85	2.88	0.30	5.00	0.00	0.03	0.03
7.90	2.88	0.30	5.00	0.00	0.03	0.03
7.95	2.88	0.30	5.00	0.00	0.03	0.03
8.00	2.88	0.30	5.00	0.00	0.03	0.03
8.05	2.88	0.30	5.00	0.00	0.03	0.03
8.10	2.88	0.30	5.00	0.00	0.03	0.03
8.15	2.88	0.30	5.00	0.00	0.03	0.03
8.20	2.88	0.30	5.00	0.00	0.03	0.03
8.25	2.88	0.30	5.00	0.00	0.03	0.03
8.30	2.88	0.30	5.00	0.00	0.03	0.03
8.35	2.88	0.30	5.00	0.00	0.03	0.03
8.40	2.88	0.30	5.00	0.00	0.03	0.03
8.45	2.88	0.30	5.00	0.00	0.03	0.03
8.50	2.88	0.30	5.00	0.00	0.03	0.03
8.55	2.88	0.30	5.00	0.00	0.03	0.03
8.60	2.88	0.30	5.00	0.00	0.03	0.03
8.65	2.88	0.30	5.00	0.00	0.03	0.03
8.70	2.88	0.30	5.00	0.00	0.03	0.03
8.75	2.88	0.30	5.00	0.00	0.03	0.03
8.80	2.88	0.30	5.00	0.00	0.03	0.03
8.85	2.88	0.30	5.00	0.00	0.03	0.03
8.90	2.88	0.30	5.00	0.00	0.03	0.03
8.95	2.88	0.30	5.00	0.00	0.03	0.03
9.00	2.88	0.30	5.00	0.00	0.03	0.03
9.05	2.88	0.30	5.00	0.00	0.03	0.03
9.10	2.88	0.30	5.00	0.00	0.03	0.03
9.15	2.88	0.30	5.00	0.00	0.03	0.03
9.20	2.88	0.30	5.00	0.00	0.03	0.03
9.25	2.88	0.30	5.00	0.00	0.03	0.03
9.30	2.88	0.30	5.00	0.00	0.03	0.03
9.35	2.88	0.30	5.00	0.00	0.03	0.03
9.40	2.88	0.30	5.00	0.00	0.03	0.03
9.45	2.88	0.30	5.00	0.00	0.03	0.03
9.50	2.88	0.30	5.00	0.00	0.03	0.03
9.55	2.88	0.30	5.00	0.00	0.03	0.03
9.60	2.88	0.30	5.00	0.00	0.03	0.03
9.65	2.88	0.30	5.00	0.00	0.03	0.03
9.70	2.88	0.30	5.00	0.00	0.03	0.03
9.75	2.88	0.30	5.00	0.00	0.03	0.03
9.80	2.88	0.30	5.00	0.00	0.03	0.03
9.85	2.88	0.30	5.00	0.00	0.03	0.03
9.90	2.88	0.30	5.00	0.00	0.03	0.03
9.95	2.88	0.30	5.00	0.00	0.03	0.03
10.00	2.88	0.30	5.00	0.00	0.03	0.03
10.05	2.88	0.30	5.00	0.00	0.03	0.03
10.10	2.88	0.30	5.00	0.00	0.03	0.03
10.15	2.88	0.30	5.00	0.00	0.03	0.03
10.20	2.88	0.30	5.00	0.00	0.03	0.03
10.25	2.88	0.30	5.00	0.00	0.03	0.03
10.30	2.88	0.30	5.00	0.00	0.03	0.03
10.35	2.88	0.30	5.00	0.00	0.03	0.03
10.40	2.88	0.30	5.00	0.00	0.03	0.03
10.45	2.88	0.30	5.00	0.00	0.03	0.03
10.50	2.88	0.30	5.00	0.00	0.03	0.03
10.55	2.88	0.30	5.00	0.00	0.03	0.03
10.60	2.88	0.30	5.00	0.00	0.03	0.03
10.65	2.88	0.30	5.00	0.00	0.03	0.03
10.70	2.88	0.30	5.00	0.00	0.03	0.03
10.75	2.88	0.30	5.00	0.00	0.03	0.03
10.80	2.88	0.30	5.00	0.00	0.03	0.03
10.85	2.88	0.30	5.00	0.00	0.03	0.03
10.90	2.88	0.30	5.00	0.00	0.03	0.03
10.95	2.88	0.30	5.00	0.00	0.03	0.03

11.00	2.88	0.30	5.00	0.00	0.03	0.03
11.05	2.88	0.30	5.00	0.00	0.03	0.03
11.10	2.88	0.30	5.00	0.00	0.03	0.03
11.15	2.88	0.30	5.00	0.00	0.03	0.03
11.20	2.88	0.30	5.00	0.00	0.03	0.03
11.25	2.88	0.30	5.00	0.00	0.03	0.03
11.30	2.88	0.30	5.00	0.00	0.03	0.03
11.35	2.88	0.30	5.00	0.00	0.03	0.03
11.40	2.88	0.30	5.00	0.00	0.03	0.03
11.45	2.88	0.30	5.00	0.00	0.03	0.03
11.50	2.88	0.30	5.00	0.00	0.03	0.03
11.55	2.88	0.30	5.00	0.00	0.03	0.03
11.60	2.88	0.30	5.00	0.00	0.03	0.03
11.65	2.88	0.30	5.00	0.00	0.03	0.03
11.70	2.88	0.30	5.00	0.00	0.03	0.03
11.75	2.88	0.30	5.00	0.00	0.03	0.03
11.80	2.88	0.30	5.00	0.00	0.03	0.03
11.85	2.88	0.30	5.00	0.00	0.03	0.03
11.90	2.88	0.30	5.00	0.00	0.03	0.03
11.95	2.88	0.30	5.00	0.00	0.03	0.03
12.00	2.88	0.30	5.00	0.00	0.03	0.03
12.05	2.88	0.30	5.00	0.00	0.03	0.03
12.10	2.88	0.30	5.00	0.00	0.03	0.03
12.15	2.88	0.30	5.00	0.00	0.03	0.03
12.20	2.88	0.30	5.00	0.00	0.03	0.03
12.25	2.88	0.30	5.00	0.00	0.02	0.02
12.30	2.88	0.30	5.00	0.00	0.02	0.02
12.35	2.88	0.30	5.00	0.00	0.02	0.02
12.40	2.88	0.30	5.00	0.00	0.02	0.02
12.45	2.88	0.30	5.00	0.00	0.02	0.02
12.50	2.88	0.30	5.00	0.00	0.02	0.02
12.55	2.88	0.30	5.00	0.00	0.02	0.02
12.60	2.88	0.30	5.00	0.00	0.02	0.02
12.65	2.88	0.30	5.00	0.00	0.02	0.02
12.70	2.88	0.30	5.00	0.00	0.02	0.02
12.75	2.88	0.30	5.00	0.00	0.02	0.02
12.80	2.88	0.30	5.00	0.00	0.02	0.02
12.85	2.88	0.30	5.00	0.00	0.02	0.02
12.90	2.88	0.30	5.00	0.00	0.02	0.02
12.95	2.88	0.30	5.00	0.00	0.02	0.02
13.00	2.88	0.30	5.00	0.00	0.02	0.02
13.05	2.88	0.30	5.00	0.00	0.02	0.02
13.10	2.88	0.30	5.00	0.00	0.02	0.02
13.15	2.88	0.30	5.00	0.00	0.02	0.02
13.20	2.88	0.30	5.00	0.00	0.02	0.02
13.25	2.88	0.30	5.00	0.00	0.02	0.02
13.30	2.88	0.30	5.00	0.00	0.02	0.02
13.35	2.88	0.30	5.00	0.00	0.02	0.02
13.40	2.88	0.30	5.00	0.00	0.02	0.02
13.45	2.88	0.30	5.00	0.00	0.02	0.02
13.50	2.88	0.30	5.00	0.00	0.02	0.02
13.55	2.88	0.30	5.00	0.00	0.02	0.02
13.60	2.88	0.30	5.00	0.00	0.02	0.02
13.65	2.88	0.30	5.00	0.00	0.02	0.02
13.70	2.88	0.30	5.00	0.00	0.02	0.02
13.75	2.88	0.30	5.00	0.00	0.02	0.02
13.80	2.88	0.30	5.00	0.00	0.02	0.02
13.85	2.88	0.30	5.00	0.00	0.02	0.02
13.90	2.88	0.30	5.00	0.00	0.02	0.02
13.95	2.88	0.30	5.00	0.00	0.02	0.02
14.00	2.88	0.30	5.00	0.00	0.02	0.02
14.05	2.88	0.30	5.00	0.00	0.02	0.02
14.10	2.88	0.30	5.00	0.00	0.02	0.02

14.15	2.88	0.30	5.00	0.00	0.02	0.02
14.20	2.88	0.30	5.00	0.00	0.02	0.02
14.25	2.88	0.30	5.00	0.00	0.02	0.02
14.30	2.88	0.30	5.00	0.00	0.02	0.02
14.35	2.88	0.30	5.00	0.00	0.02	0.02
14.40	2.88	0.30	5.00	0.00	0.02	0.02
14.45	2.88	0.30	5.00	0.00	0.02	0.02
14.50	2.88	0.30	5.00	0.00	0.02	0.02
14.55	2.88	0.30	5.00	0.00	0.02	0.02
14.60	2.88	0.30	5.00	0.00	0.02	0.02
14.65	2.88	0.30	5.00	0.00	0.02	0.02
14.70	2.88	0.30	5.00	0.00	0.02	0.02
14.75	2.88	0.29	5.00	0.00	0.02	0.02
14.80	2.88	0.29	5.00	0.00	0.02	0.02
14.85	2.88	0.29	5.00	0.00	0.02	0.02
14.90	2.88	0.29	5.00	0.00	0.02	0.02
14.95	2.88	0.29	5.00	0.00	0.02	0.02
15.00	2.88	0.29	5.00	0.00	0.02	0.02
15.05	2.88	0.29	5.00	0.00	0.02	0.02
15.10	2.88	0.29	5.00	0.00	0.02	0.02
15.15	2.88	0.29	5.00	0.00	0.02	0.02
15.20	2.88	0.29	5.00	0.00	0.02	0.02
15.25	2.88	0.29	5.00	0.00	0.02	0.02
15.30	2.88	0.29	5.00	0.00	0.02	0.02
15.35	2.88	0.29	5.00	0.00	0.02	0.02
15.40	2.88	0.29	5.00	0.00	0.02	0.02
15.45	2.88	0.29	5.00	0.00	0.02	0.02
15.50	2.88	0.29	5.00	0.00	0.02	0.02
15.55	2.88	0.29	5.00	0.00	0.02	0.02
15.60	2.88	0.29	5.00	0.00	0.02	0.02
15.65	2.88	0.29	5.00	0.00	0.01	0.01
15.70	2.88	0.29	5.00	0.00	0.01	0.01
15.75	2.88	0.29	5.00	0.00	0.01	0.01
15.80	2.88	0.29	5.00	0.00	0.01	0.01
15.85	2.88	0.29	5.00	0.00	0.01	0.01
15.90	2.88	0.29	5.00	0.00	0.01	0.01
15.95	2.88	0.29	5.00	0.00	0.01	0.01
16.00	2.88	0.29	5.00	0.00	0.01	0.01
16.05	2.88	0.29	5.00	0.00	0.01	0.01
16.10	2.88	0.29	5.00	0.00	0.01	0.01
16.15	2.88	0.29	5.00	0.00	0.01	0.01
16.20	2.88	0.29	5.00	0.00	0.01	0.01
16.25	2.88	0.29	5.00	0.00	0.01	0.01
16.30	2.88	0.29	5.00	0.00	0.01	0.01
16.35	2.88	0.29	5.00	0.00	0.01	0.01
16.40	2.88	0.29	5.00	0.00	0.01	0.01
16.45	2.88	0.29	5.00	0.00	0.01	0.01
16.50	2.88	0.29	5.00	0.00	0.01	0.01
16.55	2.88	0.29	5.00	0.00	0.01	0.01
16.60	2.88	0.29	5.00	0.00	0.01	0.01
16.65	2.88	0.29	5.00	0.00	0.01	0.01
16.70	2.88	0.29	5.00	0.00	0.01	0.01
16.75	2.88	0.29	5.00	0.00	0.01	0.01
16.80	2.88	0.29	5.00	0.00	0.01	0.01
16.85	2.88	0.29	5.00	0.00	0.01	0.01
16.90	2.88	0.29	5.00	0.00	0.01	0.01
16.95	2.88	0.29	5.00	0.00	0.01	0.01
17.00	2.88	0.29	5.00	0.00	0.01	0.01
17.05	2.88	0.29	5.00	0.00	0.01	0.01
17.10	2.88	0.29	5.00	0.00	0.01	0.01
17.15	2.88	0.29	5.00	0.00	0.01	0.01
17.20	2.88	0.29	5.00	0.00	0.01	0.01
17.25	2.88	0.29	5.00	0.00	0.01	0.01

17.30	2.88	0.29	5.00	0.00	0.01	0.01
17.35	2.88	0.29	5.00	0.00	0.01	0.01
17.40	2.88	0.29	5.00	0.00	0.01	0.01
17.45	2.88	0.29	5.00	0.00	0.01	0.01
17.50	2.88	0.29	5.00	0.00	0.01	0.01
17.55	2.88	0.29	5.00	0.00	0.01	0.01
17.60	2.88	0.29	5.00	0.00	0.01	0.01
17.65	2.88	0.29	5.00	0.00	0.01	0.01
17.70	2.88	0.29	5.00	0.00	0.01	0.01
17.75	2.88	0.29	5.00	0.00	0.01	0.01
17.80	2.88	0.29	5.00	0.00	0.01	0.01
17.85	2.88	0.29	5.00	0.00	0.01	0.01
17.90	2.88	0.29	5.00	0.00	0.01	0.01
17.95	2.88	0.29	5.00	0.00	0.01	0.01
18.00	2.88	0.29	5.00	0.00	0.01	0.01
18.05	2.88	0.29	5.00	0.00	0.01	0.01
18.10	2.88	0.29	5.00	0.00	0.01	0.01
18.15	2.88	0.29	5.00	0.00	0.01	0.01
18.20	2.88	0.29	5.00	0.00	0.01	0.01
18.25	2.88	0.29	5.00	0.00	0.01	0.01
18.30	2.88	0.29	5.00	0.00	0.01	0.01
18.35	2.88	0.29	5.00	0.00	0.01	0.01
18.40	2.88	0.29	5.00	0.00	0.01	0.01
18.45	2.88	0.29	5.00	0.00	0.01	0.01
18.50	2.88	0.29	5.00	0.00	0.01	0.01
18.55	2.88	0.29	5.00	0.00	0.01	0.01
18.60	2.88	0.29	5.00	0.00	0.01	0.01
18.65	2.88	0.29	5.00	0.00	0.01	0.01
18.70	2.88	0.29	5.00	0.00	0.01	0.01
18.75	2.88	0.29	5.00	0.00	0.01	0.01
18.80	2.88	0.29	5.00	0.00	0.01	0.01
18.85	2.88	0.29	5.00	0.00	0.01	0.01
18.90	2.88	0.29	5.00	0.00	0.01	0.01
18.95	2.88	0.29	5.00	0.00	0.01	0.01
19.00	2.88	0.29	5.00	0.00	0.01	0.01
19.05	2.88	0.29	5.00	0.00	0.01	0.01
19.10	2.88	0.29	5.00	0.00	0.01	0.01
19.15	2.88	0.29	5.00	0.00	0.01	0.01
19.20	2.88	0.29	5.00	0.00	0.01	0.01
19.25	2.88	0.29	5.00	0.00	0.01	0.01
19.30	2.88	0.29	5.00	0.00	0.01	0.01
19.35	2.88	0.29	5.00	0.00	0.01	0.01
19.40	2.88	0.29	5.00	0.00	0.01	0.01
19.45	2.88	0.29	5.00	0.00	0.01	0.01
19.50	2.88	0.29	5.00	0.00	0.01	0.01
19.55	2.88	0.29	5.00	0.00	0.01	0.01
19.60	2.88	0.29	5.00	0.00	0.01	0.01
19.65	2.88	0.29	5.00	0.00	0.01	0.01
19.70	2.88	0.29	5.00	0.00	0.01	0.01
19.75	2.88	0.29	5.00	0.00	0.01	0.01
19.80	2.88	0.29	5.00	0.00	0.01	0.01
19.85	2.88	0.29	5.00	0.00	0.01	0.01
19.90	2.88	0.29	5.00	0.00	0.01	0.01
19.95	2.88	0.29	5.00	0.00	0.01	0.01
20.00	2.88	0.29	5.00	0.00	0.01	0.01
20.05	2.88	0.29	5.00	0.00	0.01	0.01
20.10	2.88	0.29	5.00	0.00	0.01	0.01
20.15	2.88	0.29	5.00	0.00	0.01	0.01
20.20	2.88	0.29	5.00	0.00	0.01	0.01
20.25	2.88	0.29	5.00	0.00	0.01	0.01
20.30	2.88	0.29	5.00	0.00	0.01	0.01
20.35	2.88	0.29	5.00	0.00	0.01	0.01
20.40	2.88	0.29	5.00	0.00	0.01	0.01

20.45	2.88	0.29	5.00	0.00	0.01	0.01
20.50	2.88	0.29	5.00	0.00	0.01	0.01
20.55	2.88	0.29	5.00	0.00	0.01	0.01
20.60	2.88	0.29	5.00	0.00	0.01	0.01
20.65	2.88	0.29	5.00	0.00	0.01	0.01
20.70	2.88	0.29	5.00	0.00	0.00	0.00
20.75	2.88	0.29	5.00	0.00	0.00	0.00
20.80	2.88	0.29	5.00	0.00	0.00	0.00
20.85	2.88	0.29	5.00	0.00	0.00	0.00
20.90	2.88	0.29	5.00	0.00	0.00	0.00
20.95	2.88	0.29	5.00	0.00	0.00	0.00
21.00	2.88	0.29	5.00	0.00	0.00	0.00
21.05	2.88	0.29	5.00	0.00	0.00	0.00
21.10	2.88	0.29	5.00	0.00	0.00	0.00
21.15	2.88	0.29	5.00	0.00	0.00	0.00
21.20	2.88	0.29	5.00	0.00	0.00	0.00
21.25	2.88	0.29	5.00	0.00	0.00	0.00
21.30	2.88	0.29	5.00	0.00	0.00	0.00
21.35	2.88	0.29	5.00	0.00	0.00	0.00
21.40	2.88	0.29	5.00	0.00	0.00	0.00
21.45	2.88	0.29	5.00	0.00	0.00	0.00
21.50	2.88	0.29	5.00	0.00	0.00	0.00
21.55	2.88	0.29	5.00	0.00	0.00	0.00
21.60	2.88	0.29	5.00	0.00	0.00	0.00
21.65	2.88	0.29	5.00	0.00	0.00	0.00
21.70	2.88	0.29	5.00	0.00	0.00	0.00
21.75	2.88	0.29	5.00	0.00	0.00	0.00
21.80	2.88	0.29	5.00	0.00	0.00	0.00
21.85	2.88	0.29	5.00	0.00	0.00	0.00
21.90	2.88	0.29	5.00	0.00	0.00	0.00
21.95	2.88	0.29	5.00	0.00	0.00	0.00
22.00	2.88	0.29	5.00	0.00	0.00	0.00
22.05	2.88	0.29	5.00	0.00	0.00	0.00
22.10	2.88	0.29	5.00	0.00	0.00	0.00
22.15	2.88	0.29	5.00	0.00	0.00	0.00
22.20	2.88	0.29	5.00	0.00	0.00	0.00
22.25	2.88	0.29	5.00	0.00	0.00	0.00
22.30	2.88	0.29	5.00	0.00	0.00	0.00
22.35	2.88	0.29	5.00	0.00	0.00	0.00
22.40	2.88	0.29	5.00	0.00	0.00	0.00
22.45	2.88	0.29	5.00	0.00	0.00	0.00
22.50	2.88	0.29	5.00	0.00	0.00	0.00
22.55	2.88	0.29	5.00	0.00	0.00	0.00
22.60	2.88	0.29	5.00	0.00	0.00	0.00
22.65	2.88	0.29	5.00	0.00	0.00	0.00
22.70	2.88	0.29	5.00	0.00	0.00	0.00
22.75	2.88	0.29	5.00	0.00	0.00	0.00
22.80	2.88	0.29	5.00	0.00	0.00	0.00
22.85	2.88	0.29	5.00	0.00	0.00	0.00
22.90	2.88	0.29	5.00	0.00	0.00	0.00
22.95	2.88	0.29	5.00	0.00	0.00	0.00
23.00	2.88	0.29	5.00	0.00	0.00	0.00
23.05	2.88	0.29	5.00	0.00	0.00	0.00
23.10	2.88	0.29	5.00	0.00	0.00	0.00
23.15	2.88	0.29	5.00	0.00	0.00	0.00
23.20	2.88	0.29	5.00	0.00	0.00	0.00
23.25	2.88	0.29	5.00	0.00	0.00	0.00
23.30	2.88	0.29	5.00	0.00	0.00	0.00
23.35	2.88	0.29	5.00	0.00	0.00	0.00
23.40	2.88	0.29	5.00	0.00	0.00	0.00
23.45	2.88	0.29	5.00	0.00	0.00	0.00
23.50	2.88	0.29	5.00	0.00	0.00	0.00
23.55	2.88	0.29	5.00	0.00	0.00	0.00

23.60	2.88	0.29	5.00	0.00	0.00	0.00
23.65	2.88	0.29	5.00	0.00	0.00	0.00
23.70	2.88	0.29	5.00	0.00	0.00	0.00
23.75	2.88	0.29	5.00	0.00	0.00	0.00
23.80	2.88	0.29	5.00	0.00	0.00	0.00
23.85	2.88	0.29	5.00	0.00	0.00	0.00
23.90	2.88	0.29	5.00	0.00	0.00	0.00
23.95	2.88	0.29	5.00	0.00	0.00	0.00
24.00	2.88	0.29	5.00	0.00	0.00	0.00
24.05	2.88	0.29	5.00	0.00	0.00	0.00
24.10	2.88	0.29	5.00	0.00	0.00	0.00
24.15	2.88	0.30	5.00	0.00	0.00	0.00
24.20	2.88	0.30	5.00	0.00	0.00	0.00
24.25	2.88	0.30	5.00	0.00	0.00	0.00
24.30	2.88	0.30	5.00	0.00	0.00	0.00
24.35	2.88	0.30	5.00	0.00	0.00	0.00
24.40	2.88	0.30	5.00	0.00	0.00	0.00
24.45	2.88	0.30	5.00	0.00	0.00	0.00
24.50	2.88	0.30	5.00	0.00	0.00	0.00
24.55	2.88	0.30	5.00	0.00	0.00	0.00
24.60	2.88	0.30	5.00	0.00	0.00	0.00
24.65	2.88	0.30	5.00	0.00	0.00	0.00
24.70	2.88	0.30	5.00	0.00	0.00	0.00
24.75	2.88	0.30	5.00	0.00	0.00	0.00
24.80	2.88	0.30	5.00	0.00	0.00	0.00
24.85	2.88	0.30	5.00	0.00	0.00	0.00
24.90	2.88	0.30	5.00	0.00	0.00	0.00
24.95	2.88	0.30	5.00	0.00	0.00	0.00
25.00	2.88	0.30	5.00	0.00	0.00	0.00
25.05	2.88	0.30	5.00	0.00	0.00	0.00
25.10	2.88	0.30	5.00	0.00	0.00	0.00
25.15	2.88	0.30	5.00	0.00	0.00	0.00
25.20	2.88	0.30	5.00	0.00	0.00	0.00
25.25	2.88	0.30	5.00	0.00	0.00	0.00
25.30	2.88	0.30	5.00	0.00	0.00	0.00
25.35	2.88	0.30	5.00	0.00	0.00	0.00
25.40	2.88	0.30	5.00	0.00	0.00	0.00
25.45	2.88	0.30	5.00	0.00	0.00	0.00
25.50	2.88	0.30	5.00	0.00	0.00	0.00
25.55	2.88	0.30	5.00	0.00	0.00	0.00
25.60	2.88	0.30	5.00	0.00	0.00	0.00
25.65	2.88	0.30	5.00	0.00	0.00	0.00
25.70	2.88	0.30	5.00	0.00	0.00	0.00
25.75	2.88	0.30	5.00	0.00	0.00	0.00
25.80	2.88	0.30	5.00	0.00	0.00	0.00
25.85	2.88	0.30	5.00	0.00	0.00	0.00
25.90	2.88	0.30	5.00	0.00	0.00	0.00
25.95	2.88	0.30	5.00	0.00	0.00	0.00
26.00	2.88	0.30	5.00	0.00	0.00	0.00
26.05	2.88	0.30	5.00	0.00	0.00	0.00
26.10	2.88	0.31	5.00	0.00	0.00	0.00
26.15	2.88	0.31	5.00	0.00	0.00	0.00
26.20	2.88	0.31	5.00	0.00	0.00	0.00
26.25	2.88	0.31	5.00	0.00	0.00	0.00
26.30	2.88	0.31	5.00	0.00	0.00	0.00
26.35	2.88	0.31	5.00	0.00	0.00	0.00
26.40	2.88	0.31	5.00	0.00	0.00	0.00
26.45	2.88	0.31	5.00	0.00	0.00	0.00
26.50	2.88	0.31	5.00	0.00	0.00	0.00
26.55	2.88	0.31	5.00	0.00	0.00	0.00
26.60	2.88	0.31	5.00	0.00	0.00	0.00
26.65	2.88	0.31	5.00	0.00	0.00	0.00
26.70	2.88	0.31	5.00	0.00	0.00	0.00

26.75	2.88	0.31	5.00	0.00	0.00	0.00
26.80	2.88	0.31	5.00	0.00	0.00	0.00
26.85	2.88	0.31	5.00	0.00	0.00	0.00
26.90	2.88	0.31	5.00	0.00	0.00	0.00
26.95	2.88	0.31	5.00	0.00	0.00	0.00
27.00	2.88	0.31	5.00	0.00	0.00	0.00
27.05	2.88	0.31	5.00	0.00	0.00	0.00
27.10	2.88	0.31	5.00	0.00	0.00	0.00
27.15	2.88	0.31	5.00	0.00	0.00	0.00
27.20	2.88	0.31	5.00	0.00	0.00	0.00
27.25	2.88	0.31	5.00	0.00	0.00	0.00
27.30	2.88	0.31	5.00	0.00	0.00	0.00
27.35	2.88	0.31	5.00	0.00	0.00	0.00
27.40	2.88	0.31	5.00	0.00	0.00	0.00
27.45	2.88	0.31	5.00	0.00	0.00	0.00
27.50	2.88	0.31	5.00	0.00	0.00	0.00
27.55	2.88	0.31	5.00	0.00	0.00	0.00
27.60	2.88	0.31	5.00	0.00	0.00	0.00
27.65	2.88	0.31	5.00	0.00	0.00	0.00
27.70	2.88	0.31	5.00	0.00	0.00	0.00
27.75	2.88	0.31	5.00	0.00	0.00	0.00
27.80	2.88	0.31	5.00	0.00	0.00	0.00
27.85	2.88	0.31	5.00	0.00	0.00	0.00
27.90	2.88	0.31	5.00	0.00	0.00	0.00
27.95	2.88	0.31	5.00	0.00	0.00	0.00
28.00	2.88	0.31	5.00	0.00	0.00	0.00
28.05	2.88	0.31	5.00	0.00	0.00	0.00
28.10	2.88	0.31	5.00	0.00	0.00	0.00
28.15	2.88	0.31	5.00	0.00	0.00	0.00
28.20	2.88	0.31	5.00	0.00	0.00	0.00
28.25	2.88	0.31	5.00	0.00	0.00	0.00
28.30	2.88	0.32	5.00	0.00	0.00	0.00
28.35	2.88	0.32	5.00	0.00	0.00	0.00
28.40	2.88	0.32	5.00	0.00	0.00	0.00
28.45	2.88	0.32	5.00	0.00	0.00	0.00
28.50	2.88	0.32	5.00	0.00	0.00	0.00
28.55	2.88	0.32	5.00	0.00	0.00	0.00
28.60	2.88	0.32	5.00	0.00	0.00	0.00
28.65	2.88	0.32	5.00	0.00	0.00	0.00
28.70	2.88	0.32	5.00	0.00	0.00	0.00
28.75	2.88	0.32	5.00	0.00	0.00	0.00
28.80	2.88	0.32	5.00	0.00	0.00	0.00
28.85	2.88	0.32	5.00	0.00	0.00	0.00
28.90	2.88	0.32	5.00	0.00	0.00	0.00
28.95	2.88	0.32	5.00	0.00	0.00	0.00
29.00	2.88	0.32	5.00	0.00	0.00	0.00
29.05	2.88	0.32	5.00	0.00	0.00	0.00
29.10	2.88	0.32	5.00	0.00	0.00	0.00
29.15	2.88	0.32	5.00	0.00	0.00	0.00
29.20	2.88	0.32	5.00	0.00	0.00	0.00
29.25	2.88	0.32	5.00	0.00	0.00	0.00
29.30	2.88	0.32	5.00	0.00	0.00	0.00
29.35	2.88	0.32	5.00	0.00	0.00	0.00
29.40	2.88	0.32	5.00	0.00	0.00	0.00
29.45	2.88	0.32	5.00	0.00	0.00	0.00
29.50	2.88	0.32	5.00	0.00	0.00	0.00
29.55	2.88	0.32	5.00	0.00	0.00	0.00
29.60	2.88	0.32	5.00	0.00	0.00	0.00
29.65	2.88	0.32	5.00	0.00	0.00	0.00
29.70	2.88	0.32	5.00	0.00	0.00	0.00
29.75	2.88	0.32	5.00	0.00	0.00	0.00
29.80	2.88	0.32	5.00	0.00	0.00	0.00
29.85	2.88	0.32	5.00	0.00	0.00	0.00

29.90	2.88	0.32	5.00	0.00	0.00	0.00
29.95	2.88	0.32	5.00	0.00	0.00	0.00
30.00	2.88	0.32	5.00	0.00	0.00	0.00
30.05	2.88	0.32	5.00	0.00	0.00	0.00
30.10	2.88	0.32	5.00	0.00	0.00	0.00
30.15	2.88	0.32	5.00	0.00	0.00	0.00
30.20	2.88	0.32	5.00	0.00	0.00	0.00
30.25	2.90	0.32	5.00	0.00	0.00	0.00
30.30	2.90	0.32	5.00	0.00	0.00	0.00
30.35	2.90	0.32	5.00	0.00	0.00	0.00
30.40	2.90	0.32	5.00	0.00	0.00	0.00
30.45	2.90	0.32	5.00	0.00	0.00	0.00
30.50	2.90	0.32	5.00	0.00	0.00	0.00
30.55	2.90	0.32	5.00	0.00	0.00	0.00
30.60	2.90	0.32	5.00	0.00	0.00	0.00
30.65	2.90	0.32	5.00	0.00	0.00	0.00
30.70	2.90	0.32	5.00	0.00	0.00	0.00
30.75	2.90	0.32	5.00	0.00	0.00	0.00
30.80	2.90	0.32	5.00	0.00	0.00	0.00
30.85	2.90	0.32	5.00	0.00	0.00	0.00
30.90	2.90	0.32	5.00	0.00	0.00	0.00
30.95	2.90	0.32	5.00	0.00	0.00	0.00
31.00	2.89	0.32	5.00	0.00	0.00	0.00
31.05	2.89	0.32	5.00	0.00	0.00	0.00
31.10	2.89	0.32	5.00	0.00	0.00	0.00
31.15	2.89	0.32	5.00	0.00	0.00	0.00
31.20	2.89	0.32	5.00	0.00	0.00	0.00
31.25	2.89	0.32	5.00	0.00	0.00	0.00
31.30	2.89	0.32	5.00	0.00	0.00	0.00
31.35	2.89	0.32	5.00	0.00	0.00	0.00
31.40	2.89	0.32	5.00	0.00	0.00	0.00
31.45	2.89	0.32	5.00	0.00	0.00	0.00
31.50	2.89	0.32	5.00	0.00	0.00	0.00
31.55	2.89	0.32	5.00	0.00	0.00	0.00
31.60	2.89	0.32	5.00	0.00	0.00	0.00
31.65	2.89	0.32	5.00	0.00	0.00	0.00
31.70	2.89	0.32	5.00	0.00	0.00	0.00
31.75	2.89	0.33	5.00	0.00	0.00	0.00
31.80	2.89	0.33	5.00	0.00	0.00	0.00
31.85	2.89	0.33	5.00	0.00	0.00	0.00
31.90	2.89	0.33	5.00	0.00	0.00	0.00
31.95	2.89	0.33	5.00	0.00	0.00	0.00
32.00	2.89	0.33	5.00	0.00	0.00	0.00
32.05	2.89	0.33	5.00	0.00	0.00	0.00
32.10	2.89	0.33	5.00	0.00	0.00	0.00
32.15	2.88	0.33	5.00	0.00	0.00	0.00
32.20	2.88	0.33	5.00	0.00	0.00	0.00
32.25	2.88	0.33	5.00	0.00	0.00	0.00
32.30	2.88	0.33	5.00	0.00	0.00	0.00
32.35	2.88	0.33	5.00	0.00	0.00	0.00
32.40	2.88	0.33	5.00	0.00	0.00	0.00
32.45	2.88	0.33	5.00	0.00	0.00	0.00
32.50	2.88	0.33	5.00	0.00	0.00	0.00
32.55	2.88	0.33	5.00	0.00	0.00	0.00
32.60	2.88	0.33	5.00	0.00	0.00	0.00
32.65	2.88	0.33	5.00	0.00	0.00	0.00
32.70	2.88	0.33	5.00	0.00	0.00	0.00
32.75	2.88	0.33	5.00	0.00	0.00	0.00
32.80	2.88	0.33	5.00	0.00	0.00	0.00
32.85	2.88	0.33	5.00	0.00	0.00	0.00
32.90	2.88	0.33	5.00	0.00	0.00	0.00
32.95	2.88	0.33	5.00	0.00	0.00	0.00
33.00	2.88	0.33	5.00	0.00	0.00	0.00

33.05	2.88	0.33	5.00	0.00	0.00	0.00
33.10	2.88	0.33	5.00	0.00	0.00	0.00
33.15	2.88	0.33	5.00	0.00	0.00	0.00
33.20	2.88	0.33	5.00	0.00	0.00	0.00
33.25	2.88	0.33	5.00	0.00	0.00	0.00
33.30	2.87	0.33	5.00	0.00	0.00	0.00
33.35	2.87	0.33	5.00	0.00	0.00	0.00
33.40	2.87	0.33	5.00	0.00	0.00	0.00
33.45	2.87	0.33	5.00	0.00	0.00	0.00
33.50	2.87	0.33	5.00	0.00	0.00	0.00
33.55	2.87	0.33	5.00	0.00	0.00	0.00
33.60	2.87	0.33	5.00	0.00	0.00	0.00
33.65	2.87	0.33	5.00	0.00	0.00	0.00
33.70	2.87	0.33	5.00	0.00	0.00	0.00
33.75	2.87	0.33	5.00	0.00	0.00	0.00
33.80	2.87	0.33	5.00	0.00	0.00	0.00
33.85	2.87	0.33	5.00	0.00	0.00	0.00
33.90	2.87	0.33	5.00	0.00	0.00	0.00
33.95	2.87	0.33	5.00	0.00	0.00	0.00
34.00	2.87	0.33	5.00	0.00	0.00	0.00
34.05	2.87	0.33	5.00	0.00	0.00	0.00
34.10	2.87	0.33	5.00	0.00	0.00	0.00
34.15	2.87	0.33	5.00	0.00	0.00	0.00
34.20	2.87	0.33	5.00	0.00	0.00	0.00
34.25	2.87	0.33	5.00	0.00	0.00	0.00
34.30	2.87	0.33	5.00	0.00	0.00	0.00
34.35	2.87	0.33	5.00	0.00	0.00	0.00
34.40	2.87	0.33	5.00	0.00	0.00	0.00
34.45	2.86	0.33	5.00	0.00	0.00	0.00
34.50	2.86	0.33	5.00	0.00	0.00	0.00
34.55	2.86	0.33	5.00	0.00	0.00	0.00
34.60	2.86	0.33	5.00	0.00	0.00	0.00
34.65	2.86	0.33	5.00	0.00	0.00	0.00
34.70	2.86	0.33	5.00	0.00	0.00	0.00
34.75	2.86	0.33	5.00	0.00	0.00	0.00
34.80	2.86	0.33	5.00	0.00	0.00	0.00
34.85	2.86	0.33	5.00	0.00	0.00	0.00
34.90	2.86	0.33	5.00	0.00	0.00	0.00
34.95	2.86	0.33	5.00	0.00	0.00	0.00
35.00	2.86	0.33	5.00	0.00	0.00	0.00
35.05	2.86	0.33	5.00	0.00	0.00	0.00
35.10	2.86	0.33	5.00	0.00	0.00	0.00
35.15	2.86	0.33	5.00	0.00	0.00	0.00
35.20	2.86	0.33	5.00	0.00	0.00	0.00
35.25	2.86	0.33	5.00	0.00	0.00	0.00
35.30	2.86	0.33	5.00	0.00	0.00	0.00
35.35	2.86	0.33	5.00	0.00	0.00	0.00
35.40	2.86	0.33	5.00	0.00	0.00	0.00
35.45	2.86	0.33	5.00	0.00	0.00	0.00
35.50	2.86	0.33	5.00	0.00	0.00	0.00
35.55	2.86	0.33	5.00	0.00	0.00	0.00
35.60	2.86	0.33	5.00	0.00	0.00	0.00
35.65	2.85	0.33	5.00	0.00	0.00	0.00
35.70	2.85	0.33	5.00	0.00	0.00	0.00
35.75	2.85	0.33	5.00	0.00	0.00	0.00
35.80	2.85	0.33	5.00	0.00	0.00	0.00
35.85	2.85	0.33	5.00	0.00	0.00	0.00
35.90	2.85	0.33	5.00	0.00	0.00	0.00
35.95	2.85	0.33	5.00	0.00	0.00	0.00
36.00	2.85	0.33	5.00	0.00	0.00	0.00
36.05	2.85	0.33	5.00	0.00	0.00	0.00
36.10	2.85	0.33	5.00	0.00	0.00	0.00
36.15	2.85	0.33	5.00	0.00	0.00	0.00

36.20	2.85	0.33	5.00	0.00	0.00	0.00
36.25	2.85	0.33	5.00	0.00	0.00	0.00
36.30	2.85	0.33	5.00	0.00	0.00	0.00
36.35	2.85	0.33	5.00	0.00	0.00	0.00
36.40	2.85	0.33	5.00	0.00	0.00	0.00
36.45	2.85	0.33	5.00	0.00	0.00	0.00
36.50	2.85	0.33	5.00	0.00	0.00	0.00
36.55	2.85	0.33	5.00	0.00	0.00	0.00
36.60	2.85	0.33	5.00	0.00	0.00	0.00
36.65	2.85	0.33	5.00	0.00	0.00	0.00
36.70	2.85	0.33	5.00	0.00	0.00	0.00
36.75	2.85	0.33	5.00	0.00	0.00	0.00
36.80	2.85	0.33	5.00	0.00	0.00	0.00
36.85	2.85	0.33	5.00	0.00	0.00	0.00
36.90	2.85	0.33	5.00	0.00	0.00	0.00
36.95	2.84	0.33	5.00	0.00	0.00	0.00
37.00	2.84	0.33	5.00	0.00	0.00	0.00

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands
S_all Total Settlement from Saturated and Unsaturated Sands
NoLiq No-Liquefy Soils

APPENDIX D

Stormwater Quality Management Plan

APPENDIX D.1

Parcel 2 (Starbucks)

City of Escondido
PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Starbucks - Escondido
Parcel 2

W. Mission Ave & Centre City Pkwy
Escondido, CA 92025

ASSESSOR'S PARCEL NUMBER(S):
229-171-29, 229-171-30

ENGINEER OF WORK:

Erin Sweeney, PE

PREPARED FOR:
501 W. Mission, LLC

PDP SWQMP PREPARED BY:
Mour Group Engineer + Design
6593 Riverdale St.
San Diego, CA 92120
619-727-4800

DATE OF SWQMP:
5-15-2024

PLANS PREPARED BY:
Mour Group Engineering + Design
6593 Riverdale St.
San Diego, CA 92120
619-727-4800

SWQMP APPROVED BY:

APPROVAL DATE:

ESCONDIDO
City of Choice

This page was left intentionally blank.

TABLE OF CONTENTS

TABLE OF CONTENTS iii
ATTACHMENTS iv
ACRONYMS iv
PDP SWQMP PREPARER'S CERTIFICATION PAGE v
SUBMITTAL RECORD vi
PROJECT VICINITY MAP vii
Step 1: Project type determination 1
Step 1.1: Storm Water Quality Management Plan requirements 1
Step 1.2: Exemption to PDP definitions 2
Step 1.3: Confirmation of PDP Determination 3
Step 2: City of Escondido PDP SWQMP Site Information Checklist 5
Step 2.1: Description of Existing Site Condition and Drainage Patterns 5
Step 2.2: Description of Existing Site Drainage Patterns 6
Step 2.3: Description of Proposed Site Development 7
Step 2.4: Description of Proposed Site Drainage Patterns 8
Step 2.5: Potential Pollutant Source Areas 9
Step 2.6: Identification of Receiving Water and Pollutants of Concern 10
Step 2.7: Hydromodification Management Requirements 11
Step 2.7.1: Critical Coarse Sediment Yield Areas 12
Step 2.7.2: Flow Control for Post-Project Runoff 13
Step 2.8: Other Site Requirements and Constraints 14
Step 3: Source Control BMP Checklist 15
Step 4: Site Design BMP Checklist 17
Step 5: Summary of Structural BMPs 19
Step 5.1: Offsite Alternative Compliance Participation Form 22

ATTACHMENTS

Attachment 1: Backup for PDP Pollutant Control BMPs
- Attachment 1a: Storm Water Pollutant Control Worksheet Calculations (Applicable worksheets)
- Attachment 1b: Form I-8, Categorization of Infiltration Feasibility Condition
- Attachment 1c: Form I-9, Factor of Safety and Design Infiltration Rate Worksheet
- Attachment 1d: Drainage Management Area (DMA) Exhibit
- Attachment 1e: Individual Structural BMP DMA Mapbook

Attachment 2: Backup for PDP Hydromodification Control Measures
- Attachment 2a: Flow Control Facility Design
- Attachment 2b: Hydromodification Management Exhibit
- Attachment 2c: Management of Critical Coarse Sediment Yield Areas
- Attachment 2d: Geomorphic Assessment of Receiving Channels (optional)
- Attachment 2e: Vector Control Plan (if applicable)

Attachment 3: Structural BMP Maintenance Plan
- Attachment 3a: Structural BMP Maintenance Thresholds and Actions
- Attachment 3b: Draft Maintenance Agreements / Notifications (when applicable)

Attachment 4: City of Escondido PDP Structural BMP Verification

Attachment 5: Copy of Plan Sheets Showing Permanent Storm Water BMPs

ACRONYMS

ACP	Alternative Compliance Project
APN	Assessor's Parcel Number
BMP	Best Management Practice
DMA	Drainage Management Area
EOW	Engineer of Work
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
PDP	Priority Development Project
PE	Professional Engineer
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Quality Control Board
SIC	Standard Industrial Classification
SWDM	Storm Water Design Manual
SWQMP	Storm Water Quality Management Plan
USGS	US Geological Survey
WMAA	Watershed Management Area Analysis
WQIP	Water Quality Improvement Plan

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

PDP SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: Starbucks - Escondido
Permit Number: PL22-0396

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of Escondido Storm Water Design Manual, which is a design manual for compliance with the City of Escondido Municipal Code (Chapter 22, Article 2) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100) requirements for storm water management.

I have read and understand that the City of Escondido has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the Storm Water Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by City staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

Engineer of Work's Signature, PE Number & Expiration Date

Erin Sweeney

Print Name

Mour Group Engineering + Design

Company

5-15-2024

Date

Engineer's Seal:

SUBMITTAL RECORD

Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

Preliminary Design / Planning / CEQA

Submittal Number	Date	Summary of Changes
1	2-29-2024	Initial Submittal
2	5-15-2024	Resubmittal
3		
4		

Final Design

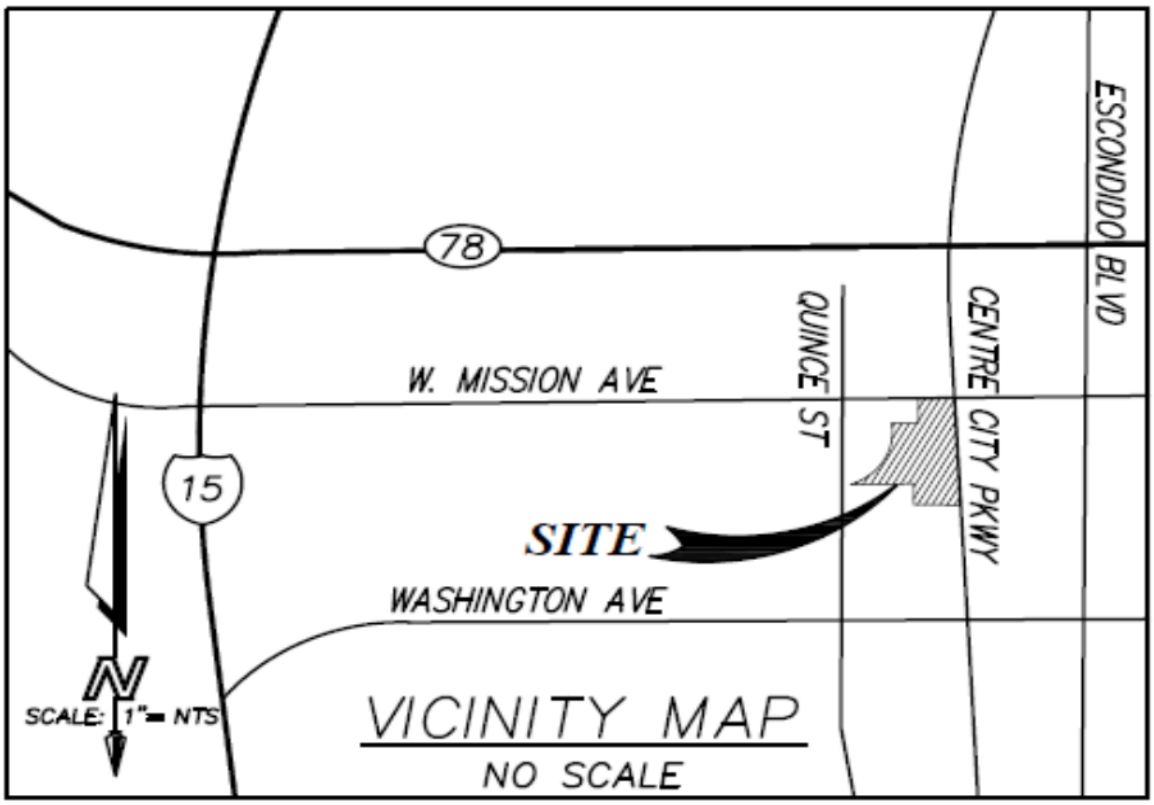
Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

Plan Changes

Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

PROJECT VICINITY MAP

Project Name: Starbucks - Escondido
Permit Number: PL22-0396



Step 1: Project type determination

Site Information Checklist for PDPs	Form I-2a
Project Summary Information	
Project Name	Starbucks Escondido
Project Address	501 W. Mission Ave Escondido, CA 92025
Assessor's Parcel Number(s)	229-171-29, 229-171-30
Permit Number	PL22-0396
Project Watershed (Hydrologic Unit)	Select One: ☑ Carlsbad 904 ☐ San Dieguito 905
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	0.51 Acres (22,152 Square Feet)
Area to be disturbed by the project (Project Area)	0.51 Acres (22,152 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	0.41 Acres (17,941 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	0.10 Acres (4,211 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Step 1.1: Storm Water Quality Management Plan requirements

Site Information Checklist for PDPs		Form I-2a
Step	**Answer**	**Progression**
Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, complete Step 1 Project Type Determination Checklist on Pages 3 and 4, and see PDP exemption information below. For further guidance, see Section 1.4 of the Storm Water Design Manual *in its entirety*.	☐ Standard Project	Standard Project requirements apply. **Complete Form I-1.**
	▬ PDP	Standard and PDP requirements apply, including PDP SWQMP. **SWQMP Required.**
	☐ PDP with ACP	If participating in offsite alternative compliance, **complete Step 5.1** (Offsite Alternative Compliance Participation Form) **and an ACP SWQMP.**
	☐ PDP Exemption	**Go to Step 1.2 below.**

Step 1.2: Exemption to PDP definitions

Site Information Checklist for PDPs	Form I-2a
Is the project exempt from PDP definitions based on either of the following: ☐ Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria: (i) Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR (ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR (iii) Designed and constructed with permeable pavements or surfaces in accordance with County of San Diego Green Streets Infrastructure;	If so: Standard Project requirements apply, AND any additional requirements specific to the type of project. City concurrence with the exemption is required. *Provide discussion and list any additional requirements below in this form.*
☐ Projects that are only retrofitting or redeveloping existing paved alleys, streets or roads that are designed and constructed in accordance with the County of San Diego Green Streets Infrastructure;	**PDP Exempt.**
Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:	

Step 1.3: Confirmation of PDP Determination

Site Information Checklist for PDPs			Form I-2a
The project is (select one): ☐ New Development ☒ Redevelopment[1]			
The total proposed newly created or replaced impervious area is: 17,941 ft²			
The project meets the following categories, (a) through (f): [select all that apply]			
Yes ☐	No ☑	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☑	No ☐	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☑	No ☐	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). *Information and an SIC search function are available at www.osha.gov/pls/imis/sicsearch.html.* (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
Yes ☐	No ☑	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any*

[1] Redevelopment is defined as: The creation and/or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include routine maintenance activities, such as trenching and resurfacing associated with utility work; pavement grinding; resurfacing existing roadways; sidewalks; pedestrian ramps; or bike lanes on existing roads; and routine replacement of damaged pavement, such as pothole repair.

Site Information Checklist for PDPs			Form I-2a
			other equivalent environmentally sensitive areas which have been identified by the Copermittees. *For projects adjacent to an ESA, but not discharging to an ESA, the 2,500 square foot threshold does not apply as long as the project does not physically disturb the ESA and the ESA is upstream of the project.*
Yes ☐	No ☑	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. *Information and an SIC search function are available at www.osha.gov/pls/imis/sicsearch.html.* (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes ☐	No ☑	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. Note: See Storm Water Design Manual Section 1.4.2 for additional guidance.

The following is for redevelopment PDPs only:

The area of existing (pre-project) impervious area at the project site is:	A	18,397	ft^2
The total proposed newly created or replaced impervious area is:	B	17,941	ft^2
Percent impervious surface created or replaced:	(B/A)*100	98	%

The percent impervious surface created or replaced is (select one based on the above calculation):

☐ **less than or equal to fifty percent (50%)** – only newly created or replaced impervious areas are considered a PDP and subject to stormwater requirements

OR

☒ **greater than fifty percent (50%)** – the entire project site is considered a PDP and subject to stormwater requirements

Step 2: City of Escondido PDP SWQMP Site Information Checklist

Step 2.1: Description of Existing Site Condition and Drainage Patterns

Site Information Checklist for PDPs	Form I-2a

Current Status of the Site (select all that apply):

- ☒ Existing development
- ☐ Previously graded but not built out
- ☐ Demolition completed without new construction
- ☐ Agricultural or other non-impervious use
- ☐ Vacant, undeveloped/natural

Description / Additional Information:

Existing Land Cover Includes (select all that apply and provide each area on site):

- ☒ Vegetative Cover 0.09 Acres (3,755 Square Feet)
- ☐ Non-Vegetated Pervious Areas 0 Acres (0 Square Feet)
- ☒ Impervious Areas 0.42 Acres (18,397 Square Feet)

Description / Additional Information:

Underlying Soil belongs to Hydrologic Soil Group (select all that apply):

- ☐ NRCS Type A
- ☐ NRCS Type B
- ☐ NRCS Type C
- ☒ NRCS Type D

Approximate Depth to Groundwater (GW) (or N/A for no infiltration BMPs):

- ☐ Groundwater Depth < 5 feet
- ☐ 5 feet < Groundwater Depth < 10 feet
- ☒ 10 feet < Groundwater Depth < 20 feet
- ☐ Groundwater Depth > 20 feet

Existing Natural Hydrologic Features (select all that apply):

- ☐ Watercourses
- ☐ Seeps
- ☐ Springs
- ☐ Wetlands
- ☒ None
- ☐ Other

Description / Additional Information:

Step 2.2: Description of Existing Site Drainage Patterns

Site Information Checklist for PDPs	Form I-2a

How is storm water runoff conveyed from the site? At a minimum, this description should answer (1) whether existing drainage conveyance is natural or urban; (2) describe existing constructed storm water conveyance systems, if applicable; and (3) is runoff from offsite conveyed through the site? If so, describe:

1. The existing drainage conveyance is urban, as part of the site improvements developed for the existing building, and parking area.

2. The existing storm drainage system is shown on the Drainage plan for Parcel 2 (C101). The stormwater runoff in the existing condition from north part of the site drains offsite on ROW at north-east corner. Similarly, west and central area of the site drains to south via sheet flow. There is one existing drainage box with a 6” and 8” diameter storm drain outlet to the southeast of the site with an unknown discharge location. All runoff from the site eventually flows south within the right-of-way of Centre City Pkwy where it is collected within a concrete drainage flume that has an inlet to a 24” diameter storm drain. The 24” storm drain eventually connects to a 42” storm drain that runs west and connects to Escondido Creek.

3. There is no offsite runoff conveyed through the property.

Step 2.3: Description of Proposed Site Development

Site Information Checklist for PDPs	Form I-2a

Project Description / Proposed Land Use and/or Activities:

The site is proposing to re-develop the existing site for the development of starbucks(restaurant) building, drive-thru lane, and onsite parking. The proposed land use is consistent with the existing use, which is as a restaurant facility. Re-development improvements occur throughout the entire site area. The overall project includes two other drive-thru restaurants that are documented separately

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):

Proposed impervious features include a new restaurant building, drive-thru lane, concrete sidewalks and flatwork, and asphalt paved parking lot.

List/describe proposed pervious features of the project (e.g., landscape areas):

Landscape planter areas.

Does the project include grading and changes to site topography?

- ■ Yes
- ☐ No

Description / Additional Information:

Old concrete will be demolished, and new grading is required to support the drainage from the new building. The grading will be a mild change for the new building footprint, drive-thru and parking layout.

Insert acreage or square feet for the different land cover types in the table below:

Change in Land Cover Type Summary

Land Cover Type	Existing (acres or ft^2)	Proposed (acres or ft^2)	Percent Change
Vegetation	3,755	4,211	12
Pervious (non-vegetated)	0	0	0
Impervious	18,397	17,941	-2.5
total	22,152	22,152	Sum Existing must equal Sum Proposed

Step 2.4: Description of Proposed Site Drainage Patterns

Site Information Checklist for PDPs	Form I-2a

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

- ☒ Yes
- ☐ No

If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.

Describe proposed site drainage patterns:

Parcel 2 has three drainage basins. Drive-thru and landscape part of the property surface drain directly to a curb inlet that is connected to the Biopod planter while the central area surface drains via sheet flow into another curb inlet on the other side of the the Biopod planter. Likewise, north-west of property including majority of the new Starbucks building drain into another new inlet located at north-west of the property that drains into Oldcastle Biopod Planter near the southwest corner of the site. The biopod planter is connected via underground pipe and conveyed in a southerly direction within a storm drain easement which eventually discharges into the Escondido Creek. Said creek has been determined to be Hydromodification Exempt per the city of Carlsbad WMA WQIP (May 2018 and Subsequent updates).

Step 2.5: Potential Pollutant Source Areas

Site Information Checklist for PDPs	Form I-2a

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply).

- ■ On-site storm drain inlets
- ☐ Interior floor drains and elevator shaft sump pumps
- ☐ Interior parking garages
- ■ Need for future indoor & structural pest control
- ■ Landscape/Outdoor Pesticide Use
- ☐ Pools, spas, ponds, decorative fountains, and other water features
- ■ Food service
- ■ Refuse areas
- ☐ Industrial processes
- ☐ Outdoor storage of equipment or materials
- ☐ Vehicle and Equipment Cleaning
- ☐ Vehicle/Equipment Repair and Maintenance
- ☐ Fuel Dispensing Areas
- ☐ Loading Docks
- ■ Fire Sprinkler Test Water
- ■ Miscellaneous Drain or Wash Water
- ■ Plazas, sidewalks, and parking lots
- ☐ Large Trash Generating Facilities
- ☐ Animal Facilities
- ☐ Nurseries and Garden Centers
- ☐ Automotive Facilities
- ☐ Other (provide description)

Description / Additional Information:

Step 2.6: Identification of Receiving Water and Pollutants of Concern

Site Information Checklist for PDPs	Form I-2a

Describe path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):

The site drains to a public storm drain system which eventually discharges into the Escondido Creek. Said creek has been determined to be Hydromodification Exempt per the city of Carlsbad WMA WQIP (May 2018 and Subsequent updates).

List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
Escondido Creek	Phosphate,TDS,sulfate,mangenese	
	DDT, bacteria,toxicity,nitrogen,selennium	
	Benthic comm eff.bifenthrin,malathion	

Identification of Project Site Pollutants*

*Identification of project site pollutants below is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs. Note the project must also participate in an alternative compliance program (unless prior lawful approval to meet earlier PDP requirements is demonstrated).

Identify pollutants expected from the project site based on all proposed use(s) of the site (see Storm Water Design Manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Anticipated from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment		x	
Nutrients		x	x
Heavy Metals		x	x
Organic Compounds		x	x
Trash & Debris		x	x
Oxygen Demanding Substances		X	X
Oil & Grease		x	
Bacteria & Viruses		x	x
Pesticides		x	

Step 2.7: Hydromodification Management Requirements

Site Information Checklist for PDPs	Form I-2a

Do hydromodification management requirements apply (see Section 1.6 of the Storm Water Design Manual)?

☐ Yes, hydromodification management requirements for flow control and preservation of critical coarse sediment yield areas are applicable.

☐ No, the project will discharge runoff directly to the exempt portion of Escondido Creek as detailed in the Carlsbad Watershed WQIP (May 2018 Update). Direct discharge is defined in section 1.6 of the Escondido Storm Water Design Manual.

☐ No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean. Refer to HMP Exhibit in Attachment 2.

☒ No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean. Refer to HMP Exhibit in Attachment 2.

Note: Direct Discharge refers to an uninterrupted hardened conveyance system. Projects claiming the Direct Discharge exemption must satisfy the applicable criteria (energy dissipation, invert elevation, etc.) included in Section 1.6 of the Escondido Storm Water Design Manual.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

Escondido Creek is a Hydromodification Exempt River Reach based on the latest Carlsbad WMA WQIP.

HMP Exemption Exhibit

Attach an HMP Exemption Exhibit that shows direct storm water runoff discharge from the project site to the HMP exempt area. Include project area, applicable underground storm drain line and/or concrete lined channels, outfall information, and exempt waterbody.

Reference applicable drawing number(s).

Carlsbad Watershed Management Area
HU 904.00, 211 mi2

Legend

- Watershed Boundaries
- Municipal Boundaries
- Regional WMAA Streams
- **Exempt Bodies:** Water Storage Reservoirs, Lakes, Enclosed Embayments, Pacific Ocean, Buena Vista Lagoon
- **Exempt River Reaches:** Reaches of San Luis Rey River, San Dieguito River, San Diego River, Forester Creek, Sweetwater River, Otay River
- **Exempt Conveyance Systems:** Existing underground storm drains or conveyance channels whose bed and bank are concrete-lined, discharging directly to exempt water bodies, exempt rivers, or localized areas of Agua Hedionda Lagoon and Batiquitos Lagoon

Aerial Imagery Source: DigitalGlobe, 06/2012

Receiving Waters and Conveyance Systems Exempt from Hydromodification Management Requirements

0 2.5 5 10 Miles

NORTH

Exhibit Date: Sept. 8, 2014
Revised Date: Sept. 6, 2018

Geosyntec consultants | RICK ENGINEERING COMPANY

Step 2.7.1: Critical Coarse Sediment Yield Areas

Site Information Checklist for PDPs	Form I-2a

☐ **N/A - This Section only required if hydromodification management requirements apply**

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

☐ Yes

☒ No, no critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Appendix H of the manual been performed?

☐ H.6.1 Site-Specific GLU Analysis

☐ H.7 Downstream Systems Sensitivity to Coarse Sediment

- H.7.1 Depositional Analysis,
- H.7.2 Threshold Channel Analysis, or
- H.7.3 Course Sediment Source Area Verification Analysis

☐ No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

☐ No critical coarse sediment yield areas to be protected based on verification of GLUs onsite.

☐ Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 8 of the SWQMP.

☐ Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections H.2, H.3, and H.4 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

N/A

Step 2.7.2: Flow Control for Post-Project Runoff

Site Information Checklist for PDPs	Form I-2a

☐ **N/A - This Section only required if hydromodification management requirements apply**

List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.

N/A

Has a geomorphic assessment been performed for the receiving channel(s)?

- ■ No, the low flow threshold is 0.1Q2 (default low flow threshold)
- ☐ Yes, the result is the low flow threshold is 0.1Q2
- ☐ Yes, the result is the low flow threshold is 0.3Q2
- ☐ Yes, the result is the low flow threshold is 0.5Q2

If a geomorphic assessment has been performed, provide title, date, and preparer:

N/A

Discussion / Additional Information: (optional)

N/A

Select method used to determine low flow threshold:

- ☐ Sizing Factor Method
- ☐ US Geological Survey (USGS) Equation
- ☐ Continuous Simulation Modeling

Step 2.8: Other Site Requirements and Constraints

Site Information Checklist for PDPs	Form I-2a
When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.	
Optional Additional Information or Continuation of Previous Sections As Needed	
This space provided for additional information or continuation of information from previous sections as needed.	

Step 3: Source Control BMP Checklist

Source Control BMP Checklist for PDPs			Form I-2b
All development projects must implement source control BMPs 4.2.1 through 4.2.6 where applicable and feasible. See Chapter 4.2 and Appendix E of the City Storm Water Design Manual for information to implement source control BMPs shown in this checklist. The following checklists serve as guides only. Mark what elements are included in your project. See Storm Water Design Manual Chapter 4 and Appendix E for more information on determining appropriate BMPs for your project. Answer each category below pursuant to the following: • "Yes" means the project will implement the source control BMP as described in Chapter 4.2 and/or Appendix E of the City Storm Water Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification must be provided.			
Source Control Requirement	**Applied?**		
4.2.1 Prevention of Illicit Discharges into the MS4	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.1 not implemented:			
4.2.2 Storm Drain Stenciling or Signage	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.2 not implemented:			
4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	■ N/A
Discussion / justification if 4.2.3 not implemented:			
4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	■ N/A
Discussion / justification if 4.2.4 not implemented:			
4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.5 not implemented:			

Form I-2b Page 2 of 2			
Source Control Requirement	**Applied?**		
4.2.6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below):			
■ Onsite storm drain inlets	■ Yes	☐ No	☐ N/A
☐ Interior floor drains and elevator shaft sump pumps	☐ Yes	☐ No	☐ N/A
☐ Interior parking garages	☐ Yes	☐ No	☐ N/A
■ Need for future indoor & structural pest control	■ Yes	☐ No	☐ N/A
■ Landscape/outdoor pesticide use	■ Yes	☐ No	☐ N/A
☐ Pools, spas, ponds, decorative fountains, and other water features	☐ Yes	☐ No	☐ N/A
■ Food service	■ Yes	☐ No	☐ N/A
■ Refuse areas	■ Yes	☐ No	☐ N/A
☐ Industrial processes	☐ Yes	☐ No	☐ N/A
☐ Outdoor storage of equipment or materials	☐ Yes	☐ No	☐ N/A
☐ Vehicle and equipment cleaning	☐ Yes	☐ No	☐ N/A
☐ Vehicle/equipment repair and maintenance	☐ Yes	☐ No	☐ N/A
☐ Fuel dispensing areas	☐ Yes	☐ No	☐ N/A
☐ Loading docks	☐ Yes	☐ No	☐ N/A
■ Fire sprinkler test water	■ Yes	☐ No	☐ N/A
■ Miscellaneous drain or wash water	■ Yes	☐ No	☐ N/A
■ Plazas, sidewalks, and parking lots	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for all "No" answers shown above.			

Note: Show all source control measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 4: Site Design BMP Checklist

Site Design BMP Checklist for PDPs			Form I-2c
All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement site design BMPs shown in this checklist. Answer each category below pursuant to the following. • "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification must be provided.			
Site Design Requirement	**Applied?**		
4.3.1 Maintain Natural Drainage Pathways and Hydrologic Features	☐ Yes	☐ No	■ N/A
Discussion / justification if 4.3.1 not implemented:			
There are no existing natural drainage pathways, however the existing urban drainage pathway is being maintained.			
1-1 Are existing natural drainage pathways and hydrologic features mapped on the site map?	■ Yes	☐ No	☐ N/A
1-2 Are trees implemented? If yes, are they shown on the site map?	☐ Yes	☐ No	■ N/A
1-3 Implemented trees meet the design criteria in 4.3.1 Fact Sheet (e.g. soil volume, maximum credit, etc.)?	☐ Yes	☐ No	■ N/A
1-4 Is tree credit volume calculated using Appendix B.2.2.1 and SD-1 Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A
4.3.2 Conserve Natural Areas, Soils, and Vegetation	☐ Yes	■ No	☐ N/A
Discussion / justification if 4.3.2 not implemented:			
Development of the Starbucks requires demolition of all existing features.			
4.3.3 Minimize Impervious Area	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.3 not implemented:			
4.3.4 Minimize Soil Compaction	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.4 not implemented:			

Form I-2c Page 2 of 2			
Site Design Requirement	**Applied?**		
4.3.5 Impervious Area Dispersion	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.5 not implemented:			
5-1 Is the pervious area receiving runon from impervious area identified on the site map?	■ Yes	☐ No	☐ N/A
5-2 Does the pervious area satisfy the design criteria in 4.3.5. Fact Sheet in Appendix E (e.g. maximum slope, minimum length, etc.)	☐ Yes	☐ No	■ N/A
5-3 Is impervious area dispersion credit volume calculated using Appendix B.2.1.1 and 4.3.5 Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A
4.3.6 Runoff Collection	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.6 not implemented:			
6a-1 Are green roofs implemented in accordance with design criteria in 4.3.6A Fact Sheet? If yes, are they shown on the site map?	☐ Yes	☐ No	■ N/A
6a-2 Is the green roof credit volume calculated using Appendix B.2.1.2 and 4.3.6A Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A
6b-1 Are permeable pavements implemented in accordance with design criteria in 4.3.6B Fact Sheet? If yes, are they shown on the site map?	☐ Yes	☐ No	■ N/A
6b-2 Is the permeable pavement credit volume calculated using Appendix B.2.1.3 and 4.3.6B Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A
4.3.7 Landscaping with Native or Drought Tolerant Species	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.7 not implemented:			
4.3.8 Harvesting and Using Precipitation	☐ Yes	■ No	☐ N/A
Discussion / justification if 4.3.8 not implemented:			
Low demand on urinal, toilet, and irrigation water.			
8-1 Are rain barrels implemented in accordance with design criteria in 4.3.8 Fact Sheet? If yes, are they shown on the site map?	☐ Yes	☐ No	■ N/A
8-2 Is the rain barrel credit volume calculated using Appendix B.2.2.2 and 4.3.8 Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A

Note: Show all site design measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 5: Summary of Structural BMPs

Summary of Structural BMPs	Form I-3

PDP Structural BMPs

All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).

PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative to certify construction of the structural BMPs (see Section 1.12 of the manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the manual).

Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).

Description of Structural BMP Strategy

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

The site drains to BMP-1 (Oldcastle Biopod) located near southwest corner of the property. The Proposed BMP has treatment capacity higher than required (per worksheet B.6-1), higher infiltration rate of 153 in/hr and unlimited external bypass system. The biopod planter is connected via underground pipe and conveyed within a public storm drain system which eventually discharges into the Escondido Creek. Said creek has been determined to be Hydromodification Exempt per the city of Carlsbad WMA WQIP (May 2018 and Subsequent updates).

(Continue on page 2 as necessary.)

Form I-3 Page 2 of 3
(Page reserved for continuation of description of general strategy for structural BMP implementation at the site)
(Continued from page 1)

Form I-3 Page 3 of 3

Structural BMP Summary Information

(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BMP-1

Construction Plan Sheet No. C100-C104

Type of structural BMP:

☐Retention by harvest and use (HU-1)
☐Retention by infiltration basin (INF-1)
☐Retention by bioretention (INF-2)
☐Retention by permeable pavement (INF-3)
☐Retention by dry wells (INF-4)
☐Partial retention by biofiltration with partial retention (PR-1)
☐Biofiltration (BF-1)
☐Biofiltration with Nutrient Sensitive Media Design (BF-2)
■Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
☐Detention pond or vault for hydromodification management
☐Other (describe in discussion section below)

Purpose:

■Pollutant control only
☐Hydromodification control only
☐Combined pollutant control and hydromodification control
☐Pre-treatment/forebay for another structural BMP
☐Other (describe in discussion section below)

Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	Mour Group Engineering + Design Erin Sweeney, P.E. 619-727-4800
Who will be the final owner of this BMP?	☐HOA ■Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ■Property Owner ☐City ☐Other (describe)

Discussion (as needed):

Step 5.1: Offsite Alternative Compliance Participation Form

THIS FORM IS NOT APPLICABLE AT THIS TIME: An Alternative Compliance Program is under consideration by the City of Escondido.	
PDP INFORMATION	
Record ID:	N/A
Assessor's Parcel Number(s) [APN(s)]	
What are your PDP Pollutant Control Debits? *See Attachment 1 of the PDP SWQMP	
What are your PDP HMP Debits? (if applicable) *See Attachment 2 of the PDP SWQMP	
ACP Information	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
Project Owner/Address	
What are your ACP Pollutant Control Credits? *See Attachment 1 of the ACP SWQMP	
What are your ACP HMP Debits? (if applicable) *See Attachment 2 of the ACP SWQMP	
Is your ACP in the same watershed as your PDP? ☐Yes ☐No	Will your ACP project be completed prior to the completion of the PDP? ☐Yes ☐No
Does your ACP account for all Deficits generated by the PDP? ☐Yes ☐No (PDP and/or ACP must be redesigned to account for all deficits generated by the PDP.)	What is the difference between your PDP debits and ACP Credits? *(ACP Credits -Total PDP Debits = Total Earned Credits) _____

ATTACHMENT 1

BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 1a	Storm Water Pollutant Control Worksheet Calculations -Worksheet B.1-DMA Summary (Optional) -Worksheet B.2-1- DCV (Required) -Worksheet B.3-1- H&U Checklist (Required) -Worksheet B.4-1-Simple Sizing Inf. (if applicable) -Worksheet B.5-1-Biofilt. Sizing (Pollutant)(if applicable) -Worksheet B.5-2-Biofilt. Sizing (Volume) (if applicable) -Worksheet B.5-3-Biofilt. Volume Ret. (if applicable) -Worksheet B.5-4-Biofilt. Alt. Min. Footprint(if applicable) -Worksheet B.5-5-Biofilt. w/Upstream Stor. (if applicable) -Worksheet B.5-6-Biofilt. Ret. No Inf. (if applicable) -Worksheet B.5-7-Vol. Ret. Amended Soils (if applicable) -Worksheet B.6-1-Flow-Thru Design Flow (if applicable) -Form I-10-Compact Biofilt. Checklist (if applicable) -Summary Worksheet (optional)	☐ Worksheet B.1 (Optional) ▬ Worksheet B.2-1 (Required) ▬ Worksheet B.3-1 (Required) ▬ Worksheet B.4-1 (if applicable) ▬ Worksheet B.5-1 (if applicable) ☐ Worksheet B.5-2 (if applicable) ☐ Worksheet B.5-3 (if applicable) ☐ Worksheet B.5-4 (if applicable) ☐ Worksheet B.5-5 (if applicable) ☐ Worksheet B.5-6 (if applicable) ☐ Worksheet B.5-7 (if applicable) ▬ Worksheet B.6-1 (if applicable) ▬ Form I-10 (if applicable) ☐ Summary Worksheet (optional)
Attachment 1b	-Worksheet C.4-1 (Form I-8A), Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions -Worksheet C.4-2 (Form I-8B), Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions (Required unless the project will use harvest and use BMPs, or an Infiltration Feasibility Condition Letter is submitted) Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-8.	▬Included ☐Not included because the entire project will use harvest and use BMPs ☐Not included because an Infiltration Feasibility Condition Letter is submitted
Attachment 1c	Form I-9, Factor of Safety and Design Infiltration Rate Worksheet (Required unless the project will use harvest and use BMPs, or an Infiltration Feasibility Condition Letter is submitted) Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-9.	▬Included ☐Not included because the entire project will use harvest and use BMPs ☐Not included because an Infiltration Feasibility Condition Letter is submitted
Attachment 1d	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	▬Included
Attachment 1e	Individual Structural BMP DMA Mapbook (Required) -Place each map on 8.5”x11” paper. -Show at a minimum the DMA, Structural BMP, and any existing hydrologic features within the DMA.	▬Included

Use this checklist to ensure the required information has been included on the DMA Exhibit:

The DMA Exhibit must identify:

- ▣ Proposed design features and surface treatments used to minimize imperviousness
- ▣ Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)
- ▣ Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Step 3.5)
- ▣ Structural BMPs (identify location, structural BMP ID#, type of BMP, and size/detail)
- ▣ Flow direction arrows
- ▣ Site Design BMPs used for volume reduction credits
- ▣ Existing and proposed site drainage network and connections to drainage offsite
- ▣ Trash Enclosure(s), if available
- ▣ Roof downspouts

Additionally, it is generally best practice (and the City may require) that these additional features listed below be included on the DMA Exhibit:

- ▣ Approximate depth to groundwater
- ▣ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- ▣ Critical coarse sediment yield areas to be protected
- ▣ Existing topography and impervious areas
- ▣ Proposed grading
- ▣ Proposed impervious features

SOURCE SCONTROL(SC)/SITE DESIGN(SD):

ITEMS	FACT SHEET/DESIGN REQMT
PREVENT ILLICIT DISCHARGE INTO MS4	4.2.1
STORM DRAIN STENCILING OR SIGNAGE	4.2.2
PROTECT TRASH STORAGE AREAS	4.2.5
MINIMIZE IMPERVIOUS AREA	4.3.3
LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES	4.3.7
ONSITE STORM DRAIN INLET LABELING	SC-A
REFUSE AREAS EXPOSURE REDUCTION	SC-G

DMA SITE MAP NOTES

1. BMP - 1 - OLDCASTLE BIOPOD WITH PLANTER, BPS/T/P-412 PLANTED WITH DIETES IRIDIODES (FORTNIGHT LILY).

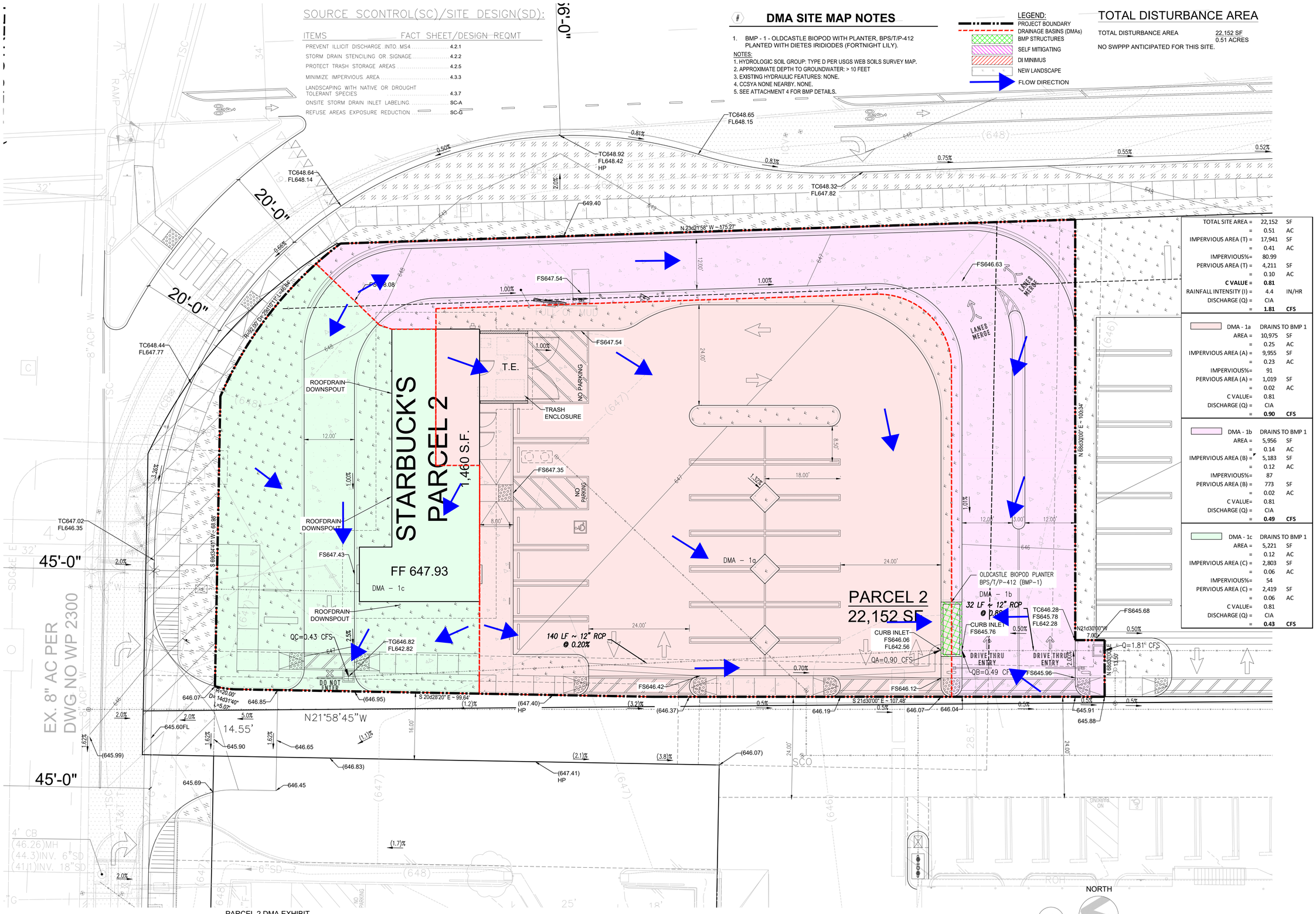
NOTES:
1. HYDROLOGIC SOIL GROUP: TYPE D PER USGS WEB SOILS SURVEY MAP.
2. APPROXIMATE DEPTH TO GROUNDWATER: > 10 FEET
3. EXISTING HYDRAULIC FEATURES: NONE.
4. CCSYA NONE NEARBY: NONE.
5. SEE ATTACHMENT 4 FOR BMP DETAILS.

LEGEND:
- PROJECT BOUNDARY
- DRAINAGE BASINS (DMAs)
- BMP STRUCTURES
- SELF MITIGATING
- DI MINIMUS
- NEW LANDSCAPE
- FLOW DIRECTION

TOTAL DISTURBANCE AREA

TOTAL DISTURBANCE AREA 22,152 SF 0.51 ACRES

NO SWPPP ANTICIPATED FOR THIS SITE.



PARCEL 2 DMA EXHIBIT

10' 5' 0' 10' 20'
GRAPHIC SCALE: 1" = 10'

SCALE: 1"=10'-0"

NORTH

TOTAL SITE AREA =	22,152	SF
=	0.51	AC
IMPERVIOUS AREA (T) =	17,941	SF
=	0.41	AC
IMPERVIOUS%=	80.99	
PERVIOUS AREA (T) =	4,211	SF
=	0.10	AC
C VALUE =	**0.81**	
RAINFALL INTENSITY (I) =	4.4	IN/HR
DISCHARGE (Q) =	CIA	
=	**1.81**	**CFS**

DMA - 1a DRAINS TO BMP 1

AREA =	10,975	SF
=	0.25	AC
IMPERVIOUS AREA (A) =	9,955	SF
=	0.23	AC
IMPERVIOUS%=	91	
PERVIOUS AREA (A) =	1,019	SF
=	0.02	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.90**	**CFS**

DMA - 1b DRAINS TO BMP 1

AREA =	5,956	SF
=	0.14	AC
IMPERVIOUS AREA (B) =	5,183	SF
=	0.12	AC
IMPERVIOUS%=	87	
PERVIOUS AREA (B) =	773	SF
=	0.02	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.49**	**CFS**

DMA - 1c DRAINS TO BMP 1

AREA =	5,221	SF
=	0.12	AC
IMPERVIOUS AREA (C) =	2,803	SF
=	0.06	AC
IMPERVIOUS%=	54	
PERVIOUS AREA (C) =	2,419	SF
=	0.06	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.43**	**CFS**

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
PROPOSED DEVELOPMENT
PARCEL 2
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MOUR GROUP
SCALE:	AS SHOWN

SHEET TITLE:
DMA EXHIBIT

PARCEL 2

SHEET #
C103

Worksheet B.2-1. BMP Design Capture Volume

Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.55	inches
2	Area tributary to BMP (s)	A=	0.509	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.75	unitless
4	Tree well volume reduction	TCV=	0	cubic-feet
5	Rain barrels volume reduction	RCV=	0	cubic-feet
6	Calculate DCV = (3630 x C x d x A) – TCV - RCV	DCV=	761	cubic-feet

Note:
C = (0.1 x Pervious area + 0.9 x impervious area) / (total area)
= (0.1 x 4,211 + 0.9 x 17,941) / (22,152)
= 0.75

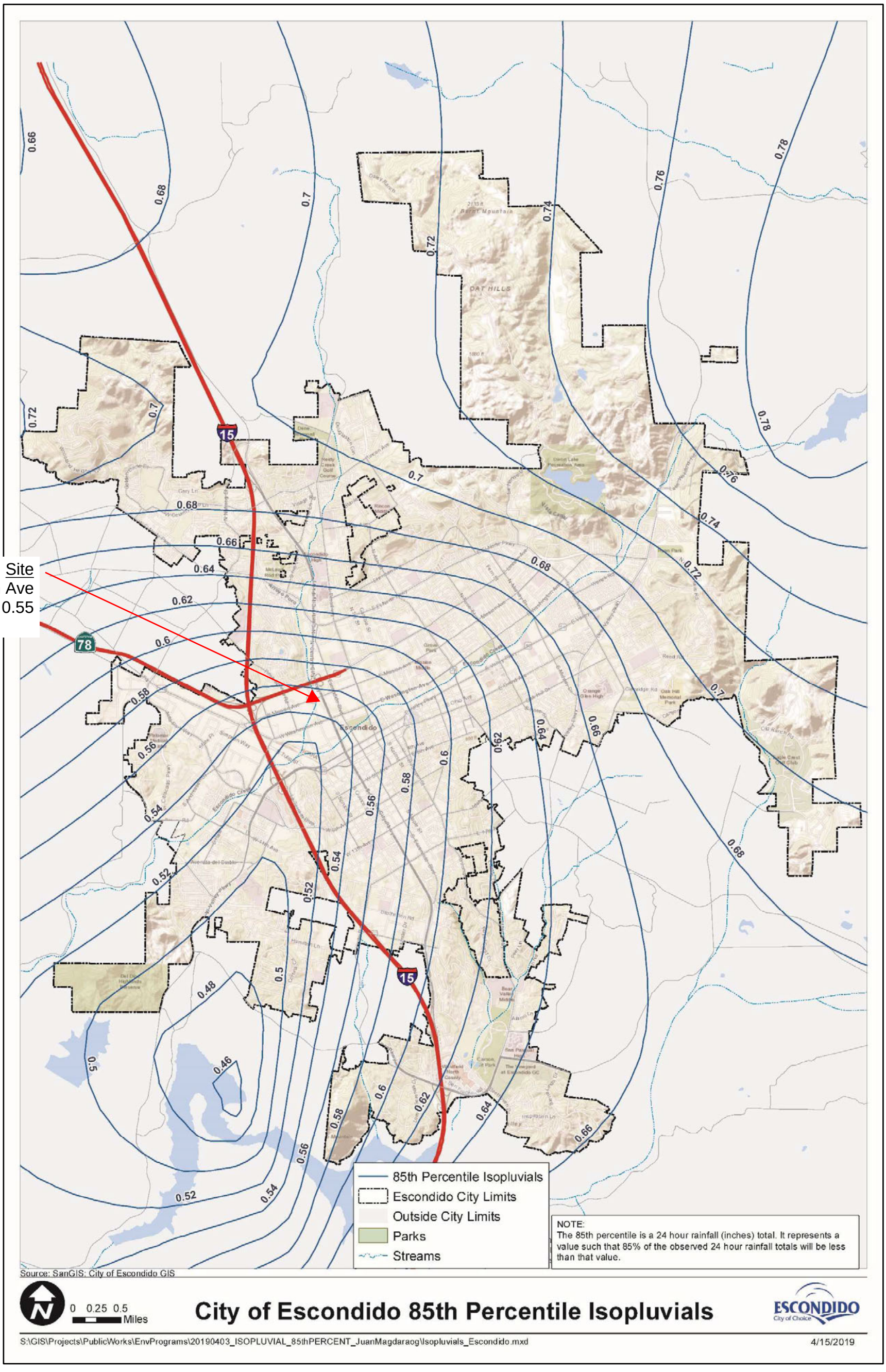


Figure B.1-1: City of Escondido 85th Percentile 24-hour Isopluvial Map

Worksheet B.3-1. Harvest and Use Feasibility Checklist (Form I-7)

Harvest and Use Feasibility Checklist	Worksksheet B.3-1

1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?
   - ☒ Toilet and urinal flushing
   - ☒ Landscape irrigation
   - ☐ Other:_____

2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.

Moderate plant water use = 197 cf, demand = 197 x 0.10 ac = 20 cf << 0.25 DCV.

3. Calculate the DCV using worksheet B-2.1.

DCV = 3630x0.75x0.55x0.509=761 cf

3a. Is the 36-hour demand greater than or equal to the DCV?	3b. Is the 36-hour demand greater than 0.25DCV but less than the full DCV?	3c. Is the 36-hour demand less than 0.25DCV?
Yes / No ⇨ ⇩ X	Yes / No ⇨ ⇩ X	Yes ⇩ X
Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.	Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.	Harvest and use is considered to be infeasible.

Note: 36-hour demand calculations are for feasibility analysis only. Once feasibility analysis is complete the applicant may be allowed to use a different drawdown time provided they meet the 80% annual capture standard (refer to B.4.2) and 96-hour vector control drawdown requirement.

Worksheet B.4-1: Simple Sizing Method for Infiltration BMPs

Simple Sizing Method for Infiltration BMPs		Worksheet B.4-1		
1	DCV (Worksheet B-2.1)	DCV=	761	cubic-feet
2	Estimated design infiltration rate	K_{design}=	153	in/hr
3	Available BMP surface area	A_{BMP}=	48	sq-ft
4	Average effective depth in the BMP footprint (DCV/A_{BMP})	D_{avg}=	3	feet
5	Drawdown time, T (D_{avg} *12/K_{design})	T=	0.24	hours
6	Provide alternative calculation of drawdown time, if needed. Since the total depth of biopod is 3', therefore avg. effective depth is taken as 3 ft directly.			
7	Provide calculations for effective depth provided in the BMP: Effective Depth = Surface ponding (below the overflow elevation) + gravel storage thickness x gravel porosity (0.4) effective depth=10+36x0.4 = 24.4 inch = 2.03 ft			

Note: Shown drawdown time is for the Biopod planter.

Worksheet B.5-1: Sizing Method for Pollutant Removal Criteria

Sizing Method for Pollutant Removal Criteria		Worksheet B.5-1	
1	Area draining to the BMP	22,152	sq. ft.
2	Adjusted runoff factor for drainage area (Refer to Appendix B.1 and B.2)	0.75	
3	85th percentile 24-hour rainfall depth	0.55	inches
4	Design capture volume [Line 1 x Line 2 x (Line 3/12)]	761	cu. ft.
BMP Parameters			
5	Surface ponding [6 inch minimum, 12 inch maximum]	10	inches
6	Media thickness [18 inches minimum], also add mulch layer and washed ASTM 33 fine aggregate sand thickness to this line for sizing calculations	20	inches
7	Aggregate storage (also add ASTM No 8 stone) above underdrain invert (12 inches typical) – use 0 inches if the aggregate is not over the entire bottom surface area	6	inches
8	Aggregate storage below underdrain invert (3 inches minimum) – use 0 inches if the aggregate is not over the entire bottom surface area	0	inches
9	Freely drained pore storage of the media	0.2	in/in
10	Porosity of aggregate storage	0.4	in/in
11	Media filtration rate to be used for sizing (maximum filtration rate of 5 in/hr. with no outlet control; if the filtration rate is controlled by the outlet use the outlet controlled rate (includes infiltration into the soil and flow rate through the outlet structure) which will be less than 5 in/hr.)	2.16	in/hr.
Baseline Calculations			
12	Allowable routing time for sizing	6	hours
13	Depth filtered during storm [Line 11 x Line 12]	12.96	inches
14	Depth of Detention Storage [Line 5 + (Line 6 x Line 9) + (Line 7 x Line 10) + (Line 8 x Line 10)]	16.4	inches
15	Total Depth Treated [Line 13 + Line 14]	29.36	inches
Option 1 – Biofilter 1.5 times the DCV			
16	Required biofiltered volume [1.5 x Line 4]	1142	cu. ft.
17	Required Footprint [Line 16/ Line 15] x 12	467	sq. ft.
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
18	Required Storage (surface + pores) Volume [0.75 x Line 4]	571	cu. ft.
19	Required Footprint [Line 18/ Line 14] x 12	467	sq. ft.
Footprint of the BMP			
20	BMP Footprint Sizing Factor (Default 0.03 or an alternative minimum footprint sizing factor from Line 11 in Worksheet B.5-4)	0.03	
21	Minimum BMP Footprint [Line 1 x Line 2 x Line 20]	498	sq. ft.
22	Footprint of the BMP = Maximum (Minimum (Line 17, Line 19), Line 21)	498	sq. ft.
23	Provided BMP Footprint	48	sq. ft.
24	Is Line 23 ≥ Line 22? If Yes, then footprint criterion is met. If No, increase the footprint of the BMP.	☐ Yes ■ No	

Note: The site is HMP exempt. The designed 4x12 Biopod (BMP) from Oldcastle provides more than required treated storm flow rate and can bypass unlimited storm. Therefore, we do not increase BMP size to match above calculated 498 sf.

Worksheet B.6-1: Flow-Thru Design Flows

Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	761	cubic-feet
2	DCV retained	$DCV_{retained}$	0	cubic-feet
3	DCV biofiltered	$DCV_{biofiltered}$	0	cubic-feet
4	DCV requiring flow-thru (Line 1 – Line 2 – 0.67*Line 3)	$DCV_{flow-thru}$	761	cubic-feet
5	Adjustment factor (Line 4 / Line 1)*	AF=	1	unitless
6	Design rainfall intensity	i=	0.20	in/hr
7	Area tributary to BMP (s)	A=	0.522	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.75	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.08	cfs
10	***For Proprietary Biofiltration Only:*** *Q_{Bio}=1.5 x Q*	*Q_{Bio}=*	0.11	*cfs*

Note: See Biopod sizing summary sheet in attachment 5 of SWQMP report.

Form I-10: Compact (high rate) Biofiltration BMP Checklist

Compact (high rate) Biofiltration BMP Checklist	Form I-10

Compact (high rate) biofiltration BMPs have a media filtration rate greater than 5 in/hr. and a media surface area smaller than 3% of contributing area times adjusted runoff factor. Compact biofiltration BMPs are typically proprietary BMPs that may qualify as biofiltration.

A compact biofiltration BMP may satisfy the pollutant control requirements for a DMA onsite in some cases. This depends on the characteristics of the DMA and the performance certification/data of the BMP. If the pollutant control requirements for a DMA are met onsite, then the DMA is not required to participate in an offsite storm water alternative compliance program to meet its pollutant control obligations.

An applicant using a compact biofiltration BMP to meet the pollutant control requirements onsite must complete Section 1 of this form and include it in the PDP SWQMP. A separate form must be completed for each DMA. In instances where the City Engineer does not agree with the applicant's determination, Section 2 of this form will be completed by the City and returned to the applicant.

Section 1: Biofiltration Criteria Checklist (Appendix F)

Refer to Part 1 of the Storm Water Standards to complete this section. When separate forms/worksheets are referenced below, the applicant must also complete these separate forms/worksheets (as applicable) and include in the PDP SWQMP. The criteria numbers below correspond to the criteria numbers in Appendix F.

Criteria	Answer	Progression
Criteria 1 and 3: What is the infiltration condition of the DMA? Refer to Section 5.4.2 and Appendix C of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance. Applicant must complete and include the following in the PDP SWQMP submittal to support the feasibility determination: • Infiltration Feasibility Condition Letter; or • Worksheet C.4-1: Form I-8A and Worksheet C.4-2: Form I- 8B. Applicant must complete and include all applicable sizing worksheets in the SWQMP submittal	☐ Full Infiltration Condition	**Stop**. Compact biofiltration BMP is not allowed.
	☐ Partial Infiltration Condition	Compact biofiltration BMP is only allowed, if the target volume retention is met onsite (Refer to Table B.5-1 in Appendix B.5). Use Worksheet B.5- 2 in Appendix B.5 to estimate the target volume retention (Note: retention in this context means reduction). If the required volume reduction is achieved **proceed to Criteria 2**. If the required volume reduction is not achieved, compact biofiltration BMP is not allowed. **Stop**.
	☑ No Infiltration Condition	Compact biofiltration BMP is allowed if volume retention criteria in Table B.5-1 in Appendix B.5 for the no infiltration condition is met. Compliance with this criterion must be documented in the PDP SWQMP. If the criteria in Table B.5-1 is met **proceed to Criteria 2**. If the criteria in Table B.5-1 is not met, compact biofiltration BMP is not allowed. **Stop**.

Compact (high rate) Biofiltration BMP Checklist	Form I-10

Provide basis for Criteria 1 and 3:

Proposed Oldcastle Biopod (BMP) has impermeable liner at bottom and treatment flow capacity higher than 1.5 times required treated flow. The site drains directly on Escondido Creek, hence Hydromodfication expempt. Therefore, we are desiging the BMP per worksheet B-6.1 that can treat the site suffciently and safely drain into an existing system that outfalls into the Pacific Ocean. Form I-8 shall be provided in next submission through Geotech Engineer.

Feasibility Analysis:

Summarize findings and include either infiltration feasibility condition letter or Worksheet C.4-1: Form I-8A and Worksheet C.4-2: Form I-8B in the PDP SWQMP submittal.

It shall be provided in next submission through the Geotech engineer.

If Partial Infiltration Condition:

Provide documentation that target volume retention is met (include Worksheet B.5-2 in the PDP SWQMP submittal). Worksheet B.5-7 in Appendix B.5 can be used to estimate volume retention benefits from landscape areas.

If No Infiltration Condition:

Provide documentation that the volume retention performance standard is met (include Worksheet B.5-2 in the PDP SWQMP submittal) in the PDP SWQMP submittal. Worksheet B.5-6 in Appendix B.5 can be used to document that the performance standard is met.

Site drains directly on Escondido Creek, hence Hydromodfication expempt. Therefore, we are neglecting footprint area per spreadsheet B-5.1 and desiging the BMP per worksheet B-6.1 that can treat the site suffciently and safely drain into an existing system that outfalls into the Pacific Ocean.

Criteria	Answer	Progression
Criteria 2: Is the compact biofiltration BMP sized to meet the performance standard from the MS4 Permit? Refer to Appendix B.5 and Appendix F.2 of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.	☑ Meets Flow Based Criteria	Use guidance from **Appendix F.2.2** to size the compact biofiltration BMP to meet the flow based criteria. Include the calculations in the PDP SWQMP. Use parameters for sizing consistent with manufacturer guidelines and conditions of its third party certifications (i.e. a BMP certified at a loading rate of 1 gpm/sq. ft. cannot be designed using a loading rate of 1.5 gpm/sq. ft.) **Proceed to Criteria 4.**
	☐ Meets Volume Based Criteria	Provide documentation that the compact biofiltration BMP has a total static (i.e. non-routed) storage volume, including pore-spaces and pre-filter detention volume (Refer to Appendix B.5 for a schematic) of at least 0.75 times the portion of the DCV not reliably retained onsite. **Proceed to Criteria 4.**
	☐ Does not Meet either	**Stop**. Compact biofiltration BMP is not allowed.

Compact (high rate) Biofiltration BMP Checklist	Form I-10

Provide basis for Criteria 2:
Provide documentation that the BMP meets the numeric criteria and is designed consistent with the manufacturer guidelines and conditions of its third-party certification (i.e., loading rate, etc., as applicable).

The BMP has 153 in/hr infiltration rate with the loading rate of 1.6 gpm/ft2. The treatment capacity of the BMP is 0.171 cfs which is greater than required flow rate (0.114 cfs). The BMP has unlimited external bypass system. For more detail see BMP details on last pages of SWQMP report.

Criteria	Answer	Progression
Criteria 4: Does the compact biofiltration BMP meet the pollutant treatment performance standard for the projects most significant pollutants of concern? Refer to Appendix B.6 and Appendix F.1 of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.	☑ Yes, meets the TAPE certification.	Provide documentation that the compact BMP has an appropriate TAPE certification for the projects most significant pollutants of concern. **Proceed to Criteria 5.**
	☐ Yes, through other third-party documentation.	Acceptance of third-party documentation is at the discretion of the City Engineer. The City engineer will consider, (a) the data submitted; (b) representativeness of the data submitted; and (c) consistency of the BMP performance claims with pollutant control objectives in Table F.1-2 and Table F.1-1 while making this determination. If a compact biofiltration BMP is not accepted, a written explanation/ reason will be provided in Section 2. **Proceed to Criteria 5.**
	☐ No	**Stop**. Compact biofiltration BMP is not allowed.

Provide basis for Criteria 4:
Provide documentation that identifies the projects most significant pollutants of concern and TAPE certification or other third party documentation that shows that the compact biofiltration BMP meets the pollutant treatment performance standard for the projects most significant pollutants of concern.

The oldcastle Biopod is a TAPE certified based on link shown below:

https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies

Compact (high rate) Biofiltration BMP Checklist		Form I-10
Criteria	**Answer**	**Progression**
Criteria 5: Is the compact biofiltration BMP designed to promote appropriate biological activity to support and maintain treatment process? Refer to Appendix F of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.	☑ Yes	Provide documentation that the compact biofiltration BMP support appropriate biological activity. Refer to Appendix F for guidance. **Proceed to Criteria 6.**
	☐ No	**Stop**. Compact biofiltration BMP is not allowed.
Provide basis for Criteria 5: Provide documentation that appropriate biological activity is supported by the compact biofiltration BMP to maintain treatment process.		
See BMP details for more information.		
Criteria	**Answer**	**Progression**
Criteria 6: Is the compact biofiltration BMP designed with a hydraulic loading rate to prevent erosion, scour and channeling within the BMP?	☑ Yes	Provide documentation that the compact biofiltration BMP is used in a manner consistent with manufacturer guidelines and conditions of its third-party certification. **Proceed to Criteria 7.**
	☐ No	**Stop**. Compact biofiltration BMP is not allowed.
Provide basis for Criteria 6: Provide documentation that the BMP meets the numeric criteria and is designed consistent with the manufacturer guidelines and conditions of its third-party certification (i.e., maximum tributary area, maximum inflow velocities, etc., as applicable).		
The BMP has 300 psf pedestrian loading, 45 pcf lateral earth pressure, 80 psf lateral live load surcharge and atleast 5,000 psi concrete compressive strength. It has 48 sf surface area with 153 in/hr infiltration rate and loading rate of 1.6 gpm/ft2. See BMP detail for more information.		

Compact (high rate) Biofiltration BMP Checklist		Form I-10
Criteria	**Answer**	**Progression**
Criteria 7: Is the compact biofiltration BMP maintenance plan consistent with manufacturer guidelines and conditions of its third-party certification (i.e., maintenance activities, frequencies)?	☑ Yes, and the compact BMP is privately owned, operated and not in the public right of way.	Submit a maintenance agreement that will also include a statement that the BMP will be maintained in accordance with manufacturer guidelines and conditions of third-party certification. **Stop**. The compact biofiltration BMP meets the required criteria.
	☐ Yes, and the BMP is either owned or operated by the City or in the public right of way.	Approval is at the discretion of the City Engineer. The city engineer will consider maintenance requirements, cost of maintenance activities, relevant previous local experience with operation and maintenance of the BMP type, ability to continue to operate the system in event that the vending company is no longer operating as a business or other relevant factors while making the determination. **Stop**. Consult the City Engineer for a determination.
	☐ No	**Stop**. Compact biofiltration BMP is not allowed.

Provide basis for Criteria 7:

Include copy of manufacturer guidelines and conditions of third-party certification in the maintenance agreement. PDP SWQMP must include a statement that the compact BMP will be maintained in accordance with manufacturer guidelines and conditions of third-party certification.

Manufacturer maintenance guidelines is included in attachment 3 (SWCFMA).

Compact (high rate) Biofiltration BMP Checklist	Form I-10
Section 1: Biofiltration Criteria Checklist (Appendix F)	
Is the proposed compact BMP accepted by the City Engineer for onsite pollutant control compliance for the DMA?	▣ Yes ☐ No, See explanation below
Explanation/reason if the compact BMP is not accepted by the City for onsite pollutant control compliance:	

Worksheet C.4-2 (Form I-8A): Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions[2]

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]
Part 1 - Full Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		**Project Phase:**
Criteria 1: Infiltration Rate Screening		
1A	Is the mapped hydrologic soil group according to the NRCS Web Soil Survey or UC Davis Soil Web Mapper Type A or B and corroborated by available site soil data[4]? ☐ Yes; the DMA may feasibly support full infiltration. Answer "Yes" to Criteria 1 Result or continue to Step 1B if the applicant elects to perform infiltration testing. ☐ No; the mapped soil types are A or B but is not corroborated by available site soil data (continue to Step 1B). ☐ No; the mapped soil types are C, D, or "urban/unclassified" and is corroborated by available site soil data. Answer "No" to Criteria 1 Result. ☐ No; the mapped soil types are C, D, or "urban/unclassified" but is not corroborated by available site soil data (continue to Step 1B).	
1B	Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1? ☐ Yes; Continue to Step 1C. ☐ No; Skip to Step 1D.	
1C	Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1 greater than 0.5 inches per hour? ☐ Yes; the DMA may feasibly support full infiltration. Answer "Yes" to Criteria 1 Result. ☐ No; full infiltration is not required. Answer "No" to Criteria 1 Result.	
1D	**Infiltration Testing Method.** Is the selected infiltration testing method suitable during the design phase (see Appendix D.3)? Note: Alternative testing standards may be allowed with appropriate rationales and documentation. ☐ Yes; continue to Step 1E. ☐ No; select an appropriate infiltration testing method.	

[2] Note that it is not required to investigate each and every criterion in the worksheet, a single "no" answer in Part 1, Part 2, Part 3, or Part 4 determines a full, partial, or no infiltration condition.
[3] This form must be completed each time there is a change to the site layout that would affect the infiltration feasibility condition. Previously completed forms shall be retained to document the evolution of the site storm water design.
[4] Available data includes site-specific sampling or observation of soil types or texture classes, such as obtained from borings or test pits necessary to support other design elements.

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A[3]
1E	**Number of Percolation/Infiltration Tests.** Does the infiltration testing method performed satisfy the minimum number of tests specified in Table D.3-2? ☐ Yes; continue to Step 1F. ☐ No; conduct appropriate number of tests.
IF	**Factor of Safety.** Is the suitable Factor of Safety selected for full infiltration design? See guidance in D.5; Tables D.5-1 and D.5-2; and Worksheet D.5-1 (Form I-9). ☐ Yes; continue to Step 1G. ☐ No; select appropriate factor of safety.
1G	**Full Infiltration Feasibility.** Is the average measured infiltration rate divided by the Factor of Safety greater than 0.5 inches per hour? ☐ Yes; answer "Yes" to Criteria 1 Result. ☐ No; answer "No" to Criteria 1 Result.
Criteria 1 Result	Is the estimated reliable infiltration rate greater than 0.5 inches per hour within the DMA where runoff can reasonably be routed to a BMP? ☐ Yes; the DMA may feasibly support full infiltration. Continue to Criteria 2. ☐ No; full infiltration is not required. Skip to Part 1 Result.
Summarize infiltration testing methods, testing locations, replicates, and results and summarize estimates of reliable infiltration rates according to procedures outlined in D.5. Documentation should be included in project geotechnical report.	

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
Criteria 2: Geologic/Geotechnical Screening			
2A	If all questions in Step 2A are answered "Yes," continue to Step 2B. For any "No" answer in Step 2A answer "No" to Criteria 2, and submit an "Infiltration Feasibility Condition Letter" that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.		
2A-1	Can the proposed full infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick below the infiltrating surface?	☐ Yes	☐ No
2A-2	Can the proposed full infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	☐ Yes	☐ No
2A-3	Can the proposed full infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	☐ Yes	☐ No
2B	When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1. If all questions in Step 2B are answered "Yes," then answer "Yes" to Criteria 2 Result. If there are "No" answers continue to Step 2C.		
2B-1	**Hydroconsolidation.** Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP. Can full infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?	☐ Yes	☐ No
2B-2	**Expansive Soils.** Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs. Can full infiltration BMPs be proposed within the DMA without increasing expansive soil risks?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
2B-3	**Liquefaction**. If applicable, identify mapped liquefaction areas. Evaluate liquefaction hazards in accordance with Section 6.4.2 of the City of San Diego's Guidelines for Geotechnical Reports (2011 or most recent edition). Liquefaction hazard assessment shall take into account any increase in groundwater elevation or groundwater mounding that could occur as a result of proposed infiltration or percolation facilities. Can full infiltration BMPs be proposed within the DMA without increasing liquefaction risks?	☐ Yes	☐ No
2B-4	**Slope Stability**. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required. Can full infiltration BMPs be proposed within the DMA without increasing slope stability risks?	☐ Yes	☐ No
2B-5	**Other Geotechnical Hazards.** Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1). Can full infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?	☐ Yes	☐ No
2B-6	**Setbacks.** Establish setbacks from underground utilities, structures, and/or retaining walls. Reference applicable ASTM or other recognized standard in the geotechnical report. Can full infiltration BMPs be proposed within the DMA using established setbacks from underground utilities, structures, and/or retaining walls?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
2C	**Mitigation Measures.** Propose mitigation measures for each geologic/geotechnical hazard identified in Step 2B. Provide a discussion of geologic/geotechnical hazards that would prevent full infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures. Can mitigation measures be proposed to allow for full infiltration BMPs? If the question in Step 2 is answered "Yes," then answer "Yes" to Criteria 2 Result. If the question in Step 2C is answered "No," then answer "No" to Criteria 2 Result.	☐ Yes	☐ No
Criteria 2 Result	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?	☐ Yes	☐ No
Summarize findings and basis; provide references to related reports or exhibits.			

Part 1 Result – Full Infiltration Geotechnical Screening [5]	Result
If answers to both Criteria 1 and Criteria 2 are "Yes", a full infiltration design is potentially feasible based on Geotechnical conditions only. If either answer to Criteria 1 or Criteria 2 is "No", a full infiltration design is not required.	☐ Full infiltration Condition ☐ Complete Part 2

[5] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]
Part 2 – Partial vs. No Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		**Project Phase:**
Criteria 3: Infiltration Rate Screening		
3A	**NRCS Type C, D, or "urban/unclassified":** Is the mapped hydrologic soil group according to the NRCS Web Soil Survey or UC Davis Soil Web Mapper is Type C, D, or "urban/unclassified" and corroborated by available site soil data? ☐ Yes; the site is mapped as C soils and a reliable infiltration rate of 0.15 in/hr. is used to size partial infiltration BMPS. Answer "Yes" to Criteria 3 Result. ☐ Yes; the site is mapped as D soils or "urban/unclassified" and a reliable infiltration rate of 0.05 in/hr. is used to size partial infiltration BMPS. Answer "Yes" to Criteria 3 Result. ☐ No; infiltration testing is conducted (refer to Table D.3-1), continue to Step 3B.	
3B	**Infiltration Testing Result:** Is the reliable infiltration rate (i.e. average measured infiltration rate/2) greater than 0.05 in/hr. and less than or equal to 0.5 in/hr? ☐ Yes; the site may support partial infiltration. Answer "Yes" to Criteria 3 Result. ☐ No; the reliable infiltration rate (i.e. average measured rate/2) is less than 0.05 in/hr., partial infiltration is not required. Answer "No" to Criteria 3 Result.	
Criteria 3 Result	Is the estimated reliable infiltration rate (i.e., average measured infiltration rate/2) greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour at any location within each DMA where runoff can reasonably be routed to a BMP? ☐ Yes; Continue to Criteria 4. ☐ No: Skip to Part 2 Result.	
Summarize infiltration testing and/or mapping results (i.e. soil maps and series description used for infiltration rate).		

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
Criteria 4: Geologic/Geotechnical Screening			
4A	If all questions in Step 4A are answered "Yes," continue to Step 2B. For any "No" answer in Step 4A answer "No" to Criteria 4 Result, and submit an "Infiltration Feasibility Condition Letter" that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.		
4A-1	Can the proposed partial infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick?	☐ Yes	☐ No
4A-2	Can the proposed partial infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	☐ Yes	☐ No
4A-3	Can the proposed partial infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	☐ Yes	☐ No
4B	When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1 If all questions in Step 4B are answered "Yes," then answer "Yes" to Criteria 4 Result. If there are any "No" answers continue to Step 4C.		
4B-1	**Hydroconsolidation.** Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP. Can partial infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?	☐ Yes	☐ No
4B-2	**Expansive Soils.** Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs. Can partial infiltration BMPs be proposed within the DMA without increasing expansive soil risks?	☐ Yes	☐ No
4B-3	**Liquefaction**. If applicable, identify mapped liquefaction areas. Evaluate liquefaction hazards in accordance with Section 6.4.2 of the City of San Diego's Guidelines for Geotechnical Reports (2011). Liquefaction hazard assessment shall take into account any increase in groundwater elevation or groundwater mounding that could occur as a result of proposed infiltration or percolation facilities. Can partial infiltration BMPs be proposed within the DMA without increasing liquefaction risks?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
4B-4	**Slope Stability**. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required. Can partial infiltration BMPs be proposed within the DMA without increasing slope stability risks?	☐ Yes	☐ No
4B-5	**Other Geotechnical Hazards.** Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1). Can partial infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?	☐ Yes	☐ No
4B-6	**Setbacks.** Establish setbacks from underground utilities, structures, and/or retaining walls. Reference applicable ASTM or other recognized standard in the geotechnical report. Can partial infiltration BMPs be proposed within the DMA using recommended setbacks from underground utilities, structures, and/or retaining walls?	☐ Yes	☐ No
4C	**Mitigation Measures.** Propose mitigation measures for each geologic/geotechnical hazard identified in Step 4B. Provide a discussion on geologic/geotechnical hazards that would prevent partial infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures. Can mitigation measures be proposed to allow for partial infiltration BMPs? If the question in Step 4C is answered "Yes," then answer "Yes" to Criteria 4 Result. If the question in Step 4C is answered "No," then answer "No" to Criteria 4 Result.	☐ Yes	☐ No
Criteria 4 Result	Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without increasing the risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A[3]
Summarize findings and basis; provide references to related reports or exhibits	

Part 2 – Partial Infiltration Geotechnical Screening Result[6]	Result
If answers to both Criteria 3 and Criteria 4 are "Yes", a partial infiltration design is potentially feasible based on geotechnical conditions only. If answers to either Criteria 3 or Criteria 4 is "No", then infiltration of any volume is considered to be infeasible within the site.	☐ Partial Infiltration Condition ☐ No Infiltration Condition

[6] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Worksheet C.4-2: Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions[7]

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions		Worksheet C.4-2: Form I-8B[8]
Part 1 - Full Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		**Project Phase:**
Criteria 1: Groundwater Screening		
1A	**Groundwater Depth.** Is the depth to seasonally high groundwater tables (normal high depth during the wet season) beneath the base of any full infiltration BMP greater than 10 feet? ☐ Yes; continue to Step 1B. ☐ No; The depth to groundwater is less than or equal to 10 feet, but site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to step 1B. ☐ No; The depth to groundwater is less than or equal to 10 feet and site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer "No" for Criteria 1 Result.	
1B	**Contaminated Soil/Groundwater.** Are proposed full infiltration BMPs at least 250 feet away from contaminated soil or groundwater sites? This can be confirmed using GeoTracker (geotracker.waterboards.ca.gov) to identify open contaminated sites. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP. ☐ Yes; continue to Step 1C. ☐ No; However, site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to Step 1C. ☐ No; Site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer "No" to Criteria 1 Result.	

[7] Note that it is not required to investigate each and every criterion in the worksheet, a single "no" answer in Part 1, Part 2, part 3, or Part 4 determines a full, partial, or no infiltration condition.
[8] This form must be completed each time there is a change to the site layout that would affect the infiltration feasibility condition. Previously completed forms shall be retained to document the evolution of the site storm water design.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
1C	**Inadequate Soil Treatment Capacity.** Are full infiltration BMPs proposed in DMA soils that have adequate soil treatment capacity? The DMA has adequate soil treatment capacity if **ALL** of the following criteria (detailed in C.2.2.1) for all soil layers beneath the infiltrating surface are met: • USDA texture class is sandy loam or loam or silt loam or silt or sandy clay loam or clay loam or silty clay loam or sandy clay or silty clay or clay; and • Cation Exchange Capacity (CEC) greater than 5 milliequivalents/100g; and • Soil organic matter is greater than 1%; and • Groundwater table is equal to or greater than 10 feet beneath the base of the full infiltration BMP. ☐ Yes; continue to Step 1D. ☐ No; However, site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to Step 1D. ☐ No; Site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer "No" to Criteria 1 Result.
1D	**Other Groundwater Contamination Hazards.** Are there site-specific groundwater contamination hazards not already mentioned (refer to Appendix C.2.2) that can be reasonably mitigated to support full infiltration BMPs? ☐ Yes; there are other contamination hazards identified that can be mitigated. Answer "Yes" to Criteria 1 Result. ☐ No; there are other contamination hazards identified that cannot be mitigated. Answer "No" to Criteria 1 Result. ☐ N/A; no contamination hazards are identified. Answer "Yes" to Criteria 1 Result.
Criteria 1 Result	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination that cannot be reasonably mitigated to an acceptable level? See Appendix C.2.2.8 for a list of typically reasonable and typically unreasonable mitigation measures. ☐ Yes; Continue to Part 1, Criteria 2. ☐ No; Continue to Part 1 Result.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Summarize groundwater quality and any mitigation measures proposed. Documentation should focus on groundwater table, mapped soil types and contaminated site locations.	

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Criteria 2: Water Balance Screening	
2A	**Ephemeral Stream Setback.** Does the proposed full infiltration BMP meet both the following? • The full infiltration BMP is located at least 250 feet away from an ephemeral stream; **AND** • The bottom surface of the full infiltration BMP is at a depth 20 feet or greater from seasonally high groundwater tables. ☐ Yes; Answer "Yes" to Criteria 2 Result. ☐ No; Continue to Step 2B.
2B	**Mitigation Measures.** Can site layout changes be proposed to support full infiltration BMPs? ☐ Yes; the site can be reconfigured to mitigate potential water balance issues. Answer "Yes" to Criteria 2 Result. ☐ No; the site cannot be reconfigured to mitigate potential water balance issues. Continue to Step 2C and provide discussion.
2C	**Additional studies.** Do additional studies support full infiltration BMPs? In the event that water balance effects are used to reject full infiltration (anticipated to be rare), additional analysis shall be completed and documented by a qualified professional indicating the site-specific information evaluated and the technical basis for this finding. ☐ Yes; Answer "Yes" to Criteria 2 Result. ☐ No; Answer "No" to Criteria 2 Result.
Criteria 2 Result	Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams? ☐ Yes; Continue to Part 1 Result. ☐ No; Continue to Part 1 Result.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Summarize potential water balance effects. Documentation should focus on mapping and soil data regarding proximity to ephemeral streams and groundwater depth.	

Part 1 – Full Infiltration Groundwater and Water Balance Screening Result[9]	Result
If answers to Criteria 1 and 2 are "Yes", a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration based on groundwater conditions. If answer to Criteria 1 or Criteria 2 is "No", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design based on groundwater conditions. Proceed to Part 2.	☐ Full Infiltration ☐ Complete Part 2

[9] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Part 2 – Partial vs. No Infiltration Feasibility Screening Criteria	
DMA(s) Being Analyzed:	**Project Phase:**
Criteria 3: Groundwater Screening	
Contaminated Soil/Groundwater. Are partial infiltration BMPs proposed at least 100 feet away from contaminated soil or groundwater sites? This can be confirmed using GeoTracker (geotracker.waterboards.ca.gov) to identify open contaminated sites. This criterion is intentionally a smaller radius than full infiltration, as the potential quantity of infiltration from partial infiltration BMPs is smaller. ☐ Yes; Answer "Yes" to Criteria 3 Result. ☐ No; However, site layout changes can be proposed to avoid contaminated soils or soils that lack adequate treatment capacity. Select "Yes" to Criteria 3 Result. It is a requirement for the SWQMP preparer to identify potential mitigation measures. ☐ No; Contaminated soils or soils that lack adequate treatment capacity cannot be avoided and partial infiltration BMPs are not feasible. Select "No" to Criteria 3 Result.	
Criteria 3 Result: Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without increasing risk of groundwater contamination that cannot be reasonably mitigated to an acceptable level? Yes; Continue to Part 2, Criteria 4. ☐ No; Skip to Part 2 Result.	
Summarize findings and basis. Documentation should focus on mapped soil types and contaminated site locations.	

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Criteria 4: Water Balance Screening	
Additional studies. In the event that water balance effects are used to reject partial infiltration (anticipated to be rare), a qualified professional must provide an analysis of the incremental effects of partial infiltration BMPs on the water balance compared to incidental infiltration under a no infiltration scenario (e.g. precipitation, irrigation, etc.).	
Criteria 4 Result: Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams? ☐ Yes: Continue to Part 2 Result. ☐ No: Continue to Part 2 Result.	
Summarize potential water balance effects. Documentation should focus on mapping and soil data regarding proximity to ephemeral streams and groundwater depth	

Part 2 – Partial Infiltration Groundwater and Water Balance Screening Result[10]	Result
If answers to Criteria 3 and Criteria 4 are "Yes", a partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration based on groundwater and water balance conditions. If answer to Criteria 3 or Criteria 4 is "No", then infiltration of any volume is considered to be infeasible within the site. The feasibility screening category is No Infiltration based on groundwater or water balance condition.	☐ Partial Infiltration Condition ☐ No Infiltration Condition

[10] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Factor of Safety and Design Infiltration Rate Worksheet				Form I-9	
Factor Category		**Factor Description**	**Assigned Weight (w)**	**Factor Value (v)**	**Product (p) p = w x v**
A	Suitability Assessment	Soil assessment methods	0.25		
		Predominant soil texture	0.25		
		Site soil variability	0.25		
		Depth to groundwater or impervious layer	0.25		
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			
B	Design	Level of pretreatment/ expected sediment loads	0.5		
		Redundancy/resiliency	0.25		
		Compaction during construction	0.25		
		Design Safety Factor, $S_B = \Sigma p$			
Combined Safety Factor, $S_{total} = S_A \times S_B$					
Observed Infiltration Rate, inch/hr, $K_{observed}$ (corrected for test-specific bias)					
Design Infiltration Rate, in/hr, $K_{design} = K_{observed} / S_{total}$					
Supporting Data					
Briefly describe infiltration test and provide reference to test forms:					

Factor of Safety and Design Infiltration Rate Worksheet	Form I-9

The Geotechnical Engineer certifies they completed Form I-9 (see Appendix C.4.3).

Professional Geotechnical Engineer's Printed Name: _____

Professional Geotechnical Engineer's Signed Name: _____

Date: _____

[SEAL]

ATTACHMENT 3

Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 3a	Structural BMP Maintenance Plan (Required)	▣Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Storm Water Control Facilities Maintenance Agreement (SWCFMA) (when applicable)	▣Included ☐Not Applicable

Note: Aggreement to be signed prior to final approval.

Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

Attachment 3a must identify:

- ☒ Specific maintenance indicators and actions for proposed structural BMP(s). This must be based on Section 7.7 and Appendix E of the Storm Water Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)
- ☒ How to access the structural BMP(s) to inspect and perform maintenance
- ☒ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- ☒ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☒ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- ☒ Recommended equipment to perform maintenance
- ☐ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

Attachment 3b: For all Structural BMPs, Attachment 3b must include a draft maintenance agreement in the City's standard format (PDP applicant to contact City staff to obtain the current maintenance agreement forms or download from City's website).

Missing items typically not required at planning level.

Summary of Standard Inspection and Maintenance

The property owner is responsible to ensure inspection, operation and maintenance of permanent BMPs on their property unless responsibility has been formally transferred to an agency, community facilities district, homeowners association, property owners association, or other special district.

Maintenance frequencies listed in this table are average/typical frequencies. Actual maintenance needs are site-specific, and maintenance may be required more frequently. Maintenance must be performed whenever needed, based on maintenance indicators presented in this table. The BMP owner is responsible for conducting regular inspections to see when maintenance is needed based on the maintenance indicators. During the first year of operation of a structural BMP, inspection is recommended at least once prior to August 31 and then monthly from September through May. Inspection during a storm event is also recommended. After the initial period of frequent inspections, the minimum inspection and maintenance frequency can be determined based on the results of the first year inspections.

Threshold/Indicator	Maintenance Action	Typical Maintenance Frequency
Accumulation of sediment, litter, or debris	Remove and properly dispose of accumulated materials, without damage to the vegetation or compaction of the media layer.	• Inspect monthly. If the BMP is 25% full* or more in one month, increase inspection frequency to monthly plus after every 0.1-inch or larger storm event. • Remove any accumulated materials found at each inspection.
Obstructed inlet or outlet structure	Clear blockage.	• Inspect monthly and after every 0.5-inch or larger storm event. • Remove any accumulated materials found at each inspection.
Damage to structural components such as weirs, inlet or outlet structures	Repair or replace as applicable	• Inspect annually. • Maintain when needed.
Poor vegetation establishment	Re-seed, re-plant, or re-establish vegetation per original plans.	• Inspect monthly. • Maintain when needed.

Threshold/Indicator	Maintenance Action	Typical Maintenance Frequency
Dead or diseased vegetation	Remove dead or diseased vegetation, re-seed, re-plant, or re-establish vegetation per original plans.	• Inspect monthly. • Maintain when needed.
Overgrown vegetation	Mow or trim as appropriate.	• Inspect monthly. • Maintain when needed.
2/3 of mulch has decomposed, or mulch has been removed	Remove decomposed fraction and top off with fresh mulch to a total depth of 3 inches.	• Inspect monthly. • Replenish mulch annually, or more frequently when needed based on inspection.
Erosion due to concentrated irrigation flow	Repair/re-seed/re-plant eroded areas and adjust the irrigation system.	• Inspect monthly. • Maintain when needed.
Erosion due to concentrated storm water runoff flow	Repair/re-seed/re-plant eroded areas, and make appropriate corrective measures such as adding erosion control blankets, adding stone at flow entry points, or minor re-grading to restore proper drainage according to the original plan. If the issue is not corrected by restoring the BMP to the original plan and grade, the City Engineer shall be contacted prior to any additional repairs or reconstruction.	• Inspect after every 0.5-inch or larger storm event. If erosion due to storm water flow has been observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed. If the issue is not corrected by restoring the BMP to the original plan and grade, the City Engineer shall be contacted prior to any additional repairs or reconstruction.
Standing water in BMP for longer than 24 hours following a storm event Surface ponding longer than approximately 24 hours following a storm event may be detrimental to vegetation health	Make appropriate corrective measures such as adjusting irrigation system, removing obstructions of debris or invasive vegetation, clearing underdrains, or repairing/replacing clogged or compacted soils.	• Inspect monthly and after every 0.5-inch or larger storm event. If standing water is observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed.

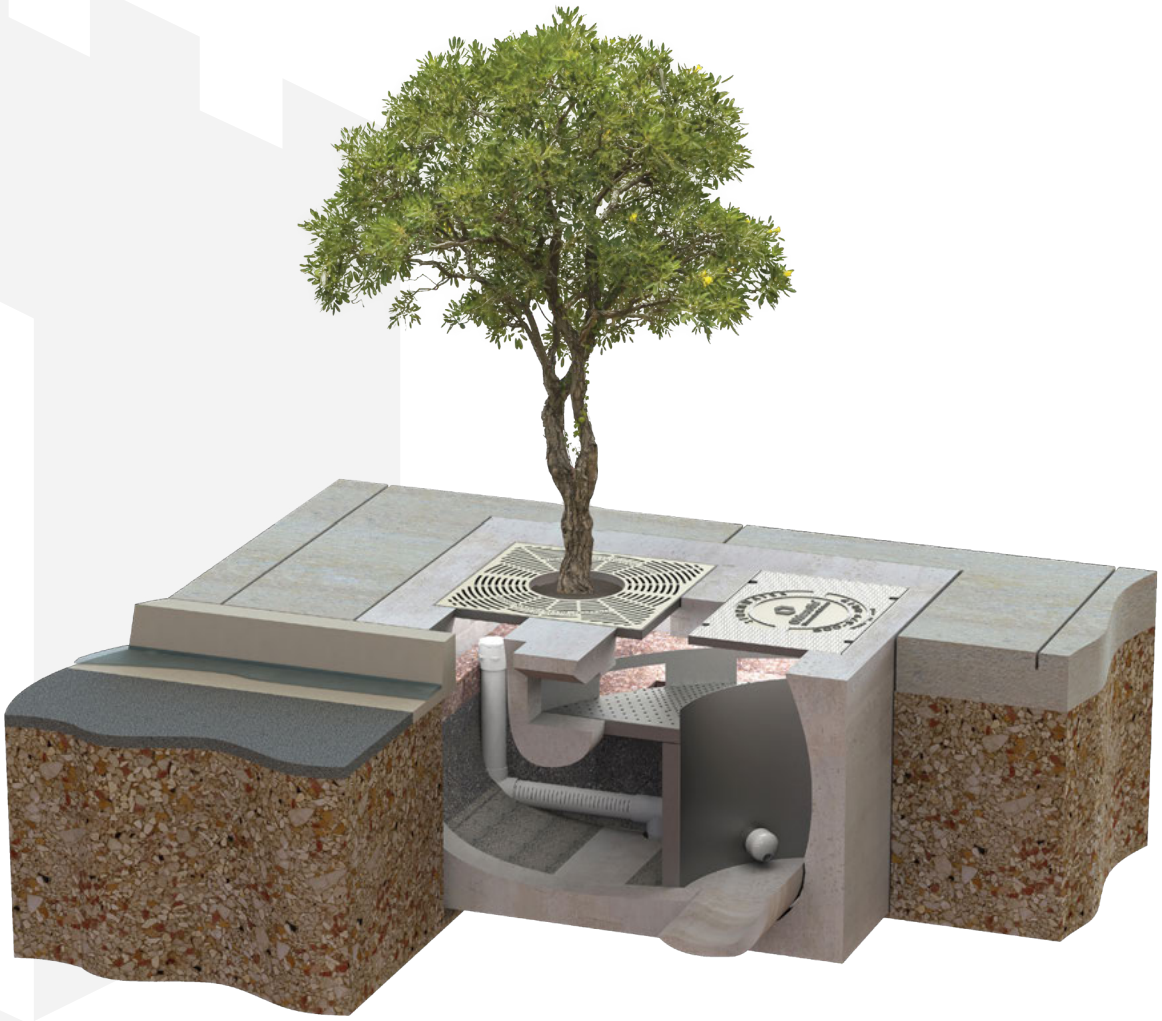
Threshold/Indicator	Maintenance Action	Typical Maintenance Frequency
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology	If mosquitos/larvae are observed: first, immediately remove any standing water by dispersing to nearby landscaping; second, make corrective measures as applicable to restore BMP drainage to prevent standing water. If mosquitos persist following corrective measures to remove standing water, or if the BMP design does not meet the 96-hour drawdown criteria due to release rates controlled by an orifice installed on the underdrain, the City Engineer shall be contacted to determine a solution. A different BMP type, or a Vector Management Plan prepared with concurrence from the County of San Diego Department of Environmental Health, may be required.	• Inspect monthly and after every 0.5-inch or larger storm event. If mosquitos are observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed.
Underdrain clogged	Clear blockage.	Inspect if standing water is observed for longer than 24-96 hours following a storm event. Maintain when needed.

"25% full" is defined as ¼ of the depth from the design bottom elevation to the crest of the outflow structure (e.g., if the height to the outflow opening is 12 inches from the bottom elevation, then the materials must be removed when there is 3 inches of accumulation – this should be marked on the outflow structure).

BIOPOD™ SYSTEM

with StormMix™ Media

Inspection & Maintenance Guide



Oldcastle Infrastructure™
A CRH COMPANY

BIOPOD™ BIOFILTER WITH STORMMIX™ BIOFILTRATION MEDIA

DESCRIPTION

The BioPod™ Biofilter System (BioPod) is a storm water biofiltration treatment system used to remove pollutants from storm water runoff. Impervious surfaces and other urban and suburban landscapes generate a variety of contaminants that can enter storm water and pollute downstream receiving waters unless treatment is provided. The BioPod system uses proprietary StormMix™ biofiltration media to capture and retain pollutants including total suspended solids (TSS), metals, nutrients, gross solids, trash and debris as well as petroleum hydrocarbons.

FUNCTION

The BioPod system uses engineered, high-flow rate filter media to remove storm water pollutants, allowing for a smaller footprint than conventional bioretention systems. Contained within a compact precast concrete vault, the BioPod system consists of a biofiltration chamber and an optional integrated high-flow bypass. The biofiltration chamber is filled with horizontal layers of aggregate, biofiltration media and mulch. Storm water passes vertically down through the mulch and biofiltration media for treatment. The mulch provides pretreatment by retaining most of the solids or sediment. The biofiltration media provides further treatment by retaining finer sediment and dissolved pollutants. The aggregate allows the media bed to drain evenly for discharge through an underdrain pipe or by infiltration.

INSPECTION & MAINTENANCE OVERVIEW

State and local regulations require all storm water management systems to be inspected on a regular basis and maintained as necessary to ensure performance and protect downstream receiving waters. Without maintenance, excessive pollutant buildup can limit system performance by reducing the operating capacity of the system and increasing the potential for scouring of pollutants during periods of high flow.

Some configurations of the BioPod may require periodic irrigation to establish and maintain vegetation. Vegetation will typically become established about two years after planting. Irrigation requirements are ultimately dependent on climate, rainfall and the type of vegetation selected.

INSPECTION & MAINTENANCE FREQUENCY

Periodic inspection is essential for consistent system performance and is easily completed. Inspection is typically conducted a minimum of twice per year, but since pollutant transport and deposition varies from site to site, a site-specific maintenance frequency should be established during the first two or three years of operation.

INSPECTION EQUIPMENT

The following equipment is helpful when conducting BioPod inspections:

- Recording device (pen and paper form, voice recorder, iPad, etc.)
- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- PPE as required for entry
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Socket

INSPECTION PROCEDURES

BioPod inspections are visual and are conducted without entering the unit. To complete an inspection, safety measures including traffic control should be deployed before the access covers or tree grates are removed. Once the covers have been removed, the following items should be checked and recorded (see form provided on page 6) to determine whether maintenance is required:

- If the BioPod unit is equipped with an internal bypass, inspect the inlet rack (or inlet chamber on underground units) and outlet chamber and note whether there are any broken or missing parts. In the unlikely event that internal parts are broken or missing, contact Oldcastle Storm water at (800) 579-8819 to determine appropriate corrective action.
- Note whether the curb inlet, inlet pipe, or inlet rack is blocked or obstructed.
- If the unit is equipped with an internal bypass, observe, quantify and record the accumulation of trash and debris in the inlet rack or inlet chamber. The significance of accumulated trash and debris is a matter of judgment. Often, much of the trash and debris may be removed manually at the time of inspection if a separate maintenance visit is not yet warranted.
- If it has not rained within the past 24 hours, note whether standing water is observed in the biofiltration chamber.
- Finally, observe, quantify and record presence of invasive vegetation and the amount of trash and debris and sediment load in the biofiltration chamber. Erosion of the mulch and biofiltration media bed should also be recorded. Often, much of the invasive vegetation and trash and debris may be removed manually at the time of inspection if a separate maintenance visit is not yet warranted. Sediment load may be rated light, medium or heavy depending on the conditions. Loading characteristics may be determined as follows:
  - **Light sediment load** – sediment is difficult to distinguish among the mulch fibers at the top of the mulch layer; the mulch appears almost new.
  - **Medium sediment load** – sediment accumulation is apparent and may be concentrated in some areas; probing the mulch layer reveals lighter sediment loads under the top 1" of mulch.
  - **Heavy sediment load** – sediment is readily apparent across the entire top of the mulch layer; individual mulch fibers are difficult to distinguish; probing the mulch layer reveals heavy sediment load under the top 1" of mulch.

MAINTENANCE INDICATORS

Maintenance should be scheduled if any of the following conditions are identified during inspection:

- The concrete structure is damaged or the tree grate or access cover is damaged or missing
- The inlet obstructed
- Standing water is observed in the biofiltration chamber more than 24 hours after a rainfall event (use discretion if the BioPod is located downstream of a storage system that attenuates flow)
- Trash and debris in the inlet rack cannot be easily removed at the time of inspection
- Trash and debris, invasive vegetation or sediment load in the biofiltration chamber is heavy or excessive erosion has occurred

MAINTENANCE EQUIPMENT

The following equipment is helpful when conducting BioPod maintenance:

- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- PPE as required for entry
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Rake, hoe, shovel and broom
- Bucket
- Pruners
- Vacuum truck (optional)
- Socket

MAINTENANCE PROCEDURES

Maintenance should be conducted during dry weather when no flows are entering the system. In most cases, maintenance may be conducted without entering. Entry may be required to maintain BioPod Underground units, depending on system depth. Once safety measures such as traffic control are deployed, the access covers may be removed and the following activities may be conducted to complete maintenance:

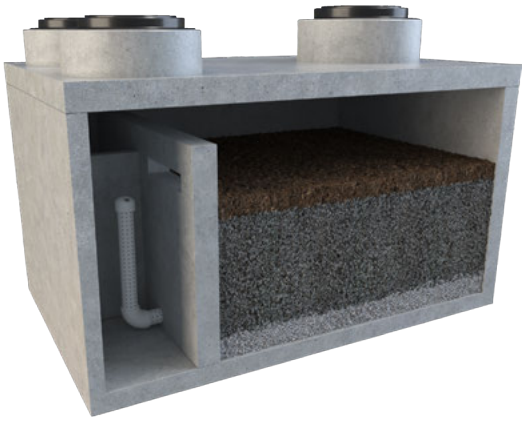
- Remove all trash and debris from the curb inlet and inlet rack manually or by using a vacuum truck as required.
- Remove all trash and debris and invasive vegetation from the biofiltration chamber manually or by using a vacuum truck as required.
- If the sediment load is medium or light but erosion of the biofiltration media bed is evident, redistribute the mulch with a rake or replace missing mulch as appropriate. If erosion persists, rocks may be placed in the eroded area to help dissipate energy and prevent recurring erosion.
- If the sediment load is heavy, remove the mulch layer using a hoe, rake, shovel and bucket, or by using a vacuum truck as required. If the sediment load is particularly heavy, inspect the surface of the biofiltration media once the mulch has been removed. If the media appears clogged with sediment, remove and replace one or two inches of biofiltration media prior to replacing the mulch* layer.
- Prune vegetation as appropriate and replace damaged or dead plants as required.
- Replace the tree grate and/or access covers and sweep the area around the BioPod to leave the site clean.
- All material removed from the BioPod during maintenance must be disposed of in accordance with local environmental regulations. In most cases, the material may be handled in the same manner as disposal of material removed from sumped catch basins or manholes.

* Natural, shredded hardwood mulch should be used in the BioPod. Timely replacement of the mulch layer according to the maintenance indicators described above should protect the biofiltration media below the mulch layer from clogging due to sediment accumulation. However, whenever the mulch is replaced, the BioPod should be visited 24 hours after the next major storm event to ensure that there is no standing water in the biofiltration chamber. Standing water indicates that the biofiltration media below the mulch layer is clogged and must be replaced. Please contact Oldcastle Infrastructure at (800) 579-8819 to purchase the proprietary StormMix™ biofiltration media.

BIOPOD SURFACE

BIOPOD TREE

BIOPOD PLANTER



BIOPOD UNDERGROUND

ATTACHMENT: 3B

EXEMPT FROM FEES pursuant to Gov't Code §§ 6103, 27383, and 27388.1 (filing requested/executed by municipality)

RECORDING REQUESTED BY, AND WHEN RECORDED RETURN TO:

City Engineer
City of Escondido
201 North Broadway
Escondido, CA 92025-2798

This Space for Recorder's Use Only

STORM WATER CONTROL FACILITY MAINTENANCE AGREEMENT
APN NO. 229-171-29, 229-171-30

This STORM WATER CONTROL FACILITY MAINTENANCE AGREEMENT ("Agreement") is entered into between the City of Escondido, a California municipal corporation ("City") and 501 W. Mission, LLC ("Owner"), and in accordance with City of Escondido Grading Plan No. [GP Number] ("Grading Plan"). (The City and Owner may each be referred to herein as a "Party" and collectively as the "Parties.")

WHEREAS, installation and maintenance of Storm Water Control Facilities ("SWCF") is required pursuant to the Escondido Municipal Code, by the California Regional Water Quality Control Board ("RWQCB"), and by the City as a condition of approval of property development; and

WHEREAS, Owner is the owner of certain real property identified as APN 229-171-29 & 229-171-30; located at SE Corner of Mission ave & Center City Pkwy, Escondido, CA 92025; and more particularly described in Exhibit A, attached hereto and incorporated herein by this reference ("Property"); and

WHEREAS, Owner has proposed development of the Property that provides benefit to the general public and the City and meets the requirements of RWQCB Order R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100 (National Pollution Discharge Elimination System No. CAS0109266); and

WHEREAS, the current and future subdivision Owner shall use the SWCF as installed per the Grading Plan and the provisions of the Storm Water Quality Management Plan prepared by the Owner and approved by the CITY on [Approval Date] ("Storm Water Plan"); and

WHEREAS, it is the mutual desire of the Parties to establish a method for the maintenance and repair of the SWCF, and that the SWCF be maintained in a safe and usable condition by the Owner; and

WHEREAS, the City shall have the right but not the obligation to enforce full compliance with the terms and conditions of this Agreement; and

WHEREAS, it is the mutual intention of the Parties that this Agreement constitute a covenant running with the land, binding upon each successive person having or acquiring any right, title, or interest in all or any portion of the Property.

NOW, THEREFORE, in consideration of the above premises, the mutual covenants and promises below, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. The Property is benefited by this Agreement, and the Owner is expressly bound hereby for the benefit of the land. In the event any of the herein described parcels of land are subdivided further, the Owner, or its heirs, assigns, and successors in interest of each such newly created parcel, shall be liable under this Agreement for its then pro rata share of expenses and such pro rata shares of expenses shall be computed to reflect such newly created parcels.

2. The cost and expense of maintaining the SWCF shall be the responsibility of, and paid by, the Owner. The SWCF shall be constructed and maintained by the Owner in accordance with the Grading Plan and Storm Water Plan.

3. Repair and maintenance responsibilities for all structural SWCF and required Best Management Practices ("BMPs") are set forth in the Storm Water Plan. Owner shall, as changes occur, provide the City with the name, title, and phone number of the persons or entities responsible for maintenance and reporting activities; funding, schedules, and procedures for inspection and maintenance of the SWCF; implementation of worker training requirements; and any other activities necessary to ensure compliance with BMPs. The Storm Water Plan shall provide for the servicing of all SWCF as needed, and at least once during August or September of each year, and for the retention of inspection and maintenance records for at least three years. Owner shall submit annual certification to the City's Department of Engineering Services between September 1 and October 1 of each year. The certification shall document all maintenance performed and compliance with applicable permits.

4. The City shall have the right to inspect the SWCF and related records as needed to ensure the SWCF is being properly maintained.

5. If any individual Owner fails to pay its share of costs and expenses as required to use, maintain, or repair the SWCF, then the City shall be entitled without further notice to institute legal action for the collection of funds advanced on behalf of the individual Owner that did not pay its share of costs and expenses and shall be entitled to recover in such action, in addition to the funds advanced, interest thereon at the current prime rate of interest, until paid; all costs and disbursements of such action, including such sum or sums as the court may fix; and reasonable attorney's fees.

6. Any liability of the Owner to any worker employed to make repairs or provide maintenance under this Agreement, or to third persons, as well as any liability of the Owner for damage to the property of any such worker, or any third persons, as a result of or arising out of repairs and maintenance under this Agreement, shall be borne solely by the Owner (and if jointly owned,

then in the same percentage as each individual Owner bears the costs and expenses of such repairs and maintenance). In the case of more than one Owner, each individual Owner shall be responsible for and maintain its own insurance. By this Agreement, the Parties do not intend to provide for the sharing of liability with respect to personal injury or property damage other than that attributable to the repairs and maintenance undertaken under this Agreement. Each Owner agrees to indemnify any other Owner from any and all liability for injury to an individual Owner or damage to its property when such injury or damage results from, arises out of, or is attributable to any maintenance or repairs undertaken pursuant to this Agreement.

7. Indemnification, Duty to Defend, Hold Harmless.

7.1 To the fullest extent permitted by law, Owner shall jointly and severally indemnify, defend with legal counsel reasonably satisfactory to the City, and hold harmless the City and the City's officers, officials, directors, employees, agents, volunteers, and Councilmembers (collectively, "Indemnitees") from and against any and all claims, demands, actions, causes of action, proceedings (including but not limited to legal and administrative proceedings of any kind), suits, fines, penalties, sanctions, judgments, levies, liens, orders (including without limitation any RWQCB Orders), assessments, costs, expenses, liabilities, losses, damages, or injuries, in law or equity, including without limitation the payment of all consequential damages and attorney's fees and other related litigation costs and expenses, of every nature caused by, arising out of, or in connection with Owner's obligations under this Agreement or Owner's obligations for implementation of storm water management in accordance with RWQCB Order R9-2013-0001 and subsequent amendments (collectively, "Claims"), including any reasonable attorney's fees, costs, and expenses incurred by the Indemnitees in responding to or defending any Claims, except where caused by the active negligence, sole negligence, or willful misconduct of the Indemnitees.

7.2 Owner's duty to defend the Indemnitees is separate, independent, and free-standing from Owner's duty to indemnify and hold harmless the Indemnitees. Owner's defense obligation shall arise immediately upon receipt by the City or Owner of any written notice of any alleged Claims, or a written Notice of Violation or equivalent notice of intent from the RWQCB or other enforcement agency to levy any fines, penalties, or sanctions against Indemnitees, and shall continue until the entry of any final and non-appealable judgment or order, including without limitation any final and non-appealable RWQCB Order or other agency enforcement order.

7.3 The indemnity protections provided by this Agreement are not intended to exceed the indemnity available under applicable law. If the indemnity protections are found by a court to be unlawful in any way, the protection shall be curtailed or adjusted, but only to the minimum extent required to conform to applicable law.

7.4 All terms and provisions within this Section 7 shall survive termination of this Agreement.

8. If, in the City's sole judgment, the SWCF is not being maintained to the standards required by this Agreement, the City may thereupon provide written notice to the Owner to initiate repairs or construction within 90 days. Upon the Owner's failure to demonstrate good faith to make repairs or construction within 90 days, the City may make all necessary repairs to the SWCF or construct the SWCF in a manner to meet the standards set forth in this Agreement and to then assess

costs to the Owner.

9. If the City elects to make necessary maintenance or repairs in accordance with this Agreement, such maintenance and repairs shall be accepted "as is" by the Owner without any warranty of workmanship and be guaranteed and indemnified by Owner in accordance with this Agreement.

10. The obligations and benefits provided for in this Agreement shall run with the land obligated and benefited, respectively, and shall be binding on all persons having or acquiring any right, title, or interest in the Property or any part thereof. As such, it is the intent of the Parties that this Agreement and the promises, covenants, rights, and obligations set forth herein (i) shall be and are covenants running with the Property, encumbering the Property for the term of this Agreement, and binding upon Owner's successors in title and all subsequent owners and operators of the Property; (ii) are not merely personal covenants of the Owner; and (iii) shall bind Owner and its respective heirs, executors, administrators, successors, and assigns.

11. Amendments. This Agreement may not be amended, modified, waived, or supplemented except by an agreement in writing signed by all of the Parties, and then only in the specific instance and for the specific purpose given.

12. Governing Law. This Agreement shall be governed by the laws of the State of California. In the event any provision of this Agreement is held to be unenforceable or invalid by any court of competent jurisdiction, the validity and enforceability of the remaining provisions shall not be affected thereby.

13. Entire Agreement. This Agreement, together with its attachments or other documents, if any, described or incorporated herein, contains the entire agreement and understanding concerning the subject of this Agreement and supersedes and replaces all prior negotiations, understandings, or proposed agreements, written or oral, except as otherwise provided herein. Each of the Parties hereto acknowledges that no other Party, nor the agents nor the attorneys for any Party, has made any promise, representation, or warranty whatsoever, express or implied, not contained herein, to induce the execution of this Agreement and acknowledges that this Agreement has not been executed in reliance upon any promise, representation, or warranty not contained herein.

14. Severability. This Agreement shall be performed and shall be enforceable to the full extent allowed by applicable law, and the illegality, invalidity, waiver, or unenforceability of any provision of this Agreement shall not affect the legality, validity, applicability, or enforceability of the remaining provisions of this Agreement.

15. Capacity. Each individual signing this Agreement represents and warrants that he or she has been authorized to do so by proper action of the Party on whose behalf he or she has signed.

16 Advice of Counsel. The Parties hereby acknowledge that they have executed this Agreement after having the opportunity to consult with, and receive the advice of, their own counsel.

17. Attorney's Fees. In any action to enforce the terms of this Agreement, the Parties agree that the prevailing party shall be entitled to its actual attorney's fees and all costs, fees, and expenses, including the fees of expert witnesses and consultants, whether or not such costs, fees, and

expenses are recoverable or allowed as costs under section 1033.5 of the California Code of Civil Procedure. Such fees and costs shall be proven and awarded by the court after the conclusion of the trial on all other issues by way of a cost bill and motion. In addition to the foregoing award of attorney's fees and costs, the prevailing party shall be entitled to its attorney's fees and costs incurred in any post-judgment proceeding to collect or enforce any judgment. This provision is separate and shall survive the merger of this provision into any judgment on this Agreement.

18. Counterparts. This Agreement may be executed on separate counterparts that, upon completion, may be assembled into and shall be construed as one document.

19. Recitals. The Recitals set forth in this Agreement are included herein by reference as part of this Agreement and the Parties agree that said Recitals are essential facts to this Agreement.

20. Effective Date. Unless a different date is provided in this Agreement, the effective date of this Agreement shall be the latest date of execution set forth by the names of the signators below.

IN WITNESS WHEREOF, this Agreement is executed by the Parties or their duly authorized representatives as of the Effective Date:

CITY OF ESCONDIDO

Date: _____

_____
Julie Procopio, Director of Engineering Services

[OWNER]

Date: _____

_____
Signature

_____
Name/Title (please print)

(ALL ABOVE SIGNATURES MUST BE NOTARIZED)

Approved as to Form:

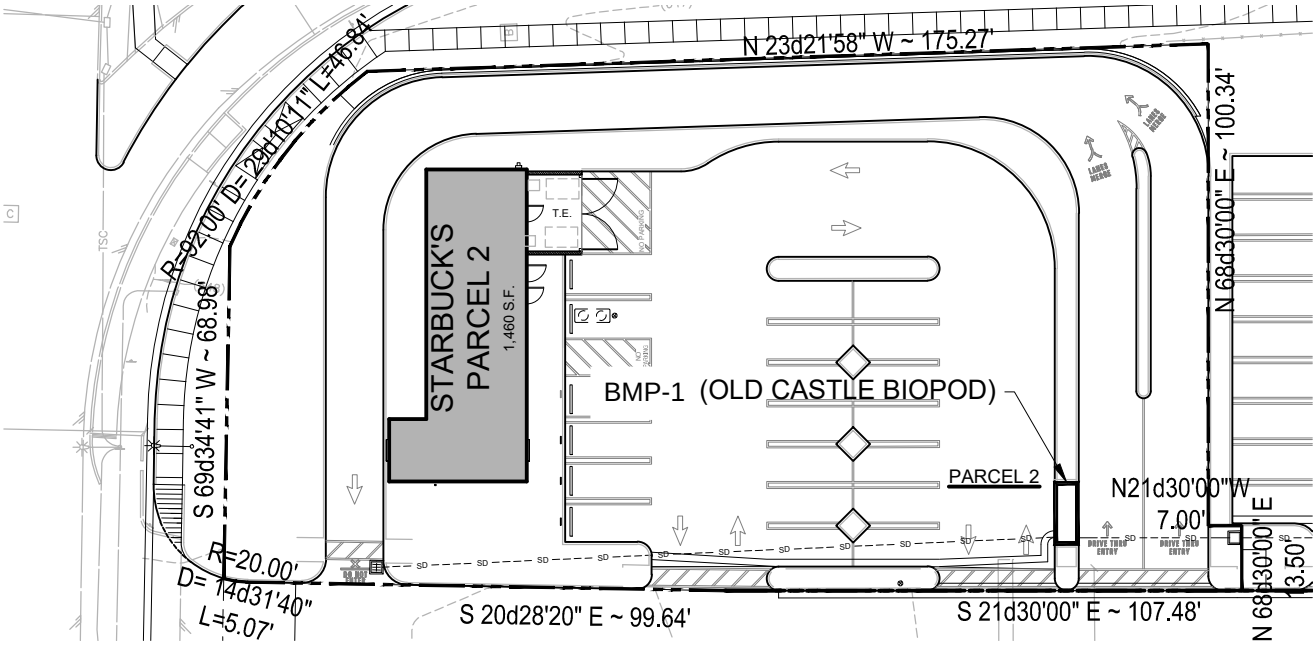
OFFICE OF THE CITY ATTORNEY
Michael R. McGuinness, City Attorney

BY: _____

EXHIBIT A

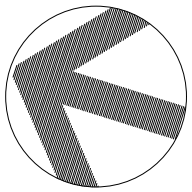
Legal Description of Property

SEE NEXT PAGE



LEGAL DESCRIPTION: 22,152 SF (0.51 AC) PROPERTY LOCATED AT W. MISSION AVE & CENTRE CITY PKWY, ESCONDIDO, CA. PARCEL 2, APN 229-171-29, 229-171-30.

NORTH



SCALE: 1"=40'

SWCFMA SITE PLAN

PARCEL 2
W. MISSION AVE & CENTRE CITY PKWY
ESCONDIDO, CA 92025

ATTACHMENT 4

City of Escondido PDP Structural BMP Verification for Permitted Land Development Projects

This is the cover sheet for Attachment 4.

City of Escondido Storm Water Structural BMP Verification Form Page 1 of 3	
Project Summary Information	
Project Name	Starbucks - Escondido
Permit Number (e.g., grading/improvement plan number)	PL22-0396
Project Address	502 W. Mission Ave Escondido, CA 92025
Assessor's Parcel Number(s) (APN(s))	229-171-29, 229-171-30
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	Carlsbad 904
Maintenance Notification / Agreement No.	
Responsible Party for Construction Phase	
Developer's Name	
Address	
Email Address	
Phone Number	
Engineer of Work	
Engineer's Phone Number	
Responsible Party for Ongoing Maintenance	
Owner's Name(s)*	
Address	
Email Address	
Phone Number	
*Note: If a corporation or LLC, provide information for principal partner or Agent for Service of Process. If an HOA, provide information for the Board or property manager at time of project closeout.	

City of Escondido Storm Water Structural BMP Verification Form Page 2 of 3				
Stormwater Structural Pollutant Control & Hydromodification Control BMPs* (List all from SWQMP)				
Description/Type of Structural BMP	**Plan Sheet #**	**Structural BMP ID#**	**Maintenance Agreement Recorded Doc #**	**Revisions**
Biopod from Oldcastle	C100-104	BMP-1	TBD	
*All Priority Development Projects (PDPs) require a Structural BMP				

Note: If this is a partial verification of Structural BMPs, provide a list and map denoting Structural BMPs that have already been submitted, those for this submission, and those anticipated in future submissions.

City of Escondido Storm Structural BMP Verification Form Page 3 of 3

Checklist for Engineer of Work (EOW) to submit to Field Engineering:

- ☐ Copy of the final accepted SWQMP and any accepted addendum.
- ☐ Copy of the most current plan showing the Storm Water Structural BMP Table, plans/cross-section sheets of the Structural BMPs and the location of each verified as-built Structural BMP.
- ☐ Photograph of each Structural BMP.
- ☐ Photograph(s) of each Structural BMP during the construction process to illustrate proper construction.
- ☐ Copy of the approved Structural BMP maintenance agreement and associated security

By signing below, I certify that the Structural BMP(s) for this project have been constructed and all BMPs are in substantial conformance with the approved plans and applicable regulations. I understand the City reserves the right to inspect the above BMPs to verify compliance with the approved plans and Storm Water Ordinance. Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Please sign your name and seal.

Professional Engineer's Printed Name: _____

Professional Engineer's Signed Name: _____

Date: _____

[SEAL]

ATTACHMENT 5

Copy of Plan Sheets Showing Permanent Storm Water BMPs, Source Control, and Site Design BMPs

This is the cover sheet for Attachment 5.

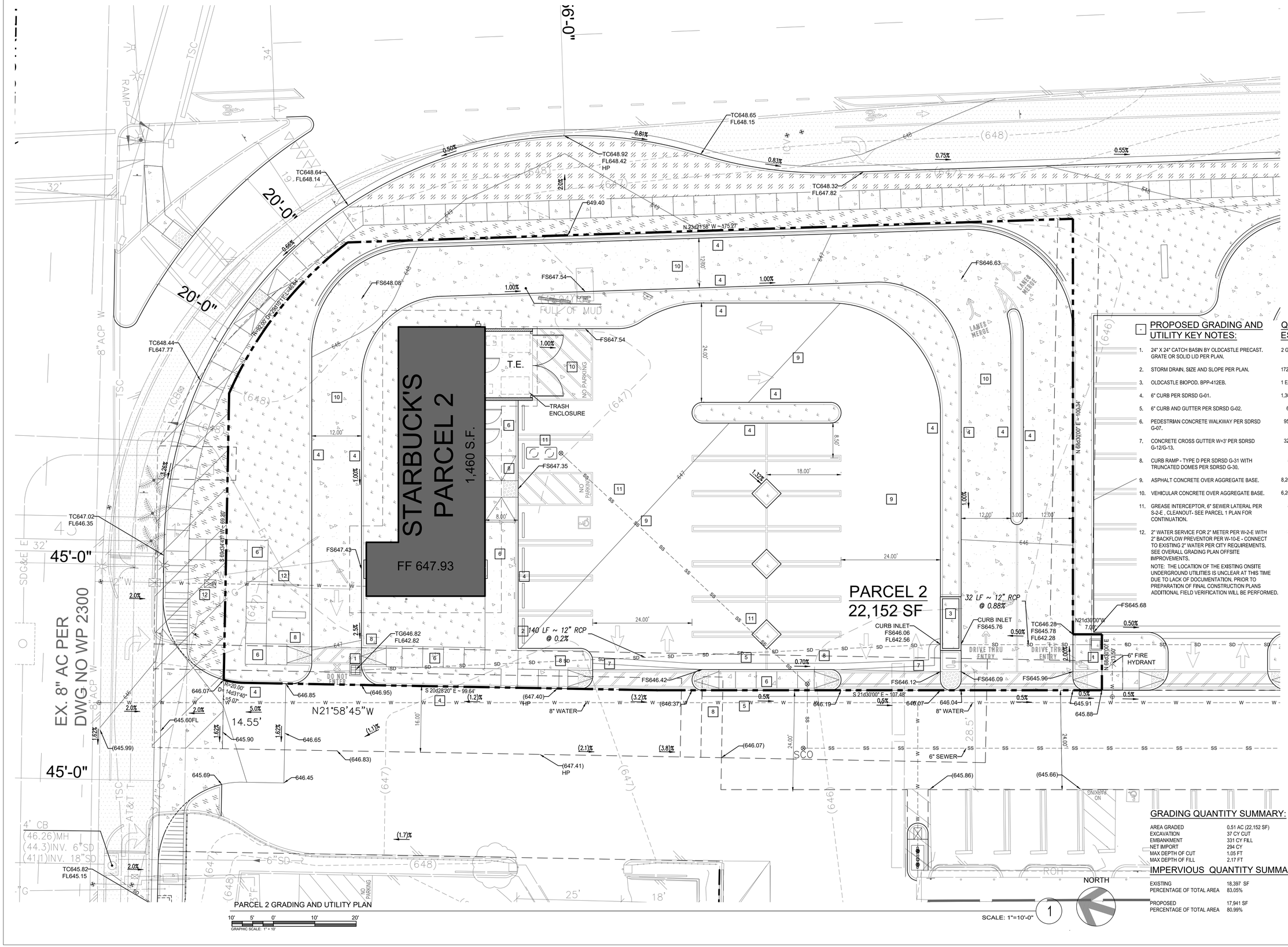
Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

- ■ Structural BMP(s) with ID numbers matching Step 5 Summary of PDP Structural BMPs
- ■ The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
- ■ Details and specifications for construction of structural BMP(s)
- ☐ Signage indicating the location and boundary of structural BMP(s) as required by City staff
- ☐ How to access the structural BMP(s) to inspect and perform maintenance
- ☐ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- ☐ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☐ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- ☐ Recommended equipment to perform maintenance
- ☐ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management
- ☐ Include landscaping plan sheets showing vegetation requirements for vegetated structural BMP(s)
- ☐ All BMPs must be fully dimensioned on the plans
- ☐ When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number must be provided. Photocopies of general brochures are not acceptable.
- ☐ Include all source control and site design measures described in Steps 3 and 4 of the SWQMP. Can be included as a separate exhibit as necessary.

***Note: Plan sheets included in this attachment can be full size or half size.**

Missing items typically not required at planning level.



PROPOSED GRADING AND UTILITY KEY NOTES:

		QUANTITY ESTIMATE:
1.	24" X 24" CATCH BASIN BY OLDCASTLE PRECAST. GRATE OR SOLID LID PER PLAN.	2 GRATE LID
2.	STORM DRAIN, SIZE AND SLOPE PER PLAN.	172 LF 12 "
3.	OLDCASTLE BIOPOD. BPP-412EB.	1 EACH 4'X12'
4.	6" CURB PER SDRSD G-01.	1,309 LF
5.	6" CURB AND GUTTER PER SDRSD G-02.	66 LF
6.	PEDESTRIAN CONCRETE WALKWAY PER SDRSD G-07.	950 SF
7.	CONCRETE CROSS GUTTER W=3' PER SDRSD G-12/G-13.	327 SF
8.	CURB RAMP - TYPE D PER SDRSD G-31 WITH TRUNCATED DOMES PER SDRSD G-30.	8 EACH
9.	ASPHALT CONCRETE OVER AGGREGATE BASE.	8,269 SF
10.	VEHICULAR CONCRETE OVER AGGREGATE BASE.	6,207 SF
11.	GREASE INTERCEPTOR, 6" SEWER LATERAL PER S-2-E , CLEANOUT- SEE PARCEL 1 PLAN FOR CONTINUATION.	83 LF
12.	2" WATER SERVICE FOR 2" METER PER W-2-E WITH 2" BACKFLOW PREVENTOR PER W-10-E - CONNECT TO EXISTING 2" WATER PER CITY REQUIREMENTS. SEE OVERALL GRADING PLAN OFFSITE IMPROVEMENTS. NOTE: THE LOCATION OF THE EXISTING ONSITE UNDERGROUND UTILITIES IS UNCLEAR AT THIS TIME DUE TO LACK OF DOCUMENTATION. PRIOR TO PREPARATION OF FINAL CONSTRUCTION PLANS ADDITIONAL FIELD VERIFICATION WILL BE PERFORMED.	34 LF

GRADING QUANTITY SUMMARY:

AREA GRADED	0.51 AC (22,152 SF)
EXCAVATION	37 CY CUT
EMBANKMENT	331 CY FILL
NET IMPORT	294 CY
MAX DEPTH OF CUT	1.05 FT
MAX DEPTH OF FILL	2.17 FT

IMPERVIOUS QUANTITY SUMMARY:

EXISTING	18,397 SF
PERCENTAGE OF TOTAL AREA	83.05%
PROPOSED	17,941 SF
PERCENTAGE OF TOTAL AREA	80.99%

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

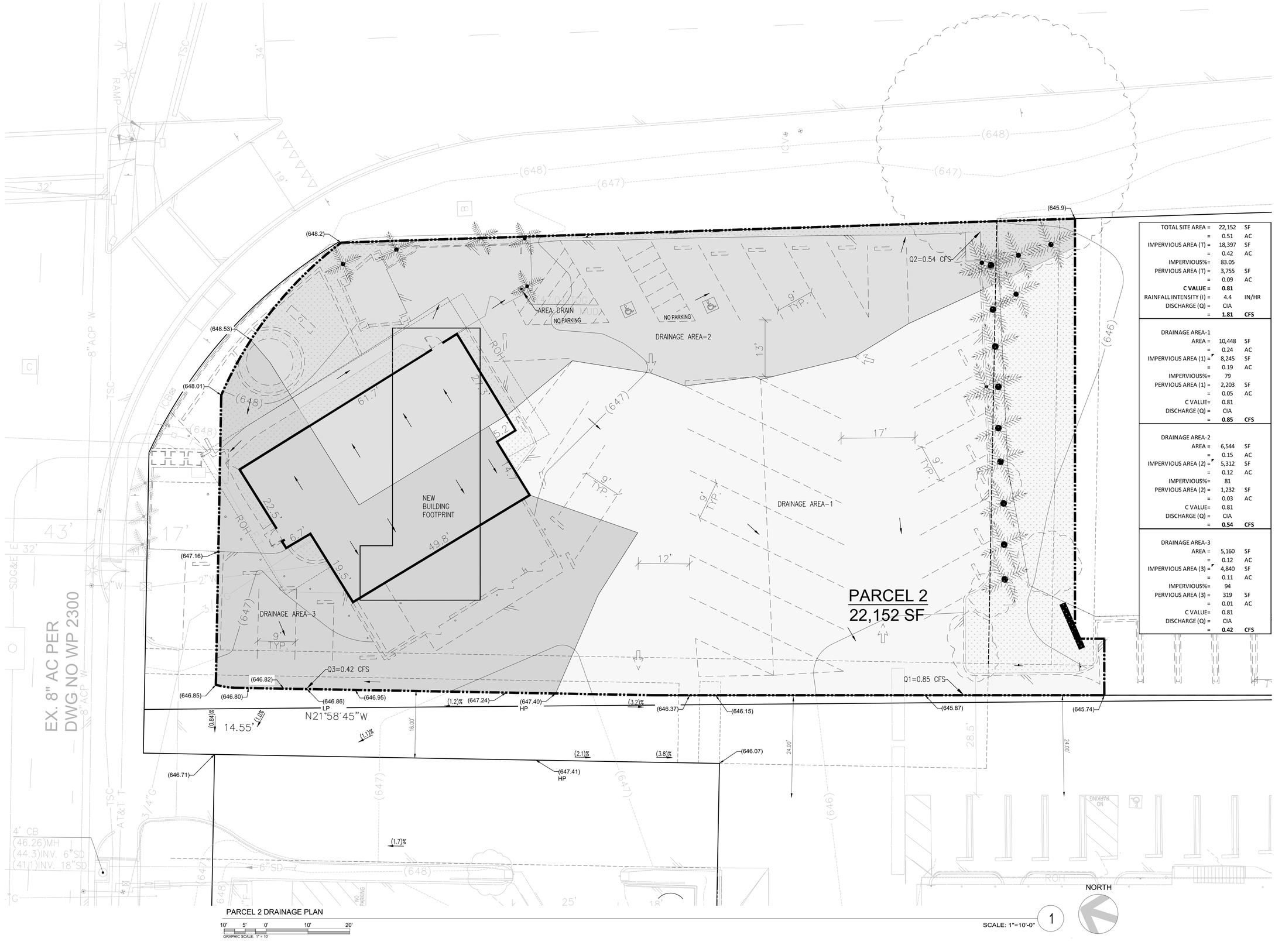
PROJECT
PROPOSED DEVELOPMENT
PARCEL 2
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE: MAY 7, 2024
PROJECT NO.: WM2301
DRAWN:
SCALE: AS SHOWN

SHEET TITLE:
GRADING AND UTILITY PLAN PARCEL 2

SHEET #
C100



TOTAL SITE AREA =	22,152	SF
=	0.51	AC
IMPERVIOUS AREA (T) =	18,397	SF
=	0.42	AC
IMPERVIOUS%=	83.05	
PERVIOUS AREA (T) =	3,755	SF
=	0.09	AC
C VALUE =	**0.81**	
RAINFALL INTENSITY (I) =	4.4	IN/HR
DISCHARGE (Q) =	CIA	
=	**1.81**	**CFS**

DRAINAGE AREA-1		
AREA =	10,448	SF
=	0.24	AC
IMPERVIOUS AREA (1) =	8,245	SF
=	0.19	AC
IMPERVIOUS%=	79	
PERVIOUS AREA (1) =	2,203	SF
=	0.05	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.85**	**CFS**

DRAINAGE AREA-2		
AREA =	6,544	SF
=	0.15	AC
IMPERVIOUS AREA (2) =	5,312	SF
=	0.12	AC
IMPERVIOUS%=	81	
PERVIOUS AREA (2) =	1,232	SF
=	0.03	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.54**	**CFS**

DRAINAGE AREA-3		
AREA =	5,160	SF
=	0.12	AC
IMPERVIOUS AREA (3) =	4,840	SF
=	0.11	AC
IMPERVIOUS%=	94	
PERVIOUS AREA (3) =	319	SF
=	0.01	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.42**	**CFS**

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

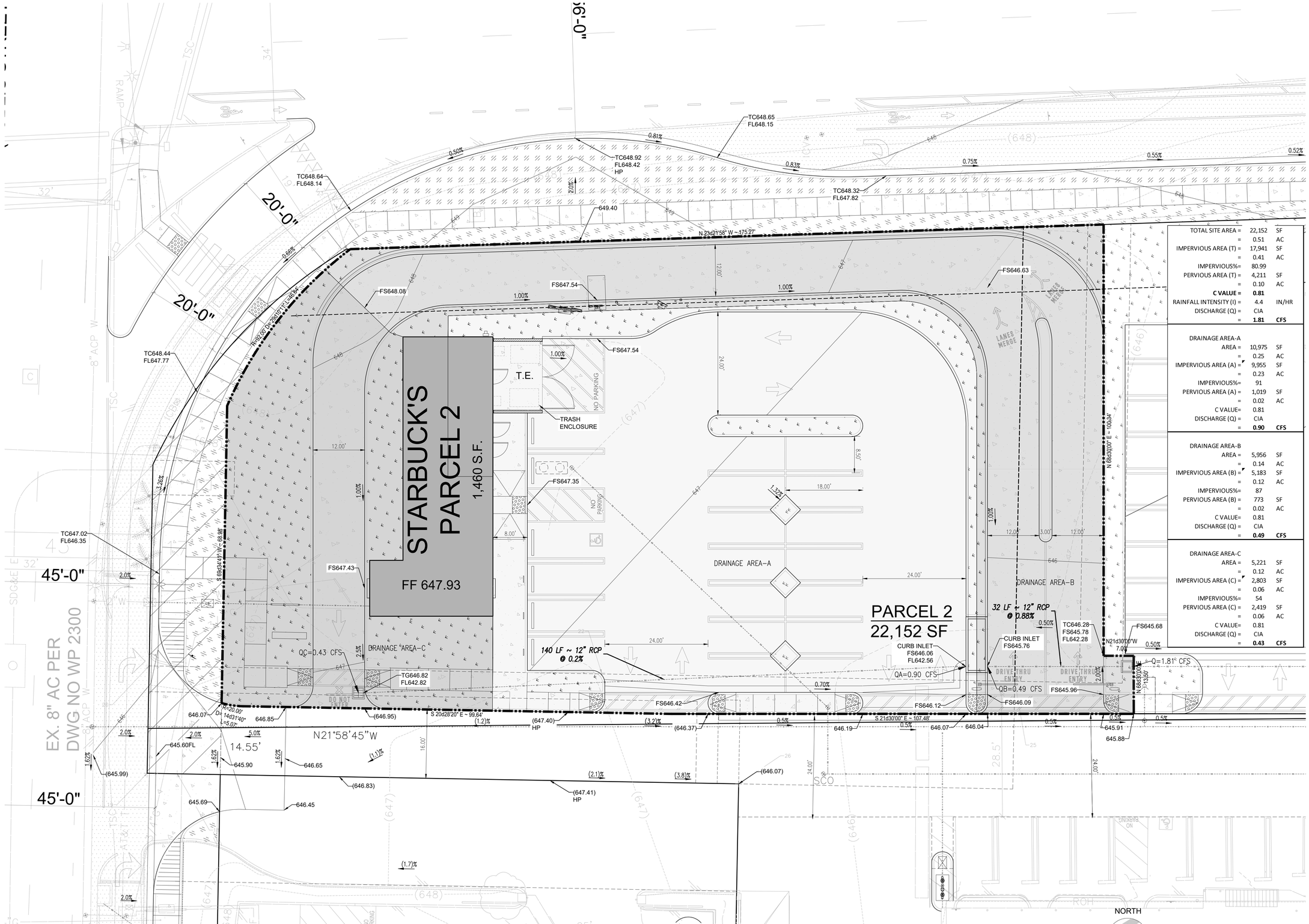
PROJECT
PROPOSED DEVELOPMENT
PARCEL 2
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	
SCALE:	AS SHOWN

SHEET TITLE:
DRAINAGE PLAN
EXISTING
PARCEL 2

SHEET #
C101



PARCEL 2 DRAINAGE PLAN

GRAPHIC SCALE: 1" = 10'

SCALE: 1"=10'-0" 1

TOTAL SITE AREA =	22,152	SF
=	0.51	AC
IMPERVIOUS AREA (T) =	17,941	SF
=	0.41	AC
IMPERVIOUS%=	80.99	
PERVIOUS AREA (T) =	4,211	SF
=	0.10	AC
C VALUE =	**0.81**	
RAINFALL INTENSITY (I) =	4.4	IN/HR
DISCHARGE (Q) =	CIA	
=	**1.81**	**CFS**

DRAINAGE AREA-A		
AREA =	10,975	SF
=	0.25	AC
IMPERVIOUS AREA (A) =	9,955	SF
=	0.23	AC
IMPERVIOUS%=	91	
PERVIOUS AREA (A) =	1,019	SF
=	0.02	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.90**	**CFS**

DRAINAGE AREA-B		
AREA =	5,956	SF
=	0.14	AC
IMPERVIOUS AREA (B) =	5,183	SF
=	0.12	AC
IMPERVIOUS%=	87	
PERVIOUS AREA (B) =	773	SF
=	0.02	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.49**	**CFS**

DRAINAGE AREA-C		
AREA =	5,221	SF
=	0.12	AC
IMPERVIOUS AREA (C) =	2,803	SF
=	0.06	AC
IMPERVIOUS%=	54	
PERVIOUS AREA (C) =	2,419	SF
=	0.06	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.43**	**CFS**

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
PROPOSED DEVELOPMENT
PARCEL 2
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MOUR GROUP
SCALE:	AS SHOWN

SHEET TITLE:
DRAINAGE PLAN
PROPOSED
PARCEL 2

SHEET #
C102

SOURCE SCONTROL(SC)/SITE DESIGN(SD):

ITEMS	FACT SHEET/DESIGN REQMT
PREVENT ILLICIT DISCHARGE INTO MS4	4.2.1
STORM DRAIN STENCILING OR SIGNAGE	4.2.2
PROTECT TRASH STORAGE AREAS	4.2.5
MINIMIZE IMPERVIOUS AREA	4.3.3
LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES	4.3.7
ONSITE STORM DRAIN INLET LABELING	SC-A
REFUSE AREAS EXPOSURE REDUCTION	SC-G

DMA SITE MAP NOTES

1. BMP - 1 - OLDCASTLE BIOPOD WITH PLANTER, BPS/T/P-412 PLANTED WITH DIETES IRIDIODES (FORTNIGHT LILY).

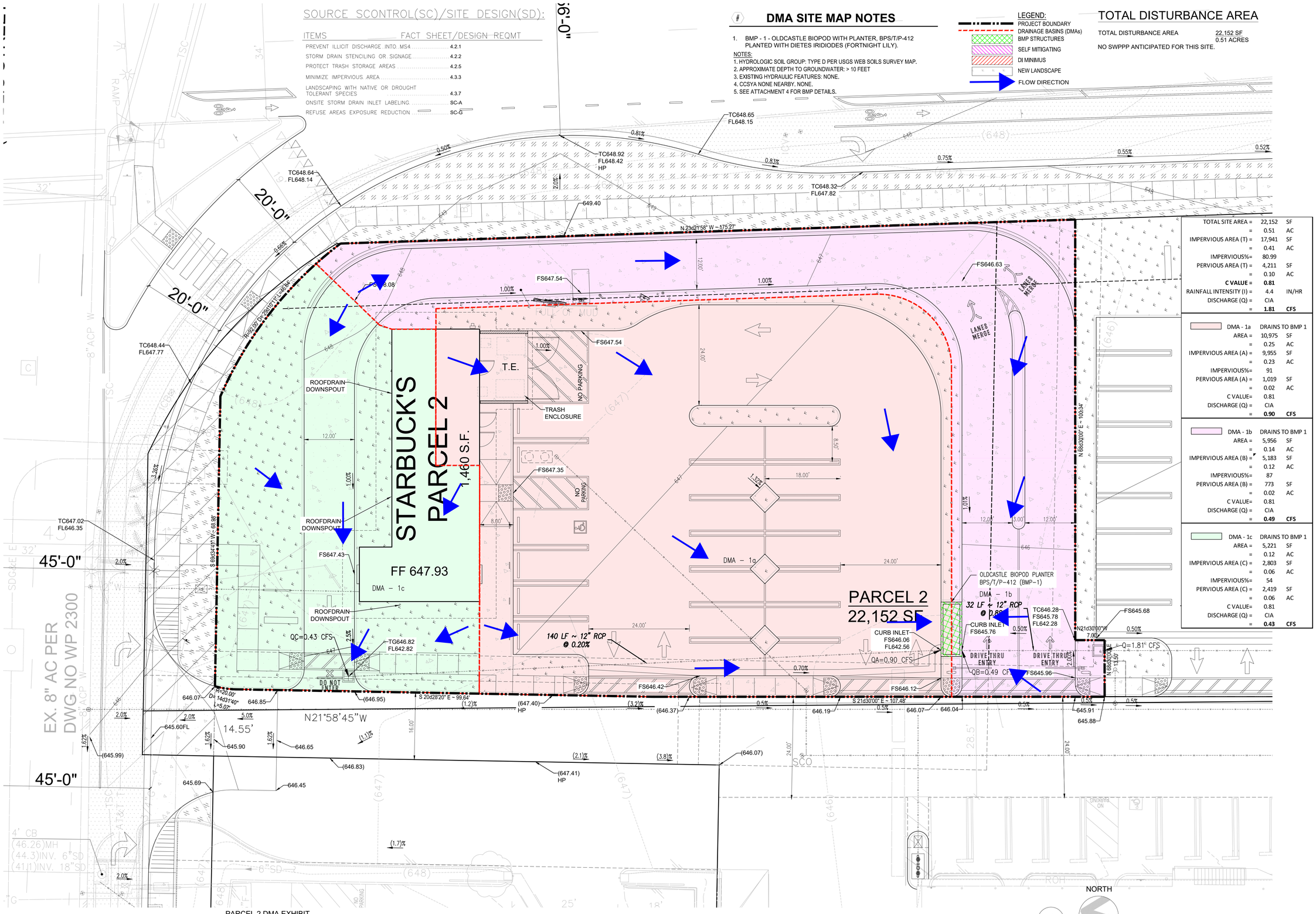
NOTES:
1. HYDROLOGIC SOIL GROUP: TYPE D PER USGS WEB SOILS SURVEY MAP.
2. APPROXIMATE DEPTH TO GROUNDWATER: > 10 FEET
3. EXISTING HYDRAULIC FEATURES: NONE.
4. CCSYA NONE NEARBY: NONE.
5. SEE ATTACHMENT 4 FOR BMP DETAILS.

LEGEND:
- PROJECT BOUNDARY
- DRAINAGE BASINS (DMAs)
- BMP STRUCTURES
- SELF MITIGATING
- DI MINIMUS
- NEW LANDSCAPE
- FLOW DIRECTION

TOTAL DISTURBANCE AREA

TOTAL DISTURBANCE AREA 22,152 SF 0.51 ACRES

NO SWPPP ANTICIPATED FOR THIS SITE.



PARCEL 2 DMA EXHIBIT

10' 5' 0' 10' 20'
GRAPHIC SCALE: 1" = 10'

SCALE: 1"=10'-0"

NORTH

TOTAL SITE AREA =	22,152	SF
=	0.51	AC
IMPERVIOUS AREA (T) =	17,941	SF
=	0.41	AC
IMPERVIOUS%=	80.99	
PERVIOUS AREA (T) =	4,211	SF
=	0.10	AC
C VALUE =	**0.81**	
RAINFALL INTENSITY (I) =	4.4	IN/HR
DISCHARGE (Q) =	CIA	
=	**1.81**	**CFS**

DMA - 1a DRAINS TO BMP 1

AREA =	10,975	SF
=	0.25	AC
IMPERVIOUS AREA (A) =	9,955	SF
=	0.23	AC
IMPERVIOUS%=	91	
PERVIOUS AREA (A) =	1,019	SF
=	0.02	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.90**	**CFS**

DMA - 1b DRAINS TO BMP 1

AREA =	5,956	SF
=	0.14	AC
IMPERVIOUS AREA (B) =	5,183	SF
=	0.12	AC
IMPERVIOUS%=	87	
PERVIOUS AREA (B) =	773	SF
=	0.02	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.49**	**CFS**

DMA - 1c DRAINS TO BMP 1

AREA =	5,221	SF
=	0.12	AC
IMPERVIOUS AREA (C) =	2,803	SF
=	0.06	AC
IMPERVIOUS%=	54	
PERVIOUS AREA (C) =	2,419	SF
=	0.06	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.43**	**CFS**

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
PROPOSED DEVELOPMENT
PARCEL 2
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

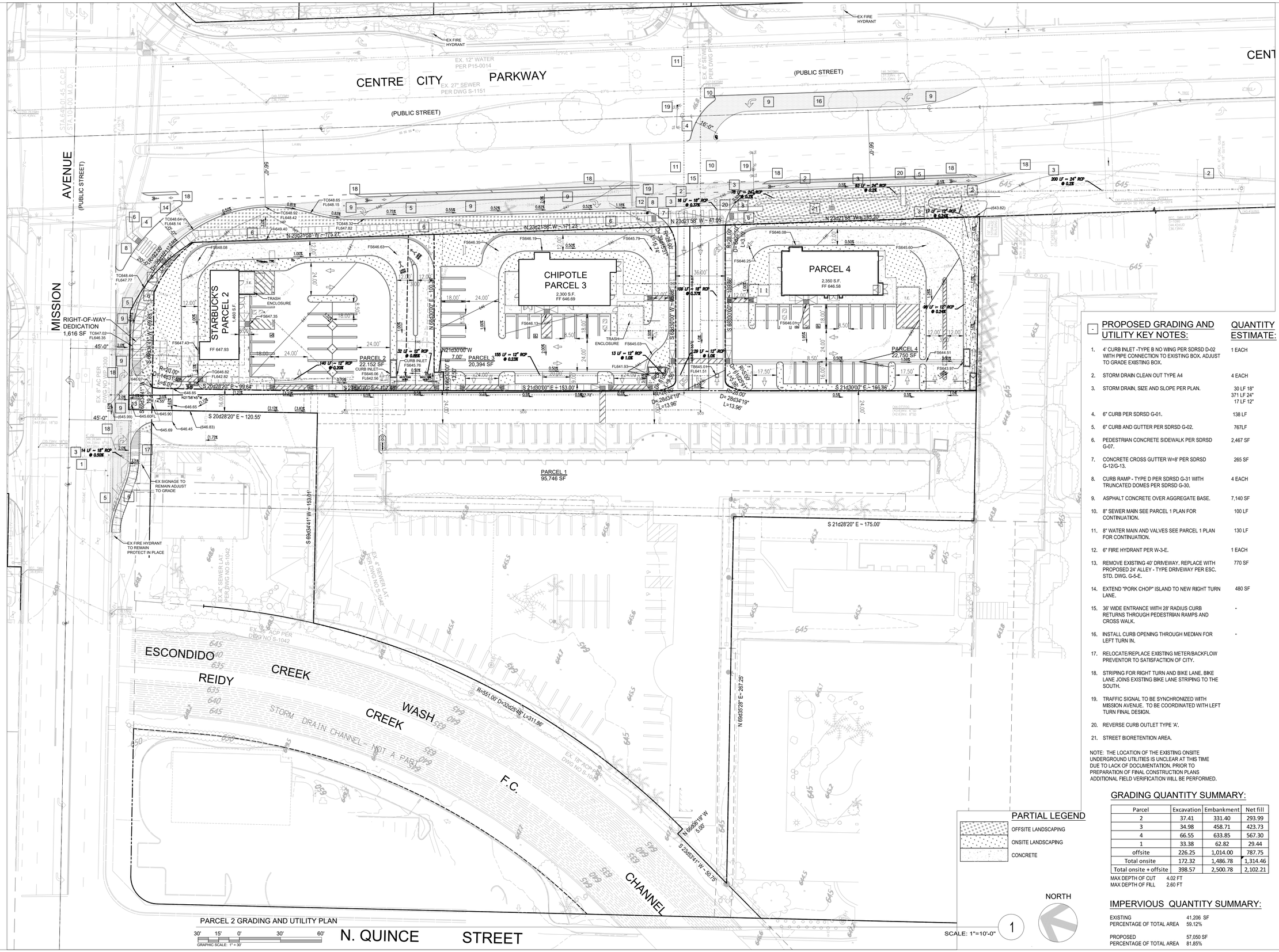
CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MOUR GROUP
SCALE:	AS SHOWN

SHEET TITLE:
DMA EXHIBIT

PARCEL 2

SHEET #
C103



PROPOSED GRADING AND UTILITY KEY NOTES:

		QUANTITY ESTIMATE:
1.	4' CURB INLET -TYPE B NO WING PER SDRSD D-02 WITH PIPE CONNECTION TO EXISTING BOX. ADJUST TO GRADE EXISTING BOX.	1 EACH
2.	STORM DRAIN CLEAN OUT TYPE A4	4 EACH
3.	STORM DRAIN, SIZE AND SLOPE PER PLAN.	30 LF 18" 371 LF 24" 17 LF 12"
4.	6" CURB PER SDRSD G-01.	138 LF
5.	6" CURB AND GUTTER PER SDRSD G-02.	767LF
6.	PEDESTRIAN CONCRETE SIDEWALK PER SDRSD G-07.	2,467 SF
7.	CONCRETE CROSS GUTTER W=8' PER SDRSD G-12/G-13.	265 SF
8.	CURB RAMP - TYPE D PER SDRSD G-31 WITH TRUNCATED DOMES PER SDRSD G-30.	4 EACH
9.	ASPHALT CONCRETE OVER AGGREGATE BASE.	7,140 SF
10.	8" SEWER MAIN SEE PARCEL 1 PLAN FOR CONTINUATION.	100 LF
11.	8" WATER MAIN AND VALVES SEE PARCEL 1 PLAN FOR CONTINUATION.	130 LF
12.	6" FIRE HYDRANT PER W-3-E.	1 EACH
13.	REMOVE EXISTING 40' DRIVEWAY, REPLACE WITH PROPOSED 24' ALLEY - TYPE DRIVEWAY PER ESC. STD. DWG. G-5-E.	770 SF
14.	EXTEND "PORK CHOP" ISLAND TO NEW RIGHT TURN LANE.	480 SF
15.	36' WIDE ENTRANCE WITH 28' RADIUS CURB RETURNS THROUGH PEDESTRIAN RAMPS AND CROSS WALK.	-
16.	INSTALL CURB OPENING THROUGH MEDIAN FOR LEFT TURN IN.	-
17.	RELOCATE/REPLACE EXISTING METER/BACKFLOW PREVENTOR TO SATISFACTION OF CITY.	
18.	STRIPING FOR RIGHT TURN AND BIKE LANE. BIKE LANE JOINS EXISTING BIKE LANE STRIPING TO THE SOUTH.	
19.	TRAFFIC SIGNAL TO BE SYNCHRONIZED WITH MISSION AVENUE. TO BE COORDINATED WITH LEFT TURN FINAL DESIGN.	
20.	REVERSE CURB OUTLET TYPE 'A'.	
21.	STREET BIORETENTION AREA.	

NOTE: THE LOCATION OF THE EXISTING ONSITE UNDERGROUND UTILITIES IS UNCLEAR AT THIS TIME DUE TO LACK OF DOCUMENTATION. PRIOR TO PREPARATION OF FINAL CONSTRUCTION PLANS ADDITIONAL FIELD VERIFICATION WILL BE PERFORMED.

PARTIAL LEGEND

- OFFSITE LANDSCAPING
- ONSITE LANDSCAPING
- CONCRETE

GRADING QUANTITY SUMMARY:

Parcel	Excavation	Embankment	Net fill
2	37.41	331.40	293.99
3	34.98	458.71	423.73
4	66.55	633.85	567.30
1	33.38	62.82	29.44
offsite	226.25	1,014.00	787.75
Total onsite	172.32	1,486.78	1,314.46
Total onsite + offsite	398.57	2,500.78	2,102.21

MAX DEPTH OF CUT 4.02 FT
MAX DEPTH OF FILL 2.60 FT

IMPERVIOUS QUANTITY SUMMARY:

EXISTING 41,206 SF
PERCENTAGE OF TOTAL AREA 59.12%

PROPOSED 57,050 SF
PERCENTAGE OF TOTAL AREA 81.85%

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
PROPOSED DEVELOPMENT
PARCEL 2
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE: MAY 7, 2024
PROJECT NO.: WM2301
DRAWN:
SCALE: AS SHOWN

SHEET TITLE:
OVERALL GRADING AND UTILITY PLAN

SHEET #
C104

Surface/Tree/Planter - External Bypass									
							Treatment Flow Rates		
Model	Structure Size (ft x ft)	Max Pipe Size (in)	Rim to Invert Depth[(d)] (ft)	Media (cy)	Mulch (cy)	Drain Rock (cy)	WA DOE 1.6 gpm/sf (cfs)	NJCAT 1.8 gpm/sf (cfs)	Max Peak Flow (cfs)
BPS/T/T-44	4 x 4	4	3.77	0.89	0.10	0.30	0.057	0.064	N/a
BPS/T/P-46	4 x 6	4	3.77	1.33	0.15	0.44	0.085	0.096	N/a
BPS/T/P-48	4 x 8	4	3.77	1.78	0.20	0.59	0.114	0.128	N/a
BPS/T/P-412	4 x 12	4	3.77	2.67	0.30	0.89	0.171	0.192	N/a
BPS/T/P-68	6 x 8	4	3.77	2.67	0.30	0.89	0.171	0.192	N/a
BPS/T/P-612	6 x 12	4	3.77	4.00	0.44	1.33	0.256	0.288	N/a
BPS/T/P-812	8 x 12	6	3.77	5.33	0.59	1.78	0.341	0.384	N/a
BPS/T/P-816	8 x 16	6	3.77	7.11	0.79	2.37	0.455	0.512	N/a

Notes:

(a) For depths less than minimum, contact Solution Engineering for design assistance.

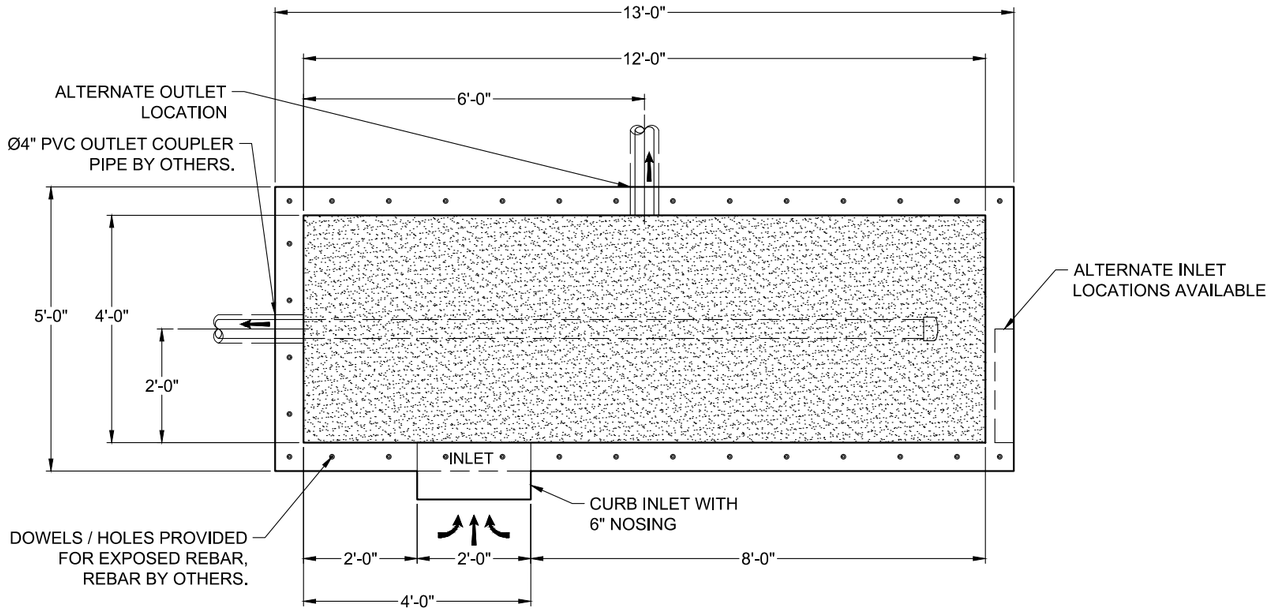
(b) For depths greater than the maximum, contact Solution Engineering for design assistance.

(c) Panel vault configuration only available in PNW. Check with local manufacturing for form availability.

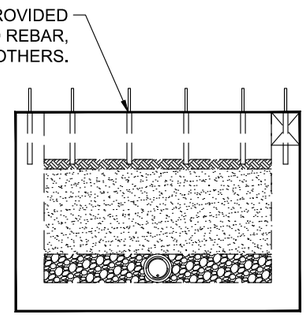
(d) Rim to invert depth for Planter Model, external bypass, is 3.50 ft.

SITE SPECIFIC DATA				
Structure ID				ID
Treatment Flow Rate (cfs)				-
Peak Flow Rate (cfs)				NA
Rim Elevation				-
Pipe Data	**Pipe Location**	**Pipe Size**	**Pipe Type**	**Invert Elevation**
Outlet	-	-	-	-
Notes:				

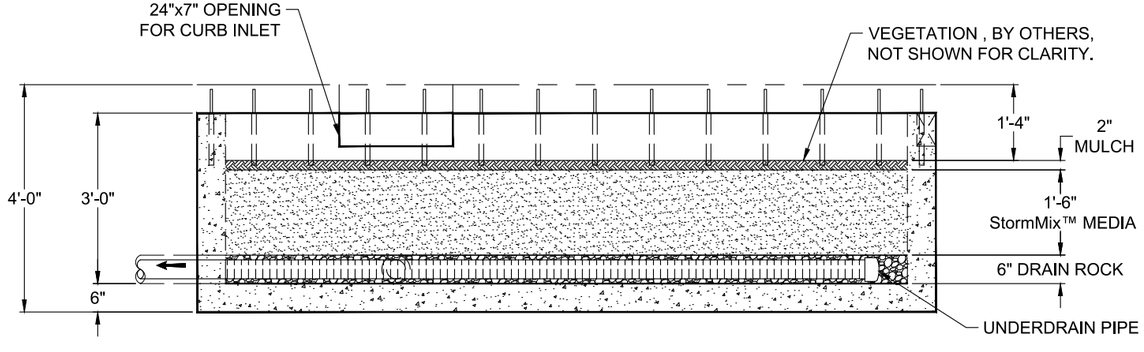
PERFORMANCE SPECIFICATIONS	
Treatment Flow Capacities:	
NJDEP 80% Removal, 75 micron	0.192 cfs
WA Ecology GULD - Basic, Enhanced & Phosphorus	0.171 cfs
Bypass Capacity	NA
*Contact Oldcastle for alternative treatment flow capacities.	



PLAN VIEW



LEFT END VIEW



ELEVATION VIEW

NOTES:

1. DESIGN LOADINGS:
   A. 300 PSF PEDESTRIAN LOADING
   B. DESIGN SOIL COVER: 0' MAXIMUM
   C. ASSUMED WATER TABLE: BELOW BASE OF PRECAST (ENGINEER-OF-RECORD TO CONFIRM SITE WATER TABLE ELEVATION)
   D. LATERAL EARTH PRESSURE: 45 PCF (DRAINED)
   E. LATERAL LIVE LOAD SURCHARGE: 80 PSF (APPLIED TO 8'-0" BELOW GRADE)
   F. NO LATERAL SURCHARGE FROM ADJACENT BUILDINGS, WALLS, PIERS, OR FOUNDATIONS.
2. CONCRETE 28-DAY MINIMUM COMPRESSIVE STRENGTH: 5,000 PSI MINIMUM.
3. REINFORCING: REBAR, ASTM A615/A706, GRADE 60
4. CEMENT: ASTM C150
5. REQUIRED ALLOWABLE SOIL BEARING CAPACITY: 2,500 PSF
6. REFERENCE STANDARD:
   A. ASTM C890
   B. ASTM C913
   C. ACI 318-14
7. THIS STRUCTURE IS DESIGNED TO THE PARAMETERS NOTED HEREIN. ENGINEER-OF-RECORD SHALL VERIFY THAT NOTED PARAMETERS MEET OR EXCEED PROJECT REQUIREMENTS. IF DESIGN PARAMETERS ARE INCORRECT, REVIEWING ENGINEER/AUTHORITY SHALL NOTIFY OLDCASTLE INFRASTRUCTURE UPON REVIEW.
8. INLET AND OUTLET HOLES WILL BE FACTORY CORED/CAST PER PLANS AND CUSTOMER REQUIREMENTS. INLET AND OUTLET LOCATIONS CAN BE MIRRORED.
9. CONTRACTOR RESPONSIBLE TO VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS.
10. CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
11. SECTION HEIGHTS, SLAB/WALL THICKNESSES, AND KEYWAYS ARE SUBJECT TO CHANGE AS REQUIRED FOR SITE REQUIREMENTS AND/OR DUE TO PRODUCT AVAILABILITY AND PRODUCTION FACILITY CONSTRAINTS.
12. MAXIMUM PICK WEIGHTS":
    A. BASE: XX,XXX LBS*
       (* COMBINED WEIGHT OF BASE INCLUDES BYPASS WEIR, DIVIDER WALL, ROCK & MEDIA)
13. INTERNALS SHALL CONSIST OF UNDERDRAIN PIPE, ROCK, STORMMIX™ MEDIA, AND MULCH.

Oldcastle Infrastructure™
A CRH COMPANY

Ph: 800.579.8819 | www.oldcastleinfrastructure.com/stormwater

BioPod™ Biofilter System (STANDARD)

Planter vault with External Bypass

CUSTOMER
-

PROJECT NAME
-

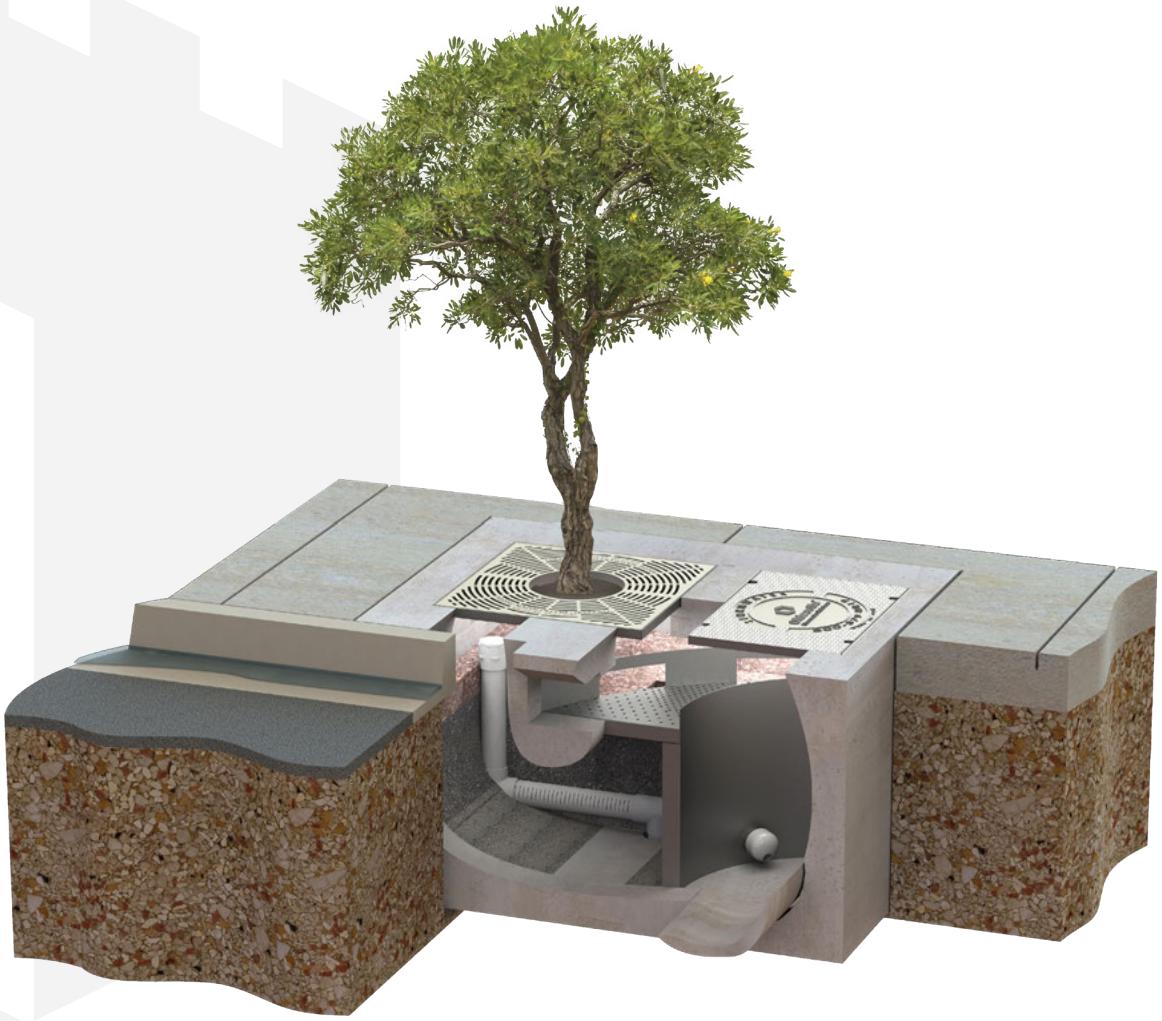
SHEET NAME	REVISION	SHEET
Specifier Drawing BPP-412EB	-	1 OF 1
	REV DATE -	

Bioretention/ Biofiltration

BIOPOD™ SYSTEM

with StormMix™ Media

Inspection & Maintenance Guide



Oldcastle Infrastructure™
A CRH COMPANY

BIOPOD™ BIOFILTER WITH STORMMIX™ BIOFILTRATION MEDIA

DESCRIPTION

The BioPod™ Biofilter System (BioPod) is a storm water biofiltration treatment system used to remove pollutants from storm water runoff. Impervious surfaces and other urban and suburban landscapes generate a variety of contaminants that can enter storm water and pollute downstream receiving waters unless treatment is provided. The BioPod system uses proprietary StormMix™ biofiltration media to capture and retain pollutants including total suspended solids (TSS), metals, nutrients, gross solids, trash and debris as well as petroleum hydrocarbons.

FUNCTION

The BioPod system uses engineered, high-flow rate filter media to remove storm water pollutants, allowing for a smaller footprint than conventional bioretention systems. Contained within a compact precast concrete vault, the BioPod system consists of a biofiltration chamber and an optional integrated high-flow bypass. The biofiltration chamber is filled with horizontal layers of aggregate, biofiltration media and mulch. Storm water passes vertically down through the mulch and biofiltration media for treatment. The mulch provides pretreatment by retaining most of the solids or sediment. The biofiltration media provides further treatment by retaining finer sediment and dissolved pollutants. The aggregate allows the media bed to drain evenly for discharge through an underdrain pipe or by infiltration.

INSPECTION & MAINTENANCE OVERVIEW

State and local regulations require all storm water management systems to be inspected on a regular basis and maintained as necessary to ensure performance and protect downstream receiving waters. Without maintenance, excessive pollutant buildup can limit system performance by reducing the operating capacity of the system and increasing the potential for scouring of pollutants during periods of high flow.

Some configurations of the BioPod may require periodic irrigation to establish and maintain vegetation. Vegetation will typically become established about two years after planting. Irrigation requirements are ultimately dependent on climate, rainfall and the type of vegetation selected.

INSPECTION & MAINTENANCE FREQUENCY

Periodic inspection is essential for consistent system performance and is easily completed. Inspection is typically conducted a minimum of twice per year, but since pollutant transport and deposition varies from site to site, a site-specific maintenance frequency should be established during the first two or three years of operation.

INSPECTION EQUIPMENT

The following equipment is helpful when conducting BioPod inspections:

- Recording device (pen and paper form, voice recorder, iPad, etc.)
- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- PPE as required for entry
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Socket

INSPECTION PROCEDURES

BioPod inspections are visual and are conducted without entering the unit. To complete an inspection, safety measures including traffic control should be deployed before the access covers or tree grates are removed. Once the covers have been removed, the following items should be checked and recorded (see form provided on page 6) to determine whether maintenance is required:

- If the BioPod unit is equipped with an internal bypass, inspect the inlet rack (or inlet chamber on underground units) and outlet chamber and note whether there are any broken or missing parts. In the unlikely event that internal parts are broken or missing, contact Oldcastle Storm water at (800) 579-8819 to determine appropriate corrective action.
- Note whether the curb inlet, inlet pipe, or inlet rack is blocked or obstructed.
- If the unit is equipped with an internal bypass, observe, quantify and record the accumulation of trash and debris in the inlet rack or inlet chamber. The significance of accumulated trash and debris is a matter of judgment. Often, much of the trash and debris may be removed manually at the time of inspection if a separate maintenance visit is not yet warranted.
- If it has not rained within the past 24 hours, note whether standing water is observed in the biofiltration chamber.
- Finally, observe, quantify and record presence of invasive vegetation and the amount of trash and debris and sediment load in the biofiltration chamber. Erosion of the mulch and biofiltration media bed should also be recorded. Often, much of the invasive vegetation and trash and debris may be removed manually at the time of inspection if a separate maintenance visit is not yet warranted. Sediment load may be rated light, medium or heavy depending on the conditions. Loading characteristics may be determined as follows:
  - **Light sediment load** – sediment is difficult to distinguish among the mulch fibers at the top of the mulch layer; the mulch appears almost new.
  - **Medium sediment load** – sediment accumulation is apparent and may be concentrated in some areas; probing the mulch layer reveals lighter sediment loads under the top 1" of mulch.
  - **Heavy sediment load** – sediment is readily apparent across the entire top of the mulch layer; individual mulch fibers are difficult to distinguish; probing the mulch layer reveals heavy sediment load under the top 1" of mulch.

MAINTENANCE INDICATORS

Maintenance should be scheduled if any of the following conditions are identified during inspection:

- The concrete structure is damaged or the tree grate or access cover is damaged or missing
- The inlet obstructed
- Standing water is observed in the biofiltration chamber more than 24 hours after a rainfall event (use discretion if the BioPod is located downstream of a storage system that attenuates flow)
- Trash and debris in the inlet rack cannot be easily removed at the time of inspection
- Trash and debris, invasive vegetation or sediment load in the biofiltration chamber is heavy or excessive erosion has occurred

MAINTENANCE EQUIPMENT

The following equipment is helpful when conducting BioPod maintenance:

- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- PPE as required for entry
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Rake, hoe, shovel and broom
- Bucket
- Pruners
- Vacuum truck (optional)
- Socket

MAINTENANCE PROCEDURES

Maintenance should be conducted during dry weather when no flows are entering the system. In most cases, maintenance may be conducted without entering. Entry may be required to maintain BioPod Underground units, depending on system depth. Once safety measures such as traffic control are deployed, the access covers may be removed and the following activities may be conducted to complete maintenance:

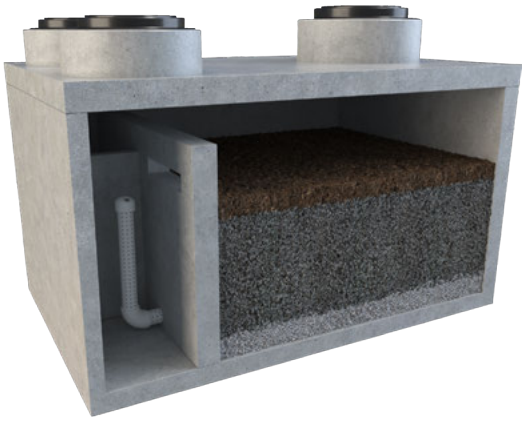
- Remove all trash and debris from the curb inlet and inlet rack manually or by using a vacuum truck as required.
- Remove all trash and debris and invasive vegetation from the biofiltration chamber manually or by using a vacuum truck as required.
- If the sediment load is medium or light but erosion of the biofiltration media bed is evident, redistribute the mulch with a rake or replace missing mulch as appropriate. If erosion persists, rocks may be placed in the eroded area to help dissipate energy and prevent recurring erosion.
- If the sediment load is heavy, remove the mulch layer using a hoe, rake, shovel and bucket, or by using a vacuum truck as required. If the sediment load is particularly heavy, inspect the surface of the biofiltration media once the mulch has been removed. If the media appears clogged with sediment, remove and replace one or two inches of biofiltration media prior to replacing the mulch* layer.
- Prune vegetation as appropriate and replace damaged or dead plants as required.
- Replace the tree grate and/or access covers and sweep the area around the BioPod to leave the site clean.
- All material removed from the BioPod during maintenance must be disposed of in accordance with local environmental regulations. In most cases, the material may be handled in the same manner as disposal of material removed from sumped catch basins or manholes.

* Natural, shredded hardwood mulch should be used in the BioPod. Timely replacement of the mulch layer according to the maintenance indicators described above should protect the biofiltration media below the mulch layer from clogging due to sediment accumulation. However, whenever the mulch is replaced, the BioPod should be visited 24 hours after the next major storm event to ensure that there is no standing water in the biofiltration chamber. Standing water indicates that the biofiltration media below the mulch layer is clogged and must be replaced. Please contact Oldcastle Infrastructure at (800) 579-8819 to purchase the proprietary StormMix™ biofiltration media.

BIOPOD SURFACE

BIOPOD TREE

BIOPOD PLANTER



BIOPOD UNDERGROUND

BIOPOD INSPECTION & MAINTENANCE LOG

BioPod Model _____ Inspection Date _____

Location _____

Condition of Internal Components *NOTES:*

☐ **GOOD** ☐ **DAMAGED** ☐ **MISSING**

Curb Inlet or Inlet Rack Blocked *NOTES:*

☐ **YES** ☐ **NO**

Standing Water in Biofiltration Chamber *NOTES:*

☐ **YES** ☐ **NO**

Trash and Debris in Inlet Rack *NOTES:*

☐ **YES** ☐ **NO**

Trash and Debris in Biofiltration Chamber *NOTES:*

☐ **YES** ☐ **NO**

Invasive Vegetation in Biofiltration Chamber *NOTES:*

☐ **YES** ☐ **NO**

Sediment in Biofiltration Chamber *NOTES:*

☐ **LIGHT** ☐ **MEDIUM** ☐ **HEAVY**

Erosion in Biofiltration Chamber *NOTES:*

☐ **YES** ☐ **NO**

Maintenance Requirements

☐ **YES - Schedule Maintenance** ☐ **NO - Schedule Re-Inspection**

NOTES

APPENDIX D.2

Parcel 3 (Chipotle)

City of Escondido
PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Chipotle - Escondido
Parcel-3

W. Mission Ave & Centre City Pkwy
Escondido, CA 92025

ASSESSOR'S PARCEL NUMBER(S):
229-171-29, 229-171-30

ENGINEER OF WORK:

Erin Sweeney, PE

PREPARED FOR:
501 W. Mission, LLC

PDP SWQMP PREPARED BY:
Mour Group Engineer + Design
6593 Riverdale St.
San Diego, CA 92120
619-727-4800

DATE OF SWQMP:
5-15-2024

PLANS PREPARED BY:
Mour Group Engineering + Design
6593 Riverdale St.
San Diego, CA 92120
619-727-4800

SWQMP APPROVED BY:

APPROVAL DATE:

ESCONDIDO
City of Choice

This page was left intentionally blank.

TABLE OF CONTENTS

TABLE OF CONTENTS iii
ATTACHMENTS iv
ACRONYMS iv
PDP SWQMP PREPARER'S CERTIFICATION PAGE v
SUBMITTAL RECORD vi
PROJECT VICINITY MAP vii
Step 1: Project type determination 1
Step 1.1: Storm Water Quality Management Plan requirements 1
Step 1.2: Exemption to PDP definitions 2
Step 1.3: Confirmation of PDP Determination 3
Step 2: City of Escondido PDP SWQMP Site Information Checklist 5
Step 2.1: Description of Existing Site Condition and Drainage Patterns 5
Step 2.2: Description of Existing Site Drainage Patterns 6
Step 2.3: Description of Proposed Site Development 7
Step 2.4: Description of Proposed Site Drainage Patterns 8
Step 2.5: Potential Pollutant Source Areas 9
Step 2.6: Identification of Receiving Water and Pollutants of Concern 10
Step 2.7: Hydromodification Management Requirements 11
Step 2.7.1: Critical Coarse Sediment Yield Areas 12
Step 2.7.2: Flow Control for Post-Project Runoff 13
Step 2.8: Other Site Requirements and Constraints 14
Step 3: Source Control BMP Checklist 15
Step 4: Site Design BMP Checklist 17
Step 5: Summary of Structural BMPs 19
Step 5.1: Offsite Alternative Compliance Participation Form 22

ATTACHMENTS

Attachment 1: Backup for PDP Pollutant Control BMPs
- Attachment 1a: Storm Water Pollutant Control Worksheet Calculations (Applicable worksheets)
- Attachment 1b: Form I-8, Categorization of Infiltration Feasibility Condition
- Attachment 1c: Form I-9, Factor of Safety and Design Infiltration Rate Worksheet
- Attachment 1d: Drainage Management Area (DMA) Exhibit
- Attachment 1e: Individual Structural BMP DMA Mapbook

Attachment 2: Backup for PDP Hydromodification Control Measures
- Attachment 2a: Flow Control Facility Design
- Attachment 2b: Hydromodification Management Exhibit
- Attachment 2c: Management of Critical Coarse Sediment Yield Areas
- Attachment 2d: Geomorphic Assessment of Receiving Channels (optional)
- Attachment 2e: Vector Control Plan (if applicable)

Attachment 3: Structural BMP Maintenance Plan
- Attachment 3a: Structural BMP Maintenance Thresholds and Actions
- Attachment 3b: Draft Maintenance Agreements / Notifications (when applicable)

Attachment 4: City of Escondido PDP Structural BMP Verification

Attachment 5: Copy of Plan Sheets Showing Permanent Storm Water BMPs

ACRONYMS

ACP	Alternative Compliance Project
APN	Assessor's Parcel Number
BMP	Best Management Practice
DMA	Drainage Management Area
EOW	Engineer of Work
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
PDP	Priority Development Project
PE	Professional Engineer
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Quality Control Board
SIC	Standard Industrial Classification
SWDM	Storm Water Design Manual
SWQMP	Storm Water Quality Management Plan
USGS	US Geological Survey
WMAA	Watershed Management Area Analysis
WQIP	Water Quality Improvement Plan

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

PDP SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: Chipotle - Escondido
Permit Number: PL22-0396

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of Escondido Storm Water Design Manual, which is a design manual for compliance with the City of Escondido Municipal Code (Chapter 22, Article 2) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100) requirements for storm water management.

I have read and understand that the City of Escondido has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the Storm Water Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by City staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

Engineer of Work's Signature, PE Number & Expiration Date

Erin Sweeney

Print Name

Mour Group Engineering + Design

Company

5-15-2024

Date

Engineer's Seal:

SUBMITTAL RECORD

Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

Preliminary Design / Planning / CEQA

Submittal Number	Date	Summary of Changes
1	2-29-2024	Initial Submittal
2	5-15-2024	Resubmittal
3		
4		

Final Design

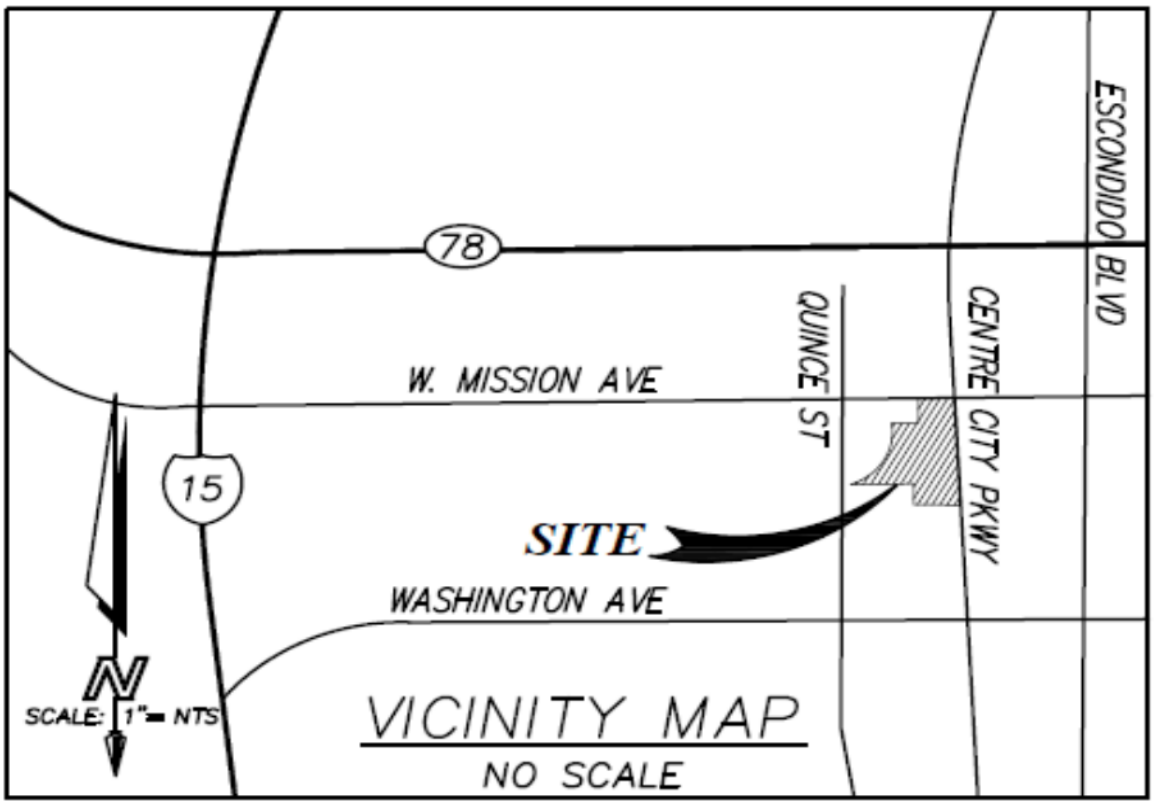
Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

Plan Changes

Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

PROJECT VICINITY MAP

Project Name: Chipotle - Escondido
Permit Number: PL22-0396



Step 1: Project type determination

Site Information Checklist for PDPs	Form I-2a
Project Summary Information	
Project Name	Chipotle Escondido
Project Address	502 W. Mission Ave Escondido, CA 92025
Assessor's Parcel Number(s)	229-171-29, 229-171-30
Permit Number	PL22-0396
Project Watershed (Hydrologic Unit)	Select One: ☑ Carlsbad 904 ☐ San Dieguito 905
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	0.47 Acres (20,394 Square Feet)
Area to be disturbed by the project (Project Area)	0.47 Acres (20,394 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	0.39 Acres (16,786 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	0.08 Acres (3,608 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Step 1.1: Storm Water Quality Management Plan requirements

Site Information Checklist for PDPs		Form I-2a
Step	**Answer**	**Progression**
Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, complete Step 1 Project Type Determination Checklist on Pages 3 and 4, and see PDP exemption information below. For further guidance, see Section 1.4 of the Storm Water Design Manual *in its entirety*.	☐ Standard Project	Standard Project requirements apply. **Complete Form I-1.**
	▬ PDP	Standard and PDP requirements apply, including PDP SWQMP. **SWQMP Required.**
	☐ PDP with ACP	If participating in offsite alternative compliance, **complete Step 5.1** (Offsite Alternative Compliance Participation Form) **and an ACP SWQMP.**
	☐ PDP Exemption	**Go to Step 1.2 below.**

Step 1.2: Exemption to PDP definitions

Site Information Checklist for PDPs	Form I-2a
Is the project exempt from PDP definitions based on either of the following: ☐ Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria: (i) Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR (ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR (iii) Designed and constructed with permeable pavements or surfaces in accordance with County of San Diego Green Streets Infrastructure;	If so: Standard Project requirements apply, AND any additional requirements specific to the type of project. City concurrence with the exemption is required. *Provide discussion and list any additional requirements below in this form.*
☐ Projects that are only retrofitting or redeveloping existing paved alleys, streets or roads that are designed and constructed in accordance with the County of San Diego Green Streets Infrastructure;	**PDP Exempt.**
Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:	

Step 1.3: Confirmation of PDP Determination

Site Information Checklist for PDPs			Form I-2a
The project is (select one): ☐ New Development ⬓ Redevelopment[1]			
The total proposed newly created or replaced impervious area is: 16,786 ft²			
The project meets the following categories, (a) through (f): [select all that apply]			
Yes ☐	No ☑	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☑	No ☐	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☑	No ☐	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). *Information and an SIC search function are available at www.osha.gov/pls/imis/sicsearch.html.* (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
Yes ☐	No ☑	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any*

[1] Redevelopment is defined as: The creation and/or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include routine maintenance activities, such as trenching and resurfacing associated with utility work; pavement grinding; resurfacing existing roadways; sidewalks; pedestrian ramps; or bike lanes on existing roads; and routine replacement of damaged pavement, such as pothole repair.

Site Information Checklist for PDPs			Form I-2a
			other equivalent environmentally sensitive areas which have been identified by the Copermittees. *For projects adjacent to an ESA, but not discharging to an ESA, the 2,500 square foot threshold does not apply as long as the project does not physically disturb the ESA and the ESA is upstream of the project.*
Yes ☐	No ☑	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. *Information and an SIC search function are available at www.osha.gov/pls/imis/sicsearch.html.* (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes ☐	No ☑	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. Note: See Storm Water Design Manual Section 1.4.2 for additional guidance.

The following is for redevelopment PDPs only:

The area of existing (pre-project) impervious area at the project site is:	A	4,685	ft^2
The total proposed newly created or replaced impervious area is:	B	15,710	ft^2
Percent impervious surface created or replaced:	(B/A)*100	335	%

The percent impervious surface created or replaced is (select one based on the above calculation):

☐ **less than or equal to fifty percent (50%)** – only newly created or replaced impervious areas are considered a PDP and subject to stormwater requirements

OR

☒ **greater than fifty percent (50%)** – the entire project site is considered a PDP and subject to stormwater requirements

Step 2: City of Escondido PDP SWQMP Site Information Checklist

Step 2.1: Description of Existing Site Condition and Drainage Patterns

Site Information Checklist for PDPs | **Form I-2a**

Current Status of the Site (select all that apply):
- ■ Existing development
- ☐ Previously graded but not built out
- ☐ Demolition completed without new construction
- ☐ Agricultural or other non-impervious use
- ☐ Vacant, undeveloped/natural

Description / Additional Information:

Current site consists of parking area, and pool .

Existing Land Cover Includes (select all that apply and provide each area on site):
- ■ Vegetative Cover 0.36 Acres (15,710 Square Feet)
- ☐ Non-Vegetated Pervious Areas 0 Acres (0 Square Feet)
- ■ Impervious Areas 0.11 Acres (4,685 Square Feet)

Description / Additional Information:

Current site consists of parking area, and pool .

Underlying Soil belongs to Hydrologic Soil Group (select all that apply):
- ☐ NRCS Type A
- ☐ NRCS Type B
- ☐ NRCS Type C
- ■ NRCS Type D

Approximate Depth to Groundwater (GW) (or N/A for no infiltration BMPs):
- ☐ Groundwater Depth < 5 feet
- ☐ 5 feet < Groundwater Depth < 10 feet
- ■ 10 feet < Groundwater Depth < 20 feet
- ☐ Groundwater Depth > 20 feet

Existing Natural Hydrologic Features (select all that apply):
- ☐ Watercourses
- ☐ Seeps
- ☐ Springs
- ☐ Wetlands
- ■ None
- ☐ Other

Description / Additional Information:

Current site consists of parking area, and pool .

Step 2.2: Description of Existing Site Drainage Patterns

Site Information Checklist for PDPs	Form I-2a
How is storm water runoff conveyed from the site? At a minimum, this description should answer (1) whether existing drainage conveyance is natural or urban; (2) describe existing constructed storm water conveyance systems, if applicable; and (3) is runoff from offsite conveyed through the site? If so, describe:	
1. The existing drainage conveyance is urban, as part of the site improvements developed for the existing restaurant building, park, pool, tennis courts. 2. The existing storm drain network is shown on the existing drainage map (C201). Stormwater runoff in the existing condition flows from north to south via sheet flow. There is one existing drainage box with a 6” and 8” diameter storm drain outlet to the southeast of the site with an unknown discharge location. All runoff from the site eventually flows south within the right-of-way of Centre City Pkwy where it is collected within a concrete drainage flume that has an inlet to a 24” diameter storm drain. The 24” storm drain eventually connects to a 42” storm drain that runs west and connects to Escondido Creek. 3. There is no offsite runoff conveyed through the property.	

Step 2.3: Description of Proposed Site Development

Site Information Checklist for PDPs	Form I-2a

Project Description / Proposed Land Use and/or Activities:

Chipotle is proposing to re-develop the existing site for the development of a new restaurant building, drive-thru lane, and onsite parking. The proposed land use is consistent with the existing use, which is as a restaurant facility. Re-development improvements occur throughout the entire site area. The overall project includes two other drive-thru restaurants that are documented separately

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):

Proposed impervious features include a new restaurant building, drive-thru lane, concrete sidewalks and flatwork, and asphalt paved parking lot.

List/describe proposed pervious features of the project (e.g., landscape areas):

Landscape planter areas.

Does the project include grading and changes to site topography?

- ■ Yes
- ☐ No

Description / Additional Information:

The entire site will be demolished, and new grading is required to support the drainage from the new building. The grading will be a mild change for the new building footprint, drive-thru and parking layout.

Insert acreage or square feet for the different land cover types in the table below:

Change in Land Cover Type Summary

Land Cover Type	Existing (acres or ft^2)	Proposed (acres or ft^2)	Percent Change
Vegetation	15,710	3,608	-77
Pervious (non-vegetated)	0	0	0
Impervious	4,685	16,786	258
total	20,394	20,394	Sum Existing must equal Sum Proposed

Step 2.4: Description of Proposed Site Drainage Patterns

Site Information Checklist for PDPs	Form I-2a

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

- ☒ Yes
- ☐ No

If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.

Describe proposed site drainage patterns:

Parcel 3 has one drainage basin. Parcel 3 is graded so that all drainage can surface flow to the Oldcastle Biopod Planter in the south corner of the site. The biopod planter is connected via underground pipe and conveyed in a southerly direction within a public storm drain system which eventually discharges into the Escondido Creek. Said creek has been determined to be Hydromodification Exempt per the city of Carlsbad WMA WQIP (May 2018 and Subsequent updates).

Step 2.5: Potential Pollutant Source Areas

Site Information Checklist for PDPs	Form I-2a

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply).

- ☐ On-site storm drain inlets
- ☐ Interior floor drains and elevator shaft sump pumps
- ☐ Interior parking garages
- ■ Need for future indoor & structural pest control
- ■ Landscape/Outdoor Pesticide Use
- ☐ Pools, spas, ponds, decorative fountains, and other water features
- ■ Food service
- ■ Refuse areas
- ☐ Industrial processes
- ☐ Outdoor storage of equipment or materials
- ☐ Vehicle and Equipment Cleaning
- ☐ Vehicle/Equipment Repair and Maintenance
- ☐ Fuel Dispensing Areas
- ☐ Loading Docks
- ■ Fire Sprinkler Test Water
- ■ Miscellaneous Drain or Wash Water
- ■ Plazas, sidewalks, and parking lots
- ☐ Large Trash Generating Facilities
- ☐ Animal Facilities
- ☐ Nurseries and Garden Centers
- ☐ Automotive Facilities
- ☐ Other (provide description)

Description / Additional Information:

Step 2.6: Identification of Receiving Water and Pollutants of Concern

Site Information Checklist for PDPs	Form I-2a

Describe path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):

The site drains to a public storm drain system which eventually discharges into the Escondido Creek. Said creek has been determined to be Hydromodification Exempt per the city of Carlsbad WMA WQIP (May 2018 and Subsequent updates).

List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
Escondido Creek	Phosphate,TDS,sulfate,mangenese	
	DDT, bacteria,toxicity,nitrogen,selennium	
	Benthic comm eff.bifenthrin,malathion	

Identification of Project Site Pollutants*

*Identification of project site pollutants below is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs. Note the project must also participate in an alternative compliance program (unless prior lawful approval to meet earlier PDP requirements is demonstrated).

Identify pollutants expected from the project site based on all proposed use(s) of the site (see Storm Water Design Manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Anticipated from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment		x	
Nutrients		x	x
Heavy Metals		x	x
Organic Compounds		x	x
Trash & Debris		x	x
Oxygen Demanding Substances		X	X
Oil & Grease		x	
Bacteria & Viruses		x	x
Pesticides		x	

Step 2.7: Hydromodification Management Requirements

Site Information Checklist for PDPs	Form I-2a

Do hydromodification management requirements apply (see Section 1.6 of the Storm Water Design Manual)?

☐ Yes, hydromodification management requirements for flow control and preservation of critical coarse sediment yield areas are applicable.

☐ No, the project will discharge runoff directly to the exempt portion of Escondido Creek as detailed in the Carlsbad Watershed WQIP (May 2018 Update). Direct discharge is defined in section 1.6 of the Escondido Storm Water Design Manual.

☐ No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean. Refer to HMP Exhibit in Attachment 2.

☒ No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean. Refer to HMP Exhibit in Attachment 2.

Note: Direct Discharge refers to an uninterrupted hardened conveyance system. Projects claiming the Direct Discharge exemption must satisfy the applicable criteria (energy dissipation, invert elevation, etc.) included in Section 1.6 of the Escondido Storm Water Design Manual.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

Escondido Creek is a Hydromodification Exempt River Reach based on the latest Carlsbad WMA WQIP.

HMP Exemption Exhibit

Attach an HMP Exemption Exhibit that shows direct storm water runoff discharge from the project site to the HMP exempt area. Include project area, applicable underground storm drain line and/or concrete lined channels, outfall information, and exempt waterbody.

Reference applicable drawing number(s).

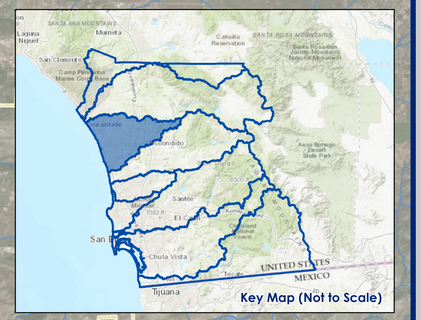
Carlsbad Watershed Management Area
HU 904.00, 211 mi2

Legend

- Watershed Boundaries
- Municipal Boundaries
- Regional WMAA Streams
- **Exempt Bodies:** Water Storage Reservoirs, Lakes, Enclosed Embayments, Pacific Ocean, Buena Vista Lagoon
- **Exempt River Reaches:** Reaches of San Luis Rey River, San Dieguito River, San Diego River, Forester Creek, Sweetwater River, Otay River
- **Exempt Conveyance Systems:** Existing underground storm drains or conveyance channels whose bed and bank are concrete-lined, discharging directly to exempt water bodies, exempt rivers, or localized areas of Agua Hedionda Lagoon and Batiquitos Lagoon

ta Margarita River
San Luis Re
OCEANSIDE
VISTA
Buena Vista Creek
Agua Hedionda Creek
CARLSBAD
SAN MARCOS
S.D. COUNTY
ESCONDIDO
Escondido Creek
S.D. COUNTY
SITE
Santa Ysabel Creek
San Marcos Creek
Encinitas Creek
Escondido Creek
S.D. COUNTY
San Dieguito River
San Dieguito River
ENCINITAS
Lusardi Creek
POWAY
SAN DIEGO
Rattlesnake Creek
DEL MAR

Aerial Imagery Source: DigitalGlobe, 06/2012



Key Map (Not to Scale)

0 2.5 5 10 Miles

NORTH

Receiving Waters and Conveyance Systems Exempt from Hydromodification Management Requirements

Exhibit Date: Sept. 8, 2014
Revised Date: Sept. 6, 2018

Geosyntec consultants
RICK ENGINEERING COMPANY

Step 2.7.1: Critical Coarse Sediment Yield Areas

Site Information Checklist for PDPs	Form I-2a

☐ **N/A - This Section only required if hydromodification management requirements apply**

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

☐ Yes

☒ No, no critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Appendix H of the manual been performed?

☐ H.6.1 Site-Specific GLU Analysis

☐ H.7 Downstream Systems Sensitivity to Coarse Sediment

- H.7.1 Depositional Analysis,
- H.7.2 Threshold Channel Analysis, or
- H.7.3 Course Sediment Source Area Verification Analysis

☐ No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

☐ No critical coarse sediment yield areas to be protected based on verification of GLUs onsite.

☐ Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 8 of the SWQMP.

☐ Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections H.2, H.3, and H.4 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

N/A

Step 2.7.2: Flow Control for Post-Project Runoff

Site Information Checklist for PDPs	Form I-2a

☐ **N/A - This Section only required if hydromodification management requirements apply**

List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.

N/A

Has a geomorphic assessment been performed for the receiving channel(s)?

- ■ No, the low flow threshold is 0.1Q2 (default low flow threshold)
- ☐ Yes, the result is the low flow threshold is 0.1Q2
- ☐ Yes, the result is the low flow threshold is 0.3Q2
- ☐ Yes, the result is the low flow threshold is 0.5Q2

If a geomorphic assessment has been performed, provide title, date, and preparer:

N/A

Discussion / Additional Information: (optional)

N/A

Select method used to determine low flow threshold:

- ☐ Sizing Factor Method
- ☐ US Geological Survey (USGS) Equation
- ☐ Continuous Simulation Modeling

Step 2.8: Other Site Requirements and Constraints

Site Information Checklist for PDPs	Form I-2a
When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.	
Optional Additional Information or Continuation of Previous Sections As Needed	
This space provided for additional information or continuation of information from previous sections as needed.	

Step 3: Source Control BMP Checklist

Source Control BMP Checklist for PDPs			Form I-2b
All development projects must implement source control BMPs 4.2.1 through 4.2.6 where applicable and feasible. See Chapter 4.2 and Appendix E of the City Storm Water Design Manual for information to implement source control BMPs shown in this checklist. The following checklists serve as guides only. Mark what elements are included in your project. See Storm Water Design Manual Chapter 4 and Appendix E for more information on determining appropriate BMPs for your project. Answer each category below pursuant to the following: • "Yes" means the project will implement the source control BMP as described in Chapter 4.2 and/or Appendix E of the City Storm Water Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification must be provided.			
Source Control Requirement	**Applied?**		
4.2.1 Prevention of Illicit Discharges into the MS4	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.1 not implemented:			
4.2.2 Storm Drain Stenciling or Signage	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.2 not implemented:			
4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	■ N/A
Discussion / justification if 4.2.3 not implemented:			
4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	■ N/A
Discussion / justification if 4.2.4 not implemented:			
4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.5 not implemented:			

Form I-2b Page 2 of 2			
Source Control Requirement	**Applied?**		
4.2.6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below):			
■ Onsite storm drain inlets	■ Yes	☐ No	☐ N/A
☐ Interior floor drains and elevator shaft sump pumps	☐ Yes	☐ No	☐ N/A
☐ Interior parking garages	☐ Yes	☐ No	☐ N/A
■ Need for future indoor & structural pest control	■ Yes	☐ No	☐ N/A
■ Landscape/outdoor pesticide use	■ Yes	☐ No	☐ N/A
☐ Pools, spas, ponds, decorative fountains, and other water features	☐ Yes	☐ No	☐ N/A
■ Food service	■ Yes	☐ No	☐ N/A
■ Refuse areas	■ Yes	☐ No	☐ N/A
☐ Industrial processes	☐ Yes	☐ No	☐ N/A
☐ Outdoor storage of equipment or materials	☐ Yes	☐ No	☐ N/A
☐ Vehicle and equipment cleaning	☐ Yes	☐ No	☐ N/A
☐ Vehicle/equipment repair and maintenance	☐ Yes	☐ No	☐ N/A
☐ Fuel dispensing areas	☐ Yes	☐ No	☐ N/A
☐ Loading docks	☐ Yes	☐ No	☐ N/A
■ Fire sprinkler test water	■ Yes	☐ No	☐ N/A
■ Miscellaneous drain or wash water	■ Yes	☐ No	☐ N/A
■ Plazas, sidewalks, and parking lots	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for all "No" answers shown above.			

Note: Show all source control measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 4: Site Design BMP Checklist

Site Design BMP Checklist for PDPs			Form I-2c
All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement site design BMPs shown in this checklist. Answer each category below pursuant to the following. • "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification must be provided.			
Site Design Requirement	**Applied?**		
4.3.1 Maintain Natural Drainage Pathways and Hydrologic Features	☐ Yes	☐ No	■ N/A
Discussion / justification if 4.3.1 not implemented:			
There are no existing natural drainage pathways, however the existing urban drainage pathway is being maintained.			
1-1 Are existing natural drainage pathways and hydrologic features mapped on the site map?	■ Yes	☐ No	☐ N/A
1-2 Are trees implemented? If yes, are they shown on the site map?	☐ Yes	☐ No	■ N/A
1-3 Implemented trees meet the design criteria in 4.3.1 Fact Sheet (e.g. soil volume, maximum credit, etc.)?	☐ Yes	☐ No	■ N/A
1-4 Is tree credit volume calculated using Appendix B.2.2.1 and SD-1 Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A
4.3.2 Conserve Natural Areas, Soils, and Vegetation	☐ Yes	■ No	☐ N/A
Discussion / justification if 4.3.2 not implemented:			
Development of the Chipotle requires demolition of all existing features.			
4.3.3 Minimize Impervious Area	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.3 not implemented:			
4.3.4 Minimize Soil Compaction	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.4 not implemented:			

Form I-2c Page 2 of 2			
Site Design Requirement	**Applied?**		
4.3.5 Impervious Area Dispersion	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.5 not implemented:			
5-1 Is the pervious area receiving runon from impervious area identified on the site map?	■ Yes	☐ No	☐ N/A
5-2 Does the pervious area satisfy the design criteria in 4.3.5. Fact Sheet in Appendix E (e.g. maximum slope, minimum length, etc.)	☐ Yes	☐ No	■ N/A
5-3 Is impervious area dispersion credit volume calculated using Appendix B.2.1.1 and 4.3.5 Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A
4.3.6 Runoff Collection	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.6 not implemented:			
6a-1 Are green roofs implemented in accordance with design criteria in 4.3.6A Fact Sheet? If yes, are they shown on the site map?	☐ Yes	☐ No	■ N/A
6a-2 Is the green roof credit volume calculated using Appendix B.2.1.2 and 4.3.6A Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A
6b-1 Are permeable pavements implemented in accordance with design criteria in 4.3.6B Fact Sheet? If yes, are they shown on the site map?	☐ Yes	☐ No	■ N/A
6b-2 Is the permeable pavement credit volume calculated using Appendix B.2.1.3 and 4.3.6B Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A
4.3.7 Landscaping with Native or Drought Tolerant Species	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.7 not implemented:			
4.3.8 Harvesting and Using Precipitation	☐ Yes	■ No	☐ N/A
Discussion / justification if 4.3.8 not implemented:			
Low demand on urinal, toilet, and irrigation water.			
8-1 Are rain barrels implemented in accordance with design criteria in 4.3.8 Fact Sheet? If yes, are they shown on the site map?	☐ Yes	☐ No	■ N/A
8-2 Is the rain barrel credit volume calculated using Appendix B.2.2.2 and 4.3.8 Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A

Note: Show all site design measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 5: Summary of Structural BMPs

Summary of Structural BMPs	Form I-3

PDP Structural BMPs

All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).

PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative to certify construction of the structural BMPs (see Section 1.12 of the manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the manual).

Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).

Description of Structural BMP Strategy

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

The site drains to BMP (Oldcastle Biopod) located at southwest corner of the property. The Proposed BMP has treatment capacity higher than required (per worksheet B.6-1), higher infiltration rate of 153 in/hr and unlimited external bypass system. The biopod planter is connected via underground pipe and conveyed within a public storm drain system which eventually discharges into the Escondido Creek. Said creek has been determined to be Hydromodification Exempt per the city of Carlsbad WMA WQIP (May 2018 and Subsequent updates).

(Continue on page 2 as necessary.)

Form I-3 Page 2 of 3
(Page reserved for continuation of description of general strategy for structural BMP implementation at the site)
(Continued from page 1)

Form I-3 Page 3 of 3

Structural BMP Summary Information

(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BMP-2

Construction Plan Sheet No. C200 - C204

Type of structural BMP:

☐Retention by harvest and use (HU-1)
☐Retention by infiltration basin (INF-1)
☐Retention by bioretention (INF-2)
☐Retention by permeable pavement (INF-3)
☐Retention by dry wells (INF-4)
☐Partial retention by biofiltration with partial retention (PR-1)
☐Biofiltration (BF-1)
☐Biofiltration with Nutrient Sensitive Media Design (BF-2)
■Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
☐Detention pond or vault for hydromodification management
☐Other (describe in discussion section below)

Purpose:

■Pollutant control only
☐Hydromodification control only
☐Combined pollutant control and hydromodification control
☐Pre-treatment/forebay for another structural BMP
☐Other (describe in discussion section below)

Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	Mour Group Engineering + Design Erin Sweeney, P.E. 619-727-4800
Who will be the final owner of this BMP?	☐HOA ■Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ■Property Owner ☐City ☐Other (describe)

Discussion (as needed):

Step 5.1: Offsite Alternative Compliance Participation Form

THIS FORM IS NOT APPLICABLE AT THIS TIME: An Alternative Compliance Program is under consideration by the City of Escondido.	
PDP INFORMATION	
Record ID:	N/A
Assessor's Parcel Number(s) [APN(s)]	
What are your PDP Pollutant Control Debits? *See Attachment 1 of the PDP SWQMP	
What are your PDP HMP Debits? (if applicable) *See Attachment 2 of the PDP SWQMP	
ACP Information	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
Project Owner/Address	
What are your ACP Pollutant Control Credits? *See Attachment 1 of the ACP SWQMP	
What are your ACP HMP Debits? (if applicable) *See Attachment 2 of the ACP SWQMP	
Is your ACP in the same watershed as your PDP? ☐Yes ☐No	Will your ACP project be completed prior to the completion of the PDP? ☐Yes ☐No
Does your ACP account for all Deficits generated by the PDP? ☐Yes ☐No (PDP and/or ACP must be redesigned to account for all deficits generated by the PDP.)	What is the difference between your PDP debits and ACP Credits? *(ACP Credits -Total PDP Debits = Total Earned Credits) _____

ATTACHMENT 1

BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 1a	Storm Water Pollutant Control Worksheet Calculations -Worksheet B.1-DMA Summary (Optional) -Worksheet B.2-1- DCV (Required) -Worksheet B.3-1- H&U Checklist (Required) -Worksheet B.4-1-Simple Sizing Inf. (if applicable) -Worksheet B.5-1-Biofilt. Sizing (Pollutant)(if applicable) -Worksheet B.5-2-Biofilt. Sizing (Volume) (if applicable) -Worksheet B.5-3-Biofilt. Volume Ret. (if applicable) -Worksheet B.5-4-Biofilt. Alt. Min. Footprint(if applicable) -Worksheet B.5-5-Biofilt. w/Upstream Stor. (if applicable) -Worksheet B.5-6-Biofilt. Ret. No Inf. (if applicable) -Worksheet B.5-7-Vol. Ret. Amended Soils (if applicable) -Worksheet B.6-1-Flow-Thru Design Flow (if applicable) -Form I-10-Compact Biofilt. Checklist (if applicable) -Summary Worksheet (optional)	☐ Worksheet B.1 (Optional) ▬ Worksheet B.2-1 (Required) ▬ Worksheet B.3-1 (Required) ▬ Worksheet B.4-1 (if applicable) ▬ Worksheet B.5-1 (if applicable) ☐ Worksheet B.5-2 (if applicable) ☐ Worksheet B.5-3 (if applicable) ☐ Worksheet B.5-4 (if applicable) ☐ Worksheet B.5-5 (if applicable) ☐ Worksheet B.5-6 (if applicable) ☐ Worksheet B.5-7 (if applicable) ▬ Worksheet B.6-1 (if applicable) ▬ Form I-10 (if applicable) ☐ Summary Worksheet (optional)
Attachment 1b	-Worksheet C.4-1 (Form I-8A), Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions -Worksheet C.4-2 (Form I-8B), Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions (Required unless the project will use harvest and use BMPs, or an Infiltration Feasibility Condition Letter is submitted) Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-8.	▬Included ☐Not included because the entire project will use harvest and use BMPs ☐Not included because an Infiltration Feasibility Condition Letter is submitted
Attachment 1c	Form I-9, Factor of Safety and Design Infiltration Rate Worksheet (Required unless the project will use harvest and use BMPs, or an Infiltration Feasibility Condition Letter is submitted) Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-9.	▬Included ☐Not included because the entire project will use harvest and use BMPs ☐Not included because an Infiltration Feasibility Condition Letter is submitted
Attachment 1d	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	▬Included
Attachment 1e	Individual Structural BMP DMA Mapbook (Required) -Place each map on 8.5”x11” paper. -Show at a minimum the DMA, Structural BMP, and any existing hydrologic features within the DMA.	▬Included

Use this checklist to ensure the required information has been included on the DMA Exhibit:

The DMA Exhibit must identify:

- ▣ Proposed design features and surface treatments used to minimize imperviousness
- ▣ Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)
- ▣ Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Step 3.5)
- ▣ Structural BMPs (identify location, structural BMP ID#, type of BMP, and size/detail)
- ▣ Flow direction arrows
- ▣ Site Design BMPs used for volume reduction credits
- ▣ Existing and proposed site drainage network and connections to drainage offsite
- ▣ Trash Enclosure(s), if available
- ▣ Roof downspouts

Additionally, it is generally best practice (and the City may require) that these additional features listed below be included on the DMA Exhibit:

- ▣ Approximate depth to groundwater
- ▣ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- ▣ Critical coarse sediment yield areas to be protected
- ▣ Existing topography and impervious areas
- ▣ Proposed grading
- ▣ Proposed impervious features

SOURCE SCONTROL(SC)/SITE DESIGN(SD):

ITEMS	FACT SHEET/DESIGN REQMT
PREVENT ILLICIT DISCHARGE INTO MS4	4.2.1
STORM DRAIN STENCILING OR SIGNAGE	4.2.2
PROTECT TRASH STORAGE AREAS	4.2.5
MINIMIZE IMPERVIOUS AREA	4.3.3
LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES	4.3.7
ONSITE STORM DRAIN INLET LABELING	SC-A
REFUSE AREAS EXPOSURE REDUCTION	SC-G

DMA SITE MAP NOTES

1. BMP - 2- OLDCASTLE BIOPOD WITH PLANTER, BPS/T/P-412 PLANTED WITH DIETES IRIDIODES (FORTNIGHT LILY).

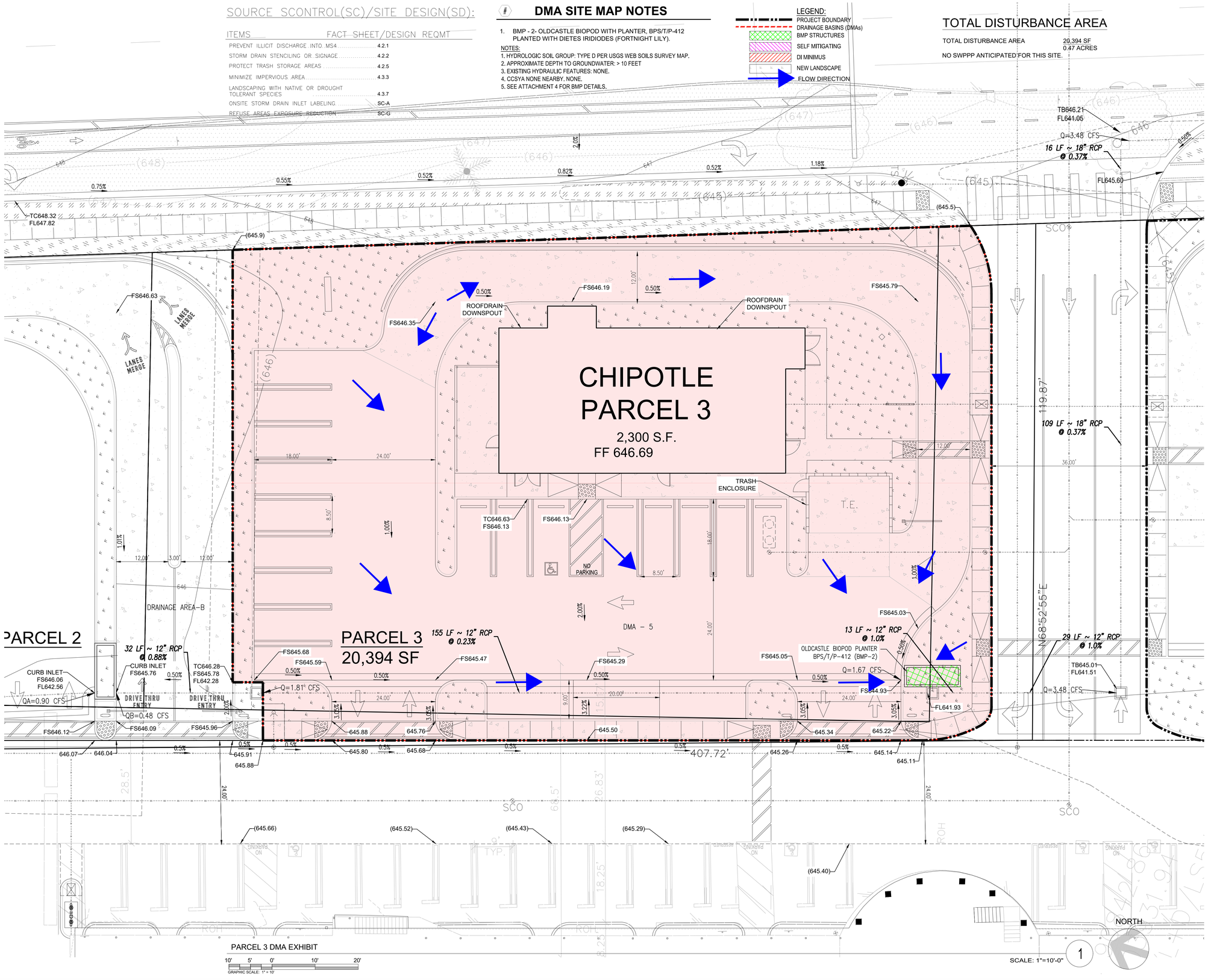
NOTES:
1. HYDROLOGIC SOIL GROUP: TYPE D PER USGS WEB SOILS SURVEY MAP.
2. APPROXIMATE DEPTH TO GROUNDWATER: > 10 FEET
3. EXISTING HYDRAULIC FEATURES: NONE.
4. CCSYA NONE NEARBY, NONE.
5. SEE ATTACHMENT 4 FOR BMP DETAILS.

LEGEND:
- PROJECT BOUNDARY
- DRAINAGE BASINS (DMAs)
- BMP STRUCTURES
- SELF MITIGATING
- DI MINIMUS
- NEW LANDSCAPE
- FLOW DIRECTION

TOTAL DISTURBANCE AREA

TOTAL DISTURBANCE AREA 20,394 SF 0.47 ACRES

NO SWPPP ANTICIPATED FOR THIS SITE.



DMA - 5 =	20,394	SF
=	0.47	AC
IMPERVIOUS AREA (T) =	16,786	SF
=	0.39	AC
IMPERVIOUS%=	82	
PERVIOUS AREA (T) =	3,608	SF
=	0.08	AC
C VALUE =	**0.81**	
RAINFALL INTENSITY (I) =	4.4	IN/HR
DISCHARGE (Q) =	CIA	
=	**1.67**	**CFS**

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
CONDITIONAL USE PERMIT
PARCEL 3
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MOUR GROUP
SCALE:	AS SHOWN

SHEET TITLE:
DMA EXHIBIT

PARCEL 3

SHEET #
C203

Worksheet B.2-1. BMP Design Capture Volume

Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.55	inches
2	Area tributary to BMP (s)	A=	0.468	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.76	unitless
4	Tree well volume reduction	TCV=	0	cubic-feet
5	Rain barrels volume reduction	RCV=	0	cubic-feet
6	Calculate DCV = (3630 x C x d x A) – TCV - RCV	DCV=	710	cubic-feet

Note:
C = (0.1 x Pervious area + 0.9 x impervious area) / (total area)
= (0.1 x 3,608 + 0.9 x 16,786) / (20,394)
= 0.76

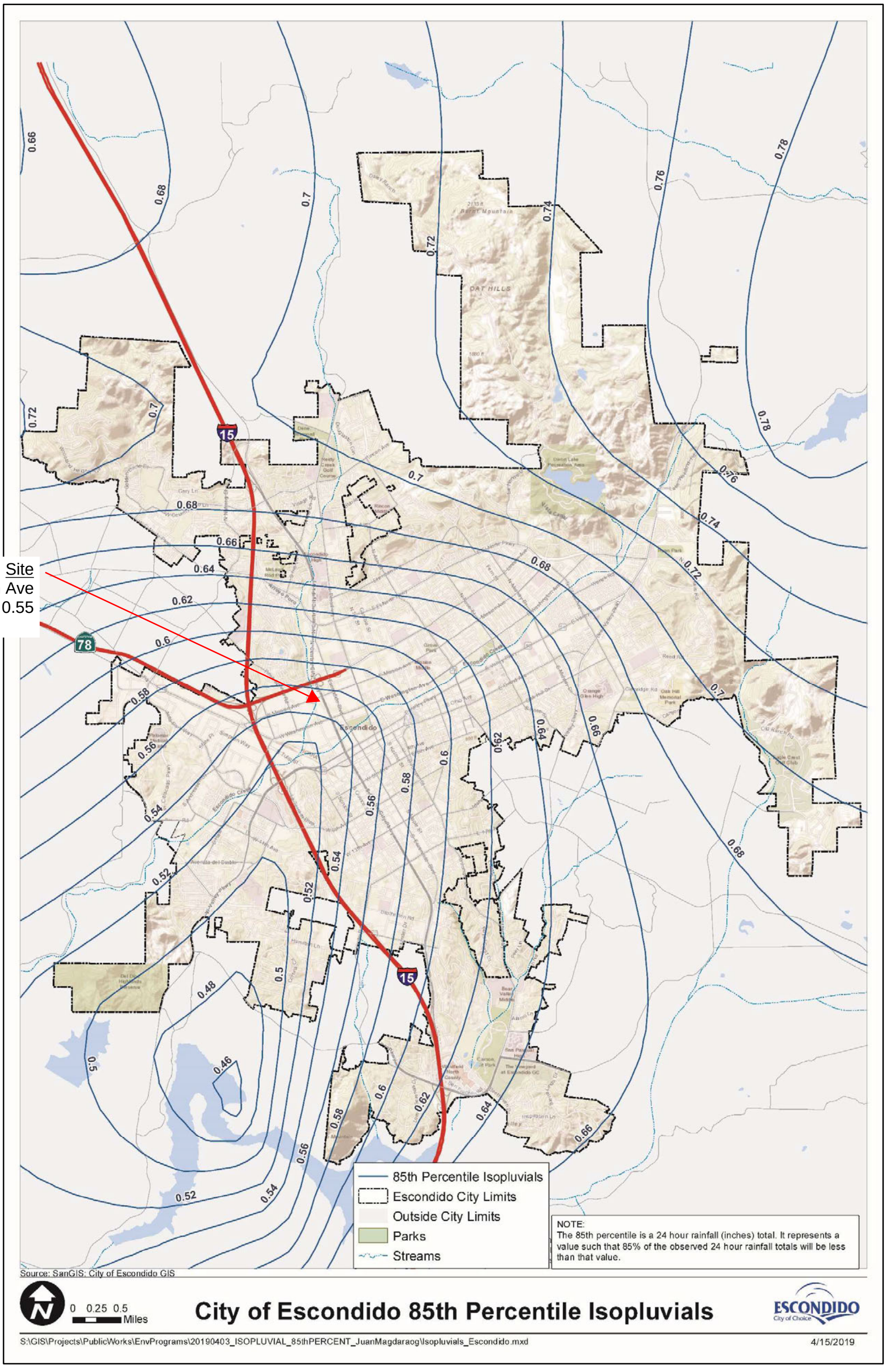


Figure B.1-1: City of Escondido 85th Percentile 24-hour Isopluvial Map

Worksheet B.3-1. Harvest and Use Feasibility Checklist (Form I-7)

Harvest and Use Feasibility Checklist	Worksksheet B.3-1

1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?
   - ☒ Toilet and urinal flushing
   - ☒ Landscape irrigation
   - ☐ Other:_____

2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.

Moderate plant water use = 197 cf, demand = 197 x 0.08 ac = 16 cf << 0.25 DCV.

3. Calculate the DCV using worksheet B-2.1.

DCV = 3630x0.76x0.55x0.468=710 cf

3a. Is the 36-hour demand greater than or equal to the DCV?	3b. Is the 36-hour demand greater than 0.25DCV but less than the full DCV?	3c. Is the 36-hour demand less than 0.25DCV?
Yes / No ⇨ ⇩ X	Yes / No ⇨ ⇩ X	Yes ⇩ X
Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.	Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.	Harvest and use is considered to be infeasible.

Note: 36-hour demand calculations are for feasibility analysis only. Once feasibility analysis is complete the applicant may be allowed to use a different drawdown time provided they meet the 80% annual capture standard (refer to B.4.2) and 96-hour vector control drawdown requirement.

Worksheet B.4-1: Simple Sizing Method for Infiltration BMPs

Simple Sizing Method for Infiltration BMPs		Worksheet B.4-1		
1	DCV (Worksheet B-2.1)	DCV=	710	cubic-feet
2	Estimated design infiltration rate	K_{design}=	153	in/hr
3	Available BMP surface area	A_{BMP}=	48	sq-ft
4	Average effective depth in the BMP footprint (DCV/A_{BMP})	D_{avg}=	3	feet
5	Drawdown time, T (D_{avg} *12/K_{design})	T=	0.24	hours
6	Provide alternative calculation of drawdown time, if needed. Since the total depth of biopod is 3', therefore avg. effective depth is taken as 3 ft directly.			
7	Provide calculations for effective depth provided in the BMP: Effective Depth = Surface ponding (below the overflow elevation) + gravel storage thickness x gravel porosity (0.4) effective depth=10+36x0.4 = 24.4 inch = 2.03 ft			

Note: Shown drawdown time is for the Biopod planter.

Worksheet B.5-1: Sizing Method for Pollutant Removal Criteria

Sizing Method for Pollutant Removal Criteria		Worksheet B.5-1	
1	Area draining to the BMP	20,394	sq. ft.
2	Adjusted runoff factor for drainage area (Refer to Appendix B.1 and B.2)	0.76	
3	85th percentile 24-hour rainfall depth	0.55	inches
4	Design capture volume [Line 1 x Line 2 x (Line 3/12)]	710	cu. ft.
BMP Parameters			
5	Surface ponding [6 inch minimum, 12 inch maximum]	10	inches
6	Media thickness [18 inches minimum], also add mulch layer and washed ASTM 33 fine aggregate sand thickness to this line for sizing calculations	20	inches
7	Aggregate storage (also add ASTM No 8 stone) above underdrain invert (12 inches typical) – use 0 inches if the aggregate is not over the entire bottom surface area	6	inches
8	Aggregate storage below underdrain invert (3 inches minimum) – use 0 inches if the aggregate is not over the entire bottom surface area	0	inches
9	Freely drained pore storage of the media	0.2	in/in
10	Porosity of aggregate storage	0.4	in/in
11	Media filtration rate to be used for sizing (maximum filtration rate of 5 in/hr. with no outlet control; if the filtration rate is controlled by the outlet use the outlet controlled rate (includes infiltration into the soil and flow rate through the outlet structure) which will be less than 5 in/hr.)	2.16	in/hr.
Baseline Calculations			
12	Allowable routing time for sizing	6	hours
13	Depth filtered during storm [Line 11 x Line 12]	12.96	inches
14	Depth of Detention Storage [Line 5 + (Line 6 x Line 9) + (Line 7 x Line 10) + (Line 8 x Line 10)]	16.4	inches
15	Total Depth Treated [Line 13 + Line 14]	29.36	inches
Option 1 – Biofilter 1.5 times the DCV			
16	Required biofiltered volume [1.5 x Line 4]	1066	cu. ft.
17	Required Footprint [Line 16/ Line 15] x 12	436	sq. ft.
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
18	Required Storage (surface + pores) Volume [0.75 x Line 4]	533	cu. ft.
19	Required Footprint [Line 18/ Line 14] x 12	390	sq. ft.
Footprint of the BMP			
20	BMP Footprint Sizing Factor (Default 0.03 or an alternative minimum footprint sizing factor from Line 11 in Worksheet B.5-4)	0.03	
21	Minimum BMP Footprint [Line 1 x Line 2 x Line 20]	465	sq. ft.
22	Footprint of the BMP = Maximum (Minimum (Line 17, Line 19), Line 21)	465	sq. ft.
23	Provided BMP Footprint	48	sq. ft.
24	Is Line 23 ≥ Line 22? If Yes, then footprint criterion is met. If No, increase the footprint of the BMP.	☐ Yes ■ No	

Note: The site is HMP exempt. The designed 4x12 Biopod (BMP) from Oldcastle provides more than required treated storm flow rate and can bypass unlimited runoff. Therefore, we do not increase BMP size to match above calculated 465 sf.

Worksheet B.6-1: Flow-Thru Design Flows

Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	710	cubic-feet
2	DCV retained	$DCV_{retained}$	0	cubic-feet
3	DCV biofiltered	$DCV_{biofiltered}$	0	cubic-feet
4	DCV requiring flow-thru (Line 1 – Line 2 – 0.67*Line 3)	$DCV_{flow-thru}$	710	cubic-feet
5	Adjustment factor (Line 4 / Line 1)*	AF=	1	unitless
6	Design rainfall intensity	i=	0.20	in/hr
7	Area tributary to BMP (s)	A=	0.468	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.76	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.071	cfs
10	***For Proprietary Biofiltration Only:*** *Q_{Bio}=1.5 x Q*	*Q_{Bio}=*	0.107	*cfs*

Note: See Biopod sizing summary sheet in attachment 5 of SWQMP report.

Form I-10: Compact (high rate) Biofiltration BMP Checklist

Compact (high rate) Biofiltration BMP Checklist	Form I-10

Compact (high rate) biofiltration BMPs have a media filtration rate greater than 5 in/hr. and a media surface area smaller than 3% of contributing area times adjusted runoff factor. Compact biofiltration BMPs are typically proprietary BMPs that may qualify as biofiltration.

A compact biofiltration BMP may satisfy the pollutant control requirements for a DMA onsite in some cases. This depends on the characteristics of the DMA and the performance certification/data of the BMP. If the pollutant control requirements for a DMA are met onsite, then the DMA is not required to participate in an offsite storm water alternative compliance program to meet its pollutant control obligations.

An applicant using a compact biofiltration BMP to meet the pollutant control requirements onsite must complete Section 1 of this form and include it in the PDP SWQMP. A separate form must be completed for each DMA. In instances where the City Engineer does not agree with the applicant's determination, Section 2 of this form will be completed by the City and returned to the applicant.

Section 1: Biofiltration Criteria Checklist (Appendix F)

Refer to Part 1 of the Storm Water Standards to complete this section. When separate forms/worksheets are referenced below, the applicant must also complete these separate forms/worksheets (as applicable) and include in the PDP SWQMP. The criteria numbers below correspond to the criteria numbers in Appendix F.

Criteria	Answer	Progression
Criteria 1 and 3: What is the infiltration condition of the DMA? Refer to Section 5.4.2 and Appendix C of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance. Applicant must complete and include the following in the PDP SWQMP submittal to support the feasibility determination: • Infiltration Feasibility Condition Letter; or • Worksheet C.4-1: Form I-8A and Worksheet C.4-2: Form I- 8B. Applicant must complete and include all applicable sizing worksheets in the SWQMP submittal	☐ Full Infiltration Condition	**Stop**. Compact biofiltration BMP is not allowed.
	☐ Partial Infiltration Condition	Compact biofiltration BMP is only allowed, if the target volume retention is met onsite (Refer to Table B.5-1 in Appendix B.5). Use Worksheet B.5- 2 in Appendix B.5 to estimate the target volume retention (Note: retention in this context means reduction). If the required volume reduction is achieved **proceed to Criteria 2**. If the required volume reduction is not achieved, compact biofiltration BMP is not allowed. **Stop**.
	☑ No Infiltration Condition	Compact biofiltration BMP is allowed if volume retention criteria in Table B.5-1 in Appendix B.5 for the no infiltration condition is met. Compliance with this criterion must be documented in the PDP SWQMP. If the criteria in Table B.5-1 is met **proceed to Criteria 2**. If the criteria in Table B.5-1 is not met, compact biofiltration BMP is not allowed. **Stop**.

Compact (high rate) Biofiltration BMP Checklist	Form I-10

Provide basis for Criteria 1 and 3:

Proposed Oldcastle Biopod (BMP) has impermeable liner at bottom and treatment flow capacity higher than 1.5 times required treated flow. The site drains directly on Escondido Creek, hence Hydromodfication expempt. Therefore, we are desiging the BMP per worksheet B-6.1 that can treat the site suffciently and safely drain into an existing system that outfalls into the Pacific Ocean. Form I-8 shall be provided in next submission through Geotech Engineer.

Feasibility Analysis:

Summarize findings and include either infiltration feasibility condition letter or Worksheet C.4-1: Form I-8A and Worksheet C.4-2: Form I-8B in the PDP SWQMP submittal.

It shall be provided in next submission through the Geotech engineer.

If Partial Infiltration Condition:

Provide documentation that target volume retention is met (include Worksheet B.5-2 in the PDP SWQMP submittal). Worksheet B.5-7 in Appendix B.5 can be used to estimate volume retention benefits from landscape areas.

If No Infiltration Condition:

Provide documentation that the volume retention performance standard is met (include Worksheet B.5-2 in the PDP SWQMP submittal) in the PDP SWQMP submittal. Worksheet B.5-6 in Appendix B.5 can be used to document that the performance standard is met.

Site drains directly on Escondido Creek, hence Hydromodfication expempt. Therefore, we are neglecting footprint area per spreadsheet B-5.1 and desiging the BMP per worksheet B-6.1 that can treat the site suffciently and safely drain into an existing system that outfalls into the Pacific Ocean.

Criteria	Answer	Progression
Criteria 2: Is the compact biofiltration BMP sized to meet the performance standard from the MS4 Permit? Refer to Appendix B.5 and Appendix F.2 of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.	☑ Meets Flow Based Criteria	Use guidance from **Appendix F.2.2** to size the compact biofiltration BMP to meet the flow based criteria. Include the calculations in the PDP SWQMP. Use parameters for sizing consistent with manufacturer guidelines and conditions of its third party certifications (i.e. a BMP certified at a loading rate of 1 gpm/sq. ft. cannot be designed using a loading rate of 1.5 gpm/sq. ft.) **Proceed to Criteria 4.**
	☐ Meets Volume Based Criteria	Provide documentation that the compact biofiltration BMP has a total static (i.e. non-routed) storage volume, including pore-spaces and pre-filter detention volume (Refer to Appendix B.5 for a schematic) of at least 0.75 times the portion of the DCV not reliably retained onsite. **Proceed to Criteria 4.**
	☐ Does not Meet either	**Stop**. Compact biofiltration BMP is not allowed.

Compact (high rate) Biofiltration BMP Checklist	Form I-10

Provide basis for Criteria 2:
Provide documentation that the BMP meets the numeric criteria and is designed consistent with the manufacturer guidelines and conditions of its third-party certification (i.e., loading rate, etc., as applicable).

The BMP has 153 in/hr infiltration rate with the loading rate of 1.6 gpm/ft2. The treatment capacity of the BMP is 0.171 cfs which is greater than required flow rate (0.107 cfs). The BMP has unlimited external bypass system. For more detail see BMP details on last pages of SWQMP report.

Criteria	Answer	Progression
Criteria 4: Does the compact biofiltration BMP meet the pollutant treatment performance standard for the projects most significant pollutants of concern? Refer to Appendix B.6 and Appendix F.1 of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.	☑ Yes, meets the TAPE certification.	Provide documentation that the compact BMP has an appropriate TAPE certification for the projects most significant pollutants of concern. **Proceed to Criteria 5.**
	☐ Yes, through other third-party documentation.	Acceptance of third-party documentation is at the discretion of the City Engineer. The City engineer will consider, (a) the data submitted; (b) representativeness of the data submitted; and (c) consistency of the BMP performance claims with pollutant control objectives in Table F.1-2 and Table F.1-1 while making this determination. If a compact biofiltration BMP is not accepted, a written explanation/ reason will be provided in Section 2. **Proceed to Criteria 5.**
	☐ No	**Stop**. Compact biofiltration BMP is not allowed.

Provide basis for Criteria 4:
Provide documentation that identifies the projects most significant pollutants of concern and TAPE certification or other third party documentation that shows that the compact biofiltration BMP meets the pollutant treatment performance standard for the projects most significant pollutants of concern.

The oldcastle Biopod is a TAPE certified based on link shown below:

https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies

Compact (high rate) Biofiltration BMP Checklist		Form I-10
Criteria	**Answer**	**Progression**
Criteria 5: Is the compact biofiltration BMP designed to promote appropriate biological activity to support and maintain treatment process? Refer to Appendix F of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.	☑ Yes	Provide documentation that the compact biofiltration BMP support appropriate biological activity. Refer to Appendix F for guidance. **Proceed to Criteria 6.**
	☐ No	**Stop**. Compact biofiltration BMP is not allowed.
Provide basis for Criteria 5: Provide documentation that appropriate biological activity is supported by the compact biofiltration BMP to maintain treatment process.		
See BMP details for more information.		
Criteria	**Answer**	**Progression**
Criteria 6: Is the compact biofiltration BMP designed with a hydraulic loading rate to prevent erosion, scour and channeling within the BMP?	☑ Yes	Provide documentation that the compact biofiltration BMP is used in a manner consistent with manufacturer guidelines and conditions of its third-party certification. **Proceed to Criteria 7.**
	☐ No	**Stop**. Compact biofiltration BMP is not allowed.
Provide basis for Criteria 6: Provide documentation that the BMP meets the numeric criteria and is designed consistent with the manufacturer guidelines and conditions of its third-party certification (i.e., maximum tributary area, maximum inflow velocities, etc., as applicable).		
The BMP has 300 psf pedestrian loading, 45 pcf lateral earth pressure, 80 psf lateral live load surcharge and atleast 5,000 psi concrete compressive strength. It has 48 sf surface area with 153 in/hr infiltration rate and loading rate of 1.6 gpm/ft2. See BMP detail for more information.		

Compact (high rate) Biofiltration BMP Checklist		Form I-10
Criteria	**Answer**	**Progression**
Criteria 7: Is the compact biofiltration BMP maintenance plan consistent with manufacturer guidelines and conditions of its third-party certification (i.e., maintenance activities, frequencies)?	☑ Yes, and the compact BMP is privately owned, operated and not in the public right of way.	Submit a maintenance agreement that will also include a statement that the BMP will be maintained in accordance with manufacturer guidelines and conditions of third-party certification. **Stop**. The compact biofiltration BMP meets the required criteria.
	☐ Yes, and the BMP is either owned or operated by the City or in the public right of way.	Approval is at the discretion of the City Engineer. The city engineer will consider maintenance requirements, cost of maintenance activities, relevant previous local experience with operation and maintenance of the BMP type, ability to continue to operate the system in event that the vending company is no longer operating as a business or other relevant factors while making the determination. **Stop**. Consult the City Engineer for a determination.
	☐ No	**Stop**. Compact biofiltration BMP is not allowed.

Provide basis for Criteria 7:

Include copy of manufacturer guidelines and conditions of third-party certification in the maintenance agreement. PDP SWQMP must include a statement that the compact BMP will be maintained in accordance with manufacturer guidelines and conditions of third-party certification.

Manufacturer maintenance guidelines is included in attachment 3 (SWCFMA).

Compact (high rate) Biofiltration BMP Checklist	Form I-10
Section 1: Biofiltration Criteria Checklist (Appendix F)	
Is the proposed compact BMP accepted by the City Engineer for onsite pollutant control compliance for the DMA?	▣ Yes ☐ No, See explanation below
Explanation/reason if the compact BMP is not accepted by the City for onsite pollutant control compliance:	

Worksheet C.4-2 (Form I-8A): Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions[2]

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]
Part 1 - Full Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		**Project Phase:**
Criteria 1: Infiltration Rate Screening		
1A	Is the mapped hydrologic soil group according to the NRCS Web Soil Survey or UC Davis Soil Web Mapper Type A or B and corroborated by available site soil data[4]? ☐ Yes; the DMA may feasibly support full infiltration. Answer "Yes" to Criteria 1 Result or continue to Step 1B if the applicant elects to perform infiltration testing. ☐ No; the mapped soil types are A or B but is not corroborated by available site soil data (continue to Step 1B). ☐ No; the mapped soil types are C, D, or "urban/unclassified" and is corroborated by available site soil data. Answer "No" to Criteria 1 Result. ☐ No; the mapped soil types are C, D, or "urban/unclassified" but is not corroborated by available site soil data (continue to Step 1B).	
1B	Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1? ☐ Yes; Continue to Step 1C. ☐ No; Skip to Step 1D.	
1C	Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1 greater than 0.5 inches per hour? ☐ Yes; the DMA may feasibly support full infiltration. Answer "Yes" to Criteria 1 Result. ☐ No; full infiltration is not required. Answer "No" to Criteria 1 Result.	
1D	**Infiltration Testing Method.** Is the selected infiltration testing method suitable during the design phase (see Appendix D.3)? Note: Alternative testing standards may be allowed with appropriate rationales and documentation. ☐ Yes; continue to Step 1E. ☐ No; select an appropriate infiltration testing method.	

[2] Note that it is not required to investigate each and every criterion in the worksheet, a single "no" answer in Part 1, Part 2, Part 3, or Part 4 determines a full, partial, or no infiltration condition.
[3] This form must be completed each time there is a change to the site layout that would affect the infiltration feasibility condition. Previously completed forms shall be retained to document the evolution of the site storm water design.
[4] Available data includes site-specific sampling or observation of soil types or texture classes, such as obtained from borings or test pits necessary to support other design elements.

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A[3]
1E	**Number of Percolation/Infiltration Tests.** Does the infiltration testing method performed satisfy the minimum number of tests specified in Table D.3-2? ☐ Yes; continue to Step 1F. ☐ No; conduct appropriate number of tests.
IF	**Factor of Safety.** Is the suitable Factor of Safety selected for full infiltration design? See guidance in D.5; Tables D.5-1 and D.5-2; and Worksheet D.5-1 (Form I-9). ☐ Yes; continue to Step 1G. ☐ No; select appropriate factor of safety.
1G	**Full Infiltration Feasibility.** Is the average measured infiltration rate divided by the Factor of Safety greater than 0.5 inches per hour? ☐ Yes; answer "Yes" to Criteria 1 Result. ☐ No; answer "No" to Criteria 1 Result.
Criteria 1 Result	Is the estimated reliable infiltration rate greater than 0.5 inches per hour within the DMA where runoff can reasonably be routed to a BMP? ☐ Yes; the DMA may feasibly support full infiltration. Continue to Criteria 2. ☐ No; full infiltration is not required. Skip to Part 1 Result.
Summarize infiltration testing methods, testing locations, replicates, and results and summarize estimates of reliable infiltration rates according to procedures outlined in D.5. Documentation should be included in project geotechnical report.	

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
Criteria 2: Geologic/Geotechnical Screening			
2A	If all questions in Step 2A are answered "Yes," continue to Step 2B. For any "No" answer in Step 2A answer "No" to Criteria 2, and submit an "Infiltration Feasibility Condition Letter" that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.		
2A-1	Can the proposed full infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick below the infiltrating surface?	☐ Yes	☐ No
2A-2	Can the proposed full infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	☐ Yes	☐ No
2A-3	Can the proposed full infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	☐ Yes	☐ No
2B	When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1. If all questions in Step 2B are answered "Yes," then answer "Yes" to Criteria 2 Result. If there are "No" answers continue to Step 2C.		
2B-1	**Hydroconsolidation.** Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP. Can full infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?	☐ Yes	☐ No
2B-2	**Expansive Soils.** Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs. Can full infiltration BMPs be proposed within the DMA without increasing expansive soil risks?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
2B-3	**Liquefaction**. If applicable, identify mapped liquefaction areas. Evaluate liquefaction hazards in accordance with Section 6.4.2 of the City of San Diego's Guidelines for Geotechnical Reports (2011 or most recent edition). Liquefaction hazard assessment shall take into account any increase in groundwater elevation or groundwater mounding that could occur as a result of proposed infiltration or percolation facilities. Can full infiltration BMPs be proposed within the DMA without increasing liquefaction risks?	☐ Yes	☐ No
2B-4	**Slope Stability**. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required. Can full infiltration BMPs be proposed within the DMA without increasing slope stability risks?	☐ Yes	☐ No
2B-5	**Other Geotechnical Hazards.** Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1). Can full infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?	☐ Yes	☐ No
2B-6	**Setbacks.** Establish setbacks from underground utilities, structures, and/or retaining walls. Reference applicable ASTM or other recognized standard in the geotechnical report. Can full infiltration BMPs be proposed within the DMA using established setbacks from underground utilities, structures, and/or retaining walls?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
2C	**Mitigation Measures.** Propose mitigation measures for each geologic/geotechnical hazard identified in Step 2B. Provide a discussion of geologic/geotechnical hazards that would prevent full infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures. Can mitigation measures be proposed to allow for full infiltration BMPs? If the question in Step 2 is answered "Yes," then answer "Yes" to Criteria 2 Result. If the question in Step 2C is answered "No," then answer "No" to Criteria 2 Result.	☐ Yes	☐ No
Criteria 2 Result	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?	☐ Yes	☐ No
Summarize findings and basis; provide references to related reports or exhibits.			

Part 1 Result – Full Infiltration Geotechnical Screening [5]	Result
If answers to both Criteria 1 and Criteria 2 are "Yes", a full infiltration design is potentially feasible based on Geotechnical conditions only. If either answer to Criteria 1 or Criteria 2 is "No", a full infiltration design is not required.	☐ Full infiltration Condition ☐ Complete Part 2

[5] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]
Part 2 – Partial vs. No Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		**Project Phase:**
Criteria 3: Infiltration Rate Screening		
3A	**NRCS Type C, D, or "urban/unclassified":** Is the mapped hydrologic soil group according to the NRCS Web Soil Survey or UC Davis Soil Web Mapper is Type C, D, or "urban/unclassified" and corroborated by available site soil data? ☐ Yes; the site is mapped as C soils and a reliable infiltration rate of 0.15 in/hr. is used to size partial infiltration BMPS. Answer "Yes" to Criteria 3 Result. ☐ Yes; the site is mapped as D soils or "urban/unclassified" and a reliable infiltration rate of 0.05 in/hr. is used to size partial infiltration BMPS. Answer "Yes" to Criteria 3 Result. ☐ No; infiltration testing is conducted (refer to Table D.3-1), continue to Step 3B.	
3B	**Infiltration Testing Result:** Is the reliable infiltration rate (i.e. average measured infiltration rate/2) greater than 0.05 in/hr. and less than or equal to 0.5 in/hr? ☐ Yes; the site may support partial infiltration. Answer "Yes" to Criteria 3 Result. ☐ No; the reliable infiltration rate (i.e. average measured rate/2) is less than 0.05 in/hr., partial infiltration is not required. Answer "No" to Criteria 3 Result.	
Criteria 3 Result	Is the estimated reliable infiltration rate (i.e., average measured infiltration rate/2) greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour at any location within each DMA where runoff can reasonably be routed to a BMP? ☐ Yes; Continue to Criteria 4. ☐ No: Skip to Part 2 Result.	
Summarize infiltration testing and/or mapping results (i.e. soil maps and series description used for infiltration rate).		

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
Criteria 4: Geologic/Geotechnical Screening			
4A	If all questions in Step 4A are answered "Yes," continue to Step 2B. For any "No" answer in Step 4A answer "No" to Criteria 4 Result, and submit an "Infiltration Feasibility Condition Letter" that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.		
4A-1	Can the proposed partial infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick?	☐ Yes	☐ No
4A-2	Can the proposed partial infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	☐ Yes	☐ No
4A-3	Can the proposed partial infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	☐ Yes	☐ No
4B	When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1 If all questions in Step 4B are answered "Yes," then answer "Yes" to Criteria 4 Result. If there are any "No" answers continue to Step 4C.		
4B-1	**Hydroconsolidation.** Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP. Can partial infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?	☐ Yes	☐ No
4B-2	**Expansive Soils.** Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs. Can partial infiltration BMPs be proposed within the DMA without increasing expansive soil risks?	☐ Yes	☐ No
4B-3	**Liquefaction**. If applicable, identify mapped liquefaction areas. Evaluate liquefaction hazards in accordance with Section 6.4.2 of the City of San Diego's Guidelines for Geotechnical Reports (2011). Liquefaction hazard assessment shall take into account any increase in groundwater elevation or groundwater mounding that could occur as a result of proposed infiltration or percolation facilities. Can partial infiltration BMPs be proposed within the DMA without increasing liquefaction risks?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
4B-4	**Slope Stability**. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required. Can partial infiltration BMPs be proposed within the DMA without increasing slope stability risks?	☐ Yes	☐ No
4B-5	**Other Geotechnical Hazards.** Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1). Can partial infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?	☐ Yes	☐ No
4B-6	**Setbacks.** Establish setbacks from underground utilities, structures, and/or retaining walls. Reference applicable ASTM or other recognized standard in the geotechnical report. Can partial infiltration BMPs be proposed within the DMA using recommended setbacks from underground utilities, structures, and/or retaining walls?	☐ Yes	☐ No
4C	**Mitigation Measures.** Propose mitigation measures for each geologic/geotechnical hazard identified in Step 4B. Provide a discussion on geologic/geotechnical hazards that would prevent partial infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures. Can mitigation measures be proposed to allow for partial infiltration BMPs? If the question in Step 4C is answered "Yes," then answer "Yes" to Criteria 4 Result. If the question in Step 4C is answered "No," then answer "No" to Criteria 4 Result.	☐ Yes	☐ No
Criteria 4 Result	Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without increasing the risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A[3]
Summarize findings and basis; provide references to related reports or exhibits	

Part 2 – Partial Infiltration Geotechnical Screening Result[6]	Result
If answers to both Criteria 3 and Criteria 4 are "Yes", a partial infiltration design is potentially feasible based on geotechnical conditions only. If answers to either Criteria 3 or Criteria 4 is "No", then infiltration of any volume is considered to be infeasible within the site.	☐ Partial Infiltration Condition ☐ No Infiltration Condition

[6] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Worksheet C.4-2: Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions[7]

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions		Worksheet C.4-2: Form I-8B[8]
Part 1 - Full Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		**Project Phase:**
Criteria 1: Groundwater Screening		
1A	**Groundwater Depth.** Is the depth to seasonally high groundwater tables (normal high depth during the wet season) beneath the base of any full infiltration BMP greater than 10 feet? ☐ Yes; continue to Step 1B. ☐ No; The depth to groundwater is less than or equal to 10 feet, but site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to step 1B. ☐ No; The depth to groundwater is less than or equal to 10 feet and site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer "No" for Criteria 1 Result.	
1B	**Contaminated Soil/Groundwater.** Are proposed full infiltration BMPs at least 250 feet away from contaminated soil or groundwater sites? This can be confirmed using GeoTracker (geotracker.waterboards.ca.gov) to identify open contaminated sites. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP. ☐ Yes; continue to Step 1C. ☐ No; However, site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to Step 1C. ☐ No; Site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer "No" to Criteria 1 Result.	

[7] Note that it is not required to investigate each and every criterion in the worksheet, a single "no" answer in Part 1, Part 2, part 3, or Part 4 determines a full, partial, or no infiltration condition.
[8] This form must be completed each time there is a change to the site layout that would affect the infiltration feasibility condition. Previously completed forms shall be retained to document the evolution of the site storm water design.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
1C	**Inadequate Soil Treatment Capacity.** Are full infiltration BMPs proposed in DMA soils that have adequate soil treatment capacity? The DMA has adequate soil treatment capacity if **ALL** of the following criteria (detailed in C.2.2.1) for all soil layers beneath the infiltrating surface are met: • USDA texture class is sandy loam or loam or silt loam or silt or sandy clay loam or clay loam or silty clay loam or sandy clay or silty clay or clay; and • Cation Exchange Capacity (CEC) greater than 5 milliequivalents/100g; and • Soil organic matter is greater than 1%; and • Groundwater table is equal to or greater than 10 feet beneath the base of the full infiltration BMP. ☐ Yes; continue to Step 1D. ☐ No; However, site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to Step 1D. ☐ No; Site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer "No" to Criteria 1 Result.
1D	**Other Groundwater Contamination Hazards.** Are there site-specific groundwater contamination hazards not already mentioned (refer to Appendix C.2.2) that can be reasonably mitigated to support full infiltration BMPs? ☐ Yes; there are other contamination hazards identified that can be mitigated. Answer "Yes" to Criteria 1 Result. ☐ No; there are other contamination hazards identified that cannot be mitigated. Answer "No" to Criteria 1 Result. ☐ N/A; no contamination hazards are identified. Answer "Yes" to Criteria 1 Result.
Criteria 1 Result	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination that cannot be reasonably mitigated to an acceptable level? See Appendix C.2.2.8 for a list of typically reasonable and typically unreasonable mitigation measures. ☐ Yes; Continue to Part 1, Criteria 2. ☐ No; Continue to Part 1 Result.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Summarize groundwater quality and any mitigation measures proposed. Documentation should focus on groundwater table, mapped soil types and contaminated site locations.	

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Criteria 2: Water Balance Screening	
2A	**Ephemeral Stream Setback.** Does the proposed full infiltration BMP meet both the following? • The full infiltration BMP is located at least 250 feet away from an ephemeral stream; **AND** • The bottom surface of the full infiltration BMP is at a depth 20 feet or greater from seasonally high groundwater tables. ☐ Yes; Answer "Yes" to Criteria 2 Result. ☐ No; Continue to Step 2B.
2B	**Mitigation Measures.** Can site layout changes be proposed to support full infiltration BMPs? ☐ Yes; the site can be reconfigured to mitigate potential water balance issues. Answer "Yes" to Criteria 2 Result. ☐ No; the site cannot be reconfigured to mitigate potential water balance issues. Continue to Step 2C and provide discussion.
2C	**Additional studies.** Do additional studies support full infiltration BMPs? In the event that water balance effects are used to reject full infiltration (anticipated to be rare), additional analysis shall be completed and documented by a qualified professional indicating the site-specific information evaluated and the technical basis for this finding. ☐ Yes; Answer "Yes" to Criteria 2 Result. ☐ No; Answer "No" to Criteria 2 Result.
Criteria 2 Result	Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams? ☐ Yes; Continue to Part 1 Result. ☐ No; Continue to Part 1 Result.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Summarize potential water balance effects. Documentation should focus on mapping and soil data regarding proximity to ephemeral streams and groundwater depth.	

Part 1 – Full Infiltration Groundwater and Water Balance Screening Result[9]	Result
If answers to Criteria 1 and 2 are "Yes", a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration based on groundwater conditions. If answer to Criteria 1 or Criteria 2 is "No", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design based on groundwater conditions. Proceed to Part 2.	☐ Full Infiltration ☐ Complete Part 2

[9] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Part 2 – Partial vs. No Infiltration Feasibility Screening Criteria	
DMA(s) Being Analyzed:	**Project Phase:**
Criteria 3: Groundwater Screening	
Contaminated Soil/Groundwater. Are partial infiltration BMPs proposed at least 100 feet away from contaminated soil or groundwater sites? This can be confirmed using GeoTracker (geotracker.waterboards.ca.gov) to identify open contaminated sites. This criterion is intentionally a smaller radius than full infiltration, as the potential quantity of infiltration from partial infiltration BMPs is smaller. ☐ Yes; Answer "Yes" to Criteria 3 Result. ☐ No; However, site layout changes can be proposed to avoid contaminated soils or soils that lack adequate treatment capacity. Select "Yes" to Criteria 3 Result. It is a requirement for the SWQMP preparer to identify potential mitigation measures. ☐ No; Contaminated soils or soils that lack adequate treatment capacity cannot be avoided and partial infiltration BMPs are not feasible. Select "No" to Criteria 3 Result.	
Criteria 3 Result: Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without increasing risk of groundwater contamination that cannot be reasonably mitigated to an acceptable level? Yes; Continue to Part 2, Criteria 4. ☐ No; Skip to Part 2 Result.	
Summarize findings and basis. Documentation should focus on mapped soil types and contaminated site locations.	

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Criteria 4: Water Balance Screening	
Additional studies. In the event that water balance effects are used to reject partial infiltration (anticipated to be rare), a qualified professional must provide an analysis of the incremental effects of partial infiltration BMPs on the water balance compared to incidental infiltration under a no infiltration scenario (e.g. precipitation, irrigation, etc.).	
Criteria 4 Result: Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams? ☐ Yes: Continue to Part 2 Result. ☐ No: Continue to Part 2 Result.	
Summarize potential water balance effects. Documentation should focus on mapping and soil data regarding proximity to ephemeral streams and groundwater depth	

Part 2 – Partial Infiltration Groundwater and Water Balance Screening Result[10]	Result
If answers to Criteria 3 and Criteria 4 are "Yes", a partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration based on groundwater and water balance conditions. If answer to Criteria 3 or Criteria 4 is "No", then infiltration of any volume is considered to be infeasible within the site. The feasibility screening category is No Infiltration based on groundwater or water balance condition.	☐ Partial Infiltration Condition ☐ No Infiltration Condition

[10] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Factor of Safety and Design Infiltration Rate Worksheet				Form I-9	
Factor Category		**Factor Description**	**Assigned Weight (w)**	**Factor Value (v)**	**Product (p) p = w x v**
A	Suitability Assessment	Soil assessment methods	0.25		
		Predominant soil texture	0.25		
		Site soil variability	0.25		
		Depth to groundwater or impervious layer	0.25		
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			
B	Design	Level of pretreatment/ expected sediment loads	0.5		
		Redundancy/resiliency	0.25		
		Compaction during construction	0.25		
		Design Safety Factor, $S_B = \Sigma p$			
Combined Safety Factor, $S_{total} = S_A \times S_B$					
Observed Infiltration Rate, inch/hr, $K_{observed}$ (corrected for test-specific bias)					
Design Infiltration Rate, in/hr, $K_{design} = K_{observed} / S_{total}$					
Supporting Data					
Briefly describe infiltration test and provide reference to test forms:					

Factor of Safety and Design Infiltration Rate Worksheet	Form I-9

The Geotechnical Engineer certifies they completed Form I-9 (see Appendix C.4.3).

Professional Geotechnical Engineer's Printed Name: _____

Professional Geotechnical Engineer's Signed Name: _____

Date: _____

[SEAL]

ATTACHMENT 3

Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 3a	Structural BMP Maintenance Plan (Required)	▣Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Storm Water Control Facilities Maintenance Agreement (SWCFMA) (when applicable)	▣Included ☐Not Applicable

Note: Aggreement to be signed prior to final approval.

Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

Attachment 3a must identify:

- ☒ Specific maintenance indicators and actions for proposed structural BMP(s). This must be based on Section 7.7 and Appendix E of the Storm Water Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)
- ☒ How to access the structural BMP(s) to inspect and perform maintenance
- ☒ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- ☒ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☒ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- ☒ Recommended equipment to perform maintenance
- ☐ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

Attachment 3b: For all Structural BMPs, Attachment 3b must include a draft maintenance agreement in the City's standard format (PDP applicant to contact City staff to obtain the current maintenance agreement forms or download from City's website).

Missing items typically not required at planning level.

ATTACHMENT: 3A

Summary of Standard Inspection and Maintenance

The property owner is responsible to ensure inspection, operation and maintenance of permanent BMPs on their property unless responsibility has been formally transferred to an agency, community facilities district, homeowners association, property owners association, or other special district.

Maintenance frequencies listed in this table are average/typical frequencies. Actual maintenance needs are site-specific, and maintenance may be required more frequently. Maintenance must be performed whenever needed, based on maintenance indicators presented in this table. The BMP owner is responsible for conducting regular inspections to see when maintenance is needed based on the maintenance indicators. During the first year of operation of a structural BMP, inspection is recommended at least once prior to August 31 and then monthly from September through May. Inspection during a storm event is also recommended. After the initial period of frequent inspections, the minimum inspection and maintenance frequency can be determined based on the results of the first year inspections.

Threshold/Indicator	Maintenance Action	Typical Maintenance Frequency
Accumulation of sediment, litter, or debris	Remove and properly dispose of accumulated materials, without damage to the vegetation or compaction of the media layer.	• Inspect monthly. If the BMP is 25% full* or more in one month, increase inspection frequency to monthly plus after every 0.1-inch or larger storm event. • Remove any accumulated materials found at each inspection.
Obstructed inlet or outlet structure	Clear blockage.	• Inspect monthly and after every 0.5-inch or larger storm event. • Remove any accumulated materials found at each inspection.
Damage to structural components such as weirs, inlet or outlet structures	Repair or replace as applicable	• Inspect annually. • Maintain when needed.
Poor vegetation establishment	Re-seed, re-plant, or re-establish vegetation per original plans.	• Inspect monthly. • Maintain when needed.

Threshold/Indicator	Maintenance Action	Typical Maintenance Frequency
Dead or diseased vegetation	Remove dead or diseased vegetation, re-seed, re-plant, or re-establish vegetation per original plans.	• Inspect monthly. • Maintain when needed.
Overgrown vegetation	Mow or trim as appropriate.	• Inspect monthly. • Maintain when needed.
2/3 of mulch has decomposed, or mulch has been removed	Remove decomposed fraction and top off with fresh mulch to a total depth of 3 inches.	• Inspect monthly. • Replenish mulch annually, or more frequently when needed based on inspection.
Erosion due to concentrated irrigation flow	Repair/re-seed/re-plant eroded areas and adjust the irrigation system.	• Inspect monthly. • Maintain when needed.
Erosion due to concentrated storm water runoff flow	Repair/re-seed/re-plant eroded areas, and make appropriate corrective measures such as adding erosion control blankets, adding stone at flow entry points, or minor re-grading to restore proper drainage according to the original plan. If the issue is not corrected by restoring the BMP to the original plan and grade, the City Engineer shall be contacted prior to any additional repairs or reconstruction.	• Inspect after every 0.5-inch or larger storm event. If erosion due to storm water flow has been observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed. If the issue is not corrected by restoring the BMP to the original plan and grade, the City Engineer shall be contacted prior to any additional repairs or reconstruction.
Standing water in BMP for longer than 24 hours following a storm event Surface ponding longer than approximately 24 hours following a storm event may be detrimental to vegetation health	Make appropriate corrective measures such as adjusting irrigation system, removing obstructions of debris or invasive vegetation, clearing underdrains, or repairing/replacing clogged or compacted soils.	• Inspect monthly and after every 0.5-inch or larger storm event. If standing water is observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed.

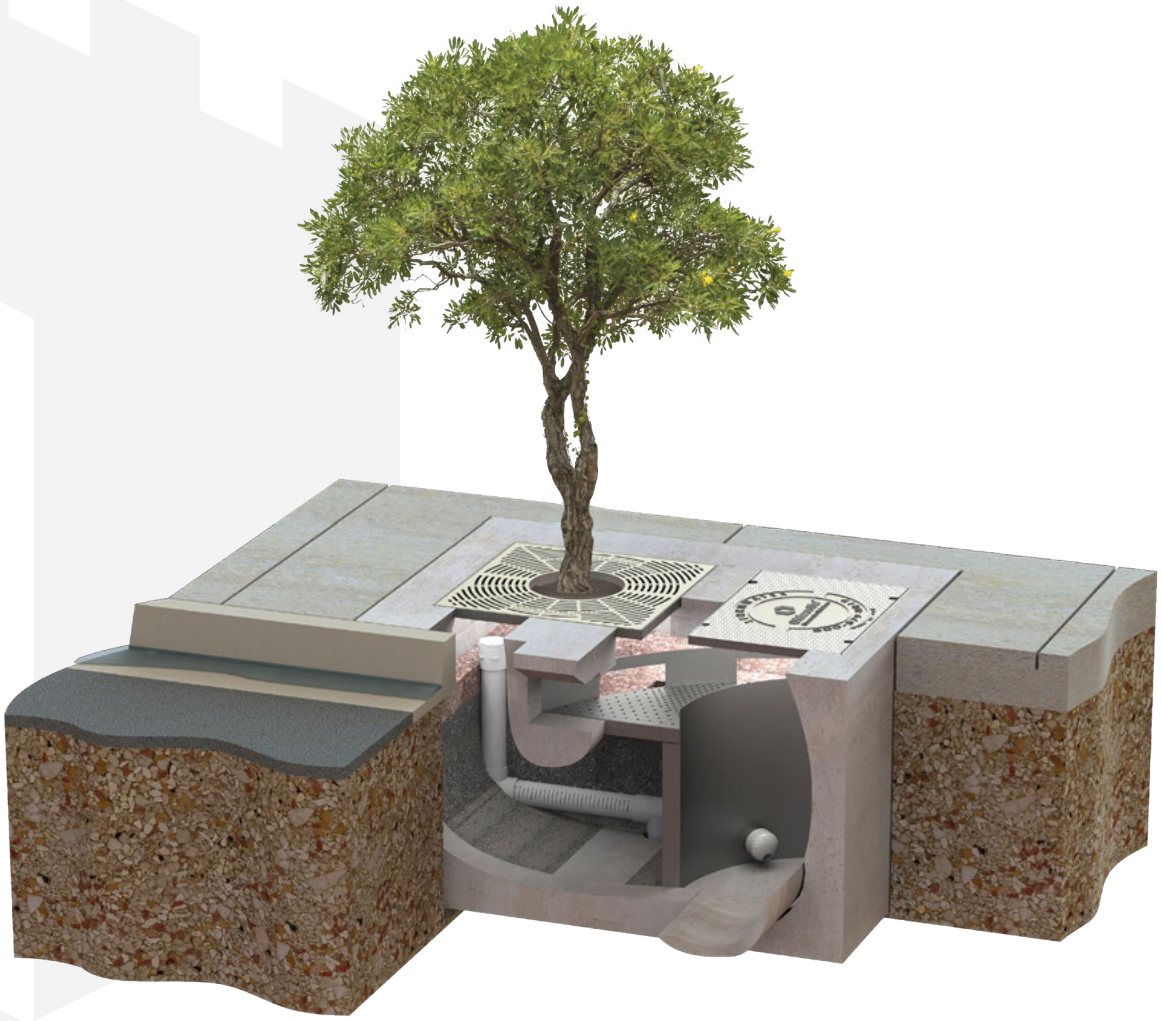
Threshold/Indicator	Maintenance Action	Typical Maintenance Frequency
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology	If mosquitos/larvae are observed: first, immediately remove any standing water by dispersing to nearby landscaping; second, make corrective measures as applicable to restore BMP drainage to prevent standing water. If mosquitos persist following corrective measures to remove standing water, or if the BMP design does not meet the 96-hour drawdown criteria due to release rates controlled by an orifice installed on the underdrain, the City Engineer shall be contacted to determine a solution. A different BMP type, or a Vector Management Plan prepared with concurrence from the County of San Diego Department of Environmental Health, may be required.	• Inspect monthly and after every 0.5-inch or larger storm event. If mosquitos are observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed.
Underdrain clogged	Clear blockage.	Inspect if standing water is observed for longer than 24-96 hours following a storm event. Maintain when needed.

"25% full" is defined as ¼ of the depth from the design bottom elevation to the crest of the outflow structure (e.g., if the height to the outflow opening is 12 inches from the bottom elevation, then the materials must be removed when there is 3 inches of accumulation – this should be marked on the outflow structure).

BIOPOD™ SYSTEM

with StormMix™ Media

Inspection & Maintenance Guide



Oldcastle Infrastructure™
A CRH COMPANY

BIOPOD™ BIOFILTER WITH STORMMIX™ BIOFILTRATION MEDIA

DESCRIPTION

The BioPod™ Biofilter System (BioPod) is a storm water biofiltration treatment system used to remove pollutants from storm water runoff. Impervious surfaces and other urban and suburban landscapes generate a variety of contaminants that can enter storm water and pollute downstream receiving waters unless treatment is provided. The BioPod system uses proprietary StormMix™ biofiltration media to capture and retain pollutants including total suspended solids (TSS), metals, nutrients, gross solids, trash and debris as well as petroleum hydrocarbons.

FUNCTION

The BioPod system uses engineered, high-flow rate filter media to remove storm water pollutants, allowing for a smaller footprint than conventional bioretention systems. Contained within a compact precast concrete vault, the BioPod system consists of a biofiltration chamber and an optional integrated high-flow bypass. The biofiltration chamber is filled with horizontal layers of aggregate, biofiltration media and mulch. Storm water passes vertically down through the mulch and biofiltration media for treatment. The mulch provides pretreatment by retaining most of the solids or sediment. The biofiltration media provides further treatment by retaining finer sediment and dissolved pollutants. The aggregate allows the media bed to drain evenly for discharge through an underdrain pipe or by infiltration.

INSPECTION & MAINTENANCE OVERVIEW

State and local regulations require all storm water management systems to be inspected on a regular basis and maintained as necessary to ensure performance and protect downstream receiving waters. Without maintenance, excessive pollutant buildup can limit system performance by reducing the operating capacity of the system and increasing the potential for scouring of pollutants during periods of high flow.

Some configurations of the BioPod may require periodic irrigation to establish and maintain vegetation. Vegetation will typically become established about two years after planting. Irrigation requirements are ultimately dependent on climate, rainfall and the type of vegetation selected.

INSPECTION & MAINTENANCE FREQUENCY

Periodic inspection is essential for consistent system performance and is easily completed. Inspection is typically conducted a minimum of twice per year, but since pollutant transport and deposition varies from site to site, a site-specific maintenance frequency should be established during the first two or three years of operation.

INSPECTION EQUIPMENT

The following equipment is helpful when conducting BioPod inspections:

- Recording device (pen and paper form, voice recorder, iPad, etc.)
- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- PPE as required for entry
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Socket

INSPECTION PROCEDURES

BioPod inspections are visual and are conducted without entering the unit. To complete an inspection, safety measures including traffic control should be deployed before the access covers or tree grates are removed. Once the covers have been removed, the following items should be checked and recorded (see form provided on page 6) to determine whether maintenance is required:

- If the BioPod unit is equipped with an internal bypass, inspect the inlet rack (or inlet chamber on underground units) and outlet chamber and note whether there are any broken or missing parts. In the unlikely event that internal parts are broken or missing, contact Oldcastle Storm water at (800) 579-8819 to determine appropriate corrective action.
- Note whether the curb inlet, inlet pipe, or inlet rack is blocked or obstructed.
- If the unit is equipped with an internal bypass, observe, quantify and record the accumulation of trash and debris in the inlet rack or inlet chamber. The significance of accumulated trash and debris is a matter of judgment. Often, much of the trash and debris may be removed manually at the time of inspection if a separate maintenance visit is not yet warranted.
- If it has not rained within the past 24 hours, note whether standing water is observed in the biofiltration chamber.
- Finally, observe, quantify and record presence of invasive vegetation and the amount of trash and debris and sediment load in the biofiltration chamber. Erosion of the mulch and biofiltration media bed should also be recorded. Often, much of the invasive vegetation and trash and debris may be removed manually at the time of inspection if a separate maintenance visit is not yet warranted. Sediment load may be rated light, medium or heavy depending on the conditions. Loading characteristics may be determined as follows:
  - **Light sediment load** – sediment is difficult to distinguish among the mulch fibers at the top of the mulch layer; the mulch appears almost new.
  - **Medium sediment load** – sediment accumulation is apparent and may be concentrated in some areas; probing the mulch layer reveals lighter sediment loads under the top 1" of mulch.
  - **Heavy sediment load** – sediment is readily apparent across the entire top of the mulch layer; individual mulch fibers are difficult to distinguish; probing the mulch layer reveals heavy sediment load under the top 1" of mulch.

MAINTENANCE INDICATORS

Maintenance should be scheduled if any of the following conditions are identified during inspection:

- The concrete structure is damaged or the tree grate or access cover is damaged or missing
- The inlet obstructed
- Standing water is observed in the biofiltration chamber more than 24 hours after a rainfall event (use discretion if the BioPod is located downstream of a storage system that attenuates flow)
- Trash and debris in the inlet rack cannot be easily removed at the time of inspection
- Trash and debris, invasive vegetation or sediment load in the biofiltration chamber is heavy or excessive erosion has occurred

MAINTENANCE EQUIPMENT

The following equipment is helpful when conducting BioPod maintenance:

- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- PPE as required for entry
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Rake, hoe, shovel and broom
- Bucket
- Pruners
- Vacuum truck (optional)
- Socket

MAINTENANCE PROCEDURES

Maintenance should be conducted during dry weather when no flows are entering the system. In most cases, maintenance may be conducted without entering. Entry may be required to maintain BioPod Underground units, depending on system depth. Once safety measures such as traffic control are deployed, the access covers may be removed and the following activities may be conducted to complete maintenance:

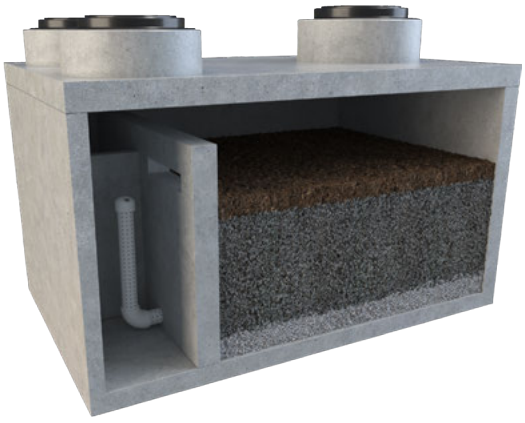
- Remove all trash and debris from the curb inlet and inlet rack manually or by using a vacuum truck as required.
- Remove all trash and debris and invasive vegetation from the biofiltration chamber manually or by using a vacuum truck as required.
- If the sediment load is medium or light but erosion of the biofiltration media bed is evident, redistribute the mulch with a rake or replace missing mulch as appropriate. If erosion persists, rocks may be placed in the eroded area to help dissipate energy and prevent recurring erosion.
- If the sediment load is heavy, remove the mulch layer using a hoe, rake, shovel and bucket, or by using a vacuum truck as required. If the sediment load is particularly heavy, inspect the surface of the biofiltration media once the mulch has been removed. If the media appears clogged with sediment, remove and replace one or two inches of biofiltration media prior to replacing the mulch* layer.
- Prune vegetation as appropriate and replace damaged or dead plants as required.
- Replace the tree grate and/or access covers and sweep the area around the BioPod to leave the site clean.
- All material removed from the BioPod during maintenance must be disposed of in accordance with local environmental regulations. In most cases, the material may be handled in the same manner as disposal of material removed from sumped catch basins or manholes.

* Natural, shredded hardwood mulch should be used in the BioPod. Timely replacement of the mulch layer according to the maintenance indicators described above should protect the biofiltration media below the mulch layer from clogging due to sediment accumulation. However, whenever the mulch is replaced, the BioPod should be visited 24 hours after the next major storm event to ensure that there is no standing water in the biofiltration chamber. Standing water indicates that the biofiltration media below the mulch layer is clogged and must be replaced. Please contact Oldcastle Infrastructure at (800) 579-8819 to purchase the proprietary StormMix™ biofiltration media.

BIOPOD SURFACE

BIOPOD TREE

BIOPOD PLANTER



BIOPOD UNDERGROUND

ATTACHMENT: 3B

EXEMPT FROM FEES pursuant to Gov't Code §§ 6103, 27383, and 27388.1 (filing requested/executed by municipality)

RECORDING REQUESTED BY, AND WHEN RECORDED RETURN TO:

City Engineer
City of Escondido
201 North Broadway
Escondido, CA 92025-2798

This Space for Recorder's Use Only

STORM WATER CONTROL FACILITY MAINTENANCE AGREEMENT
APN NO. 229-171-29, 229-171-30

This STORM WATER CONTROL FACILITY MAINTENANCE AGREEMENT ("Agreement") is entered into between the City of Escondido, a California municipal corporation ("City") and 501 W. Mission, LLC ("Owner"), and in accordance with City of Escondido Grading Plan No. [GP Number] ("Grading Plan"). (The City and Owner may each be referred to herein as a "Party" and collectively as the "Parties.")

WHEREAS, installation and maintenance of Storm Water Control Facilities ("SWCF") is required pursuant to the Escondido Municipal Code, by the California Regional Water Quality Control Board ("RWQCB"), and by the City as a condition of approval of property development; and

WHEREAS, Owner is the owner of certain real property identified as APN 229-171-29 & 229-171-30; located at SE Corner of Mission ave & Center City Pkwy, Escondido, CA 92025; and more particularly described in Exhibit A, attached hereto and incorporated herein by this reference ("Property"); and

WHEREAS, Owner has proposed development of the Property that provides benefit to the general public and the City and meets the requirements of RWQCB Order R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100 (National Pollution Discharge Elimination System No. CAS0109266); and

WHEREAS, the current and future subdivision Owner shall use the SWCF as installed per the Grading Plan and the provisions of the Storm Water Quality Management Plan prepared by the Owner and approved by the CITY on [Approval Date] ("Storm Water Plan"); and

WHEREAS, it is the mutual desire of the Parties to establish a method for the maintenance and repair of the SWCF, and that the SWCF be maintained in a safe and usable condition by the Owner; and

WHEREAS, the City shall have the right but not the obligation to enforce full compliance with the terms and conditions of this Agreement; and

WHEREAS, it is the mutual intention of the Parties that this Agreement constitute a covenant running with the land, binding upon each successive person having or acquiring any right, title, or interest in all or any portion of the Property.

NOW, THEREFORE, in consideration of the above premises, the mutual covenants and promises below, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. The Property is benefited by this Agreement, and the Owner is expressly bound hereby for the benefit of the land. In the event any of the herein described parcels of land are subdivided further, the Owner, or its heirs, assigns, and successors in interest of each such newly created parcel, shall be liable under this Agreement for its then pro rata share of expenses and such pro rata shares of expenses shall be computed to reflect such newly created parcels.

2. The cost and expense of maintaining the SWCF shall be the responsibility of, and paid by, the Owner. The SWCF shall be constructed and maintained by the Owner in accordance with the Grading Plan and Storm Water Plan.

3. Repair and maintenance responsibilities for all structural SWCF and required Best Management Practices ("BMPs") are set forth in the Storm Water Plan. Owner shall, as changes occur, provide the City with the name, title, and phone number of the persons or entities responsible for maintenance and reporting activities; funding, schedules, and procedures for inspection and maintenance of the SWCF; implementation of worker training requirements; and any other activities necessary to ensure compliance with BMPs. The Storm Water Plan shall provide for the servicing of all SWCF as needed, and at least once during August or September of each year, and for the retention of inspection and maintenance records for at least three years. Owner shall submit annual certification to the City's Department of Engineering Services between September 1 and October 1 of each year. The certification shall document all maintenance performed and compliance with applicable permits.

4. The City shall have the right to inspect the SWCF and related records as needed to ensure the SWCF is being properly maintained.

5. If any individual Owner fails to pay its share of costs and expenses as required to use, maintain, or repair the SWCF, then the City shall be entitled without further notice to institute legal action for the collection of funds advanced on behalf of the individual Owner that did not pay its share of costs and expenses and shall be entitled to recover in such action, in addition to the funds advanced, interest thereon at the current prime rate of interest, until paid; all costs and disbursements of such action, including such sum or sums as the court may fix; and reasonable attorney's fees.

6. Any liability of the Owner to any worker employed to make repairs or provide maintenance under this Agreement, or to third persons, as well as any liability of the Owner for damage to the property of any such worker, or any third persons, as a result of or arising out of repairs and maintenance under this Agreement, shall be borne solely by the Owner (and if jointly owned,

then in the same percentage as each individual Owner bears the costs and expenses of such repairs and maintenance). In the case of more than one Owner, each individual Owner shall be responsible for and maintain its own insurance. By this Agreement, the Parties do not intend to provide for the sharing of liability with respect to personal injury or property damage other than that attributable to the repairs and maintenance undertaken under this Agreement. Each Owner agrees to indemnify any other Owner from any and all liability for injury to an individual Owner or damage to its property when such injury or damage results from, arises out of, or is attributable to any maintenance or repairs undertaken pursuant to this Agreement.

7. Indemnification, Duty to Defend, Hold Harmless.

7.1 To the fullest extent permitted by law, Owner shall jointly and severally indemnify, defend with legal counsel reasonably satisfactory to the City, and hold harmless the City and the City's officers, officials, directors, employees, agents, volunteers, and Councilmembers (collectively, "Indemnitees") from and against any and all claims, demands, actions, causes of action, proceedings (including but not limited to legal and administrative proceedings of any kind), suits, fines, penalties, sanctions, judgments, levies, liens, orders (including without limitation any RWQCB Orders), assessments, costs, expenses, liabilities, losses, damages, or injuries, in law or equity, including without limitation the payment of all consequential damages and attorney's fees and other related litigation costs and expenses, of every nature caused by, arising out of, or in connection with Owner's obligations under this Agreement or Owner's obligations for implementation of storm water management in accordance with RWQCB Order R9-2013-0001 and subsequent amendments (collectively, "Claims"), including any reasonable attorney's fees, costs, and expenses incurred by the Indemnitees in responding to or defending any Claims, except where caused by the active negligence, sole negligence, or willful misconduct of the Indemnitees.

7.2 Owner's duty to defend the Indemnitees is separate, independent, and free-standing from Owner's duty to indemnify and hold harmless the Indemnitees. Owner's defense obligation shall arise immediately upon receipt by the City or Owner of any written notice of any alleged Claims, or a written Notice of Violation or equivalent notice of intent from the RWQCB or other enforcement agency to levy any fines, penalties, or sanctions against Indemnitees, and shall continue until the entry of any final and non-appealable judgment or order, including without limitation any final and non-appealable RWQCB Order or other agency enforcement order.

7.3 The indemnity protections provided by this Agreement are not intended to exceed the indemnity available under applicable law. If the indemnity protections are found by a court to be unlawful in any way, the protection shall be curtailed or adjusted, but only to the minimum extent required to conform to applicable law.

7.4 All terms and provisions within this Section 7 shall survive termination of this Agreement.

8. If, in the City's sole judgment, the SWCF is not being maintained to the standards required by this Agreement, the City may thereupon provide written notice to the Owner to initiate repairs or construction within 90 days. Upon the Owner's failure to demonstrate good faith to make repairs or construction within 90 days, the City may make all necessary repairs to the SWCF or construct the SWCF in a manner to meet the standards set forth in this Agreement and to then assess

costs to the Owner.

9. If the City elects to make necessary maintenance or repairs in accordance with this Agreement, such maintenance and repairs shall be accepted "as is" by the Owner without any warranty of workmanship and be guaranteed and indemnified by Owner in accordance with this Agreement.

10. The obligations and benefits provided for in this Agreement shall run with the land obligated and benefited, respectively, and shall be binding on all persons having or acquiring any right, title, or interest in the Property or any part thereof. As such, it is the intent of the Parties that this Agreement and the promises, covenants, rights, and obligations set forth herein (i) shall be and are covenants running with the Property, encumbering the Property for the term of this Agreement, and binding upon Owner's successors in title and all subsequent owners and operators of the Property; (ii) are not merely personal covenants of the Owner; and (iii) shall bind Owner and its respective heirs, executors, administrators, successors, and assigns.

11. Amendments. This Agreement may not be amended, modified, waived, or supplemented except by an agreement in writing signed by all of the Parties, and then only in the specific instance and for the specific purpose given.

12. Governing Law. This Agreement shall be governed by the laws of the State of California. In the event any provision of this Agreement is held to be unenforceable or invalid by any court of competent jurisdiction, the validity and enforceability of the remaining provisions shall not be affected thereby.

13. Entire Agreement. This Agreement, together with its attachments or other documents, if any, described or incorporated herein, contains the entire agreement and understanding concerning the subject of this Agreement and supersedes and replaces all prior negotiations, understandings, or proposed agreements, written or oral, except as otherwise provided herein. Each of the Parties hereto acknowledges that no other Party, nor the agents nor the attorneys for any Party, has made any promise, representation, or warranty whatsoever, express or implied, not contained herein, to induce the execution of this Agreement and acknowledges that this Agreement has not been executed in reliance upon any promise, representation, or warranty not contained herein.

14. Severability. This Agreement shall be performed and shall be enforceable to the full extent allowed by applicable law, and the illegality, invalidity, waiver, or unenforceability of any provision of this Agreement shall not affect the legality, validity, applicability, or enforceability of the remaining provisions of this Agreement.

15. Capacity. Each individual signing this Agreement represents and warrants that he or she has been authorized to do so by proper action of the Party on whose behalf he or she has signed.

16 Advice of Counsel. The Parties hereby acknowledge that they have executed this Agreement after having the opportunity to consult with, and receive the advice of, their own counsel.

17. Attorney's Fees. In any action to enforce the terms of this Agreement, the Parties agree that the prevailing party shall be entitled to its actual attorney's fees and all costs, fees, and expenses, including the fees of expert witnesses and consultants, whether or not such costs, fees, and

expenses are recoverable or allowed as costs under section 1033.5 of the California Code of Civil Procedure. Such fees and costs shall be proven and awarded by the court after the conclusion of the trial on all other issues by way of a cost bill and motion. In addition to the foregoing award of attorney's fees and costs, the prevailing party shall be entitled to its attorney's fees and costs incurred in any post-judgment proceeding to collect or enforce any judgment. This provision is separate and shall survive the merger of this provision into any judgment on this Agreement.

18. Counterparts. This Agreement may be executed on separate counterparts that, upon completion, may be assembled into and shall be construed as one document.

19. Recitals. The Recitals set forth in this Agreement are included herein by reference as part of this Agreement and the Parties agree that said Recitals are essential facts to this Agreement.

20. Effective Date. Unless a different date is provided in this Agreement, the effective date of this Agreement shall be the latest date of execution set forth by the names of the signators below.

IN WITNESS WHEREOF, this Agreement is executed by the Parties or their duly authorized representatives as of the Effective Date:

CITY OF ESCONDIDO

Date: _____

_____
Julie Procopio, Director of Engineering Services

[OWNER]

Date: _____

_____
Signature

_____
Name/Title (please print)

(ALL ABOVE SIGNATURES MUST BE NOTARIZED)

Approved as to Form:

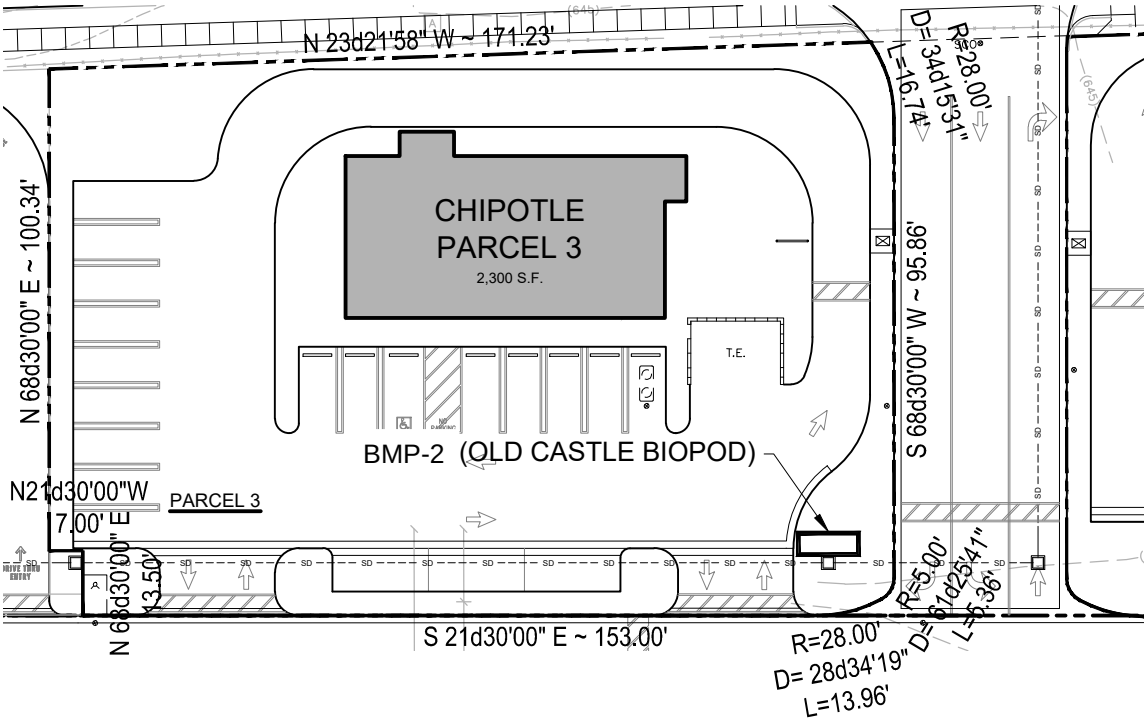
OFFICE OF THE CITY ATTORNEY
Michael R. McGuinness, City Attorney

BY: _____

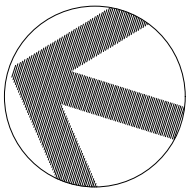
EXHIBIT A

Legal Description of Property

SEE NEXT PAGE



NORTH



SCALE: 1"=40'

LEGAL DESCRIPTION: 20,394 SF (0.47 AC) PROPERTY LOCATED AT W. MISSION AVE & CENTRE CITY PKWY, ESCONDIDO, CA. PARCEL 3, APN 229-171-29, 229-171-30.

SWCFMA SITE PLAN

CHIPOTLE-ESCONDIDO
PARCEL 3
W. MISSION AVE & CENTRE CITY PKWY
ESCONDIDO, CA 92025

ATTACHMENT 4

City of Escondido PDP Structural BMP Verification for Permitted Land Development Projects

This is the cover sheet for Attachment 4.

City of Escondido Storm Water Structural BMP Verification Form Page 1 of 3	
Project Summary Information	
Project Name	Chipotle - Escondido
Permit Number (e.g., grading/improvement plan number)	
Project Address	
Assessor's Parcel Number(s) (APN(s))	
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	
Maintenance Notification / Agreement No.	
Responsible Party for Construction Phase	
Developer's Name	
Address	
Email Address	
Phone Number	
Engineer of Work	
Engineer's Phone Number	
Responsible Party for Ongoing Maintenance	
Owner's Name(s)*	
Address	
Email Address	
Phone Number	
*Note: If a corporation or LLC, provide information for principal partner or Agent for Service of Process. If an HOA, provide information for the Board or property manager at time of project closeout.	

City of Escondido Storm Water Structural BMP Verification Form Page 2 of 3				
Stormwater Structural Pollutant Control & Hydromodification Control BMPs* (List all from SWQMP)				
Description/Type of Structural BMP	**Plan Sheet #**	**Structural BMP ID#**	**Maintenance Agreement Recorded Doc #**	**Revisions**
Biopod from Oldcastle	C200-204	BMP-2	TBD	
*All Priority Development Projects (PDPs) require a Structural BMP				

Note: If this is a partial verification of Structural BMPs, provide a list and map denoting Structural BMPs that have already been submitted, those for this submission, and those anticipated in future submissions.

City of Escondido Storm Structural BMP Verification Form Page 3 of 3

Checklist for Engineer of Work (EOW) to submit to Field Engineering:

- ☐ Copy of the final accepted SWQMP and any accepted addendum.
- ☐ Copy of the most current plan showing the Storm Water Structural BMP Table, plans/cross-section sheets of the Structural BMPs and the location of each verified as-built Structural BMP.
- ☐ Photograph of each Structural BMP.
- ☐ Photograph(s) of each Structural BMP during the construction process to illustrate proper construction.
- ☐ Copy of the approved Structural BMP maintenance agreement and associated security

By signing below, I certify that the Structural BMP(s) for this project have been constructed and all BMPs are in substantial conformance with the approved plans and applicable regulations. I understand the City reserves the right to inspect the above BMPs to verify compliance with the approved plans and Storm Water Ordinance. Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Please sign your name and seal.

Professional Engineer's Printed Name: _____

Professional Engineer's Signed Name: _____

Date: _____

[SEAL]

ATTACHMENT 5

Copy of Plan Sheets Showing Permanent Storm Water BMPs, Source Control, and Site Design BMPs

This is the cover sheet for Attachment 5.

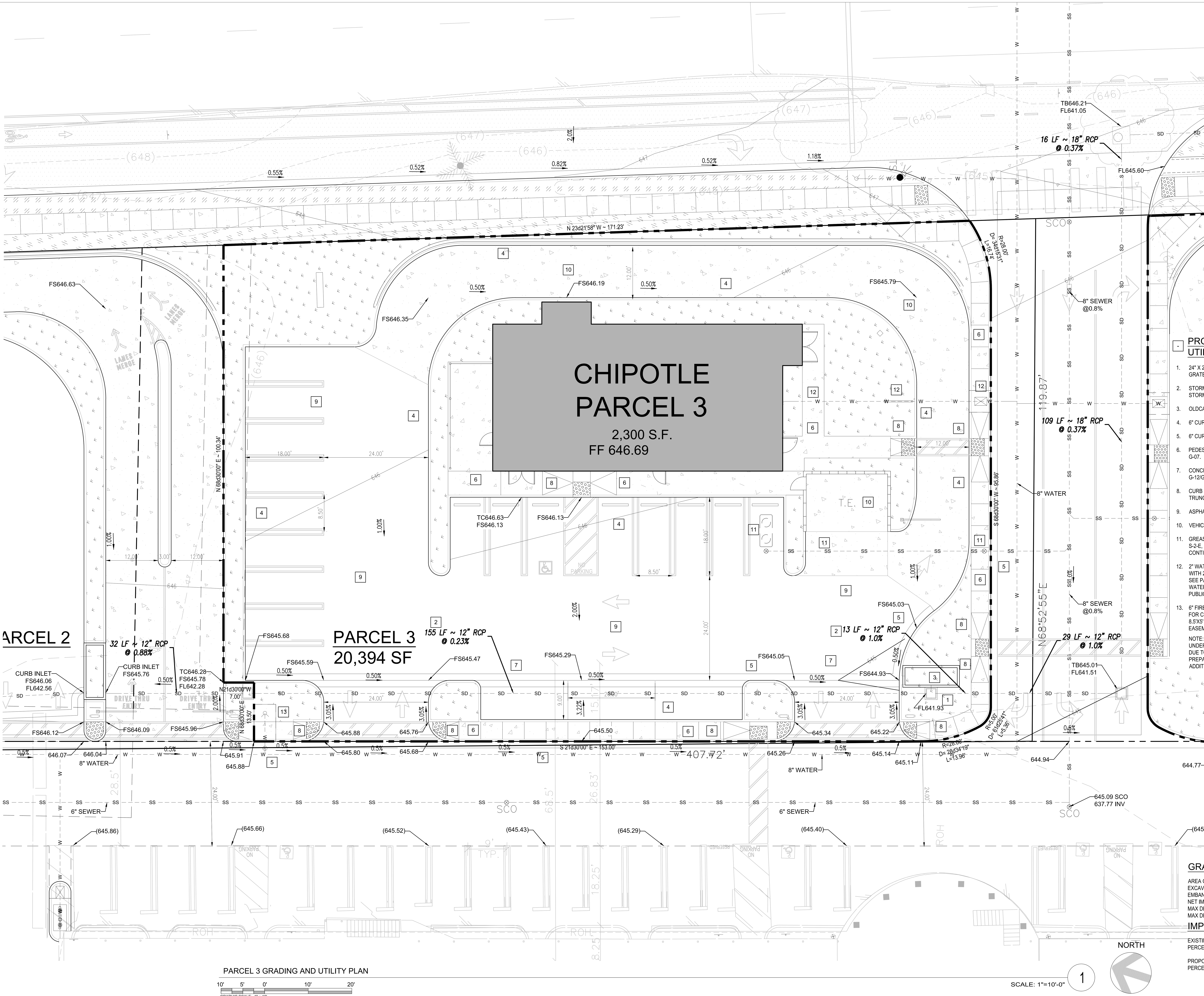
Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

- ■ Structural BMP(s) with ID numbers matching Step 5 Summary of PDP Structural BMPs
- ■ The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
- ■ Details and specifications for construction of structural BMP(s)
- ☐ Signage indicating the location and boundary of structural BMP(s) as required by City staff
- ☐ How to access the structural BMP(s) to inspect and perform maintenance
- ☐ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- ☐ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☐ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- ☐ Recommended equipment to perform maintenance
- ☐ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management
- ☐ Include landscaping plan sheets showing vegetation requirements for vegetated structural BMP(s)
- ☐ All BMPs must be fully dimensioned on the plans
- ☐ When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number must be provided. Photocopies of general brochures are not acceptable.
- ☐ Include all source control and site design measures described in Steps 3 and 4 of the SWQMP. Can be included as a separate exhibit as necessary.

***Note: Plan sheets included in this attachment can be full size or half size.**

Missing items typically not required at planning level.



PARCEL 3 GRADING AND UTILITY PLAN

GRAPHIC SCALE: 1" = 10'

1 SCALE: 1"=10'-0"

PROPOSED GRADING AND UTILITY KEY NOTES:

		QUANTITY ESTIMATE:
1.	24" X 24" CATCH BASIN BY OLDCASTLE PRECAST. GRATE OF SOLID LID PER PLAN.	1 EACH
2.	STORM DRAIN, SIZE AND SLOPE PER PLAN. NOTE: STORM DRAIN IN AN EASEMENT.	167 LF
3.	OLDCASTLE BIOPOD. BPP-412EB.	1 EACH 4'X12'
4.	6" CURB PER SDRSD G-01.	870 LF
5.	6" CURB AND GUTTER PER SDRSD G-02.	222 LF
6.	PEDESTRIAN CONCRETE WALKWAY PER SDRSD G-07.	1,612 SF
7.	CONCRETE CROSS GUTTER W=3' PER SDRSD G-12/G-13.	585 SF
8.	CURB RAMP - TYPE D PER SDRSD G-31 WITH TRUNCATED DOMES PER SDRSD G-30.	8 EACH
9.	ASPHALT CONCRETE OVER AGGREGATE BASE.	8,426 SF
10.	VEHICULAR CONCRETE OVER AGGREGATE BASE.	3,193 SF
11.	GREASE INTERCEPTOR, 6" SEWER LATERAL PER S-2-E, CLEANOUT - SEE PARCEL 1 PLAN FOR CONTINUATION.	69 LF
12.	2" WATER SERVICE FOR 2" METER PER W-2-E WITH 2" BACKFLOW PREVENTOR PER W-10-E - SEE PARCEL 1 PLAN FOR CONTINUATION. NOTE: WATER METER IS IN A 5'X5' EASEMENT OFF OF THE PUBLIC UTILITY EASEMENT.	54 LF
13.	6" FIRE HYDRANT PER W-3-E SEE PARCEL 1 PLAN FOR CONTINUATION. NOTE: FIRE HYDRANT IS IN AN 8.5'X5' EASEMENT OFF OF THE PUBLIC UTILTY EASEMENT.	1 EACH

NOTE: THE LOCATION OF THE EXISTING ONSITE UNDERGROUND UTILITIES IS UNCLEAR AT THIS TIME DUE TO LACK OF DOCUMENTATION. PRIOR TO PREPARATION OF FINAL CONSTRUCTION PLANS ADDITIONAL FIELD VERIFICATION WILL BE PERFORMED.

GRADING QUANTITY SUMMARY:

AREA GRADED	0.47 AC (20,394 SF)
EXCAVATION	35 CY CUT
EMBANKMENT	459 CY FILL
NET IMPORT	424 CY
MAX DEPTH OF CUT	4.02 FT
MAX DEPTH OF FILL	1.99 FT

IMPERVIOUS QUANTITY SUMMARY:

EXISTING	4,685 SF
PERCENTAGE OF TOTAL AREA	22.97%
PROPOSED	16,786 SF
PERCENTAGE OF TOTAL AREA	82.31%

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
CONDITIONAL USE PERMIT
PARCEL 3
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MO | ES
SCALE:	AS SHOWN

SHEET TITLE:
GRADING AND UTILITY PLAN PARCEL 3

SHEET #
C200

PARCEL 3 DRAINAGE PLAN

10' 5' 0' 10' 20'

GRAPHIC SCALE: 1" = 10'

SCALE: 1"=10'-0"

1

NORTH

TOTAL SITE AREA =	20,394	SF
=	0.47	AC
IMPERVIOUS AREA (T) =	4,685	SF
=	0.11	AC
IMPERVIOUS%=	22.97	
PERVIOUS AREA (T) =	15,710	SF
=	0.36	AC
C VALUE =	**0.44**	
RAINFALL INTENSITY (I) =	4.4	IN/HR
DISCHARGE (Q) =	CIA	
=	**0.90**	**CFS**

DRAINAGE AREA-1		
AREA =	3,508	SF
=	0.08	AC
IMPERVIOUS AREA (1) =	2,990	SF
=	0.07	AC
IMPERVIOUS%=	85	
PERVIOUS AREA (1) =	518	SF
=	0.01	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.29**	**CFS**

DRAINAGE AREA-2		
AREA =	16,887	SF
=	0.39	AC
IMPERVIOUS AREA (2) =	1,695	SF
=	0.04	AC
IMPERVIOUS%=	10	
PERVIOUS AREA (2) =	15,192	SF
=	0.35	AC
C VALUE=	0.36	
DISCHARGE (Q) =	CIA	
=	**0.61**	**CFS**

Revisions:	
1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT

CONDITIONAL USE PERMIT
PARCEL 3

CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

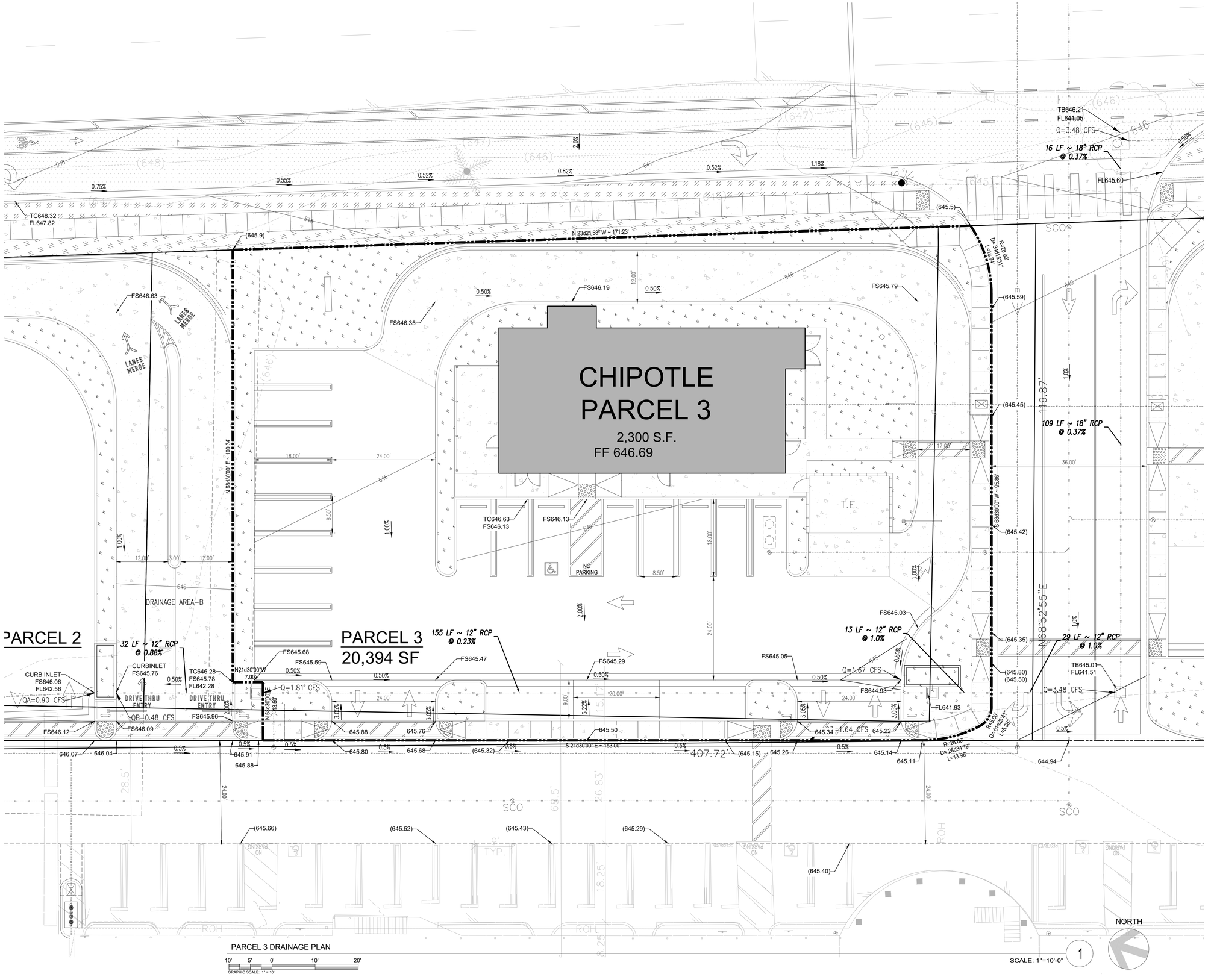
CLIENT:

501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MOUR GROUP
SCALE:	AS SHOWN

SHEET TITLE:
DRAINAGE PLAN
EXISTING
PARCEL 3

SHEET #
C201



TOTAL SITE AREA =	20,394	SF
=	0.47	AC
IMPERVIOUS AREA (T) =	16,786	SF
=	0.39	AC
IMPERVIOUS%=	82.31	
PERVIOUS AREA (T) =	3,608	SF
=	0.08	AC
C VALUE =	**0.81**	
RAINFALL INTENSITY (I) =	4.4	IN/HR
DISCHARGE (Q) =	CIA	
=	**1.67**	**CFS**

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA 92120
PH. 619.727.4800

PROJECT
CONDITIONAL USE PERMIT
PARCEL 3
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MOUR GROUP
SCALE:	AS SHOWN

SHEET TITLE:
DRAINAGE PLAN
PROPOSED
PARCEL 3

SHEET #
C202

SOURCE SCONTROL(SC)/SITE DESIGN(SD):

ITEMS	FACT SHEET/DESIGN REQMT
PREVENT ILLICIT DISCHARGE INTO MS4	4.2.1
STORM DRAIN STENCILING OR SIGNAGE	4.2.2
PROTECT TRASH STORAGE AREAS	4.2.5
MINIMIZE IMPERVIOUS AREA	4.3.3
LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES	4.3.7
ONSITE STORM DRAIN INLET LABELING	SC-A
REFUSE AREAS EXPOSURE REDUCTION	SC-G

DMA SITE MAP NOTES

1. BMP - 2- OLDCASTLE BIOPOD WITH PLANTER, BPS/T/P-412 PLANTED WITH DIETES IRIDIODES (FORTNIGHT LILY).

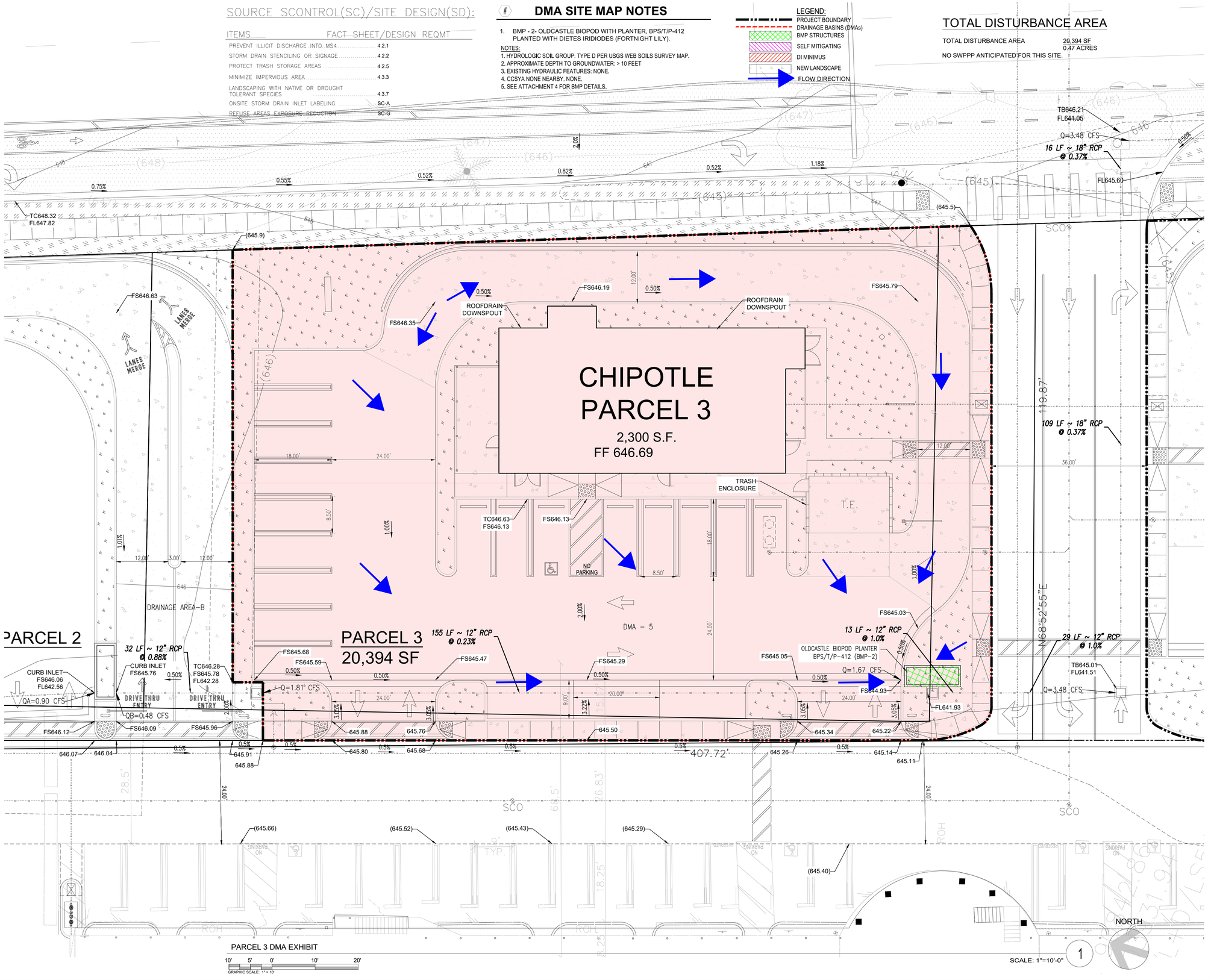
NOTES:
1. HYDROLOGIC SOIL GROUP: TYPE D PER USGS WEB SOILS SURVEY MAP.
2. APPROXIMATE DEPTH TO GROUNDWATER: > 10 FEET
3. EXISTING HYDRAULIC FEATURES: NONE.
4. CCSYA NONE NEARBY, NONE.
5. SEE ATTACHMENT 4 FOR BMP DETAILS.

LEGEND:
- PROJECT BOUNDARY
- DRAINAGE BASINS (DMAs)
- BMP STRUCTURES
- SELF MITIGATING
- DI MINIMUS
- NEW LANDSCAPE
- FLOW DIRECTION

TOTAL DISTURBANCE AREA

TOTAL DISTURBANCE AREA 20,394 SF 0.47 ACRES

NO SWPPP ANTICIPATED FOR THIS SITE.



DMA - 5 =	20,394	SF
=	0.47	AC
IMPERVIOUS AREA (T) =	16,786	SF
=	0.39	AC
IMPERVIOUS%=	82	
PERVIOUS AREA (T) =	3,608	SF
=	0.08	AC
C VALUE =	**0.81**	
RAINFALL INTENSITY (I) =	4.4	IN/HR
DISCHARGE (Q) =	CIA	
=	**1.67**	**CFS**

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
CONDITIONAL USE PERMIT
PARCEL 3
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

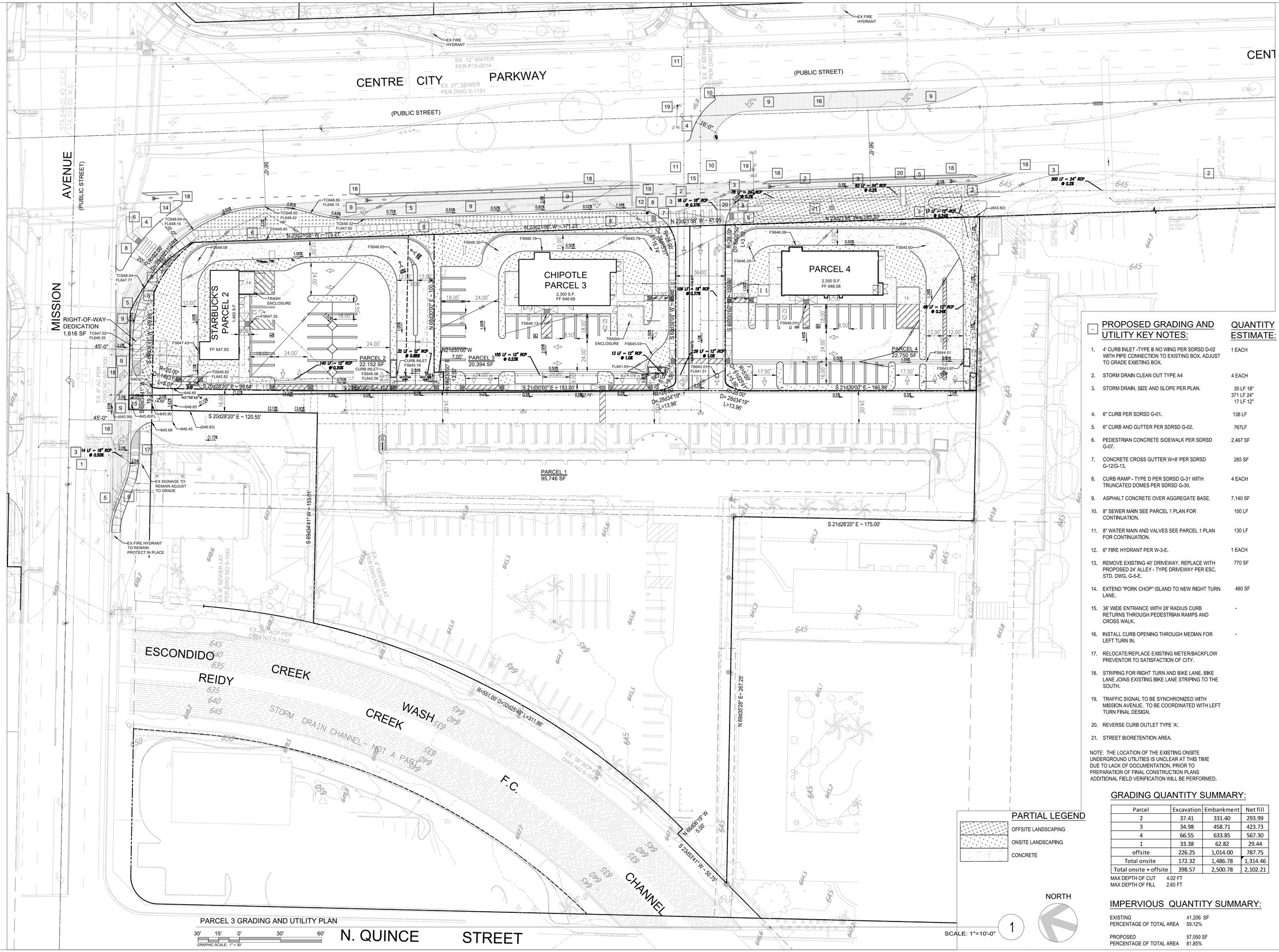
CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MOUR GROUP
SCALE:	AS SHOWN

SHEET TITLE:
DMA EXHIBIT

PARCEL 3

SHEET #
C203



PROPOSED GRADING AND UTILITY KEY NOTES:

		QUANTITY ESTIMATE:
1.	4' CURB INLET -TYPE B NO WING PER SDRSD D-02 WITH PIPE CONNECTION TO EXISTING BOX. ADJUST TO GRADE EXISTING BOX.	1 EACH
2.	STORM DRAIN CLEAN OUT TYPE A4	4 EACH
3.	STORM DRAIN, SIZE AND SLOPE PER PLAN.	30 LF 18" 371 LF 24" 17 LF 12"
4.	6" CURB PER SDRSD G-01.	138 LF
5.	6" CURB AND GUTTER PER SDRSD G-02.	767LF
6.	PEDESTRIAN CONCRETE SIDEWALK PER SDRSD G-07.	2,467 SF
7.	CONCRETE CROSS GUTTER W=8' PER SDRSD G-12/G-13.	265 SF
8.	CURB RAMP - TYPE D PER SDRSD G-31 WITH TRUNCATED DOMES PER SDRSD G-30.	4 EACH
9.	ASPHALT CONCRETE OVER AGGREGATE BASE.	7,140 SF
10.	8" SEWER MAIN SEE PARCEL 1 PLAN FOR CONTINUATION.	100 LF
11.	8" WATER MAIN AND VALVES SEE PARCEL 1 PLAN FOR CONTINUATION.	130 LF
12.	6" FIRE HYDRANT PER W-3-E.	1 EACH
13.	REMOVE EXISTING 40' DRIVEWAY. REPLACE WITH PROPOSED 24' ALLEY - TYPE DRIVEWAY PER ESC. STD. DWG. G-5-E.	770 SF
14.	EXTEND "PORK CHOP" ISLAND TO NEW RIGHT TURN LANE.	480 SF
15.	36' WIDE ENTRANCE WITH 28' RADIUS CURB RETURNS THROUGH PEDESTRIAN RAMPS AND CROSS WALK.	-
16.	INSTALL CURB OPENING THROUGH MEDIAN FOR LEFT TURN IN.	-
17.	RELOCATE/REPLACE EXISTING METER/BACKFLOW PREVENTOR TO SATISFACTION OF CITY.	
18.	STRIPING FOR RIGHT TURN AND BIKE LANE. BIKE LANE JOINS EXISTING BIKE LANE STRIPING TO THE SOUTH.	
19.	TRAFFIC SIGNAL TO BE SYNCHRONIZED WITH MISSION AVENUE. TO BE COORDINATED WITH LEFT TURN FINAL DESIGN.	
20.	REVERSE CURB OUTLET TYPE 'A'.	
21.	STREET BIORETENTION AREA.	

NOTE: THE LOCATION OF THE EXISTING ONSITE UNDERGROUND UTILITIES IS UNCLEAR AT THIS TIME DUE TO LACK OF DOCUMENTATION. PRIOR TO PREPARATION OF FINAL CONSTRUCTION PLANS ADDITIONAL FIELD VERIFICATION WILL BE PERFORMED.

PARTIAL LEGEND

- OFFSITE LANDSCAPING
- ONSITE LANDSCAPING
- CONCRETE

GRADING QUANTITY SUMMARY:

Parcel	Excavation	Embankment	Net fill
2	37.41	331.40	293.99
3	34.98	458.71	423.73
4	66.55	633.85	567.30
1	33.38	62.82	29.44
offsite	226.25	1,014.00	787.75
Total onsite	172.32	1,486.78	1,314.46
Total onsite + offsite	398.57	2,500.78	2,102.21

MAX DEPTH OF CUT 4.02 FT
MAX DEPTH OF FILL 2.60 FT

IMPERVIOUS QUANTITY SUMMARY:

EXISTING	41,206 SF
PERCENTAGE OF TOTAL AREA	59.12%
PROPOSED	57,050 SF
PERCENTAGE OF TOTAL AREA	81.85%

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
CONDITIONAL USE PERMIT
PARCEL 3
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

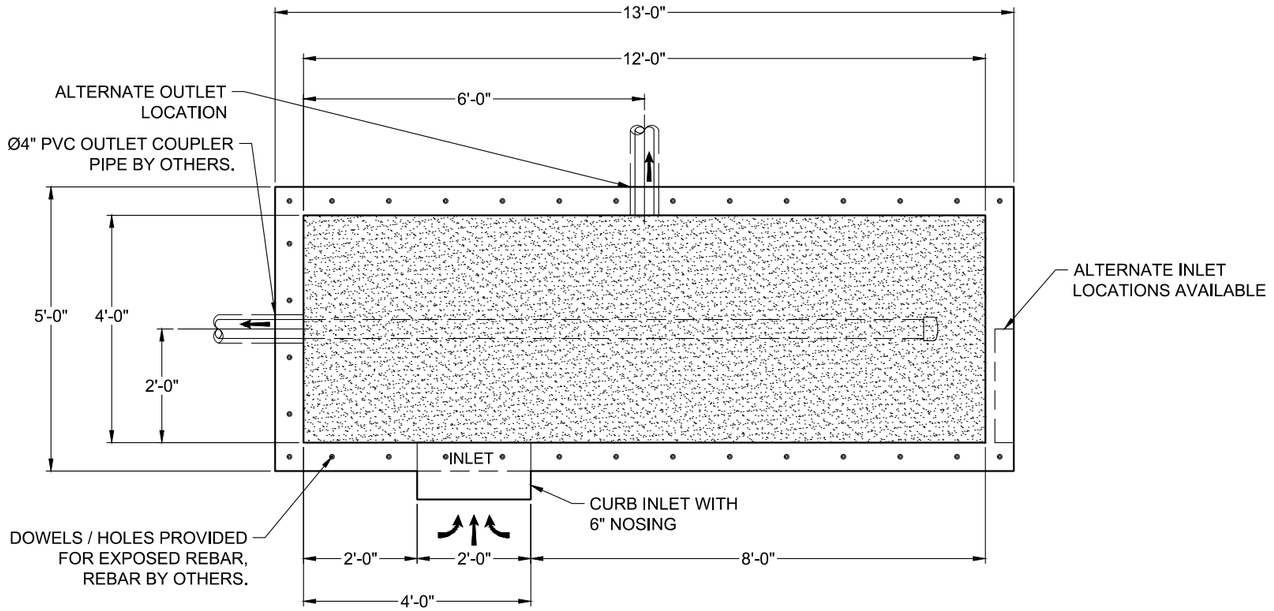
DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MO | ES
SCALE:	AS SHOWN

SHEET TITLE:
OVERALL GRADING AND UTILITY PLAN

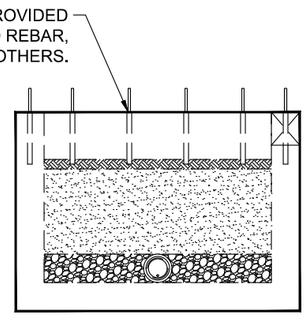
SHEET #
C204

SITE SPECIFIC DATA				
Structure ID				ID
Treatment Flow Rate (cfs)				-
Peak Flow Rate (cfs)				NA
Rim Elevation				-
Pipe Data	**Pipe Location**	**Pipe Size**	**Pipe Type**	**Invert Elevation**
Outlet	-	-	-	-
Notes:				

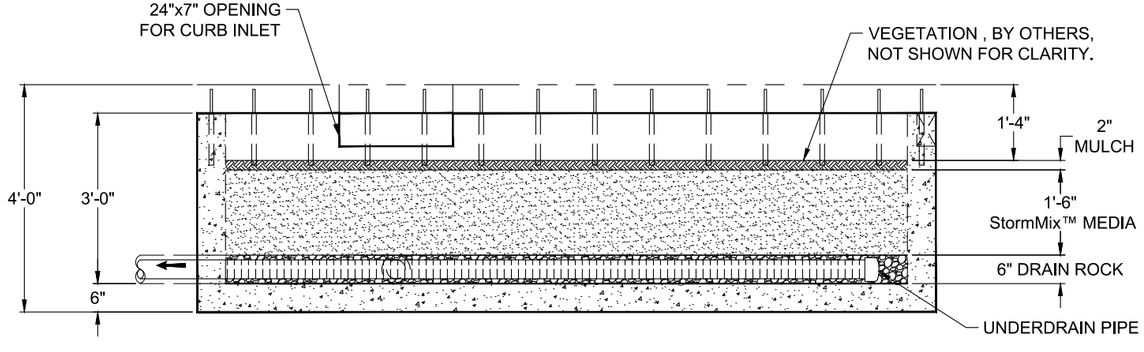
PERFORMANCE SPECIFICATIONS	
Treatment Flow Capacities:	
NJDEP 80% Removal, 75 micron	0.192 cfs
WA Ecology GULD - Basic, Enhanced & Phosphorus	0.171 cfs
Bypass Capacity	NA
*Contact Oldcastle for alternative treatment flow capacities.	



PLAN VIEW



LEFT END VIEW



ELEVATION VIEW

NOTES:

1. DESIGN LOADINGS:
   A. 300 PSF PEDESTRIAN LOADING
   B. DESIGN SOIL COVER: 0' MAXIMUM
   C. ASSUMED WATER TABLE: BELOW BASE OF PRECAST (ENGINEER-OF-RECORD TO CONFIRM SITE WATER TABLE ELEVATION)
   D. LATERAL EARTH PRESSURE: 45 PCF (DRAINED)
   E. LATERAL LIVE LOAD SURCHARGE: 80 PSF (APPLIED TO 8'-0" BELOW GRADE)
   F. NO LATERAL SURCHARGE FROM ADJACENT BUILDINGS, WALLS, PIERS, OR FOUNDATIONS.
2. CONCRETE 28-DAY MINIMUM COMPRESSIVE STRENGTH: 5,000 PSI MINIMUM.
3. REINFORCING: REBAR, ASTM A615/A706, GRADE 60
4. CEMENT: ASTM C150
5. REQUIRED ALLOWABLE SOIL BEARING CAPACITY: 2,500 PSF
6. REFERENCE STANDARD:
   A. ASTM C890
   B. ASTM C913
   C. ACI 318-14
7. THIS STRUCTURE IS DESIGNED TO THE PARAMETERS NOTED HEREIN. ENGINEER-OF-RECORD SHALL VERIFY THAT NOTED PARAMETERS MEET OR EXCEED PROJECT REQUIREMENTS. IF DESIGN PARAMETERS ARE INCORRECT, REVIEWING ENGINEER/AUTHORITY SHALL NOTIFY OLDCASTLE INFRASTRUCTURE UPON REVIEW.
8. INLET AND OUTLET HOLES WILL BE FACTORY CORED/CAST PER PLANS AND CUSTOMER REQUIREMENTS. INLET AND OUTLET LOCATIONS CAN BE MIRRORED.
9. CONTRACTOR RESPONSIBLE TO VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS.
10. CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
11. SECTION HEIGHTS, SLAB/WALL THICKNESSES, AND KEYWAYS ARE SUBJECT TO CHANGE AS REQUIRED FOR SITE REQUIREMENTS AND/OR DUE TO PRODUCT AVAILABILITY AND PRODUCTION FACILITY CONSTRAINTS.
12. MAXIMUM PICK WEIGHTS":
    A. BASE: XX,XXX LBS*
       (* COMBINED WEIGHT OF BASE INCLUDES BYPASS WEIR, DIVIDER WALL, ROCK & MEDIA)
13. INTERNALS SHALL CONSIST OF UNDERDRAIN PIPE, ROCK, STORMMIX™ MEDIA, AND MULCH.

Oldcastle Infrastructure™
A CRH COMPANY

Ph: 800.579.8819 | www.oldcastleinfrastructure.com/stormwater

BioPod™ Biofilter System (STANDARD)

Planter vault with External Bypass

CUSTOMER
-

PROJECT NAME
-

SHEET NAME	REVISION	SHEET
Specifier Drawing BPP-412EB	-	1 OF 1
	REV DATE -	

Bioretention/ Biofiltration

Surface/Tree/Planter - External Bypass									
							Treatment Flow Rates		
Model	Structure Size (ft x ft)	Max Pipe Size (in)	Rim to Invert Depth[(d)] (ft)	Media (cy)	Mulch (cy)	Drain Rock (cy)	WA DOE 1.6 gpm/sf (cfs)	NJCAT 1.8 gpm/sf (cfs)	Max Peak Flow (cfs)
BPS/T/T-44	4 x 4	4	3.77	0.89	0.10	0.30	0.057	0.064	N/a
BPS/T/P-46	4 x 6	4	3.77	1.33	0.15	0.44	0.085	0.096	N/a
BPS/T/P-48	4 x 8	4	3.77	1.78	0.20	0.59	0.114	0.128	N/a
BPS/T/P-412	4 x 12	4	3.77	2.67	0.30	0.89	0.171	0.192	N/a
BPS/T/P-68	6 x 8	4	3.77	2.67	0.30	0.89	0.171	0.192	N/a
BPS/T/P-612	6 x 12	4	3.77	4.00	0.44	1.33	0.256	0.288	N/a
BPS/T/P-812	8 x 12	6	3.77	5.33	0.59	1.78	0.341	0.384	N/a
BPS/T/P-816	8 x 16	6	3.77	7.11	0.79	2.37	0.455	0.512	N/a

Notes:

(a) For depths less than minimum, contact Solution Engineering for design assistance.

(b) For depths greater than the maximum, contact Solution Engineering for design assistance.

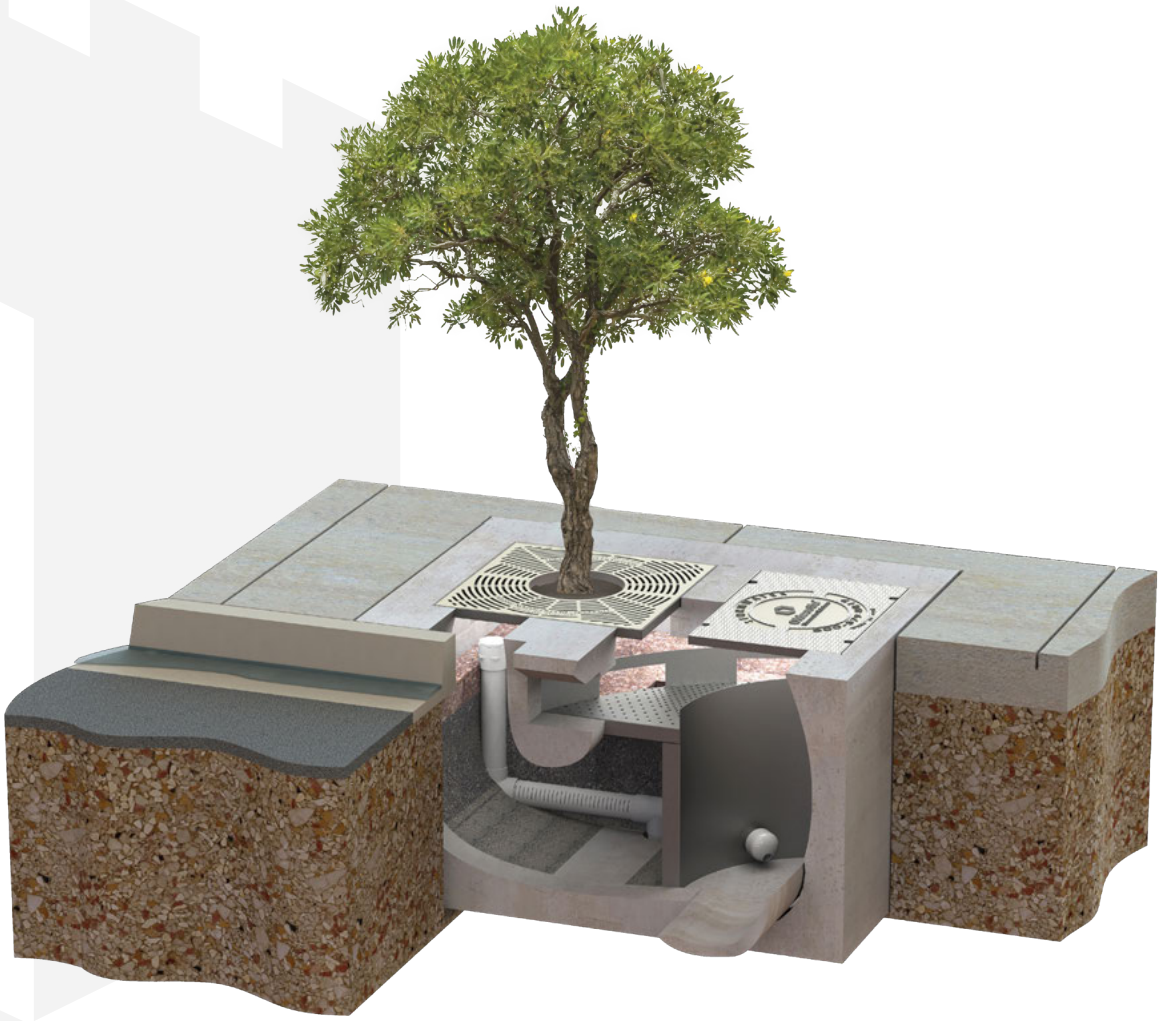
(c) Panel vault configuration only available in PNW. Check with local manufacturing for form availability.

(d) Rim to invert depth for Planter Model, external bypass, is 3.50 ft.

BIOPOD™ SYSTEM

with StormMix™ Media

Inspection & Maintenance Guide



Oldcastle Infrastructure™
A CRH COMPANY

BIOPOD™ BIOFILTER WITH STORMMIX™ BIOFILTRATION MEDIA

DESCRIPTION

The BioPod™ Biofilter System (BioPod) is a storm water biofiltration treatment system used to remove pollutants from storm water runoff. Impervious surfaces and other urban and suburban landscapes generate a variety of contaminants that can enter storm water and pollute downstream receiving waters unless treatment is provided. The BioPod system uses proprietary StormMix™ biofiltration media to capture and retain pollutants including total suspended solids (TSS), metals, nutrients, gross solids, trash and debris as well as petroleum hydrocarbons.

FUNCTION

The BioPod system uses engineered, high-flow rate filter media to remove storm water pollutants, allowing for a smaller footprint than conventional bioretention systems. Contained within a compact precast concrete vault, the BioPod system consists of a biofiltration chamber and an optional integrated high-flow bypass. The biofiltration chamber is filled with horizontal layers of aggregate, biofiltration media and mulch. Storm water passes vertically down through the mulch and biofiltration media for treatment. The mulch provides pretreatment by retaining most of the solids or sediment. The biofiltration media provides further treatment by retaining finer sediment and dissolved pollutants. The aggregate allows the media bed to drain evenly for discharge through an underdrain pipe or by infiltration.

INSPECTION & MAINTENANCE OVERVIEW

State and local regulations require all storm water management systems to be inspected on a regular basis and maintained as necessary to ensure performance and protect downstream receiving waters. Without maintenance, excessive pollutant buildup can limit system performance by reducing the operating capacity of the system and increasing the potential for scouring of pollutants during periods of high flow.

Some configurations of the BioPod may require periodic irrigation to establish and maintain vegetation. Vegetation will typically become established about two years after planting. Irrigation requirements are ultimately dependent on climate, rainfall and the type of vegetation selected.

INSPECTION & MAINTENANCE FREQUENCY

Periodic inspection is essential for consistent system performance and is easily completed. Inspection is typically conducted a minimum of twice per year, but since pollutant transport and deposition varies from site to site, a site-specific maintenance frequency should be established during the first two or three years of operation.

INSPECTION EQUIPMENT

The following equipment is helpful when conducting BioPod inspections:

- Recording device (pen and paper form, voice recorder, iPad, etc.)
- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- PPE as required for entry
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Socket

INSPECTION PROCEDURES

BioPod inspections are visual and are conducted without entering the unit. To complete an inspection, safety measures including traffic control should be deployed before the access covers or tree grates are removed. Once the covers have been removed, the following items should be checked and recorded (see form provided on page 6) to determine whether maintenance is required:

- If the BioPod unit is equipped with an internal bypass, inspect the inlet rack (or inlet chamber on underground units) and outlet chamber and note whether there are any broken or missing parts. In the unlikely event that internal parts are broken or missing, contact Oldcastle Storm water at (800) 579-8819 to determine appropriate corrective action.
- Note whether the curb inlet, inlet pipe, or inlet rack is blocked or obstructed.
- If the unit is equipped with an internal bypass, observe, quantify and record the accumulation of trash and debris in the inlet rack or inlet chamber. The significance of accumulated trash and debris is a matter of judgment. Often, much of the trash and debris may be removed manually at the time of inspection if a separate maintenance visit is not yet warranted.
- If it has not rained within the past 24 hours, note whether standing water is observed in the biofiltration chamber.
- Finally, observe, quantify and record presence of invasive vegetation and the amount of trash and debris and sediment load in the biofiltration chamber. Erosion of the mulch and biofiltration media bed should also be recorded. Often, much of the invasive vegetation and trash and debris may be removed manually at the time of inspection if a separate maintenance visit is not yet warranted. Sediment load may be rated light, medium or heavy depending on the conditions. Loading characteristics may be determined as follows:
  - **Light sediment load** – sediment is difficult to distinguish among the mulch fibers at the top of the mulch layer; the mulch appears almost new.
  - **Medium sediment load** – sediment accumulation is apparent and may be concentrated in some areas; probing the mulch layer reveals lighter sediment loads under the top 1" of mulch.
  - **Heavy sediment load** – sediment is readily apparent across the entire top of the mulch layer; individual mulch fibers are difficult to distinguish; probing the mulch layer reveals heavy sediment load under the top 1" of mulch.

MAINTENANCE INDICATORS

Maintenance should be scheduled if any of the following conditions are identified during inspection:

- The concrete structure is damaged or the tree grate or access cover is damaged or missing
- The inlet obstructed
- Standing water is observed in the biofiltration chamber more than 24 hours after a rainfall event (use discretion if the BioPod is located downstream of a storage system that attenuates flow)
- Trash and debris in the inlet rack cannot be easily removed at the time of inspection
- Trash and debris, invasive vegetation or sediment load in the biofiltration chamber is heavy or excessive erosion has occurred

MAINTENANCE EQUIPMENT

The following equipment is helpful when conducting BioPod maintenance:

- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- PPE as required for entry
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Rake, hoe, shovel and broom
- Bucket
- Pruners
- Vacuum truck (optional)
- Socket

MAINTENANCE PROCEDURES

Maintenance should be conducted during dry weather when no flows are entering the system. In most cases, maintenance may be conducted without entering. Entry may be required to maintain BioPod Underground units, depending on system depth. Once safety measures such as traffic control are deployed, the access covers may be removed and the following activities may be conducted to complete maintenance:

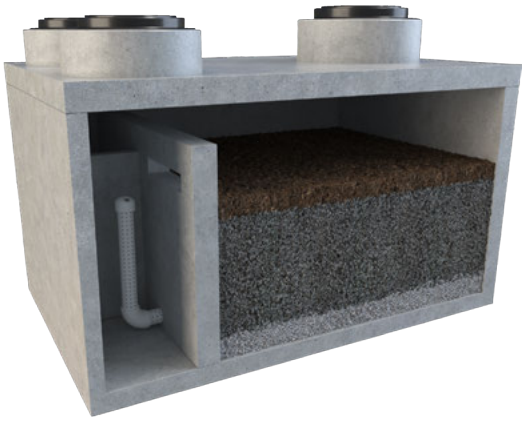
- Remove all trash and debris from the curb inlet and inlet rack manually or by using a vacuum truck as required.
- Remove all trash and debris and invasive vegetation from the biofiltration chamber manually or by using a vacuum truck as required.
- If the sediment load is medium or light but erosion of the biofiltration media bed is evident, redistribute the mulch with a rake or replace missing mulch as appropriate. If erosion persists, rocks may be placed in the eroded area to help dissipate energy and prevent recurring erosion.
- If the sediment load is heavy, remove the mulch layer using a hoe, rake, shovel and bucket, or by using a vacuum truck as required. If the sediment load is particularly heavy, inspect the surface of the biofiltration media once the mulch has been removed. If the media appears clogged with sediment, remove and replace one or two inches of biofiltration media prior to replacing the mulch* layer.
- Prune vegetation as appropriate and replace damaged or dead plants as required.
- Replace the tree grate and/or access covers and sweep the area around the BioPod to leave the site clean.
- All material removed from the BioPod during maintenance must be disposed of in accordance with local environmental regulations. In most cases, the material may be handled in the same manner as disposal of material removed from sumped catch basins or manholes.

* Natural, shredded hardwood mulch should be used in the BioPod. Timely replacement of the mulch layer according to the maintenance indicators described above should protect the biofiltration media below the mulch layer from clogging due to sediment accumulation. However, whenever the mulch is replaced, the BioPod should be visited 24 hours after the next major storm event to ensure that there is no standing water in the biofiltration chamber. Standing water indicates that the biofiltration media below the mulch layer is clogged and must be replaced. Please contact Oldcastle Infrastructure at (800) 579-8819 to purchase the proprietary StormMix™ biofiltration media.

BIOPOD SURFACE

BIOPOD TREE

BIOPOD PLANTER



BIOPOD UNDERGROUND

BIOPOD INSPECTION & MAINTENANCE LOG

BioPod Model _____ Inspection Date _____

Location _____

Condition of Internal Components *NOTES:*

☐ **GOOD** ☐ **DAMAGED** ☐ **MISSING**

Curb Inlet or Inlet Rack Blocked *NOTES:*

☐ **YES** ☐ **NO**

Standing Water in Biofiltration Chamber *NOTES:*

☐ **YES** ☐ **NO**

Trash and Debris in Inlet Rack *NOTES:*

☐ **YES** ☐ **NO**

Trash and Debris in Biofiltration Chamber *NOTES:*

☐ **YES** ☐ **NO**

Invasive Vegetation in Biofiltration Chamber *NOTES:*

☐ **YES** ☐ **NO**

Sediment in Biofiltration Chamber *NOTES:*

☐ **LIGHT** ☐ **MEDIUM** ☐ **HEAVY**

Erosion in Biofiltration Chamber *NOTES:*

☐ **YES** ☐ **NO**

Maintenance Requirements

☐ **YES - Schedule Maintenance** ☐ **NO - Schedule Re-Inspection**

NOTES

APPENDIX D.3

Parcel 4

City of Escondido
PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Parcel-4

W. Mission Ave & Centre City Pkwy
Escondido, CA 92025

ASSESSOR'S PARCEL NUMBER(S):
229-171-29, 229-171-30

ENGINEER OF WORK:

Erin Sweeney, PE

PREPARED FOR:
501 W. Mission, LLC

PDP SWQMP PREPARED BY:
Mour Group Engineer + Design
6593 Riverdale St.
San Diego, CA 92120
619-727-4800

DATE OF SWQMP:
5-15-2024

PLANS PREPARED BY:
Mour Group Engineering + Design
6593 Riverdale St.
San Diego, CA 92120
619-727-4800

SWQMP APPROVED BY:

APPROVAL DATE:

ESCONDIDO
City of Choice

This page was left intentionally blank.

TABLE OF CONTENTS

TABLE OF CONTENTS iii
ATTACHMENTS iv
ACRONYMS iv
PDP SWQMP PREPARER'S CERTIFICATION PAGE v
SUBMITTAL RECORD vi
PROJECT VICINITY MAP vii
Step 1: Project type determination 1
Step 1.1: Storm Water Quality Management Plan requirements 1
Step 1.2: Exemption to PDP definitions 2
Step 1.3: Confirmation of PDP Determination 3
Step 2: City of Escondido PDP SWQMP Site Information Checklist 5
Step 2.1: Description of Existing Site Condition and Drainage Patterns 5
Step 2.2: Description of Existing Site Drainage Patterns 6
Step 2.3: Description of Proposed Site Development 7
Step 2.4: Description of Proposed Site Drainage Patterns 8
Step 2.5: Potential Pollutant Source Areas 9
Step 2.6: Identification of Receiving Water and Pollutants of Concern 10
Step 2.7: Hydromodification Management Requirements 11
Step 2.7.1: Critical Coarse Sediment Yield Areas 12
Step 2.7.2: Flow Control for Post-Project Runoff 13
Step 2.8: Other Site Requirements and Constraints 14
Step 3: Source Control BMP Checklist 15
Step 4: Site Design BMP Checklist 17
Step 5: Summary of Structural BMPs 19
Step 5.1: Offsite Alternative Compliance Participation Form 22

ATTACHMENTS

Attachment 1: Backup for PDP Pollutant Control BMPs
- Attachment 1a: Storm Water Pollutant Control Worksheet Calculations (Applicable worksheets)
- Attachment 1b: Form I-8, Categorization of Infiltration Feasibility Condition
- Attachment 1c: Form I-9, Factor of Safety and Design Infiltration Rate Worksheet
- Attachment 1d: Drainage Management Area (DMA) Exhibit
- Attachment 1e: Individual Structural BMP DMA Mapbook

Attachment 2: Backup for PDP Hydromodification Control Measures
- Attachment 2a: Flow Control Facility Design
- Attachment 2b: Hydromodification Management Exhibit
- Attachment 2c: Management of Critical Coarse Sediment Yield Areas
- Attachment 2d: Geomorphic Assessment of Receiving Channels (optional)
- Attachment 2e: Vector Control Plan (if applicable)

Attachment 3: Structural BMP Maintenance Plan
- Attachment 3a: Structural BMP Maintenance Thresholds and Actions
- Attachment 3b: Draft Maintenance Agreements / Notifications (when applicable)

Attachment 4: City of Escondido PDP Structural BMP Verification

Attachment 5: Copy of Plan Sheets Showing Permanent Storm Water BMPs

ACRONYMS

ACP	Alternative Compliance Project
APN	Assessor's Parcel Number
BMP	Best Management Practice
DMA	Drainage Management Area
EOW	Engineer of Work
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
PDP	Priority Development Project
PE	Professional Engineer
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Quality Control Board
SIC	Standard Industrial Classification
SWDM	Storm Water Design Manual
SWQMP	Storm Water Quality Management Plan
USGS	US Geological Survey
WMAA	Watershed Management Area Analysis
WQIP	Water Quality Improvement Plan

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

PDP SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: Parcel 4
Permit Number: PL22-0396

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of Escondido Storm Water Design Manual, which is a design manual for compliance with the City of Escondido Municipal Code (Chapter 22, Article 2) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100) requirements for storm water management.

I have read and understand that the City of Escondido has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the Storm Water Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by City staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

Engineer of Work's Signature, PE Number & Expiration Date

Erin Sweeney

Print Name

Mour Group Engineering + Design

Company

5-15-2024

Date

Engineer's Seal:

SUBMITTAL RECORD

Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

Preliminary Design / Planning / CEQA

Submittal Number	Date	Summary of Changes
1	2-29-2024	Initial Submittal
2	5-15-2024	Resubmittal
3		
4		

Final Design

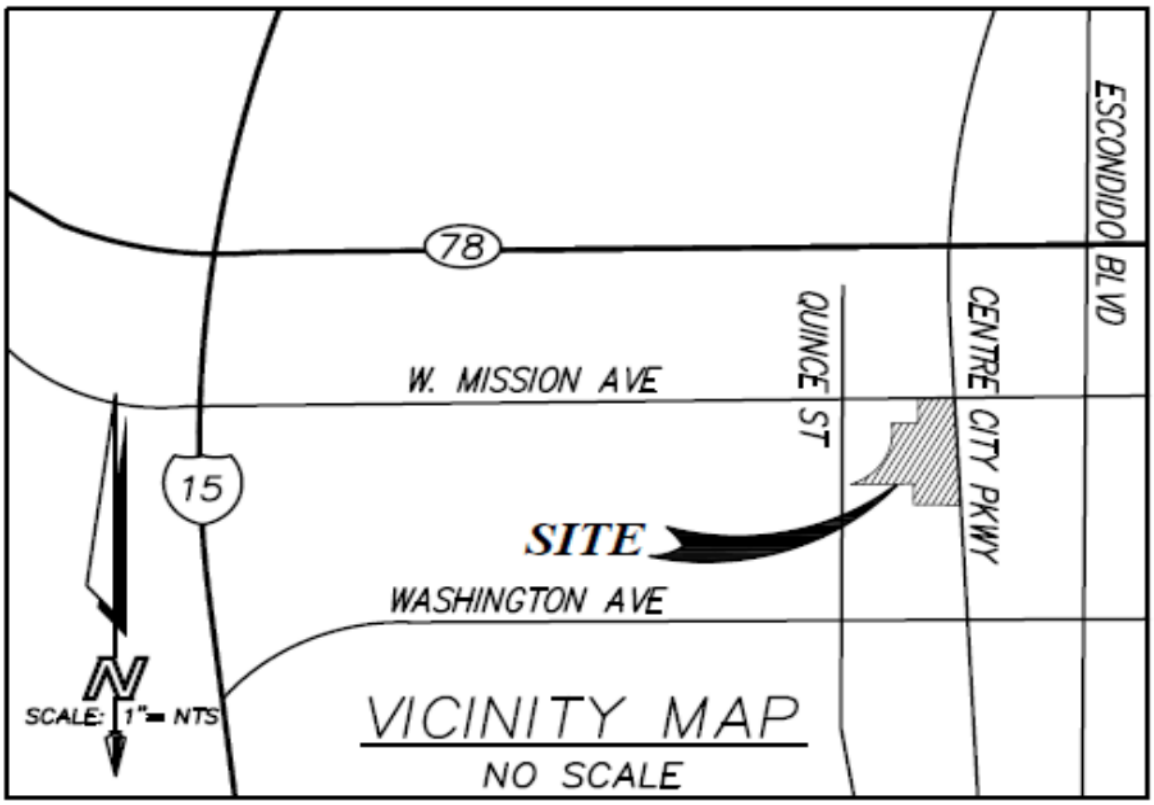
Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

Plan Changes

Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

PROJECT VICINITY MAP

Project Name: Parcel 4
Permit Number: PL22-0396



Step 1: Project type determination

Site Information Checklist for PDPs	Form I-2a
Project Summary Information	
Project Name	Parcel 4
Project Address	502 W. Mission Ave Escondido, CA 92025
Assessor's Parcel Number(s)	229-171-29, 229-171-30
Permit Number	PL22-0396
Project Watershed (Hydrologic Unit)	Select One: ☑ Carlsbad 904 ☐ San Dieguito 905
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	0.52 Acres (22,750 Square Feet)
Area to be disturbed by the project (Project Area)	0.52 Acres (22,750 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	0.42 Acres (18,303 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	0.10 Acres (4,447 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Step 1.1: Storm Water Quality Management Plan requirements

Site Information Checklist for PDPs		Form I-2a
Step	**Answer**	**Progression**
Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, complete Step 1 Project Type Determination Checklist on Pages 3 and 4, and see PDP exemption information below. For further guidance, see Section 1.4 of the Storm Water Design Manual *in its entirety*.	☐ Standard Project	Standard Project requirements apply. **Complete Form I-1.**
	▬ PDP	Standard and PDP requirements apply, including PDP SWQMP. **SWQMP Required.**
	☐ PDP with ACP	If participating in offsite alternative compliance, **complete Step 5.1** (Offsite Alternative Compliance Participation Form) **and an ACP SWQMP.**
	☐ PDP Exemption	**Go to Step 1.2 below.**

Step 1.2: Exemption to PDP definitions

Site Information Checklist for PDPs	Form I-2a
Is the project exempt from PDP definitions based on either of the following: ☐ Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria: (i) Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR (ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR (iii) Designed and constructed with permeable pavements or surfaces in accordance with County of San Diego Green Streets Infrastructure;	If so: Standard Project requirements apply, AND any additional requirements specific to the type of project. City concurrence with the exemption is required. *Provide discussion and list any additional requirements below in this form.*
☐ Projects that are only retrofitting or redeveloping existing paved alleys, streets or roads that are designed and constructed in accordance with the County of San Diego Green Streets Infrastructure;	**PDP Exempt.**
Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:	

Step 1.3: Confirmation of PDP Determination

Site Information Checklist for PDPs			Form I-2a
The project is (select one): ☐ New Development ☒ Redevelopment[1]			
The total proposed newly created or replaced impervious area is: 18,303 ft²			
The project meets the following categories, (a) through (f): [select all that apply]			
Yes ☐	No ☑	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☑	No ☐	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☑	No ☐	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). *Information and an SIC search function are available at www.osha.gov/pls/imis/sicsearch.html.* (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
Yes ☐	No ☑	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any*

[1] Redevelopment is defined as: The creation and/or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include routine maintenance activities, such as trenching and resurfacing associated with utility work; pavement grinding; resurfacing existing roadways; sidewalks; pedestrian ramps; or bike lanes on existing roads; and routine replacement of damaged pavement, such as pothole repair.

Site Information Checklist for PDPs			Form I-2a
			other equivalent environmentally sensitive areas which have been identified by the Copermittees. *For projects adjacent to an ESA, but not discharging to an ESA, the 2,500 square foot threshold does not apply as long as the project does not physically disturb the ESA and the ESA is upstream of the project.*
Yes ☐	No ☑	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. *Information and an SIC search function are available at www.osha.gov/pls/imis/sicsearch.html.* (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes ☐	No ☑	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. Note: See Storm Water Design Manual Section 1.4.2 for additional guidance.

The following is for redevelopment PDPs only:

The area of existing (pre-project) impervious area at the project site is:	A	16,037	ft^2
The total proposed newly created or replaced impervious area is:	B	18,303	ft^2
Percent impervious surface created or replaced:	(B/A)*100	114	%

The percent impervious surface created or replaced is (select one based on the above calculation):

☐ **less than or equal to fifty percent (50%)** – only newly created or replaced impervious areas are considered a PDP and subject to stormwater requirements

OR

☒ **greater than fifty percent (50%)** – the entire project site is considered a PDP and subject to stormwater requirements

Step 2: City of Escondido PDP SWQMP Site Information Checklist

Step 2.1: Description of Existing Site Condition and Drainage Patterns

Site Information Checklist for PDPs	Form I-2a

Current Status of the Site (select all that apply):

- ☒ Existing development
- ☐ Previously graded but not built out
- ☐ Demolition completed without new construction
- ☐ Agricultural or other non-impervious use
- ☐ Vacant, undeveloped/natural

Description / Additional Information:

Current site consists of pool, concretes, landscape & tennis courts.

Existing Land Cover Includes (select all that apply and provide each area on site):

- ☒ Vegetative Cover 0.15 Acres (6,713 Square Feet)
- ☐ Non-Vegetated Pervious Areas 0 Acres (0 Square Feet)
- ☒ Impervious Areas 0.37 Acres (16,037 Square Feet)

Description / Additional Information:

Current site consists of pool, concretes, landscape & tennis courts.

Underlying Soil belongs to Hydrologic Soil Group (select all that apply):

- ☐ NRCS Type A
- ☐ NRCS Type B
- ☐ NRCS Type C
- ☒ NRCS Type D

Approximate Depth to Groundwater (GW) (or N/A for no infiltration BMPs):

- ☐ Groundwater Depth < 5 feet
- ☐ 5 feet < Groundwater Depth < 10 feet
- ☒ 10 feet < Groundwater Depth < 20 feet
- ☐ Groundwater Depth > 20 feet

Existing Natural Hydrologic Features (select all that apply):

- ☐ Watercourses
- ☐ Seeps
- ☐ Springs
- ☐ Wetlands
- ☒ None
- ☐ Other

Description / Additional Information:

Current site consists of pool, concretes, landscape & tennis courts.

Step 2.2: Description of Existing Site Drainage Patterns

Site Information Checklist for PDPs	Form I-2a
How is storm water runoff conveyed from the site? At a minimum, this description should answer (1) whether existing drainage conveyance is natural or urban; (2) describe existing constructed storm water conveyance systems, if applicable; and (3) is runoff from offsite conveyed through the site? If so, describe:	
1. The existing drainage conveyance is urban, as part of the site improvements developed for the existing restaurant building, park, pool, tennis courts. 2. The existing storm drainage system is shown on the Drainage plan for Parcel 4 (C301). Stormwater runoff in the existing condition flows from north to south via sheet flow. There is one existing drainage box with a 6” and 8” diameter storm drain outlet to the southeast of the site with an unknown discharge location. All runoff from the site eventually flows south within the right-of-way of Centre City Pkwy where it is collected within a concrete drainage flume that has an inlet to a 24” diameter storm drain. The 24” storm drain eventually connects to a 42” storm drain that runs west and connects to Escondido Creek. 3. There is no offsite runoff conveyed through the property.	

Step 2.3: Description of Proposed Site Development

Site Information Checklist for PDPs	Form I-2a

Project Description / Proposed Land Use and/or Activities:

The site is proposing to re-develop the existing site for the development of a new restaurant building, drive-thru lane, and onsite parking. The proposed land use is consistent with the existing use, which is as a restaurant facility. Re-development improvements occur throughout the entire site area. The overall project includes two other drive-thru restaurants that are documented separately

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):

Proposed impervious features include a new restaurant building, drive-thru lane, concrete sidewalks and flatwork, and asphalt paved parking lot.

List/describe proposed pervious features of the project (e.g., landscape areas):

Landscape planter areas.

Does the project include grading and changes to site topography?

- ■ Yes
- ☐ No

Description / Additional Information:

Old concrete will be demolished, and new grading is required to support the drainage from the new building. The grading will be a mild change for the new building footprint, drive-thru and parking layout.

Insert acreage or square feet for the different land cover types in the table below:

Change in Land Cover Type Summary

Land Cover Type	Existing (acres or ft^2)	Proposed (acres or ft^2)	Percent Change
Vegetation	6,713	4,447	-34
Pervious (non-vegetated)	0	0	0
Impervious	16,037	18,303	14
total	22,750	22,750	Sum Existing must equal Sum Proposed

Step 2.4: Description of Proposed Site Drainage Patterns

Site Information Checklist for PDPs	Form I-2a

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

- ☒ Yes
- ☐ No

If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.

Describe proposed site drainage patterns:

Parcel 4 has one drainage basin. Parcel 4 is graded so that all drainage can surface flow to the Oldcastle Biopod Planter in the southwest corner of the site. The biopod planter is connected via underground pipe and conveyed in a southerly direction within a public storm drain system which eventually discharges into the Escondido Creek. Said creek has been determined to be Hydromodification Exempt per the city of Carlsbad WMA WQIP (May 2018 and Subsequent updates).

Step 2.5: Potential Pollutant Source Areas

Site Information Checklist for PDPs	Form I-2a

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply).

- ■ On-site storm drain inlets
- ☐ Interior floor drains and elevator shaft sump pumps
- ☐ Interior parking garages
- ■ Need for future indoor & structural pest control
- ■ Landscape/Outdoor Pesticide Use
- ☐ Pools, spas, ponds, decorative fountains, and other water features
- ■ Food service
- ■ Refuse areas
- ☐ Industrial processes
- ☐ Outdoor storage of equipment or materials
- ☐ Vehicle and Equipment Cleaning
- ☐ Vehicle/Equipment Repair and Maintenance
- ☐ Fuel Dispensing Areas
- ☐ Loading Docks
- ■ Fire Sprinkler Test Water
- ■ Miscellaneous Drain or Wash Water
- ■ Plazas, sidewalks, and parking lots
- ☐ Large Trash Generating Facilities
- ☐ Animal Facilities
- ☐ Nurseries and Garden Centers
- ☐ Automotive Facilities
- ☐ Other (provide description)

Description / Additional Information:

Step 2.6: Identification of Receiving Water and Pollutants of Concern

Site Information Checklist for PDPs	Form I-2a

Describe path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):

The site drains to a public storm drain system which eventually discharges into the Escondido Creek. Said creek has been determined to be Hydromodification Exempt per the city of Carlsbad WMA WQIP (May 2018 and Subsequent updates).

List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
Escondido Creek	Phosphate,TDS,sulfate,mangenese	
	DDT, bacteria,toxicity,nitrogen,selennium	
	Benthic comm eff.bifenthrin,malathion	

Identification of Project Site Pollutants*

*Identification of project site pollutants below is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs. Note the project must also participate in an alternative compliance program (unless prior lawful approval to meet earlier PDP requirements is demonstrated).

Identify pollutants expected from the project site based on all proposed use(s) of the site (see Storm Water Design Manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Anticipated from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment		x	
Nutrients		x	x
Heavy Metals		x	x
Organic Compounds		x	x
Trash & Debris		x	x
Oxygen Demanding Substances		X	X
Oil & Grease		x	
Bacteria & Viruses		x	x
Pesticides		x	

Step 2.7: Hydromodification Management Requirements

Site Information Checklist for PDPs	Form I-2a

Do hydromodification management requirements apply (see Section 1.6 of the Storm Water Design Manual)?

☐ Yes, hydromodification management requirements for flow control and preservation of critical coarse sediment yield areas are applicable.

☐ No, the project will discharge runoff directly to the exempt portion of Escondido Creek as detailed in the Carlsbad Watershed WQIP (May 2018 Update). Direct discharge is defined in section 1.6 of the Escondido Storm Water Design Manual.

☐ No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean. Refer to HMP Exhibit in Attachment 2.

☒ No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean. Refer to HMP Exhibit in Attachment 2.

Note: Direct Discharge refers to an uninterrupted hardened conveyance system. Projects claiming the Direct Discharge exemption must satisfy the applicable criteria (energy dissipation, invert elevation, etc.) included in Section 1.6 of the Escondido Storm Water Design Manual.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

Escondido Creek is a Hydromodification Exempt River Reach based on the latest Carlsbad WMA WQIP.

HMP Exemption Exhibit

Attach an HMP Exemption Exhibit that shows direct storm water runoff discharge from the project site to the HMP exempt area. Include project area, applicable underground storm drain line and/or concrete lined channels, outfall information, and exempt waterbody.

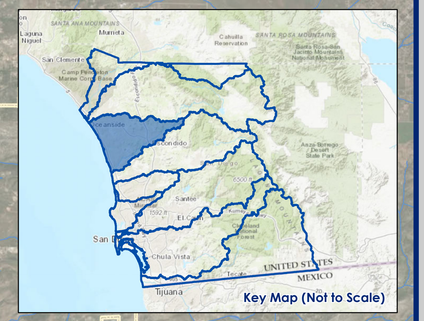
Reference applicable drawing number(s).

Carlsbad Watershed Management Area
HU 904.00, 211 mi2

Legend

- Watershed Boundaries
- Municipal Boundaries
- Regional WMAA Streams
- **Exempt Bodies:** Water Storage Reservoirs, Lakes, Enclosed Embayments, Pacific Ocean, Buena Vista Lagoon
- **Exempt River Reaches:** Reaches of San Luis Rey River, San Dieguito River, San Diego River, Forester Creek, Sweetwater River, Otay River
- **Exempt Conveyance Systems:** Existing underground storm drains or conveyance channels whose bed and bank are concrete-lined, discharging directly to exempt water bodies, exempt rivers, or localized areas of Agua Hedionda Lagoon and Batiquitos Lagoon

Aerial Imagery Source: DigitalGlobe, 06/2012



0 2.5 5 10 Miles

NORTH

Receiving Waters and Conveyance Systems Exempt from Hydromodification Management Requirements

Exhibit Date: Sept. 8, 2014
Revised Date: Sept. 6, 2018

Geosyntec consultants | RICK ENGINEERING COMPANY

Step 2.7.1: Critical Coarse Sediment Yield Areas

Site Information Checklist for PDPs	Form I-2a

☐ **N/A - This Section only required if hydromodification management requirements apply**

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

☐ Yes

☒ No, no critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Appendix H of the manual been performed?

☐ H.6.1 Site-Specific GLU Analysis

☐ H.7 Downstream Systems Sensitivity to Coarse Sediment

- H.7.1 Depositional Analysis,
- H.7.2 Threshold Channel Analysis, or
- H.7.3 Course Sediment Source Area Verification Analysis

☐ No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

☐ No critical coarse sediment yield areas to be protected based on verification of GLUs onsite.

☐ Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 8 of the SWQMP.

☐ Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections H.2, H.3, and H.4 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

N/A

Step 2.7.2: Flow Control for Post-Project Runoff

Site Information Checklist for PDPs	Form I-2a

☐ **N/A - This Section only required if hydromodification management requirements apply**

List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.

N/A

Has a geomorphic assessment been performed for the receiving channel(s)?

- ■ No, the low flow threshold is 0.1Q2 (default low flow threshold)
- ☐ Yes, the result is the low flow threshold is 0.1Q2
- ☐ Yes, the result is the low flow threshold is 0.3Q2
- ☐ Yes, the result is the low flow threshold is 0.5Q2

If a geomorphic assessment has been performed, provide title, date, and preparer:

N/A

Discussion / Additional Information: (optional)

N/A

Select method used to determine low flow threshold:

- ☐ Sizing Factor Method
- ☐ US Geological Survey (USGS) Equation
- ☐ Continuous Simulation Modeling

Step 2.8: Other Site Requirements and Constraints

Site Information Checklist for PDPs	Form I-2a
When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.	
Optional Additional Information or Continuation of Previous Sections As Needed	
This space provided for additional information or continuation of information from previous sections as needed.	

Step 3: Source Control BMP Checklist

Source Control BMP Checklist for PDPs			Form I-2b
All development projects must implement source control BMPs 4.2.1 through 4.2.6 where applicable and feasible. See Chapter 4.2 and Appendix E of the City Storm Water Design Manual for information to implement source control BMPs shown in this checklist. The following checklists serve as guides only. Mark what elements are included in your project. See Storm Water Design Manual Chapter 4 and Appendix E for more information on determining appropriate BMPs for your project. Answer each category below pursuant to the following: • "Yes" means the project will implement the source control BMP as described in Chapter 4.2 and/or Appendix E of the City Storm Water Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification must be provided.			
Source Control Requirement	**Applied?**		
4.2.1 Prevention of Illicit Discharges into the MS4	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.1 not implemented:			
4.2.2 Storm Drain Stenciling or Signage	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.2 not implemented:			
4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	■ N/A
Discussion / justification if 4.2.3 not implemented:			
4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	■ N/A
Discussion / justification if 4.2.4 not implemented:			
4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.5 not implemented:			

Form I-2b Page 2 of 2			
Source Control Requirement	**Applied?**		
4.2.6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below):			
☐ Onsite storm drain inlets	☐ Yes	☐ No	☐ N/A
☐ Interior floor drains and elevator shaft sump pumps	☐ Yes	☐ No	☐ N/A
☐ Interior parking garages	☐ Yes	☐ No	☐ N/A
■ Need for future indoor & structural pest control	■ Yes	☐ No	☐ N/A
■ Landscape/outdoor pesticide use	■ Yes	☐ No	☐ N/A
☐ Pools, spas, ponds, decorative fountains, and other water features	☐ Yes	☐ No	☐ N/A
■ Food service	■ Yes	☐ No	☐ N/A
■ Refuse areas	■ Yes	☐ No	☐ N/A
☐ Industrial processes	☐ Yes	☐ No	☐ N/A
☐ Outdoor storage of equipment or materials	☐ Yes	☐ No	☐ N/A
☐ Vehicle and equipment cleaning	☐ Yes	☐ No	☐ N/A
☐ Vehicle/equipment repair and maintenance	☐ Yes	☐ No	☐ N/A
☐ Fuel dispensing areas	☐ Yes	☐ No	☐ N/A
☐ Loading docks	☐ Yes	☐ No	☐ N/A
■ Fire sprinkler test water	■ Yes	☐ No	☐ N/A
■ Miscellaneous drain or wash water	■ Yes	☐ No	☐ N/A
■ Plazas, sidewalks, and parking lots	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for <u>all</u> "No" answers shown above.			

Note: Show all source control measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 4: Site Design BMP Checklist

Site Design BMP Checklist for PDPs			Form I-2c
All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement site design BMPs shown in this checklist. Answer each category below pursuant to the following. • "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification must be provided.			
Site Design Requirement	**Applied?**		
4.3.1 Maintain Natural Drainage Pathways and Hydrologic Features	☐ Yes	☐ No	■ N/A
Discussion / justification if 4.3.1 not implemented:			
There are no existing natural drainage pathways, however the existing urban drainage pathway is being maintained.			
1-1 Are existing natural drainage pathways and hydrologic features mapped on the site map?	■ Yes	☐ No	☐ N/A
1-2 Are trees implemented? If yes, are they shown on the site map?	☐ Yes	☐ No	■ N/A
1-3 Implemented trees meet the design criteria in 4.3.1 Fact Sheet (e.g. soil volume, maximum credit, etc.)?	☐ Yes	☐ No	■ N/A
1-4 Is tree credit volume calculated using Appendix B.2.2.1 and SD-1 Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A
4.3.2 Conserve Natural Areas, Soils, and Vegetation	☐ Yes	■ No	☐ N/A
Discussion / justification if 4.3.2 not implemented:			
Development of the Starbucks requires demolition of all existing features.			
4.3.3 Minimize Impervious Area	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.3 not implemented:			
4.3.4 Minimize Soil Compaction	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.4 not implemented:			

Form I-2c Page 2 of 2			
Site Design Requirement	**Applied?**		
4.3.5 Impervious Area Dispersion	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.5 not implemented:			
5-1 Is the pervious area receiving runon from impervious area identified on the site map?	■ Yes	☐ No	☐ N/A
5-2 Does the pervious area satisfy the design criteria in 4.3.5. Fact Sheet in Appendix E (e.g. maximum slope, minimum length, etc.)	☐ Yes	☐ No	■ N/A
5-3 Is impervious area dispersion credit volume calculated using Appendix B.2.1.1 and 4.3.5 Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A
4.3.6 Runoff Collection	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.6 not implemented:			
6a-1 Are green roofs implemented in accordance with design criteria in 4.3.6A Fact Sheet? If yes, are they shown on the site map?	☐ Yes	☐ No	■ N/A
6a-2 Is the green roof credit volume calculated using Appendix B.2.1.2 and 4.3.6A Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A
6b-1 Are permeable pavements implemented in accordance with design criteria in 4.3.6B Fact Sheet? If yes, are they shown on the site map?	☐ Yes	☐ No	■ N/A
6b-2 Is the permeable pavement credit volume calculated using Appendix B.2.1.3 and 4.3.6B Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A
4.3.7 Landscaping with Native or Drought Tolerant Species	■ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.7 not implemented:			
4.3.8 Harvesting and Using Precipitation	☐ Yes	■ No	☐ N/A
Discussion / justification if 4.3.8 not implemented:			
Low demand on urinal, toilet, and irrigation water.			
8-1 Are rain barrels implemented in accordance with design criteria in 4.3.8 Fact Sheet? If yes, are they shown on the site map?	☐ Yes	☐ No	■ N/A
8-2 Is the rain barrel credit volume calculated using Appendix B.2.2.2 and 4.3.8 Fact Sheet in Appendix E?	☐ Yes	☐ No	■ N/A

Note: Show all site design measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 5: Summary of Structural BMPs

Summary of Structural BMPs	Form I-3

PDP Structural BMPs

All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).

PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative to certify construction of the structural BMPs (see Section 1.12 of the manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the manual).

Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).

Description of Structural BMP Strategy

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

The site drains to BMP (Oldcastle Biopod) located at southwest corner of the property. The Proposed BMP has treatment capacity higher than required (per worksheet B.6-1), higher infiltration rate of 153 in/hr and unlimited external bypass system. The biopod planter is connected via underground pipe and conveyed within a public storm drain system which eventually discharges into the Escondido Creek. Said creek has been determined to be Hydromodification Exempt per the city of Carlsbad WMA WQIP (May 2018 and Subsequent updates).

(Continue on page 2 as necessary.)

Form I-3 Page 2 of 3
(Page reserved for continuation of description of general strategy for structural BMP implementation at the site)
(Continued from page 1)

Form I-3 Page 3 of 3

Structural BMP Summary Information

(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BMP-3

Construction Plan Sheet No. C300 - C304

Type of structural BMP:

☐Retention by harvest and use (HU-1)
☐Retention by infiltration basin (INF-1)
☐Retention by bioretention (INF-2)
☐Retention by permeable pavement (INF-3)
☐Retention by dry wells (INF-4)
☐Partial retention by biofiltration with partial retention (PR-1)
☐Biofiltration (BF-1)
☐Biofiltration with Nutrient Sensitive Media Design (BF-2)
■Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
☐Detention pond or vault for hydromodification management
☐Other (describe in discussion section below)

Purpose:

■Pollutant control only
☐Hydromodification control only
☐Combined pollutant control and hydromodification control
☐Pre-treatment/forebay for another structural BMP
☐Other (describe in discussion section below)

Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	Mour Group Engineering + Design Erin Sweeney, P.E. 619-727-4800
Who will be the final owner of this BMP?	☐HOA ■Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ■Property Owner ☐City ☐Other (describe)

Discussion (as needed):

Step 5.1: Offsite Alternative Compliance Participation Form

THIS FORM IS NOT APPLICABLE AT THIS TIME: An Alternative Compliance Program is under consideration by the City of Escondido.	
PDP INFORMATION	
Record ID:	N/A
Assessor's Parcel Number(s) [APN(s)]	
What are your PDP Pollutant Control Debits? *See Attachment 1 of the PDP SWQMP	
What are your PDP HMP Debits? (if applicable) *See Attachment 2 of the PDP SWQMP	
ACP Information	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
Project Owner/Address	
What are your ACP Pollutant Control Credits? *See Attachment 1 of the ACP SWQMP	
What are your ACP HMP Debits? (if applicable) *See Attachment 2 of the ACP SWQMP	
Is your ACP in the same watershed as your PDP? ☐Yes ☐No	Will your ACP project be completed prior to the completion of the PDP? ☐Yes ☐No
Does your ACP account for all Deficits generated by the PDP? ☐Yes ☐No (PDP and/or ACP must be redesigned to account for all deficits generated by the PDP.)	What is the difference between your PDP debits and ACP Credits? *(ACP Credits -Total PDP Debits = Total Earned Credits) _____

ATTACHMENT 1

BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 1a	Storm Water Pollutant Control Worksheet Calculations -Worksheet B.1-DMA Summary (Optional) -Worksheet B.2-1- DCV (Required) -Worksheet B.3-1- H&U Checklist (Required) -Worksheet B.4-1-Simple Sizing Inf. (if applicable) -Worksheet B.5-1-Biofilt. Sizing (Pollutant)(if applicable) -Worksheet B.5-2-Biofilt. Sizing (Volume) (if applicable) -Worksheet B.5-3-Biofilt. Volume Ret. (if applicable) -Worksheet B.5-4-Biofilt. Alt. Min. Footprint(if applicable) -Worksheet B.5-5-Biofilt. w/Upstream Stor. (if applicable) -Worksheet B.5-6-Biofilt. Ret. No Inf. (if applicable) -Worksheet B.5-7-Vol. Ret. Amended Soils (if applicable) -Worksheet B.6-1-Flow-Thru Design Flow (if applicable) -Form I-10-Compact Biofilt. Checklist (if applicable) -Summary Worksheet (optional)	☐ Worksheet B.1 (Optional) ▬ Worksheet B.2-1 (Required) ▬ Worksheet B.3-1 (Required) ▬ Worksheet B.4-1 (if applicable) ▬ Worksheet B.5-1 (if applicable) ☐ Worksheet B.5-2 (if applicable) ☐ Worksheet B.5-3 (if applicable) ☐ Worksheet B.5-4 (if applicable) ☐ Worksheet B.5-5 (if applicable) ☐ Worksheet B.5-6 (if applicable) ☐ Worksheet B.5-7 (if applicable) ▬ Worksheet B.6-1 (if applicable) ▬ Form I-10 (if applicable) ☐ Summary Worksheet (optional)
Attachment 1b	-Worksheet C.4-1 (Form I-8A), Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions -Worksheet C.4-2 (Form I-8B), Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions (Required unless the project will use harvest and use BMPs, or an Infiltration Feasibility Condition Letter is submitted) Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-8.	▬Included ☐Not included because the entire project will use harvest and use BMPs ☐Not included because an Infiltration Feasibility Condition Letter is submitted
Attachment 1c	Form I-9, Factor of Safety and Design Infiltration Rate Worksheet (Required unless the project will use harvest and use BMPs, or an Infiltration Feasibility Condition Letter is submitted) Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-9.	▬Included ☐Not included because the entire project will use harvest and use BMPs ☐Not included because an Infiltration Feasibility Condition Letter is submitted
Attachment 1d	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	▬Included
Attachment 1e	Individual Structural BMP DMA Mapbook (Required) -Place each map on 8.5”x11” paper. -Show at a minimum the DMA, Structural BMP, and any existing hydrologic features within the DMA.	▬Included

Use this checklist to ensure the required information has been included on the DMA Exhibit:

The DMA Exhibit must identify:

- ▣ Proposed design features and surface treatments used to minimize imperviousness
- ▣ Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)
- ▣ Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Step 3.5)
- ▣ Structural BMPs (identify location, structural BMP ID#, type of BMP, and size/detail)
- ▣ Flow direction arrows
- ▣ Site Design BMPs used for volume reduction credits
- ▣ Existing and proposed site drainage network and connections to drainage offsite
- ▣ Trash Enclosure(s), if available
- ▣ Roof downspouts

Additionally, it is generally best practice (and the City may require) that these additional features listed below be included on the DMA Exhibit:

- ▣ Approximate depth to groundwater
- ▣ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- ▣ Critical coarse sediment yield areas to be protected
- ▣ Existing topography and impervious areas
- ▣ Proposed grading
- ▣ Proposed impervious features

SOURCE SCONTROL(SC)/SITE DESIGN(SD):

ITEMS	FACT SHEET/DESIGN REQMT
PREVENT ILLICIT DISCHARGE INTO MS4	4.2.1
STORM DRAIN STENCILING OR SIGNAGE	4.2.2
PROTECT TRASH STORAGE AREAS	4.2.5
MINIMIZE IMPERVIOUS AREA	4.3.3
LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES	4.3.7
ONSITE STORM DRAIN INLET LABELING	SC-A
REFUSE AREAS EXPOSURE REDUCTION	SC-G

DMA SITE MAP NOTES

1. BMP - 3 - OLDCASTLE BIOPOD WITH PLANTER, BPS/T/P-412 PLANTED WITH DIETES IRIDIODES (FORTNIGHT LILY).
2. BMP - 4 - OLDCASTLE BIOPOD WITH PLANTER, BPS/T/P-412 PLANTED WITH DIETES IRIDIODES (FORTNIGHT LILY).

NOTES:
1. HYDROLOGIC SOIL GROUP: TYPE D PER USGS WEB SOILS SURVEY MAP.
2. APPROXIMATE DEPTH TO GROUNDWATER: > 10 FEET
3. EXISTING HYDRAULIC FEATURES: NONE.
4. CCSYA NONE NEARBY: NONE.
5. SEE ATTACHMENT 4 FOR BMP DETAILS.

LEGEND:
- PROJECT BOUNDARY
- DRAINAGE BASINS (DMAs)
- BMP STRUCTURES
- SELF MITIGATING
- DI MINIMUS
- NEW LANDSCAPE
- FLOW DIRECTION

TOTAL DISTURBANCE AREA

TOTAL DISTURBANCE AREA 22,750 SF / 0.52 ACRES

NO SWPPP ANTICIPATED FOR THIS SITE.

PARCEL 4

2,350 S.F.
FF 646.58

PARCEL 4
22,750 SF

DMA – 6

78 LF ~ 24" RCP @ 0.2%
93 LF ~ 24" RCP @ 0.2%
16 LF ~ 18" RCP @ 0.37%
109 LF ~ 18" RCP @ 0.37%
29 LF ~ 12" RCP @ 1.0%
17 LF ~ 12" RCP @ 0.24%
96 LF ~ 12" RCP @ 0.24%

TB646.21 FL641.05 Q=3.48 CFS
TB644.50 FL640.89
TB643.50 FL640.70 Q=1.86 CFS
TB645.01 FL641.51 Q=3.48 CFS
FL645.60
FL645.39
TC646.32 FL645.82
TC646.24 FL645.74
646.30 HP
(643.82)
(645.5)
(645.0)
(645.59)
(645.45)
(645.42)
(645.35)
(645.80) (645.50)
644.94
644.77
644.75
644.67
644.23
644.15
644.18
644.45
644.55
644.57
644.30
645.00
645.30
644.87
644.51
643.97
FS646.25
ROOFDRAIN DOWNSPOUT FS646.08
FS645.73 ROOF DRAIN DOWNSPOUT
FS645.60
FS645.24
FS645.28
FS646.01
TC646.51 FS646.01
FS645.46
FS645.19
TRASH ENCLOSURE
OLDCASTLE BIOPOD PLANTER BPS/T/P-412 (BMP-3)
OLDCASTLE BIOPOD PLANTER BPS/T/P-412 (BMP-4)
TG644.07
(44.07)TOG
(43.6)INV. 6"SD
(42.6)INV. 8"SD
6"SD,8"SD
(644.84)
(644.79)
(644.85)
(644.73)
(644.55)
NO PARKING
10' TALL STORAGE BUILDING
5'-0" WALL WITH A 30" TALL RAZOR WIRE ON TOP
SCO
ROH
TYP.
N88°52'55"E
119.87'
36.20'
26.33'
18.58'
24.00'
12.00'
8.50'
17.50'
16.00'
3.00'
1.95%
1.28%
1.15%
0.5%
1.0%
2.00%
1.59%
1.00%

TOTAL SITE AREA =	22,750	SF
=	0.52	AC
IMPERVIOUS AREA (T) =	17,918	SF
=	0.41	AC
IMPERVIOUS%=	78.76	
PERVIOUS AREA (T) =	4,832	SF
=	0.11	AC
C VALUE =	**0.81**	
RAINFALL INTENSITY (I) =	4.4	IN/HR
DISCHARGE (Q) =	CIA	
=	**1.86**	**CFS**

DMA - 3	DRAINS TO BMP 3	
AREA =	22,117	SF
=	0.51	AC
IMPERVIOUS AREA (A) =	17,918	SF
=	0.41	AC
IMPERVIOUS%=	81	
PERVIOUS AREA (A) =	4,199	SF
=	0.10	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**1.81**	**CFS**

DMA - 4	DRAINS TO BMP 4	
AREA =	634	SF
=	0.01	AC
IMPERVIOUS AREA (B) =	0	SF
=	0.00	AC
IMPERVIOUS%=	0	
PERVIOUS AREA (B) =	634	SF
=	0.01	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.05**	**CFS**

NOTE: BMP 4 TREATS RUNOFF FROM PARCEL 1. THERE IS A 5' WIDE DRAINAGE EASEMENT ALONG THIS SOUTH PROPERTY LINE TO CONVEY DRAINAGE FROM PARCEL 1 TO CENTER CITY PARKWAY.

PARCEL 4 DMA EXHIBIT

GRAPHIC SCALE: 1" = 10'

SCALE: 1"=10'-0"

NORTH

Revisions:	
1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
CONDITIONAL USE PERMIT
PARCEL 4
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MOUR GROUP
SCALE:	AS SHOWN

SHEET TITLE:
DMA EXHIBIT

PARCEL 4

SHEET #
C303

Worksheet B.2-1. BMP Design Capture Volume

Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.55	inches
2	Area tributary to BMP (s)	A=	0.522	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.74	unitless
4	Tree well volume reduction	TCV=	0	cubic-feet
5	Rain barrels volume reduction	RCV=	0	cubic-feet
6	Calculate DCV = (3630 x C x d x A) – TCV - RCV	DCV=	772	cubic-feet

Note:
C = (0.1 x Pervious area + 0.9 x impervious area) / (total area)
= (0.1 x 4447 + 0.9 x 18303) / (22750)
= 0.74

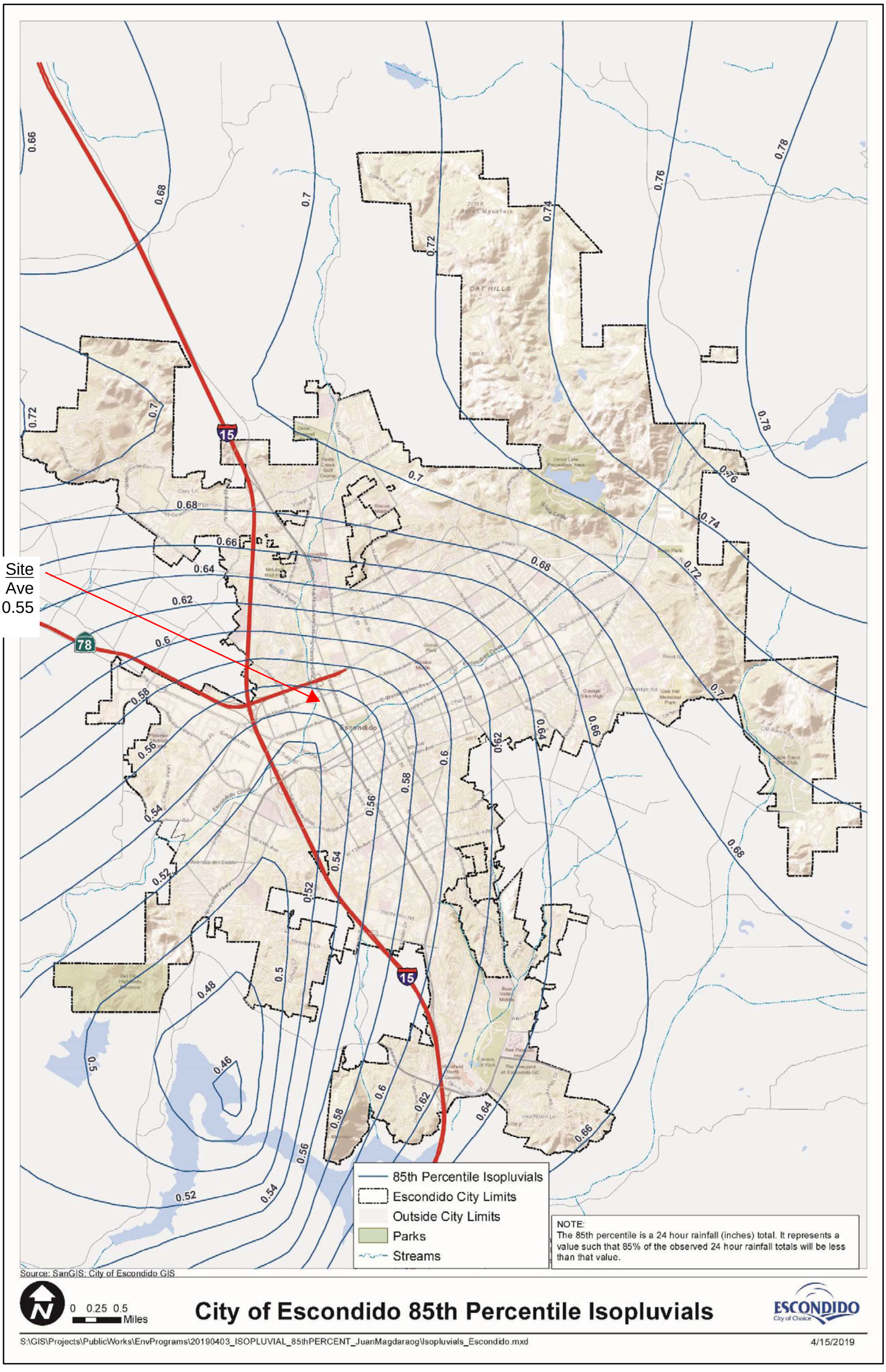


Figure B.1-1: City of Escondido 85th Percentile 24-hour Isopluvial Map

Worksheet B.3-1. Harvest and Use Feasibility Checklist (Form I-7)

Harvest and Use Feasibility Checklist	Worksksheet B.3-1

1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?
   - ☒ Toilet and urinal flushing
   - ☒ Landscape irrigation
   - ☐ Other:_____

2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.

Moderate plant water use = 197 cf, demand = 197 x 0.10 ac = 20 cf << 0.25 DCV.

3. Calculate the DCV using worksheet B-2.1.

DCV = 3630x0.74x0.55x0.522=772 cf

3a. Is the 36-hour demand greater than or equal to the DCV?	3b. Is the 36-hour demand greater than 0.25DCV but less than the full DCV?	3c. Is the 36-hour demand less than 0.25DCV?
Yes / No ⇨ ⇩ X	Yes / No ⇨ ⇩ X	Yes ⇩ X
Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.	Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.	Harvest and use is considered to be infeasible.

Note: 36-hour demand calculations are for feasibility analysis only. Once feasibility analysis is complete the applicant may be allowed to use a different drawdown time provided they meet the 80% annual capture standard (refer to B.4.2) and 96-hour vector control drawdown requirement.

Worksheet B.4-1: Simple Sizing Method for Infiltration BMPs

Simple Sizing Method for Infiltration BMPs		Worksheet B.4-1		
1	DCV (Worksheet B-2.1)	DCV=	772	cubic-feet
2	Estimated design infiltration rate	K_{design}=	153	in/hr
3	Available BMP surface area	A_{BMP}=	48	sq-ft
4	Average effective depth in the BMP footprint (DCV/A_{BMP})	D_{avg}=	3	feet
5	Drawdown time, T (D_{avg} *12/K_{design})	T=	0.24	hours
6	Provide alternative calculation of drawdown time, if needed. Since the total depth of biopod is 3', therefore avg. effective depth is taken as 3 ft directly.			
7	Provide calculations for effective depth provided in the BMP: Effective Depth = Surface ponding (below the overflow elevation) + gravel storage thickness x gravel porosity (0.4) effective depth=10+36x0.4 = 24.4 inch = 2.03 ft			

Note: Shown drawdown time is for the Biopod planter.

Worksheet B.5-1: Sizing Method for Pollutant Removal Criteria

Sizing Method for Pollutant Removal Criteria		Worksheet B.5-1	
1	Area draining to the BMP	22,750	sq. ft.
2	Adjusted runoff factor for drainage area (Refer to Appendix B.1 and B.2)	0.74	
3	85th percentile 24-hour rainfall depth	0.55	inches
4	Design capture volume [Line 1 x Line 2 x (Line 3/12)]	772	cu. ft.
BMP Parameters			
5	Surface ponding [6 inch minimum, 12 inch maximum]	10	inches
6	Media thickness [18 inches minimum], also add mulch layer and washed ASTM 33 fine aggregate sand thickness to this line for sizing calculations	20	inches
7	Aggregate storage (also add ASTM No 8 stone) above underdrain invert (12 inches typical) – use 0 inches if the aggregate is not over the entire bottom surface area	6	inches
8	Aggregate storage below underdrain invert (3 inches minimum) – use 0 inches if the aggregate is not over the entire bottom surface area	0	inches
9	Freely drained pore storage of the media	0.2	in/in
10	Porosity of aggregate storage	0.4	in/in
11	Media filtration rate to be used for sizing (maximum filtration rate of 5 in/hr. with no outlet control; if the filtration rate is controlled by the outlet use the outlet controlled rate (includes infiltration into the soil and flow rate through the outlet structure) which will be less than 5 in/hr.)	2.16	in/hr.
Baseline Calculations			
12	Allowable routing time for sizing	6	hours
13	Depth filtered during storm [Line 11 x Line 12]	12.96	inches
14	Depth of Detention Storage [Line 5 + (Line 6 x Line 9) + (Line 7 x Line 10) + (Line 8 x Line 10)]	16.4	inches
15	Total Depth Treated [Line 13 + Line 14]	29.36	inches
Option 1 – Biofilter 1.5 times the DCV			
16	Required biofiltered volume [1.5 x Line 4]	1157	cu. ft.
17	Required Footprint [Line 16/ Line 15] x 12	473	sq. ft.
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
18	Required Storage (surface + pores) Volume [0.75 x Line 4]	579	cu. ft.
19	Required Footprint [Line 18/ Line 14] x 12	423	sq. ft.
Footprint of the BMP			
20	BMP Footprint Sizing Factor (Default 0.03 or an alternative minimum footprint sizing factor from Line 11 in Worksheet B.5-4)	0.03	
21	Minimum BMP Footprint [Line 1 x Line 2 x Line 20]	505	sq. ft.
22	Footprint of the BMP = Maximum (Minimum (Line 17, Line 19), Line 21)	505	sq. ft.
23	Provided BMP Footprint	48	sq. ft.
24	Is Line 23 ≥ Line 22? If Yes, then footprint criterion is met. If No, increase the footprint of the BMP.	☐ Yes ■ No	

Note: The site is HMP exempt. The designed 4x12 Biopod (BMP) from Oldcastle provides more than required treated storm flow rate and can bypass upto 2 cfs while the site runoff is only 1.86 cfs. Therefore, we do not increase BMP size to match above calculated 505 sf.

Worksheet B.6-1: Flow-Thru Design Flows

Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	772	cubic-feet
2	DCV retained	$DCV_{retained}$	0	cubic-feet
3	DCV biofiltered	$DCV_{biofiltered}$	0	cubic-feet
4	DCV requiring flow-thru (Line 1 – Line 2 – 0.67*Line 3)	$DCV_{flow-thru}$	772	cubic-feet
5	Adjustment factor (Line 4 / Line 1)*	AF=	1	unitless
6	Design rainfall intensity	i=	0.20	in/hr
7	Area tributary to BMP (s)	A=	0.522	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.74	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.08	cfs
10	***For Proprietary Biofiltration Only:*** *Q_{Bio}=1.5 x Q*	*Q_{Bio}=*	0.112	*cfs*

Note: See Biopod sizing summary sheet in attachment 5 of SWQMP report.

Form I-10: Compact (high rate) Biofiltration BMP Checklist

Compact (high rate) Biofiltration BMP Checklist	Form I-10

Compact (high rate) biofiltration BMPs have a media filtration rate greater than 5 in/hr. and a media surface area smaller than 3% of contributing area times adjusted runoff factor. Compact biofiltration BMPs are typically proprietary BMPs that may qualify as biofiltration.

A compact biofiltration BMP may satisfy the pollutant control requirements for a DMA onsite in some cases. This depends on the characteristics of the DMA and the performance certification/data of the BMP. If the pollutant control requirements for a DMA are met onsite, then the DMA is not required to participate in an offsite storm water alternative compliance program to meet its pollutant control obligations.

An applicant using a compact biofiltration BMP to meet the pollutant control requirements onsite must complete Section 1 of this form and include it in the PDP SWQMP. A separate form must be completed for each DMA. In instances where the City Engineer does not agree with the applicant's determination, Section 2 of this form will be completed by the City and returned to the applicant.

Section 1: Biofiltration Criteria Checklist (Appendix F)

Refer to Part 1 of the Storm Water Standards to complete this section. When separate forms/worksheets are referenced below, the applicant must also complete these separate forms/worksheets (as applicable) and include in the PDP SWQMP. The criteria numbers below correspond to the criteria numbers in Appendix F.

Criteria	Answer	Progression
Criteria 1 and 3: What is the infiltration condition of the DMA? Refer to Section 5.4.2 and Appendix C of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance. Applicant must complete and include the following in the PDP SWQMP submittal to support the feasibility determination: • Infiltration Feasibility Condition Letter; or • Worksheet C.4-1: Form I-8A and Worksheet C.4-2: Form I- 8B. Applicant must complete and include all applicable sizing worksheets in the SWQMP submittal	☐ Full Infiltration Condition	**Stop**. Compact biofiltration BMP is not allowed.
	☐ Partial Infiltration Condition	Compact biofiltration BMP is only allowed, if the target volume retention is met onsite (Refer to Table B.5-1 in Appendix B.5). Use Worksheet B.5- 2 in Appendix B.5 to estimate the target volume retention (Note: retention in this context means reduction). If the required volume reduction is achieved **proceed to Criteria 2**. If the required volume reduction is not achieved, compact biofiltration BMP is not allowed. **Stop**.
	☑ No Infiltration Condition	Compact biofiltration BMP is allowed if volume retention criteria in Table B.5-1 in Appendix B.5 for the no infiltration condition is met. Compliance with this criterion must be documented in the PDP SWQMP. If the criteria in Table B.5-1 is met **proceed to Criteria 2**. If the criteria in Table B.5-1 is not met, compact biofiltration BMP is not allowed. **Stop**.

Compact (high rate) Biofiltration BMP Checklist	Form I-10

Provide basis for Criteria 1 and 3:

Proposed Oldcastle Biopod (BMP) has impermeable liner at bottom and treatment flow capacity higher than 1.5 times required treated flow. The site drains directly on Escondido Creek, hence Hydromodfication expempt. Therefore, we are desiging the BMP per worksheet B-6.1 that can treat the site suffciently and safely drain into an existing system that outfalls into the Pacific Ocean. Form I-8 shall be provided in next submission through Geotech Engineer.

Feasibility Analysis:

Summarize findings and include either infiltration feasibility condition letter or Worksheet C.4-1: Form I-8A and Worksheet C.4-2: Form I-8B in the PDP SWQMP submittal.

It shall be provided in next submission through the Geotech engineer.

If Partial Infiltration Condition:

Provide documentation that target volume retention is met (include Worksheet B.5-2 in the PDP SWQMP submittal). Worksheet B.5-7 in Appendix B.5 can be used to estimate volume retention benefits from landscape areas.

If No Infiltration Condition:

Provide documentation that the volume retention performance standard is met (include Worksheet B.5-2 in the PDP SWQMP submittal) in the PDP SWQMP submittal. Worksheet B.5-6 in Appendix B.5 can be used to document that the performance standard is met.

Site drains directly on Escondido Creek, hence Hydromodfication expempt. Therefore, we are neglecting footprint area per spreadsheet B-5.1 and desiging the BMP per worksheet B-6.1 that can treat the site suffciently and safely drain into an existing system that outfalls into the Pacific Ocean.

Criteria	Answer	Progression
Criteria 2: Is the compact biofiltration BMP sized to meet the performance standard from the MS4 Permit? Refer to Appendix B.5 and Appendix F.2 of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.	☑ Meets Flow Based Criteria	Use guidance from **Appendix F.2.2** to size the compact biofiltration BMP to meet the flow based criteria. Include the calculations in the PDP SWQMP. Use parameters for sizing consistent with manufacturer guidelines and conditions of its third party certifications (i.e. a BMP certified at a loading rate of 1 gpm/sq. ft. cannot be designed using a loading rate of 1.5 gpm/sq. ft.) **Proceed to Criteria 4.**
	☐ Meets Volume Based Criteria	Provide documentation that the compact biofiltration BMP has a total static (i.e. non-routed) storage volume, including pore-spaces and pre-filter detention volume (Refer to Appendix B.5 for a schematic) of at least 0.75 times the portion of the DCV not reliably retained onsite. **Proceed to Criteria 4.**
	☐ Does not Meet either	**Stop**. Compact biofiltration BMP is not allowed.

Compact (high rate) Biofiltration BMP Checklist	Form I-10

Provide basis for Criteria 2:
Provide documentation that the BMP meets the numeric criteria and is designed consistent with the manufacturer guidelines and conditions of its third-party certification (i.e., loading rate, etc., as applicable).

The BMP has 153 in/hr infiltration rate with the loading rate of 1.6 gpm/ft2. The treatment capacity of the BMP is 0.171 cfs which is greater than required flow rate (0.117 cfs). The BMP has unlimited external bypass system. For more detail see BMP details on last pages of SWQMP report.

Criteria	Answer	Progression
Criteria 4: Does the compact biofiltration BMP meet the pollutant treatment performance standard for the projects most significant pollutants of concern? Refer to Appendix B.6 and Appendix F.1 of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.	☑ Yes, meets the TAPE certification.	Provide documentation that the compact BMP has an appropriate TAPE certification for the projects most significant pollutants of concern. **Proceed to Criteria 5.**
	☐ Yes, through other third-party documentation.	Acceptance of third-party documentation is at the discretion of the City Engineer. The City engineer will consider, (a) the data submitted; (b) representativeness of the data submitted; and (c) consistency of the BMP performance claims with pollutant control objectives in Table F.1-2 and Table F.1-1 while making this determination. If a compact biofiltration BMP is not accepted, a written explanation/ reason will be provided in Section 2. **Proceed to Criteria 5.**
	☐ No	**Stop**. Compact biofiltration BMP is not allowed.

Provide basis for Criteria 4:
Provide documentation that identifies the projects most significant pollutants of concern and TAPE certification or other third party documentation that shows that the compact biofiltration BMP meets the pollutant treatment performance standard for the projects most significant pollutants of concern.

The oldcastle Biopod is a TAPE certified based on link shown below:

https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies

Compact (high rate) Biofiltration BMP Checklist		Form I-10
Criteria	**Answer**	**Progression**
Criteria 5: Is the compact biofiltration BMP designed to promote appropriate biological activity to support and maintain treatment process? Refer to Appendix F of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.	☑ Yes	Provide documentation that the compact biofiltration BMP support appropriate biological activity. Refer to Appendix F for guidance. **Proceed to Criteria 6.**
	☐ No	**Stop**. Compact biofiltration BMP is not allowed.
Provide basis for Criteria 5: Provide documentation that appropriate biological activity is supported by the compact biofiltration BMP to maintain treatment process.		
See BMP details for more information.		
Criteria	**Answer**	**Progression**
Criteria 6: Is the compact biofiltration BMP designed with a hydraulic loading rate to prevent erosion, scour and channeling within the BMP?	☑ Yes	Provide documentation that the compact biofiltration BMP is used in a manner consistent with manufacturer guidelines and conditions of its third-party certification. **Proceed to Criteria 7.**
	☐ No	**Stop**. Compact biofiltration BMP is not allowed.
Provide basis for Criteria 6: Provide documentation that the BMP meets the numeric criteria and is designed consistent with the manufacturer guidelines and conditions of its third-party certification (i.e., maximum tributary area, maximum inflow velocities, etc., as applicable).		
The BMP has 300 psf pedestrian loading, 45 pcf lateral earth pressure, 80 psf lateral live load surcharge and atleast 5,000 psi concrete compressive strength. It has 48 sf surface area with 153 in/hr infiltration rate and loading rate of 1.6 gpm/ft2. See BMP detail for more information.		

Compact (high rate) Biofiltration BMP Checklist		Form I-10
Criteria	**Answer**	**Progression**
Criteria 7: Is the compact biofiltration BMP maintenance plan consistent with manufacturer guidelines and conditions of its third-party certification (i.e., maintenance activities, frequencies)?	☑ Yes, and the compact BMP is privately owned, operated and not in the public right of way.	Submit a maintenance agreement that will also include a statement that the BMP will be maintained in accordance with manufacturer guidelines and conditions of third-party certification. **Stop**. The compact biofiltration BMP meets the required criteria.
	☐ Yes, and the BMP is either owned or operated by the City or in the public right of way.	Approval is at the discretion of the City Engineer. The city engineer will consider maintenance requirements, cost of maintenance activities, relevant previous local experience with operation and maintenance of the BMP type, ability to continue to operate the system in event that the vending company is no longer operating as a business or other relevant factors while making the determination. **Stop**. Consult the City Engineer for a determination.
	☐ No	**Stop**. Compact biofiltration BMP is not allowed.

Provide basis for Criteria 7:

Include copy of manufacturer guidelines and conditions of third-party certification in the maintenance agreement. PDP SWQMP must include a statement that the compact BMP will be maintained in accordance with manufacturer guidelines and conditions of third-party certification.

Manufacturer maintenance guidelines is included in attachment 3 (SWCFMA).

Compact (high rate) Biofiltration BMP Checklist	Form I-10
Section 1: Biofiltration Criteria Checklist (Appendix F)	
Is the proposed compact BMP accepted by the City Engineer for onsite pollutant control compliance for the DMA?	▣ Yes ☐ No, See explanation below
Explanation/reason if the compact BMP is not accepted by the City for onsite pollutant control compliance:	

Worksheet C.4-2 (Form I-8A): Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions[2]

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]
Part 1 - Full Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		**Project Phase:**
Criteria 1: Infiltration Rate Screening		
1A	Is the mapped hydrologic soil group according to the NRCS Web Soil Survey or UC Davis Soil Web Mapper Type A or B and corroborated by available site soil data[4]? ☐ Yes; the DMA may feasibly support full infiltration. Answer "Yes" to Criteria 1 Result or continue to Step 1B if the applicant elects to perform infiltration testing. ☐ No; the mapped soil types are A or B but is not corroborated by available site soil data (continue to Step 1B). ☐ No; the mapped soil types are C, D, or "urban/unclassified" and is corroborated by available site soil data. Answer "No" to Criteria 1 Result. ☐ No; the mapped soil types are C, D, or "urban/unclassified" but is not corroborated by available site soil data (continue to Step 1B).	
1B	Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1? ☐ Yes; Continue to Step 1C. ☐ No; Skip to Step 1D.	
1C	Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1 greater than 0.5 inches per hour? ☐ Yes; the DMA may feasibly support full infiltration. Answer "Yes" to Criteria 1 Result. ☐ No; full infiltration is not required. Answer "No" to Criteria 1 Result.	
1D	**Infiltration Testing Method.** Is the selected infiltration testing method suitable during the design phase (see Appendix D.3)? Note: Alternative testing standards may be allowed with appropriate rationales and documentation. ☐ Yes; continue to Step 1E. ☐ No; select an appropriate infiltration testing method.	

[2] Note that it is not required to investigate each and every criterion in the worksheet, a single "no" answer in Part 1, Part 2, Part 3, or Part 4 determines a full, partial, or no infiltration condition.
[3] This form must be completed each time there is a change to the site layout that would affect the infiltration feasibility condition. Previously completed forms shall be retained to document the evolution of the site storm water design.
[4] Available data includes site-specific sampling or observation of soil types or texture classes, such as obtained from borings or test pits necessary to support other design elements.

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A[3]
1E	**Number of Percolation/Infiltration Tests.** Does the infiltration testing method performed satisfy the minimum number of tests specified in Table D.3-2? ☐ Yes; continue to Step 1F. ☐ No; conduct appropriate number of tests.
IF	**Factor of Safety.** Is the suitable Factor of Safety selected for full infiltration design? See guidance in D.5; Tables D.5-1 and D.5-2; and Worksheet D.5-1 (Form I-9). ☐ Yes; continue to Step 1G. ☐ No; select appropriate factor of safety.
1G	**Full Infiltration Feasibility.** Is the average measured infiltration rate divided by the Factor of Safety greater than 0.5 inches per hour? ☐ Yes; answer "Yes" to Criteria 1 Result. ☐ No; answer "No" to Criteria 1 Result.
Criteria 1 Result	Is the estimated reliable infiltration rate greater than 0.5 inches per hour within the DMA where runoff can reasonably be routed to a BMP? ☐ Yes; the DMA may feasibly support full infiltration. Continue to Criteria 2. ☐ No; full infiltration is not required. Skip to Part 1 Result.
Summarize infiltration testing methods, testing locations, replicates, and results and summarize estimates of reliable infiltration rates according to procedures outlined in D.5. Documentation should be included in project geotechnical report.	

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
Criteria 2: Geologic/Geotechnical Screening			
2A	If all questions in Step 2A are answered "Yes," continue to Step 2B. For any "No" answer in Step 2A answer "No" to Criteria 2, and submit an "Infiltration Feasibility Condition Letter" that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.		
2A-1	Can the proposed full infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick below the infiltrating surface?	☐ Yes	☐ No
2A-2	Can the proposed full infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	☐ Yes	☐ No
2A-3	Can the proposed full infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	☐ Yes	☐ No
2B	When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1. If all questions in Step 2B are answered "Yes," then answer "Yes" to Criteria 2 Result. If there are "No" answers continue to Step 2C.		
2B-1	**Hydroconsolidation.** Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP. Can full infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?	☐ Yes	☐ No
2B-2	**Expansive Soils.** Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs. Can full infiltration BMPs be proposed within the DMA without increasing expansive soil risks?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
2B-3	**Liquefaction**. If applicable, identify mapped liquefaction areas. Evaluate liquefaction hazards in accordance with Section 6.4.2 of the City of San Diego's Guidelines for Geotechnical Reports (2011 or most recent edition). Liquefaction hazard assessment shall take into account any increase in groundwater elevation or groundwater mounding that could occur as a result of proposed infiltration or percolation facilities. Can full infiltration BMPs be proposed within the DMA without increasing liquefaction risks?	☐ Yes	☐ No
2B-4	**Slope Stability**. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required. Can full infiltration BMPs be proposed within the DMA without increasing slope stability risks?	☐ Yes	☐ No
2B-5	**Other Geotechnical Hazards.** Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1). Can full infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?	☐ Yes	☐ No
2B-6	**Setbacks.** Establish setbacks from underground utilities, structures, and/or retaining walls. Reference applicable ASTM or other recognized standard in the geotechnical report. Can full infiltration BMPs be proposed within the DMA using established setbacks from underground utilities, structures, and/or retaining walls?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
2C	**Mitigation Measures.** Propose mitigation measures for each geologic/geotechnical hazard identified in Step 2B. Provide a discussion of geologic/geotechnical hazards that would prevent full infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures. Can mitigation measures be proposed to allow for full infiltration BMPs? If the question in Step 2 is answered "Yes," then answer "Yes" to Criteria 2 Result. If the question in Step 2C is answered "No," then answer "No" to Criteria 2 Result.	☐ Yes	☐ No
Criteria 2 Result	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?	☐ Yes	☐ No
Summarize findings and basis; provide references to related reports or exhibits.			

Part 1 Result – Full Infiltration Geotechnical Screening [5]	Result
If answers to both Criteria 1 and Criteria 2 are "Yes", a full infiltration design is potentially feasible based on Geotechnical conditions only. If either answer to Criteria 1 or Criteria 2 is "No", a full infiltration design is not required.	☐ Full infiltration Condition ☐ Complete Part 2

[5] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]
Part 2 – Partial vs. No Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		**Project Phase:**
Criteria 3: Infiltration Rate Screening		
3A	**NRCS Type C, D, or "urban/unclassified":** Is the mapped hydrologic soil group according to the NRCS Web Soil Survey or UC Davis Soil Web Mapper is Type C, D, or "urban/unclassified" and corroborated by available site soil data? ☐ Yes; the site is mapped as C soils and a reliable infiltration rate of 0.15 in/hr. is used to size partial infiltration BMPS. Answer "Yes" to Criteria 3 Result. ☐ Yes; the site is mapped as D soils or "urban/unclassified" and a reliable infiltration rate of 0.05 in/hr. is used to size partial infiltration BMPS. Answer "Yes" to Criteria 3 Result. ☐ No; infiltration testing is conducted (refer to Table D.3-1), continue to Step 3B.	
3B	**Infiltration Testing Result:** Is the reliable infiltration rate (i.e. average measured infiltration rate/2) greater than 0.05 in/hr. and less than or equal to 0.5 in/hr? ☐ Yes; the site may support partial infiltration. Answer "Yes" to Criteria 3 Result. ☐ No; the reliable infiltration rate (i.e. average measured rate/2) is less than 0.05 in/hr., partial infiltration is not required. Answer "No" to Criteria 3 Result.	
Criteria 3 Result	Is the estimated reliable infiltration rate (i.e., average measured infiltration rate/2) greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour at any location within each DMA where runoff can reasonably be routed to a BMP? ☐ Yes; Continue to Criteria 4. ☐ No: Skip to Part 2 Result.	
Summarize infiltration testing and/or mapping results (i.e. soil maps and series description used for infiltration rate).		

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
Criteria 4: Geologic/Geotechnical Screening			
4A	If all questions in Step 4A are answered "Yes," continue to Step 2B. For any "No" answer in Step 4A answer "No" to Criteria 4 Result, and submit an "Infiltration Feasibility Condition Letter" that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.		
4A-1	Can the proposed partial infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick?	☐ Yes	☐ No
4A-2	Can the proposed partial infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	☐ Yes	☐ No
4A-3	Can the proposed partial infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	☐ Yes	☐ No
4B	When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1 If all questions in Step 4B are answered "Yes," then answer "Yes" to Criteria 4 Result. If there are any "No" answers continue to Step 4C.		
4B-1	**Hydroconsolidation.** Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP. Can partial infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?	☐ Yes	☐ No
4B-2	**Expansive Soils.** Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs. Can partial infiltration BMPs be proposed within the DMA without increasing expansive soil risks?	☐ Yes	☐ No
4B-3	**Liquefaction**. If applicable, identify mapped liquefaction areas. Evaluate liquefaction hazards in accordance with Section 6.4.2 of the City of San Diego's Guidelines for Geotechnical Reports (2011). Liquefaction hazard assessment shall take into account any increase in groundwater elevation or groundwater mounding that could occur as a result of proposed infiltration or percolation facilities. Can partial infiltration BMPs be proposed within the DMA without increasing liquefaction risks?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
4B-4	**Slope Stability**. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required. Can partial infiltration BMPs be proposed within the DMA without increasing slope stability risks?	☐ Yes	☐ No
4B-5	**Other Geotechnical Hazards.** Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1). Can partial infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?	☐ Yes	☐ No
4B-6	**Setbacks.** Establish setbacks from underground utilities, structures, and/or retaining walls. Reference applicable ASTM or other recognized standard in the geotechnical report. Can partial infiltration BMPs be proposed within the DMA using recommended setbacks from underground utilities, structures, and/or retaining walls?	☐ Yes	☐ No
4C	**Mitigation Measures.** Propose mitigation measures for each geologic/geotechnical hazard identified in Step 4B. Provide a discussion on geologic/geotechnical hazards that would prevent partial infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures. Can mitigation measures be proposed to allow for partial infiltration BMPs? If the question in Step 4C is answered "Yes," then answer "Yes" to Criteria 4 Result. If the question in Step 4C is answered "No," then answer "No" to Criteria 4 Result.	☐ Yes	☐ No
Criteria 4 Result	Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without increasing the risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A[3]
Summarize findings and basis; provide references to related reports or exhibits	

Part 2 – Partial Infiltration Geotechnical Screening Result[6]	Result
If answers to both Criteria 3 and Criteria 4 are "Yes", a partial infiltration design is potentially feasible based on geotechnical conditions only. If answers to either Criteria 3 or Criteria 4 is "No", then infiltration of any volume is considered to be infeasible within the site.	☐ Partial Infiltration Condition ☐ No Infiltration Condition

[6] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Worksheet C.4-2: Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions[7]

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions		Worksheet C.4-2: Form I-8B[8]
Part 1 - Full Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		**Project Phase:**
Criteria 1: Groundwater Screening		
1A	**Groundwater Depth.** Is the depth to seasonally high groundwater tables (normal high depth during the wet season) beneath the base of any full infiltration BMP greater than 10 feet? ☐ Yes; continue to Step 1B. ☐ No; The depth to groundwater is less than or equal to 10 feet, but site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to step 1B. ☐ No; The depth to groundwater is less than or equal to 10 feet and site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer "No" for Criteria 1 Result.	
1B	**Contaminated Soil/Groundwater.** Are proposed full infiltration BMPs at least 250 feet away from contaminated soil or groundwater sites? This can be confirmed using GeoTracker (geotracker.waterboards.ca.gov) to identify open contaminated sites. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP. ☐ Yes; continue to Step 1C. ☐ No; However, site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to Step 1C. ☐ No; Site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer "No" to Criteria 1 Result.	

[7] Note that it is not required to investigate each and every criterion in the worksheet, a single "no" answer in Part 1, Part 2, part 3, or Part 4 determines a full, partial, or no infiltration condition.
[8] This form must be completed each time there is a change to the site layout that would affect the infiltration feasibility condition. Previously completed forms shall be retained to document the evolution of the site storm water design.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
1C	**Inadequate Soil Treatment Capacity.** Are full infiltration BMPs proposed in DMA soils that have adequate soil treatment capacity? The DMA has adequate soil treatment capacity if **ALL** of the following criteria (detailed in C.2.2.1) for all soil layers beneath the infiltrating surface are met: • USDA texture class is sandy loam or loam or silt loam or silt or sandy clay loam or clay loam or silty clay loam or sandy clay or silty clay or clay; and • Cation Exchange Capacity (CEC) greater than 5 milliequivalents/100g; and • Soil organic matter is greater than 1%; and • Groundwater table is equal to or greater than 10 feet beneath the base of the full infiltration BMP. ☐ Yes; continue to Step 1D. ☐ No; However, site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to Step 1D. ☐ No; Site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer "No" to Criteria 1 Result.
1D	**Other Groundwater Contamination Hazards.** Are there site-specific groundwater contamination hazards not already mentioned (refer to Appendix C.2.2) that can be reasonably mitigated to support full infiltration BMPs? ☐ Yes; there are other contamination hazards identified that can be mitigated. Answer "Yes" to Criteria 1 Result. ☐ No; there are other contamination hazards identified that cannot be mitigated. Answer "No" to Criteria 1 Result. ☐ N/A; no contamination hazards are identified. Answer "Yes" to Criteria 1 Result.
Criteria 1 Result	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination that cannot be reasonably mitigated to an acceptable level? See Appendix C.2.2.8 for a list of typically reasonable and typically unreasonable mitigation measures. ☐ Yes; Continue to Part 1, Criteria 2. ☐ No; Continue to Part 1 Result.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Summarize groundwater quality and any mitigation measures proposed. Documentation should focus on groundwater table, mapped soil types and contaminated site locations.	

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Criteria 2: Water Balance Screening	
2A	**Ephemeral Stream Setback.** Does the proposed full infiltration BMP meet both the following? • The full infiltration BMP is located at least 250 feet away from an ephemeral stream; **AND** • The bottom surface of the full infiltration BMP is at a depth 20 feet or greater from seasonally high groundwater tables. ☐ Yes; Answer "Yes" to Criteria 2 Result. ☐ No; Continue to Step 2B.
2B	**Mitigation Measures.** Can site layout changes be proposed to support full infiltration BMPs? ☐ Yes; the site can be reconfigured to mitigate potential water balance issues. Answer "Yes" to Criteria 2 Result. ☐ No; the site cannot be reconfigured to mitigate potential water balance issues. Continue to Step 2C and provide discussion.
2C	**Additional studies.** Do additional studies support full infiltration BMPs? In the event that water balance effects are used to reject full infiltration (anticipated to be rare), additional analysis shall be completed and documented by a qualified professional indicating the site-specific information evaluated and the technical basis for this finding. ☐ Yes; Answer "Yes" to Criteria 2 Result. ☐ No; Answer "No" to Criteria 2 Result.
Criteria 2 Result	Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams? ☐ Yes; Continue to Part 1 Result. ☐ No; Continue to Part 1 Result.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Summarize potential water balance effects. Documentation should focus on mapping and soil data regarding proximity to ephemeral streams and groundwater depth.	

Part 1 – Full Infiltration Groundwater and Water Balance Screening Result[9]	Result
If answers to Criteria 1 and 2 are "Yes", a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration based on groundwater conditions. If answer to Criteria 1 or Criteria 2 is "No", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design based on groundwater conditions. Proceed to Part 2.	☐ Full Infiltration ☐ Complete Part 2

[9] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Part 2 – Partial vs. No Infiltration Feasibility Screening Criteria	
DMA(s) Being Analyzed:	**Project Phase:**
Criteria 3: Groundwater Screening	
Contaminated Soil/Groundwater. Are partial infiltration BMPs proposed at least 100 feet away from contaminated soil or groundwater sites? This can be confirmed using GeoTracker (geotracker.waterboards.ca.gov) to identify open contaminated sites. This criterion is intentionally a smaller radius than full infiltration, as the potential quantity of infiltration from partial infiltration BMPs is smaller. ☐ Yes; Answer "Yes" to Criteria 3 Result. ☐ No; However, site layout changes can be proposed to avoid contaminated soils or soils that lack adequate treatment capacity. Select "Yes" to Criteria 3 Result. It is a requirement for the SWQMP preparer to identify potential mitigation measures. ☐ No; Contaminated soils or soils that lack adequate treatment capacity cannot be avoided and partial infiltration BMPs are not feasible. Select "No" to Criteria 3 Result.	
Criteria 3 Result: Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without increasing risk of groundwater contamination that cannot be reasonably mitigated to an acceptable level? Yes; Continue to Part 2, Criteria 4. ☐ No; Skip to Part 2 Result.	
Summarize findings and basis. Documentation should focus on mapped soil types and contaminated site locations.	

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Criteria 4: Water Balance Screening	
Additional studies. In the event that water balance effects are used to reject partial infiltration (anticipated to be rare), a qualified professional must provide an analysis of the incremental effects of partial infiltration BMPs on the water balance compared to incidental infiltration under a no infiltration scenario (e.g. precipitation, irrigation, etc.).	
Criteria 4 Result: Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams? ☐ Yes: Continue to Part 2 Result. ☐ No: Continue to Part 2 Result.	
Summarize potential water balance effects. Documentation should focus on mapping and soil data regarding proximity to ephemeral streams and groundwater depth	

Part 2 – Partial Infiltration Groundwater and Water Balance Screening Result[10]	Result
If answers to Criteria 3 and Criteria 4 are "Yes", a partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration based on groundwater and water balance conditions. If answer to Criteria 3 or Criteria 4 is "No", then infiltration of any volume is considered to be infeasible within the site. The feasibility screening category is No Infiltration based on groundwater or water balance condition.	☐ Partial Infiltration Condition ☐ No Infiltration Condition

[10] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Factor of Safety and Design Infiltration Rate Worksheet				Form I-9	
Factor Category		**Factor Description**	**Assigned Weight (w)**	**Factor Value (v)**	**Product (p) p = w x v**
A	Suitability Assessment	Soil assessment methods	0.25		
		Predominant soil texture	0.25		
		Site soil variability	0.25		
		Depth to groundwater or impervious layer	0.25		
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			
B	Design	Level of pretreatment/ expected sediment loads	0.5		
		Redundancy/resiliency	0.25		
		Compaction during construction	0.25		
		Design Safety Factor, $S_B = \Sigma p$			
Combined Safety Factor, $S_{total} = S_A \times S_B$					
Observed Infiltration Rate, inch/hr, $K_{observed}$ (corrected for test-specific bias)					
Design Infiltration Rate, in/hr, $K_{design} = K_{observed} / S_{total}$					
Supporting Data					
Briefly describe infiltration test and provide reference to test forms:					

Factor of Safety and Design Infiltration Rate Worksheet	Form I-9

The Geotechnical Engineer certifies they completed Form I-9 (see Appendix C.4.3).

Professional Geotechnical Engineer's Printed Name: _____

Professional Geotechnical Engineer's Signed Name: _____

Date: _____

[SEAL]

ATTACHMENT 3

Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 3a	Structural BMP Maintenance Plan (Required)	▣Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Storm Water Control Facilities Maintenance Agreement (SWCFMA) (when applicable)	▣Included ☐Not Applicable

Note: Aggreement to be signed prior to final approval.

Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

Attachment 3a must identify:

- ☒ Specific maintenance indicators and actions for proposed structural BMP(s). This must be based on Section 7.7 and Appendix E of the Storm Water Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)
- ☒ How to access the structural BMP(s) to inspect and perform maintenance
- ☒ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- ☒ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☒ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- ☒ Recommended equipment to perform maintenance
- ☐ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

Attachment 3b: For all Structural BMPs, Attachment 3b must include a draft maintenance agreement in the City's standard format (PDP applicant to contact City staff to obtain the current maintenance agreement forms or download from City's website).

Missing items typically not required at planning level.

ATTACHMENT: 3A

Summary of Standard Inspection and Maintenance

The property owner is responsible to ensure inspection, operation and maintenance of permanent BMPs on their property unless responsibility has been formally transferred to an agency, community facilities district, homeowners association, property owners association, or other special district.

Maintenance frequencies listed in this table are average/typical frequencies. Actual maintenance needs are site-specific, and maintenance may be required more frequently. Maintenance must be performed whenever needed, based on maintenance indicators presented in this table. The BMP owner is responsible for conducting regular inspections to see when maintenance is needed based on the maintenance indicators. During the first year of operation of a structural BMP, inspection is recommended at least once prior to August 31 and then monthly from September through May. Inspection during a storm event is also recommended. After the initial period of frequent inspections, the minimum inspection and maintenance frequency can be determined based on the results of the first year inspections.

Threshold/Indicator	Maintenance Action	Typical Maintenance Frequency
Accumulation of sediment, litter, or debris	Remove and properly dispose of accumulated materials, without damage to the vegetation or compaction of the media layer.	• Inspect monthly. If the BMP is 25% full* or more in one month, increase inspection frequency to monthly plus after every 0.1-inch or larger storm event. • Remove any accumulated materials found at each inspection.
Obstructed inlet or outlet structure	Clear blockage.	• Inspect monthly and after every 0.5-inch or larger storm event. • Remove any accumulated materials found at each inspection.
Damage to structural components such as weirs, inlet or outlet structures	Repair or replace as applicable	• Inspect annually. • Maintain when needed.
Poor vegetation establishment	Re-seed, re-plant, or re-establish vegetation per original plans.	• Inspect monthly. • Maintain when needed.

Threshold/Indicator	Maintenance Action	Typical Maintenance Frequency
Dead or diseased vegetation	Remove dead or diseased vegetation, re-seed, re-plant, or re-establish vegetation per original plans.	• Inspect monthly. • Maintain when needed.
Overgrown vegetation	Mow or trim as appropriate.	• Inspect monthly. • Maintain when needed.
2/3 of mulch has decomposed, or mulch has been removed	Remove decomposed fraction and top off with fresh mulch to a total depth of 3 inches.	• Inspect monthly. • Replenish mulch annually, or more frequently when needed based on inspection.
Erosion due to concentrated irrigation flow	Repair/re-seed/re-plant eroded areas and adjust the irrigation system.	• Inspect monthly. • Maintain when needed.
Erosion due to concentrated storm water runoff flow	Repair/re-seed/re-plant eroded areas, and make appropriate corrective measures such as adding erosion control blankets, adding stone at flow entry points, or minor re-grading to restore proper drainage according to the original plan. If the issue is not corrected by restoring the BMP to the original plan and grade, the City Engineer shall be contacted prior to any additional repairs or reconstruction.	• Inspect after every 0.5-inch or larger storm event. If erosion due to storm water flow has been observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed. If the issue is not corrected by restoring the BMP to the original plan and grade, the City Engineer shall be contacted prior to any additional repairs or reconstruction.
Standing water in BMP for longer than 24 hours following a storm event Surface ponding longer than approximately 24 hours following a storm event may be detrimental to vegetation health	Make appropriate corrective measures such as adjusting irrigation system, removing obstructions of debris or invasive vegetation, clearing underdrains, or repairing/replacing clogged or compacted soils.	• Inspect monthly and after every 0.5-inch or larger storm event. If standing water is observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed.

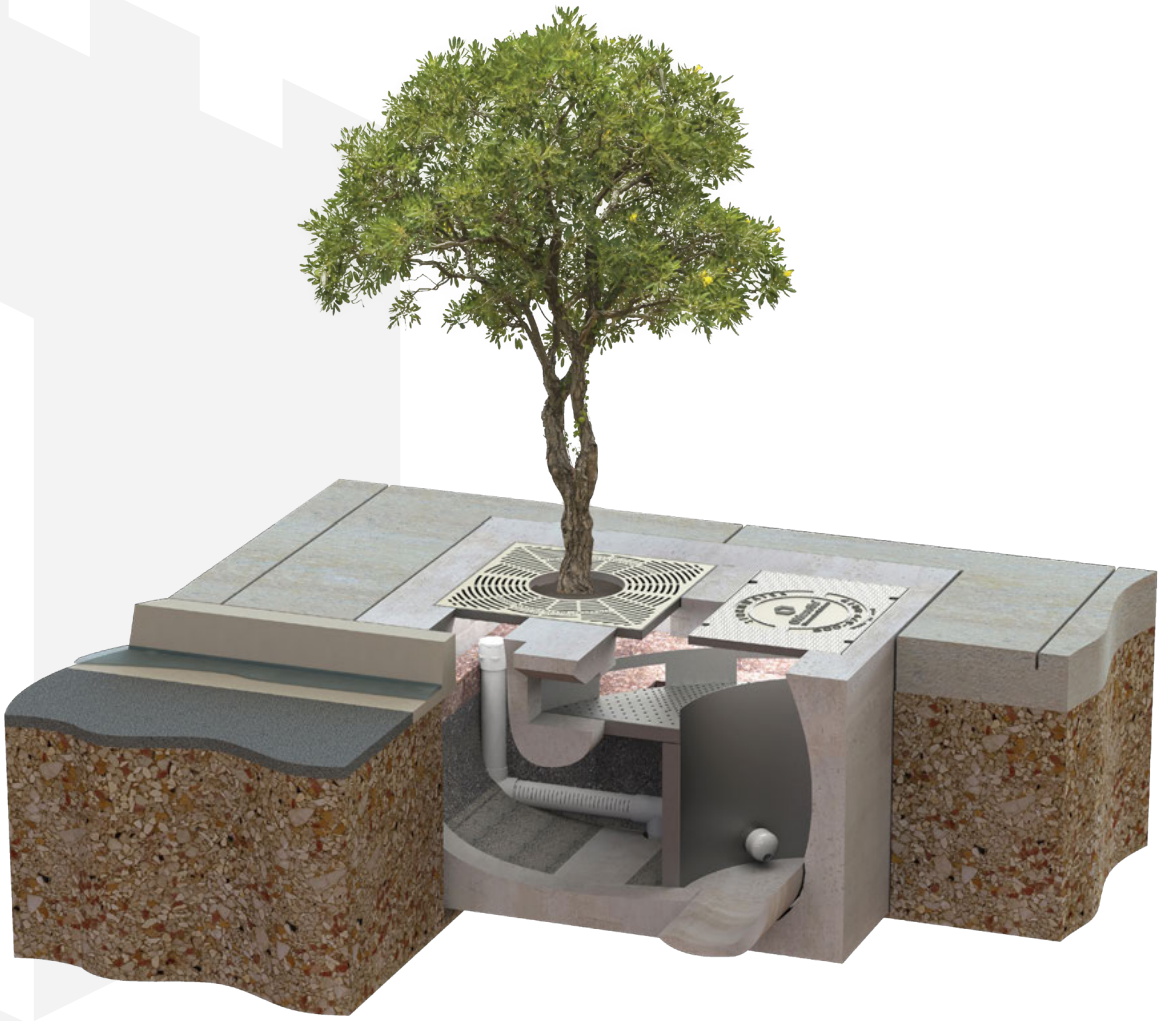
Threshold/Indicator	Maintenance Action	Typical Maintenance Frequency
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology	If mosquitos/larvae are observed: first, immediately remove any standing water by dispersing to nearby landscaping; second, make corrective measures as applicable to restore BMP drainage to prevent standing water. If mosquitos persist following corrective measures to remove standing water, or if the BMP design does not meet the 96-hour drawdown criteria due to release rates controlled by an orifice installed on the underdrain, the City Engineer shall be contacted to determine a solution. A different BMP type, or a Vector Management Plan prepared with concurrence from the County of San Diego Department of Environmental Health, may be required.	• Inspect monthly and after every 0.5-inch or larger storm event. If mosquitos are observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed.
Underdrain clogged	Clear blockage.	Inspect if standing water is observed for longer than 24-96 hours following a storm event. Maintain when needed.

"25% full" is defined as ¼ of the depth from the design bottom elevation to the crest of the outflow structure (e.g., if the height to the outflow opening is 12 inches from the bottom elevation, then the materials must be removed when there is 3 inches of accumulation – this should be marked on the outflow structure).

BIOPOD™ SYSTEM

with StormMix™ Media

Inspection & Maintenance Guide



Oldcastle Infrastructure™
A CRH COMPANY

BIOPOD™ BIOFILTER WITH STORMMIX™ BIOFILTRATION MEDIA

DESCRIPTION

The BioPod™ Biofilter System (BioPod) is a storm water biofiltration treatment system used to remove pollutants from storm water runoff. Impervious surfaces and other urban and suburban landscapes generate a variety of contaminants that can enter storm water and pollute downstream receiving waters unless treatment is provided. The BioPod system uses proprietary StormMix™ biofiltration media to capture and retain pollutants including total suspended solids (TSS), metals, nutrients, gross solids, trash and debris as well as petroleum hydrocarbons.

FUNCTION

The BioPod system uses engineered, high-flow rate filter media to remove storm water pollutants, allowing for a smaller footprint than conventional bioretention systems. Contained within a compact precast concrete vault, the BioPod system consists of a biofiltration chamber and an optional integrated high-flow bypass. The biofiltration chamber is filled with horizontal layers of aggregate, biofiltration media and mulch. Storm water passes vertically down through the mulch and biofiltration media for treatment. The mulch provides pretreatment by retaining most of the solids or sediment. The biofiltration media provides further treatment by retaining finer sediment and dissolved pollutants. The aggregate allows the media bed to drain evenly for discharge through an underdrain pipe or by infiltration.

INSPECTION & MAINTENANCE OVERVIEW

State and local regulations require all storm water management systems to be inspected on a regular basis and maintained as necessary to ensure performance and protect downstream receiving waters. Without maintenance, excessive pollutant buildup can limit system performance by reducing the operating capacity of the system and increasing the potential for scouring of pollutants during periods of high flow.

Some configurations of the BioPod may require periodic irrigation to establish and maintain vegetation. Vegetation will typically become established about two years after planting. Irrigation requirements are ultimately dependent on climate, rainfall and the type of vegetation selected.

INSPECTION & MAINTENANCE FREQUENCY

Periodic inspection is essential for consistent system performance and is easily completed. Inspection is typically conducted a minimum of twice per year, but since pollutant transport and deposition varies from site to site, a site-specific maintenance frequency should be established during the first two or three years of operation.

INSPECTION EQUIPMENT

The following equipment is helpful when conducting BioPod inspections:

- Recording device (pen and paper form, voice recorder, iPad, etc.)
- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- PPE as required for entry
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Socket

INSPECTION PROCEDURES

BioPod inspections are visual and are conducted without entering the unit. To complete an inspection, safety measures including traffic control should be deployed before the access covers or tree grates are removed. Once the covers have been removed, the following items should be checked and recorded (see form provided on page 6) to determine whether maintenance is required:

- If the BioPod unit is equipped with an internal bypass, inspect the inlet rack (or inlet chamber on underground units) and outlet chamber and note whether there are any broken or missing parts. In the unlikely event that internal parts are broken or missing, contact Oldcastle Storm water at (800) 579-8819 to determine appropriate corrective action.
- Note whether the curb inlet, inlet pipe, or inlet rack is blocked or obstructed.
- If the unit is equipped with an internal bypass, observe, quantify and record the accumulation of trash and debris in the inlet rack or inlet chamber. The significance of accumulated trash and debris is a matter of judgment. Often, much of the trash and debris may be removed manually at the time of inspection if a separate maintenance visit is not yet warranted.
- If it has not rained within the past 24 hours, note whether standing water is observed in the biofiltration chamber.
- Finally, observe, quantify and record presence of invasive vegetation and the amount of trash and debris and sediment load in the biofiltration chamber. Erosion of the mulch and biofiltration media bed should also be recorded. Often, much of the invasive vegetation and trash and debris may be removed manually at the time of inspection if a separate maintenance visit is not yet warranted. Sediment load may be rated light, medium or heavy depending on the conditions. Loading characteristics may be determined as follows:
  - **Light sediment load** – sediment is difficult to distinguish among the mulch fibers at the top of the mulch layer; the mulch appears almost new.
  - **Medium sediment load** – sediment accumulation is apparent and may be concentrated in some areas; probing the mulch layer reveals lighter sediment loads under the top 1" of mulch.
  - **Heavy sediment load** – sediment is readily apparent across the entire top of the mulch layer; individual mulch fibers are difficult to distinguish; probing the mulch layer reveals heavy sediment load under the top 1" of mulch.

MAINTENANCE INDICATORS

Maintenance should be scheduled if any of the following conditions are identified during inspection:

- The concrete structure is damaged or the tree grate or access cover is damaged or missing
- The inlet obstructed
- Standing water is observed in the biofiltration chamber more than 24 hours after a rainfall event (use discretion if the BioPod is located downstream of a storage system that attenuates flow)
- Trash and debris in the inlet rack cannot be easily removed at the time of inspection
- Trash and debris, invasive vegetation or sediment load in the biofiltration chamber is heavy or excessive erosion has occurred

MAINTENANCE EQUIPMENT

The following equipment is helpful when conducting BioPod maintenance:

- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- PPE as required for entry
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Rake, hoe, shovel and broom
- Bucket
- Pruners
- Vacuum truck (optional)
- Socket

MAINTENANCE PROCEDURES

Maintenance should be conducted during dry weather when no flows are entering the system. In most cases, maintenance may be conducted without entering. Entry may be required to maintain BioPod Underground units, depending on system depth. Once safety measures such as traffic control are deployed, the access covers may be removed and the following activities may be conducted to complete maintenance:

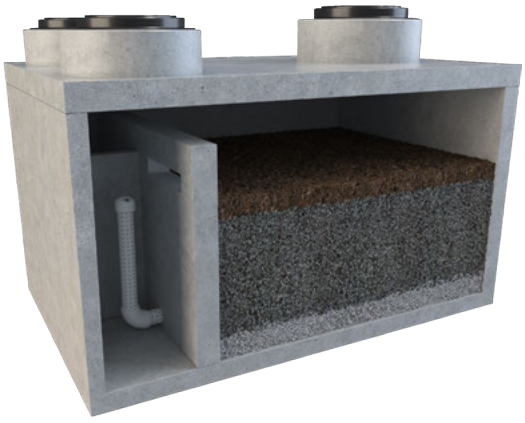
- Remove all trash and debris from the curb inlet and inlet rack manually or by using a vacuum truck as required.
- Remove all trash and debris and invasive vegetation from the biofiltration chamber manually or by using a vacuum truck as required.
- If the sediment load is medium or light but erosion of the biofiltration media bed is evident, redistribute the mulch with a rake or replace missing mulch as appropriate. If erosion persists, rocks may be placed in the eroded area to help dissipate energy and prevent recurring erosion.
- If the sediment load is heavy, remove the mulch layer using a hoe, rake, shovel and bucket, or by using a vacuum truck as required. If the sediment load is particularly heavy, inspect the surface of the biofiltration media once the mulch has been removed. If the media appears clogged with sediment, remove and replace one or two inches of biofiltration media prior to replacing the mulch* layer.
- Prune vegetation as appropriate and replace damaged or dead plants as required.
- Replace the tree grate and/or access covers and sweep the area around the BioPod to leave the site clean.
- All material removed from the BioPod during maintenance must be disposed of in accordance with local environmental regulations. In most cases, the material may be handled in the same manner as disposal of material removed from sumped catch basins or manholes.

* Natural, shredded hardwood mulch should be used in the BioPod. Timely replacement of the mulch layer according to the maintenance indicators described above should protect the biofiltration media below the mulch layer from clogging due to sediment accumulation. However, whenever the mulch is replaced, the BioPod should be visited 24 hours after the next major storm event to ensure that there is no standing water in the biofiltration chamber. Standing water indicates that the biofiltration media below the mulch layer is clogged and must be replaced. Please contact Oldcastle Infrastructure at (800) 579-8819 to purchase the proprietary StormMix™ biofiltration media.

BIOPOD SURFACE

BIOPOD TREE

BIOPOD PLANTER



BIOPOD UNDERGROUND

ATTACHMENT: 3B

EXEMPT FROM FEES pursuant to Gov't Code §§ 6103, 27383, and 27388.1 (filing requested/executed by municipality)

RECORDING REQUESTED BY, AND WHEN RECORDED RETURN TO:

City Engineer
City of Escondido
201 North Broadway
Escondido, CA 92025-2798

This Space for Recorder's Use Only

STORM WATER CONTROL FACILITY MAINTENANCE AGREEMENT
APN NO. 229-171-29, 229-171-30

This STORM WATER CONTROL FACILITY MAINTENANCE AGREEMENT ("Agreement") is entered into between the City of Escondido, a California municipal corporation ("City") and 501 W. Mission, LLC ("Owner"), and in accordance with City of Escondido Grading Plan No. [GP Number] ("Grading Plan"). (The City and Owner may each be referred to herein as a "Party" and collectively as the "Parties.")

WHEREAS, installation and maintenance of Storm Water Control Facilities ("SWCF") is required pursuant to the Escondido Municipal Code, by the California Regional Water Quality Control Board ("RWQCB"), and by the City as a condition of approval of property development; and

WHEREAS, Owner is the owner of certain real property identified as APN 229-171-29 & 229-171-30; located at SE Corner of Mission ave & Center City Pkwy, Escondido, CA 92025; and more particularly described in Exhibit A, attached hereto and incorporated herein by this reference ("Property"); and

WHEREAS, Owner has proposed development of the Property that provides benefit to the general public and the City and meets the requirements of RWQCB Order R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100 (National Pollution Discharge Elimination System No. CAS0109266); and

WHEREAS, the current and future subdivision Owner shall use the SWCF as installed per the Grading Plan and the provisions of the Storm Water Quality Management Plan prepared by the Owner and approved by the CITY on [Approval Date] ("Storm Water Plan"); and

WHEREAS, it is the mutual desire of the Parties to establish a method for the maintenance and repair of the SWCF, and that the SWCF be maintained in a safe and usable condition by the Owner; and

WHEREAS, the City shall have the right but not the obligation to enforce full compliance with the terms and conditions of this Agreement; and

WHEREAS, it is the mutual intention of the Parties that this Agreement constitute a covenant running with the land, binding upon each successive person having or acquiring any right, title, or interest in all or any portion of the Property.

NOW, THEREFORE, in consideration of the above premises, the mutual covenants and promises below, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. The Property is benefited by this Agreement, and the Owner is expressly bound hereby for the benefit of the land. In the event any of the herein described parcels of land are subdivided further, the Owner, or its heirs, assigns, and successors in interest of each such newly created parcel, shall be liable under this Agreement for its then pro rata share of expenses and such pro rata shares of expenses shall be computed to reflect such newly created parcels.

2. The cost and expense of maintaining the SWCF shall be the responsibility of, and paid by, the Owner. The SWCF shall be constructed and maintained by the Owner in accordance with the Grading Plan and Storm Water Plan.

3. Repair and maintenance responsibilities for all structural SWCF and required Best Management Practices ("BMPs") are set forth in the Storm Water Plan. Owner shall, as changes occur, provide the City with the name, title, and phone number of the persons or entities responsible for maintenance and reporting activities; funding, schedules, and procedures for inspection and maintenance of the SWCF; implementation of worker training requirements; and any other activities necessary to ensure compliance with BMPs. The Storm Water Plan shall provide for the servicing of all SWCF as needed, and at least once during August or September of each year, and for the retention of inspection and maintenance records for at least three years. Owner shall submit annual certification to the City's Department of Engineering Services between September 1 and October 1 of each year. The certification shall document all maintenance performed and compliance with applicable permits.

4. The City shall have the right to inspect the SWCF and related records as needed to ensure the SWCF is being properly maintained.

5. If any individual Owner fails to pay its share of costs and expenses as required to use, maintain, or repair the SWCF, then the City shall be entitled without further notice to institute legal action for the collection of funds advanced on behalf of the individual Owner that did not pay its share of costs and expenses and shall be entitled to recover in such action, in addition to the funds advanced, interest thereon at the current prime rate of interest, until paid; all costs and disbursements of such action, including such sum or sums as the court may fix; and reasonable attorney's fees.

6. Any liability of the Owner to any worker employed to make repairs or provide maintenance under this Agreement, or to third persons, as well as any liability of the Owner for damage to the property of any such worker, or any third persons, as a result of or arising out of repairs and maintenance under this Agreement, shall be borne solely by the Owner (and if jointly owned,

then in the same percentage as each individual Owner bears the costs and expenses of such repairs and maintenance). In the case of more than one Owner, each individual Owner shall be responsible for and maintain its own insurance. By this Agreement, the Parties do not intend to provide for the sharing of liability with respect to personal injury or property damage other than that attributable to the repairs and maintenance undertaken under this Agreement. Each Owner agrees to indemnify any other Owner from any and all liability for injury to an individual Owner or damage to its property when such injury or damage results from, arises out of, or is attributable to any maintenance or repairs undertaken pursuant to this Agreement.

7. Indemnification, Duty to Defend, Hold Harmless.

7.1 To the fullest extent permitted by law, Owner shall jointly and severally indemnify, defend with legal counsel reasonably satisfactory to the City, and hold harmless the City and the City's officers, officials, directors, employees, agents, volunteers, and Councilmembers (collectively, "Indemnitees") from and against any and all claims, demands, actions, causes of action, proceedings (including but not limited to legal and administrative proceedings of any kind), suits, fines, penalties, sanctions, judgments, levies, liens, orders (including without limitation any RWQCB Orders), assessments, costs, expenses, liabilities, losses, damages, or injuries, in law or equity, including without limitation the payment of all consequential damages and attorney's fees and other related litigation costs and expenses, of every nature caused by, arising out of, or in connection with Owner's obligations under this Agreement or Owner's obligations for implementation of storm water management in accordance with RWQCB Order R9-2013-0001 and subsequent amendments (collectively, "Claims"), including any reasonable attorney's fees, costs, and expenses incurred by the Indemnitees in responding to or defending any Claims, except where caused by the active negligence, sole negligence, or willful misconduct of the Indemnitees.

7.2 Owner's duty to defend the Indemnitees is separate, independent, and free-standing from Owner's duty to indemnify and hold harmless the Indemnitees. Owner's defense obligation shall arise immediately upon receipt by the City or Owner of any written notice of any alleged Claims, or a written Notice of Violation or equivalent notice of intent from the RWQCB or other enforcement agency to levy any fines, penalties, or sanctions against Indemnitees, and shall continue until the entry of any final and non-appealable judgment or order, including without limitation any final and non-appealable RWQCB Order or other agency enforcement order.

7.3 The indemnity protections provided by this Agreement are not intended to exceed the indemnity available under applicable law. If the indemnity protections are found by a court to be unlawful in any way, the protection shall be curtailed or adjusted, but only to the minimum extent required to conform to applicable law.

7.4 All terms and provisions within this Section 7 shall survive termination of this Agreement.

8. If, in the City's sole judgment, the SWCF is not being maintained to the standards required by this Agreement, the City may thereupon provide written notice to the Owner to initiate repairs or construction within 90 days. Upon the Owner's failure to demonstrate good faith to make repairs or construction within 90 days, the City may make all necessary repairs to the SWCF or construct the SWCF in a manner to meet the standards set forth in this Agreement and to then assess

costs to the Owner.

9. If the City elects to make necessary maintenance or repairs in accordance with this Agreement, such maintenance and repairs shall be accepted "as is" by the Owner without any warranty of workmanship and be guaranteed and indemnified by Owner in accordance with this Agreement.

10. The obligations and benefits provided for in this Agreement shall run with the land obligated and benefited, respectively, and shall be binding on all persons having or acquiring any right, title, or interest in the Property or any part thereof. As such, it is the intent of the Parties that this Agreement and the promises, covenants, rights, and obligations set forth herein (i) shall be and are covenants running with the Property, encumbering the Property for the term of this Agreement, and binding upon Owner's successors in title and all subsequent owners and operators of the Property; (ii) are not merely personal covenants of the Owner; and (iii) shall bind Owner and its respective heirs, executors, administrators, successors, and assigns.

11. Amendments. This Agreement may not be amended, modified, waived, or supplemented except by an agreement in writing signed by all of the Parties, and then only in the specific instance and for the specific purpose given.

12. Governing Law. This Agreement shall be governed by the laws of the State of California. In the event any provision of this Agreement is held to be unenforceable or invalid by any court of competent jurisdiction, the validity and enforceability of the remaining provisions shall not be affected thereby.

13. Entire Agreement. This Agreement, together with its attachments or other documents, if any, described or incorporated herein, contains the entire agreement and understanding concerning the subject of this Agreement and supersedes and replaces all prior negotiations, understandings, or proposed agreements, written or oral, except as otherwise provided herein. Each of the Parties hereto acknowledges that no other Party, nor the agents nor the attorneys for any Party, has made any promise, representation, or warranty whatsoever, express or implied, not contained herein, to induce the execution of this Agreement and acknowledges that this Agreement has not been executed in reliance upon any promise, representation, or warranty not contained herein.

14. Severability. This Agreement shall be performed and shall be enforceable to the full extent allowed by applicable law, and the illegality, invalidity, waiver, or unenforceability of any provision of this Agreement shall not affect the legality, validity, applicability, or enforceability of the remaining provisions of this Agreement.

15. Capacity. Each individual signing this Agreement represents and warrants that he or she has been authorized to do so by proper action of the Party on whose behalf he or she has signed.

16 Advice of Counsel. The Parties hereby acknowledge that they have executed this Agreement after having the opportunity to consult with, and receive the advice of, their own counsel.

17. Attorney's Fees. In any action to enforce the terms of this Agreement, the Parties agree that the prevailing party shall be entitled to its actual attorney's fees and all costs, fees, and expenses, including the fees of expert witnesses and consultants, whether or not such costs, fees, and

expenses are recoverable or allowed as costs under section 1033.5 of the California Code of Civil Procedure. Such fees and costs shall be proven and awarded by the court after the conclusion of the trial on all other issues by way of a cost bill and motion. In addition to the foregoing award of attorney's fees and costs, the prevailing party shall be entitled to its attorney's fees and costs incurred in any post-judgment proceeding to collect or enforce any judgment. This provision is separate and shall survive the merger of this provision into any judgment on this Agreement.

18. Counterparts. This Agreement may be executed on separate counterparts that, upon completion, may be assembled into and shall be construed as one document.

19. Recitals. The Recitals set forth in this Agreement are included herein by reference as part of this Agreement and the Parties agree that said Recitals are essential facts to this Agreement.

20. Effective Date. Unless a different date is provided in this Agreement, the effective date of this Agreement shall be the latest date of execution set forth by the names of the signators below.

IN WITNESS WHEREOF, this Agreement is executed by the Parties or their duly authorized representatives as of the Effective Date:

CITY OF ESCONDIDO

Date: _____

_____
Julie Procopio, Director of Engineering Services

[OWNER]

Date: _____

_____
Signature

_____
Name/Title (please print)

(ALL ABOVE SIGNATURES MUST BE NOTARIZED)

Approved as to Form:

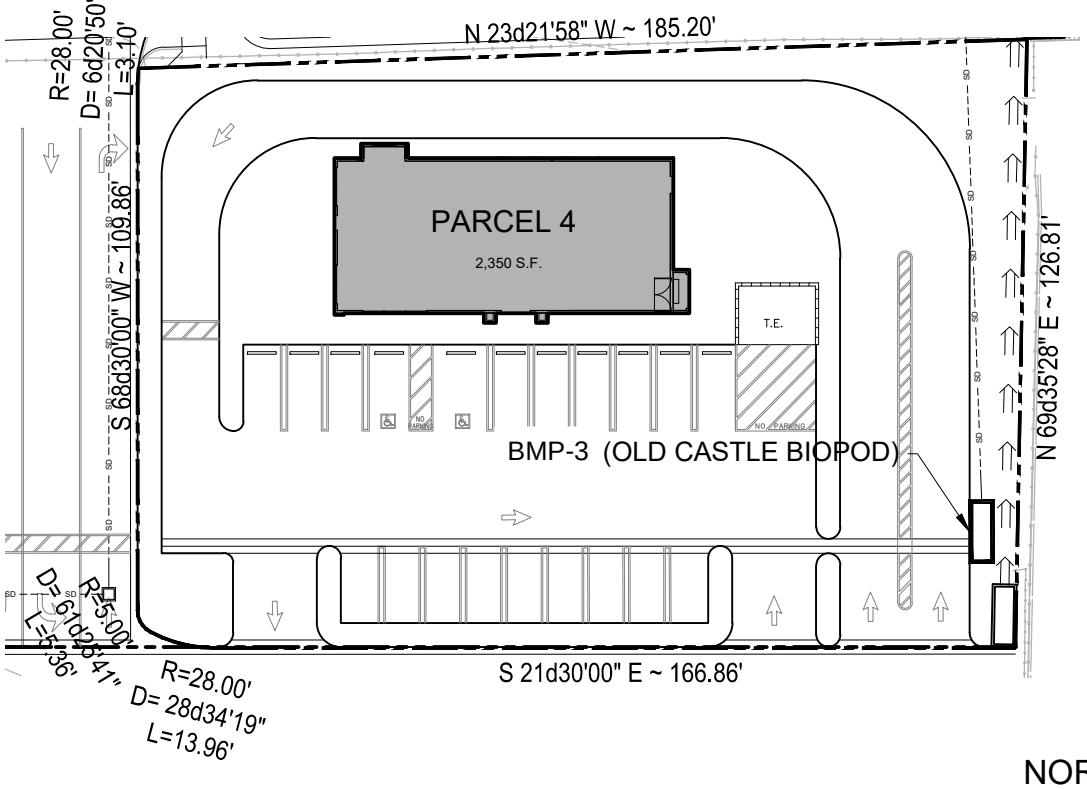
OFFICE OF THE CITY ATTORNEY
Michael R. McGuinness, City Attorney

BY: _____

EXHIBIT A

Legal Description of Property

SEE NEXT PAGE



NORTH

SCALE: 1"=40'

LEGAL DESCRIPTION: 22,750 SF (0.52 AC) PROPERTY LOCATED AT W. MISSION AVE & CENTRE CITY PKWY, ESCONDIDO, CA. PARCEL 4, APN 229-171-29, 229-171-30.

SWCFMA SITE PLAN

PARCEL 4
W. MISSION AVE & CENTRE CITY PKWY
ESCONDIDO, CA 92025

ATTACHMENT 4

City of Escondido PDP Structural BMP Verification for Permitted Land Development Projects

This is the cover sheet for Attachment 4.

City of Escondido Storm Water Structural BMP Verification Form Page 1 of 3	
Project Summary Information	
Project Name	Parcel 4
Permit Number (e.g., grading/improvement plan number)	PL22-0396
Project Address	502 W. Mission Ave Escondido, CA 92025
Assessor's Parcel Number(s) (APN(s))	229-171-29, 229-171-30
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	Carlsbad 904
Maintenance Notification / Agreement No.	
Responsible Party for Construction Phase	
Developer's Name	
Address	
Email Address	
Phone Number	
Engineer of Work	
Engineer's Phone Number	
Responsible Party for Ongoing Maintenance	
Owner's Name(s)*	
Address	
Email Address	
Phone Number	
*Note: If a corporation or LLC, provide information for principal partner or Agent for Service of Process. If an HOA, provide information for the Board or property manager at time of project closeout.	

City of Escondido Storm Water Structural BMP Verification Form Page 2 of 3				
Stormwater Structural Pollutant Control & Hydromodification Control BMPs* (List all from SWQMP)				
Description/Type of Structural BMP	**Plan Sheet #**	**Structural BMP ID#**	**Maintenance Agreement Recorded Doc #**	**Revisions**
Biopod from Oldcastle	C300 - C304	BMP-3	TBD	
*All Priority Development Projects (PDPs) require a Structural BMP				

Note: If this is a partial verification of Structural BMPs, provide a list and map denoting Structural BMPs that have already been submitted, those for this submission, and those anticipated in future submissions.

City of Escondido Storm Structural BMP Verification Form Page 3 of 3

Checklist for Engineer of Work (EOW) to submit to Field Engineering:

- ☐ Copy of the final accepted SWQMP and any accepted addendum.
- ☐ Copy of the most current plan showing the Storm Water Structural BMP Table, plans/cross-section sheets of the Structural BMPs and the location of each verified as-built Structural BMP.
- ☐ Photograph of each Structural BMP.
- ☐ Photograph(s) of each Structural BMP during the construction process to illustrate proper construction.
- ☐ Copy of the approved Structural BMP maintenance agreement and associated security

By signing below, I certify that the Structural BMP(s) for this project have been constructed and all BMPs are in substantial conformance with the approved plans and applicable regulations. I understand the City reserves the right to inspect the above BMPs to verify compliance with the approved plans and Storm Water Ordinance. Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Please sign your name and seal.

Professional Engineer's Printed Name: _____

Professional Engineer's Signed Name: _____

Date: _____

[SEAL]

ATTACHMENT 5

Copy of Plan Sheets Showing Permanent Storm Water BMPs, Source Control, and Site Design BMPs

This is the cover sheet for Attachment 5.

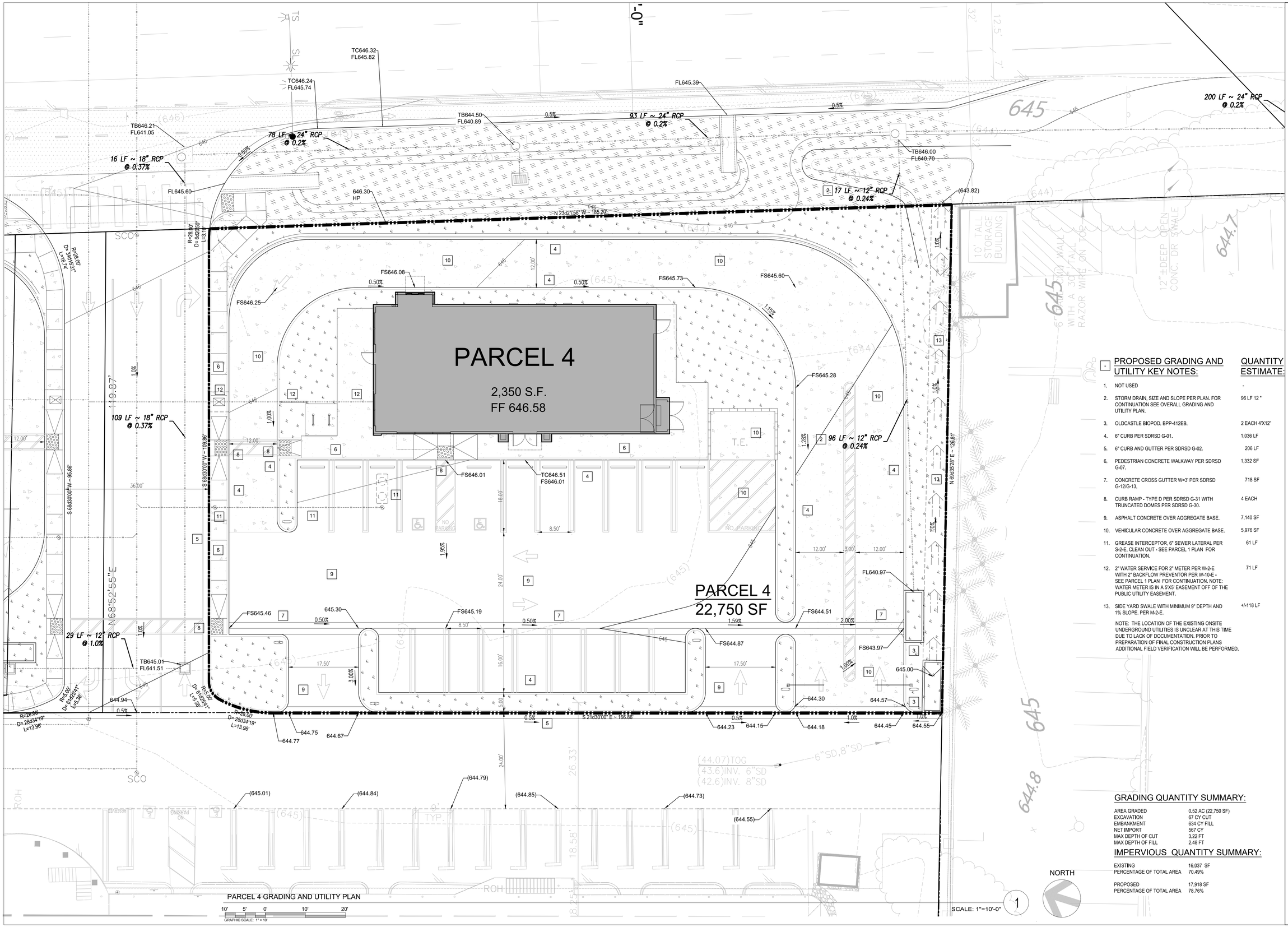
Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

- ■ Structural BMP(s) with ID numbers matching Step 5 Summary of PDP Structural BMPs
- ■ The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
- ■ Details and specifications for construction of structural BMP(s)
- ☐ Signage indicating the location and boundary of structural BMP(s) as required by City staff
- ☐ How to access the structural BMP(s) to inspect and perform maintenance
- ☐ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- ☐ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☐ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- ☐ Recommended equipment to perform maintenance
- ☐ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management
- ☐ Include landscaping plan sheets showing vegetation requirements for vegetated structural BMP(s)
- ☐ All BMPs must be fully dimensioned on the plans
- ☐ When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number must be provided. Photocopies of general brochures are not acceptable.
- ☐ Include all source control and site design measures described in Steps 3 and 4 of the SWQMP. Can be included as a separate exhibit as necessary.

***Note: Plan sheets included in this attachment can be full size or half size.**

Missing items typically not required at planning level.



PROPOSED GRADING AND UTILITY KEY NOTES:

		QUANTITY ESTIMATE:
1.	NOT USED	-
2.	STORM DRAIN, SIZE AND SLOPE PER PLAN. FOR CONTINUATION SEE OVERALL GRADING AND UTILITY PLAN.	96 LF 12 "
3.	OLDCASTLE BIOPOD, BPP-412EB.	2 EACH 4'X12'
4.	6" CURB PER SDRSD G-01.	1,036 LF
5.	6" CURB AND GUTTER PER SDRSD G-02.	206 LF
6.	PEDESTRIAN CONCRETE WALKWAY PER SDRSD G-07.	1,332 SF
7.	CONCRETE CROSS GUTTER W=3' PER SDRSD G-12/G-13.	718 SF
8.	CURB RAMP - TYPE D PER SDRSD G-31 WITH TRUNCATED DOMES PER SDRSD G-30.	4 EACH
9.	ASPHALT CONCRETE OVER AGGREGATE BASE.	7,140 SF
10.	VEHICULAR CONCRETE OVER AGGREGATE BASE.	5,976 SF
11.	GREASE INTERCEPTOR, 6" SEWER LATERAL PER S-2-E, CLEAN OUT - SEE PARCEL 1 PLAN FOR CONTINUATION.	61 LF
12.	2" WATER SERVICE FOR 2" METER PER W-2-E WITH 2" BACKFLOW PREVENTOR PER W-10-E - SEE PARCEL 1 PLAN FOR CONTINUATION. NOTE: WATER METER IS IN A 5'X5' EASEMENT OFF OF THE PUBLIC UTILITY EASEMENT.	71 LF
13.	SIDE YARD SWALE WITH MINIMUM 9" DEPTH AND 1% SLOPE. PER M-2-E.	+/-118 LF

NOTE: THE LOCATION OF THE EXISTING ONSITE UNDERGROUND UTILITIES IS UNCLEAR AT THIS TIME DUE TO LACK OF DOCUMENTATION. PRIOR TO PREPARATION OF FINAL CONSTRUCTION PLANS ADDITIONAL FIELD VERIFICATION WILL BE PERFORMED.

GRADING QUANTITY SUMMARY:

AREA GRADED	0.52 AC (22,750 SF)
EXCAVATION	67 CY CUT
EMBANKMENT	634 CY FILL
NET IMPORT	567 CY
MAX DEPTH OF CUT	3.22 FT
MAX DEPTH OF FILL	2.48 FT

IMPERVIOUS QUANTITY SUMMARY:

EXISTING	16,037 SF
PERCENTAGE OF TOTAL AREA	70.49%
PROPOSED	17,918 SF
PERCENTAGE OF TOTAL AREA	78.76%

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
CONDITIONAL USE PERMIT
PARCEL 4
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MO | ES
SCALE:	AS SHOWN

SHEET TITLE:
GRADING AND UTILITY PLAN
PARCEL 4

SHEET #
C300

TOTAL SITE AREA =	22,750	SF
=	0.52	AC
IMPERVIOUS AREA (T) =	16,037	SF
=	0.37	AC
IMPERVIOUS%=	70.49	
PERVIOUS AREA (T) =	6,713	SF
=	0.15	AC
C VALUE =	**0.72**	
RAINFALL INTENSITY (I) =	4.4	IN/HR
DISCHARGE (Q) =	CIA	
=	**1.65**	**CFS**

DRAINAGE AREA-1		
AREA =	13,421	SF
=	0.31	AC
IMPERVIOUS AREA (1) =	9,495	SF
=	0.22	AC
IMPERVIOUS%=	71	
PERVIOUS AREA (1) =	3,926	SF
=	0.09	AC
C VALUE=	0.73	
DISCHARGE (Q) =	CIA	
=	**0.98**	**CFS**

DRAINAGE AREA-2		
AREA =	9,330	SF
=	0.21	AC
IMPERVIOUS AREA (2) =	6,542	SF
=	0.15	AC
IMPERVIOUS%=	70	
PERVIOUS AREA (2) =	2,788	SF
=	0.06	AC
C VALUE=	0.71	
DISCHARGE (Q) =	CIA	
=	**0.67**	**CFS**

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

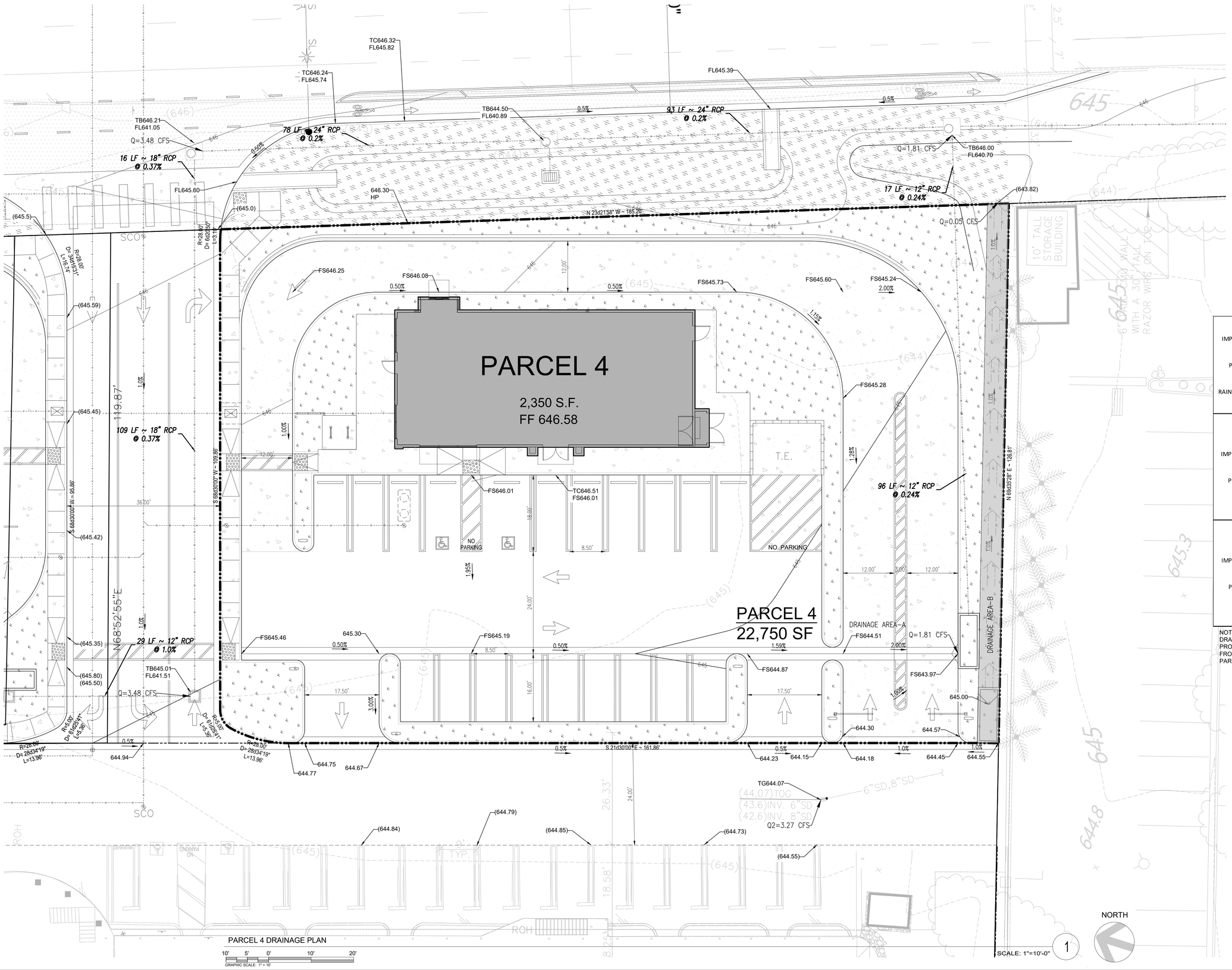
PROJECT
CONDITIONAL USE PERMIT
PARCEL 4
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MOUR GROUP
SCALE:	AS SHOWN

SHEET TITLE:
DRAINAGE PLAN
EXISTING
PARCEL 4

SHEET #
C301



TOTAL SITE AREA =	22,750	SF
=	0.52	AC
IMPERVIOUS AREA (T) =	17,918	SF
=	0.41	AC
IMPERVIOUS%=	78.76	
PERVIOUS AREA (T) =	4,832	SF
=	0.11	AC
C VALUE =	**0.81**	
RAINFALL INTENSITY (I) =	4.4	IN/HR
DISCHARGE (Q) =	CIA	
=	**1.86**	**CFS**

DRAINAGE AREA-A		
AREA =	22,117	SF
=	0.51	AC
IMPERVIOUS AREA (A) =	17,918	SF
=	0.41	AC
IMPERVIOUS%=	81	
PERVIOUS AREA (A) =	4,199	SF
=	0.10	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**1.81**	**CFS**

DRAINAGE AREA-B		
AREA =	634	SF
=	0.01	AC
IMPERVIOUS AREA (B) =	0	SF
=	0.00	AC
IMPERVIOUS%=	0	
PERVIOUS AREA (B) =	634	SF
=	0.01	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.05**	**CFS**

NOTE: DRAINAGE AREA B IS A 5' WIDE DRAINAGE EASEMENT ALONG THIS SOUTH PROPERTY LINE TO CONVEY DRAINAGE FROM PARCEL 1 TO CENTER CITY PARKWAY.

Revisions:

1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
CONDITIONAL USE PERMIT
PARCEL 4
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MOUR GROUP
SCALE:	AS SHOWN

SHEET TITLE:
DRAINAGE PLAN
PROPOSED
PARCEL 4

SHEET #
C302

SOURCE SCONTROL(SC)/SITE DESIGN(SD):

ITEMS	FACT SHEET/DESIGN REQMT
PREVENT ILLICIT DISCHARGE INTO MS4	4.2.1
STORM DRAIN STENCILING OR SIGNAGE	4.2.2
PROTECT TRASH STORAGE AREAS	4.2.5
MINIMIZE IMPERVIOUS AREA	4.3.3
LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES	4.3.7
ONSITE STORM DRAIN INLET LABELING	SC-A
REFUSE AREAS EXPOSURE REDUCTION	SC-G

DMA SITE MAP NOTES

1. BMP - 3 - OLDCASTLE BIOPOD WITH PLANTER, BPS/T/P-412 PLANTED WITH DIETES IRIDIODES (FORTNIGHT LILY).
2. BMP - 4 - OLDCASTLE BIOPOD WITH PLANTER, BPS/T/P-412 PLANTED WITH DIETES IRIDIODES (FORTNIGHT LILY).

NOTES:
1. HYDROLOGIC SOIL GROUP: TYPE D PER USGS WEB SOILS SURVEY MAP.
2. APPROXIMATE DEPTH TO GROUNDWATER: > 10 FEET
3. EXISTING HYDRAULIC FEATURES: NONE.
4. CCSYA NONE NEARBY: NONE.
5. SEE ATTACHMENT 4 FOR BMP DETAILS.

LEGEND:
- PROJECT BOUNDARY
- DRAINAGE BASINS (DMAs)
- BMP STRUCTURES
- SELF MITIGATING
- DI MINIMUS
- NEW LANDSCAPE
- FLOW DIRECTION

TOTAL DISTURBANCE AREA

TOTAL DISTURBANCE AREA 22,750 SF / 0.52 ACRES

NO SWPPP ANTICIPATED FOR THIS SITE.

PARCEL 4

2,350 S.F.
FF 646.58

PARCEL 4
22,750 SF

DMA – 6

78 LF ~ 24" RCP @ 0.2%
93 LF ~ 24" RCP @ 0.2%
16 LF ~ 18" RCP @ 0.37%
109 LF ~ 18" RCP @ 0.37%
29 LF ~ 12" RCP @ 1.0%
17 LF ~ 12" RCP @ 0.24%
96 LF ~ 12" RCP @ 0.24%

TB646.21 FL641.05 Q=3.48 CFS
TB644.50 FL640.89
TB643.50 FL640.70 Q=1.86 CFS
TB645.01 FL641.51 Q=3.48 CFS
FL645.60
FL645.39
TC646.32 FL645.82
TC646.24 FL645.74
646.30 HP
(643.82)
(645.5)
(645.0)
(645.59)
(645.45)
(645.42)
(645.35)
(645.80) (645.50)
644.94
644.77
644.75
644.67
644.23
644.15
644.18
644.45
644.55
644.57
644.30
645.00
645.30
644.87
644.51
643.97
FS646.25
ROOFDRAIN DOWNSPOUT FS646.08
FS645.73 ROOF DRAIN DOWNSPOUT
FS645.60
FS645.24
FS645.28
FS646.01
TC646.51 FS646.01
FS645.46
FS645.19
TRASH ENCLOSURE
OLDCASTLE BIOPOD PLANTER BPS/T/P-412 (BMP-3)
OLDCASTLE BIOPOD PLANTER BPS/T/P-412 (BMP-4)
TG644.07
(44.07)TOG
(43.6)INV. 6"SD
(42.6)INV. 8"SD
6"SD,8"SD
(644.84)
(644.79)
(644.85)
(644.73)
(644.55)
NO PARKING
10' TALL STORAGE BUILDING
5'-0" WALL WITH A 30" TALL RAZOR WIRE ON TOP
SCO
ROH
TYP.
N88°52'55"E
119.87'
36.20'
26.33'
18.58'
24.00'
12.00'
8.50'
17.50'
16.00'
3.00'
1.95%
1.28%
1.15%
0.5%
1.0%
2.00%
1.59%
1.00%

TOTAL SITE AREA =	22,750	SF
=	0.52	AC
IMPERVIOUS AREA (T) =	17,918	SF
=	0.41	AC
IMPERVIOUS%=	78.76	
PERVIOUS AREA (T) =	4,832	SF
=	0.11	AC
C VALUE =	**0.81**	
RAINFALL INTENSITY (I) =	4.4	IN/HR
DISCHARGE (Q) =	CIA	
=	**1.86**	**CFS**

DMA - 3	DRAINS TO BMP 3	
AREA =	22,117	SF
=	0.51	AC
IMPERVIOUS AREA (A) =	17,918	SF
=	0.41	AC
IMPERVIOUS%=	81	
PERVIOUS AREA (A) =	4,199	SF
=	0.10	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**1.81**	**CFS**

DMA - 4	DRAINS TO BMP 4	
AREA =	634	SF
=	0.01	AC
IMPERVIOUS AREA (B) =	0	SF
=	0.00	AC
IMPERVIOUS%=	0	
PERVIOUS AREA (B) =	634	SF
=	0.01	AC
C VALUE=	0.81	
DISCHARGE (Q) =	CIA	
=	**0.05**	**CFS**

NOTE: BMP 4 TREATS RUNOFF FROM PARCEL 1. THERE IS A 5' WIDE DRAINAGE EASEMENT ALONG THIS SOUTH PROPERTY LINE TO CONVEY DRAINAGE FROM PARCEL 1 TO CENTER CITY PARKWAY.

PARCEL 4 DMA EXHIBIT

GRAPHIC SCALE: 1" = 10'

SCALE: 1"=10'-0"

NORTH

Revisions:	
1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
CONDITIONAL USE PERMIT
PARCEL 4
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

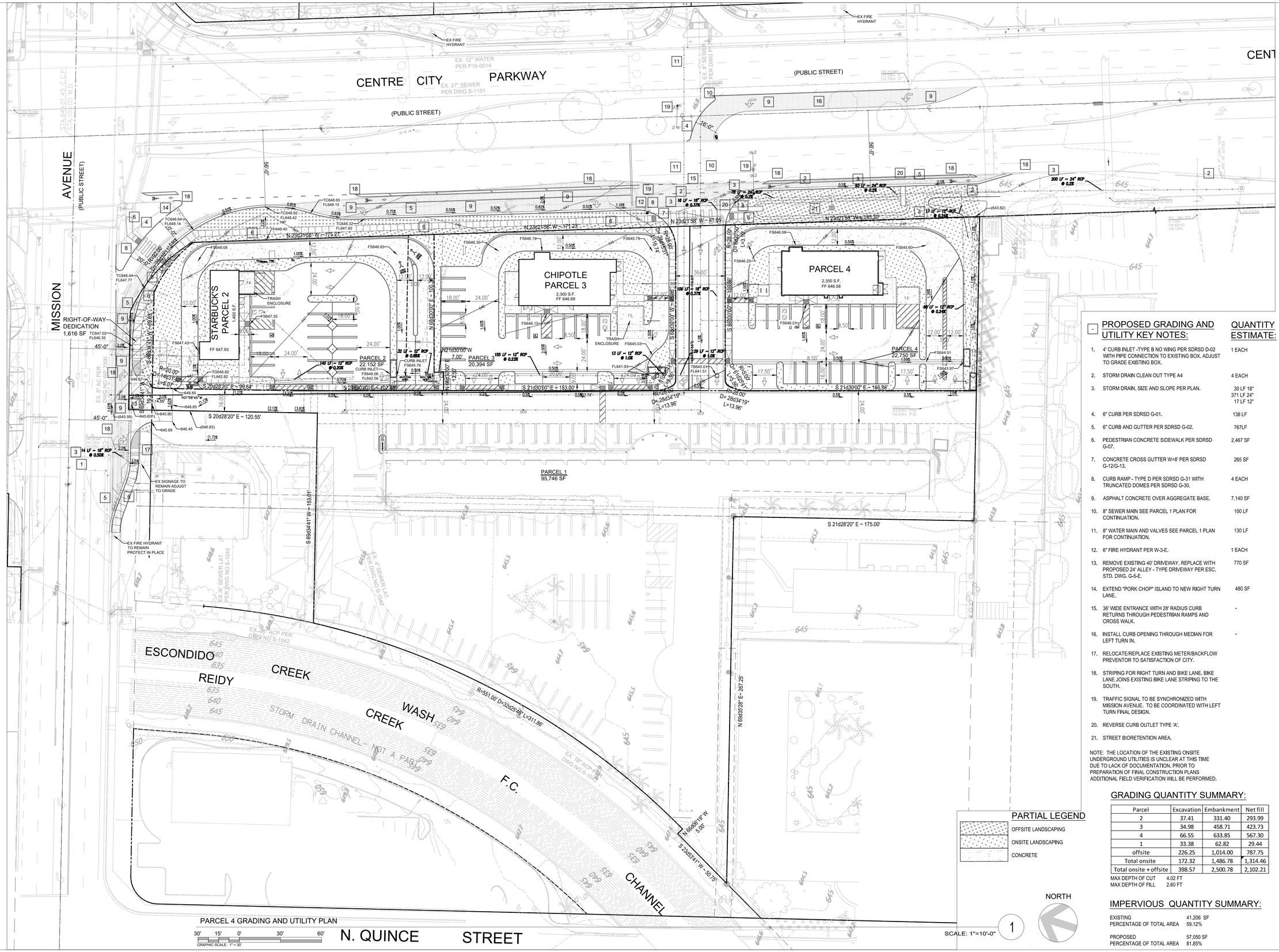
CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MOUR GROUP
SCALE:	AS SHOWN

SHEET TITLE:
DMA EXHIBIT

PARCEL 4

SHEET #
C303



PROPOSED GRADING AND UTILITY KEY NOTES:

		QUANTITY ESTIMATE:
1.	4' CURB INLET -TYPE B NO WING PER SDRSD D-02 WITH PIPE CONNECTION TO EXISTING BOX. ADJUST TO GRADE EXISTING BOX.	1 EACH
2.	STORM DRAIN CLEAN OUT TYPE A4	4 EACH
3.	STORM DRAIN, SIZE AND SLOPE PER PLAN.	30 LF 18" 371 LF 24" 17 LF 12"
4.	6" CURB PER SDRSD G-01.	138 LF
5.	6" CURB AND GUTTER PER SDRSD G-02.	767LF
6.	PEDESTRIAN CONCRETE SIDEWALK PER SDRSD G-07.	2,467 SF
7.	CONCRETE CROSS GUTTER W=8' PER SDRSD G-12/G-13.	265 SF
8.	CURB RAMP - TYPE D PER SDRSD G-31 WITH TRUNCATED DOMES PER SDRSD G-30.	4 EACH
9.	ASPHALT CONCRETE OVER AGGREGATE BASE.	7,140 SF
10.	8" SEWER MAIN SEE PARCEL 1 PLAN FOR CONTINUATION.	100 LF
11.	8" WATER MAIN AND VALVES SEE PARCEL 1 PLAN FOR CONTINUATION.	130 LF
12.	6" FIRE HYDRANT PER W-3-E.	1 EACH
13.	REMOVE EXISTING 40' DRIVEWAY. REPLACE WITH PROPOSED 24' ALLEY - TYPE DRIVEWAY PER ESC. STD. DWG. G-5-E.	770 SF
14.	EXTEND "PORK CHOP" ISLAND TO NEW RIGHT TURN LANE.	480 SF
15.	36' WIDE ENTRANCE WITH 28' RADIUS CURB RETURNS THROUGH PEDESTRIAN RAMPS AND CROSS WALK.	-
16.	INSTALL CURB OPENING THROUGH MEDIAN FOR LEFT TURN IN.	-
17.	RELOCATE/REPLACE EXISTING METER/BACKFLOW PREVENTOR TO SATISFACTION OF CITY.	
18.	STRIPING FOR RIGHT TURN AND BIKE LANE. BIKE LANE JOINS EXISTING BIKE LANE STRIPING TO THE SOUTH.	
19.	TRAFFIC SIGNAL TO BE SYNCHRONIZED WITH MISSION AVENUE. TO BE COORDINATED WITH LEFT TURN FINAL DESIGN.	
20.	REVERSE CURB OUTLET TYPE 'A'.	
21.	STREET BIORETENTION AREA.	

NOTE: THE LOCATION OF THE EXISTING ONSITE UNDERGROUND UTILITIES IS UNCLEAR AT THIS TIME DUE TO LACK OF DOCUMENTATION. PRIOR TO PREPARATION OF FINAL CONSTRUCTION PLANS ADDITIONAL FIELD VERIFICATION WILL BE PERFORMED.

GRADING QUANTITY SUMMARY:

Parcel	Excavation	Embankment	Net fill
2	37.41	331.40	293.99
3	34.98	458.71	423.73
4	66.55	633.85	567.30
1	33.38	62.82	29.44
offsite	226.25	1,014.00	787.75
Total onsite	172.32	1,486.78	1,314.46
Total onsite + offsite	398.57	2,500.78	2,102.21

MAX DEPTH OF CUT 4.02 FT
MAX DEPTH OF FILL 2.60 FT

IMPERVIOUS QUANTITY SUMMARY:

EXISTING	41,206 SF
PERCENTAGE OF TOTAL AREA	59.12%
PROPOSED	57,050 SF
PERCENTAGE OF TOTAL AREA	81.85%

PARTIAL LEGEND

- OFFSITE LANDSCAPING
- ONSITE LANDSCAPING
- CONCRETE

Revisions:	
1	
2	
3	
4	
5	
6	

MOUR GROUP
ENGINEERING + DESIGN
6593 RIVERDALE ST.
SAN DIEGO, CA. 92120
PH. 619.727.4800

PROJECT
CONDITIONAL USE PERMIT
PARCEL 4
CENTRE CITY PARKWAY AND MISSION AVENUE
ESCONDIDO, CA 92025

CLIENT:
501 WEST MISSION, LLC
c/o PATRICK COX
14493 OLD CREEK ROAD
SAN DIEGO, CA 92131

DATE:	MAY 7, 2024
PROJECT NO.:	WM2301
DRAWN:	MO | ES
SCALE:	AS SHOWN

SHEET TITLE:
OVERALL GRADING AND UTILITY PLAN

SHEET #
C304

Surface/Tree/Planter - External Bypass									
							Treatment Flow Rates		
Model	Structure Size (ft x ft)	Max Pipe Size (in)	Rim to Invert Depth[(d)] (ft)	Media (cy)	Mulch (cy)	Drain Rock (cy)	WA DOE 1.6 gpm/sf (cfs)	NJCAT 1.8 gpm/sf (cfs)	Max Peak Flow (cfs)
BPS/T/T-44	4 x 4	4	3.77	0.89	0.10	0.30	0.057	0.064	N/a
BPS/T/P-46	4 x 6	4	3.77	1.33	0.15	0.44	0.085	0.096	N/a
BPS/T/P-48	4 x 8	4	3.77	1.78	0.20	0.59	0.114	0.128	N/a
BPS/T/P-412	4 x 12	4	3.77	2.67	0.30	0.89	0.171	0.192	N/a
BPS/T/P-68	6 x 8	4	3.77	2.67	0.30	0.89	0.171	0.192	N/a
BPS/T/P-612	6 x 12	4	3.77	4.00	0.44	1.33	0.256	0.288	N/a
BPS/T/P-812	8 x 12	6	3.77	5.33	0.59	1.78	0.341	0.384	N/a
BPS/T/P-816	8 x 16	6	3.77	7.11	0.79	2.37	0.455	0.512	N/a

Notes:

(a) For depths less than minimum, contact Solution Engineering for design assistance.

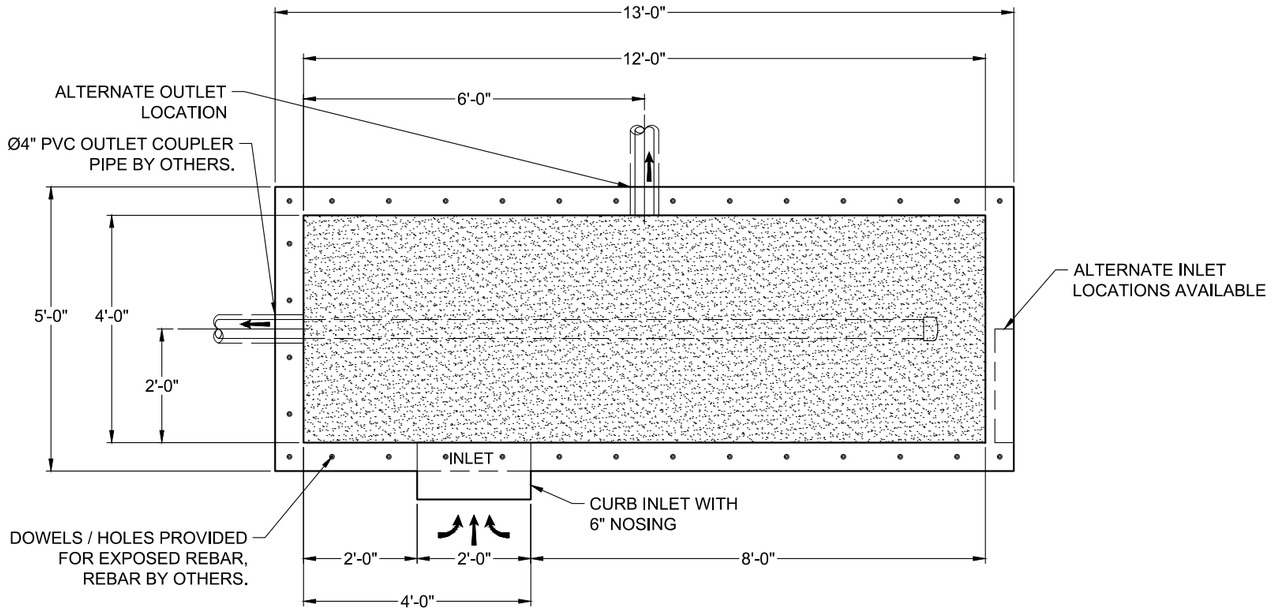
(b) For depths greater than the maximum, contact Solution Engineering for design assistance.

(c) Panel vault configuration only available in PNW. Check with local manufacturing for form availability.

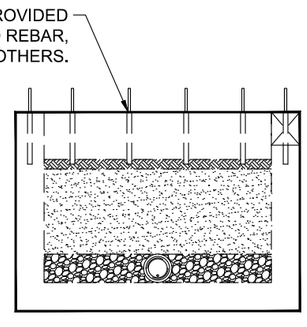
(d) Rim to invert depth for Planter Model, external bypass, is 3.50 ft.

SITE SPECIFIC DATA				
Structure ID				ID
Treatment Flow Rate (cfs)				-
Peak Flow Rate (cfs)				NA
Rim Elevation				-
Pipe Data	**Pipe Location**	**Pipe Size**	**Pipe Type**	**Invert Elevation**
Outlet	-	-	-	-
Notes:				

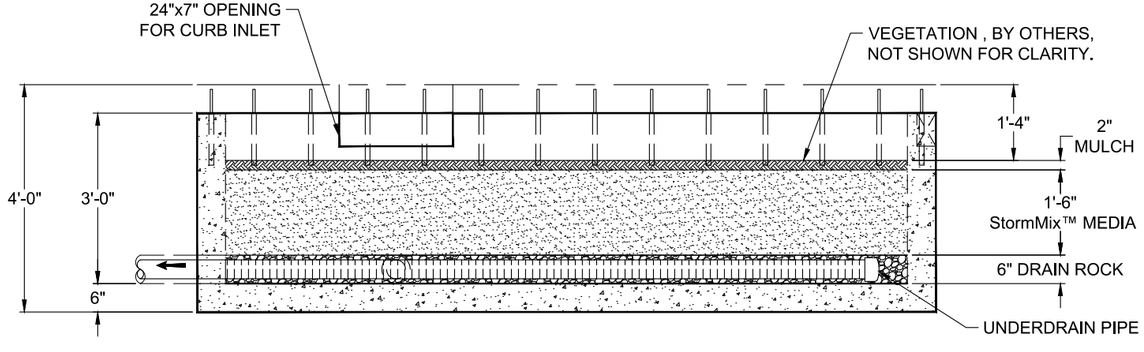
PERFORMANCE SPECIFICATIONS	
Treatment Flow Capacities:	
NJDEP 80% Removal, 75 micron	0.192 cfs
WA Ecology GULD - Basic, Enhanced & Phosphorus	0.171 cfs
Bypass Capacity	NA
*Contact Oldcastle for alternative treatment flow capacities.	



PLAN VIEW



LEFT END VIEW



ELEVATION VIEW

NOTES:

1. DESIGN LOADINGS:
   A. 300 PSF PEDESTRIAN LOADING
   B. DESIGN SOIL COVER: 0' MAXIMUM
   C. ASSUMED WATER TABLE: BELOW BASE OF PRECAST (ENGINEER-OF-RECORD TO CONFIRM SITE WATER TABLE ELEVATION)
   D. LATERAL EARTH PRESSURE: 45 PCF (DRAINED)
   E. LATERAL LIVE LOAD SURCHARGE: 80 PSF (APPLIED TO 8'-0" BELOW GRADE)
   F. NO LATERAL SURCHARGE FROM ADJACENT BUILDINGS, WALLS, PIERS, OR FOUNDATIONS.
2. CONCRETE 28-DAY MINIMUM COMPRESSIVE STRENGTH: 5,000 PSI MINIMUM.
3. REINFORCING: REBAR, ASTM A615/A706, GRADE 60
4. CEMENT: ASTM C150
5. REQUIRED ALLOWABLE SOIL BEARING CAPACITY: 2,500 PSF
6. REFERENCE STANDARD:
   A. ASTM C890
   B. ASTM C913
   C. ACI 318-14
7. THIS STRUCTURE IS DESIGNED TO THE PARAMETERS NOTED HEREIN. ENGINEER-OF-RECORD SHALL VERIFY THAT NOTED PARAMETERS MEET OR EXCEED PROJECT REQUIREMENTS. IF DESIGN PARAMETERS ARE INCORRECT, REVIEWING ENGINEER/AUTHORITY SHALL NOTIFY OLDCASTLE INFRASTRUCTURE UPON REVIEW.
8. INLET AND OUTLET HOLES WILL BE FACTORY CORED/CAST PER PLANS AND CUSTOMER REQUIREMENTS. INLET AND OUTLET LOCATIONS CAN BE MIRRORED.
9. CONTRACTOR RESPONSIBLE TO VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS.
10. CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
11. SECTION HEIGHTS, SLAB/WALL THICKNESSES, AND KEYWAYS ARE SUBJECT TO CHANGE AS REQUIRED FOR SITE REQUIREMENTS AND/OR DUE TO PRODUCT AVAILABILITY AND PRODUCTION FACILITY CONSTRAINTS.
12. MAXIMUM PICK WEIGHTS":
    A. BASE: XX,XXX LBS*
       (* COMBINED WEIGHT OF BASE INCLUDES BYPASS WEIR, DIVIDER WALL, ROCK & MEDIA)
13. INTERNALS SHALL CONSIST OF UNDERDRAIN PIPE, ROCK, STORMMIX™ MEDIA, AND MULCH.

Oldcastle Infrastructure™
A CRH COMPANY

Ph: 800.579.8819 | www.oldcastleinfrastructure.com/stormwater

BioPod™ Biofilter System (STANDARD)

Planter vault with External Bypass

CUSTOMER
-

PROJECT NAME
-

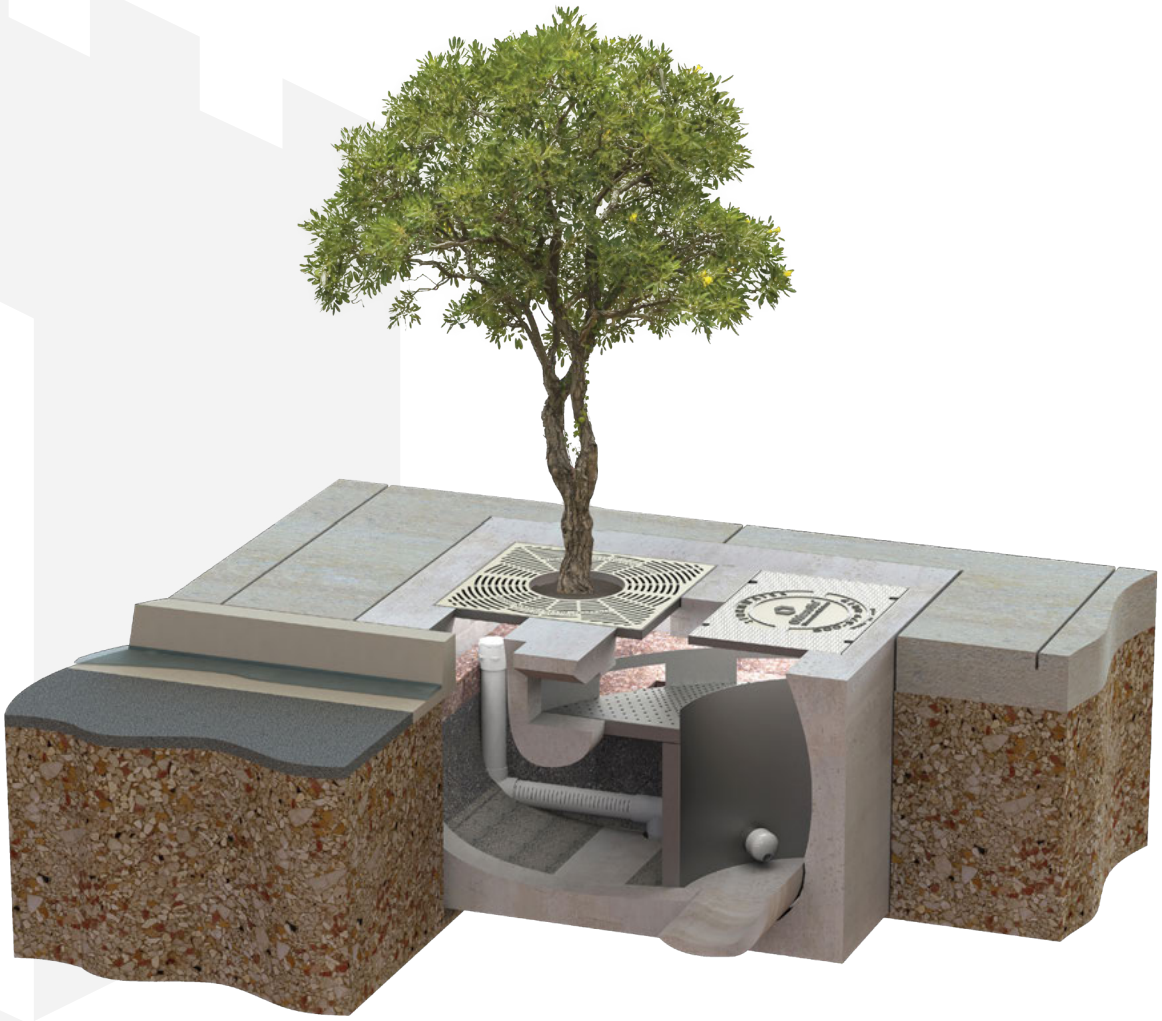
SHEET NAME	REVISION	SHEET
Specifier Drawing BPP-412EB	-	1 OF 1
	REV DATE -	

Bioretention/ Biofiltration

BIOPOD™ SYSTEM

with StormMix™ Media

Inspection & Maintenance Guide



Oldcastle Infrastructure™
A CRH COMPANY

BIOPOD™ BIOFILTER WITH STORMMIX™ BIOFILTRATION MEDIA

DESCRIPTION

The BioPod™ Biofilter System (BioPod) is a storm water biofiltration treatment system used to remove pollutants from storm water runoff. Impervious surfaces and other urban and suburban landscapes generate a variety of contaminants that can enter storm water and pollute downstream receiving waters unless treatment is provided. The BioPod system uses proprietary StormMix™ biofiltration media to capture and retain pollutants including total suspended solids (TSS), metals, nutrients, gross solids, trash and debris as well as petroleum hydrocarbons.

FUNCTION

The BioPod system uses engineered, high-flow rate filter media to remove storm water pollutants, allowing for a smaller footprint than conventional bioretention systems. Contained within a compact precast concrete vault, the BioPod system consists of a biofiltration chamber and an optional integrated high-flow bypass. The biofiltration chamber is filled with horizontal layers of aggregate, biofiltration media and mulch. Storm water passes vertically down through the mulch and biofiltration media for treatment. The mulch provides pretreatment by retaining most of the solids or sediment. The biofiltration media provides further treatment by retaining finer sediment and dissolved pollutants. The aggregate allows the media bed to drain evenly for discharge through an underdrain pipe or by infiltration.

INSPECTION & MAINTENANCE OVERVIEW

State and local regulations require all storm water management systems to be inspected on a regular basis and maintained as necessary to ensure performance and protect downstream receiving waters. Without maintenance, excessive pollutant buildup can limit system performance by reducing the operating capacity of the system and increasing the potential for scouring of pollutants during periods of high flow.

Some configurations of the BioPod may require periodic irrigation to establish and maintain vegetation. Vegetation will typically become established about two years after planting. Irrigation requirements are ultimately dependent on climate, rainfall and the type of vegetation selected.

INSPECTION & MAINTENANCE FREQUENCY

Periodic inspection is essential for consistent system performance and is easily completed. Inspection is typically conducted a minimum of twice per year, but since pollutant transport and deposition varies from site to site, a site-specific maintenance frequency should be established during the first two or three years of operation.

INSPECTION EQUIPMENT

The following equipment is helpful when conducting BioPod inspections:

- Recording device (pen and paper form, voice recorder, iPad, etc.)
- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- PPE as required for entry
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Socket

INSPECTION PROCEDURES

BioPod inspections are visual and are conducted without entering the unit. To complete an inspection, safety measures including traffic control should be deployed before the access covers or tree grates are removed. Once the covers have been removed, the following items should be checked and recorded (see form provided on page 6) to determine whether maintenance is required:

- If the BioPod unit is equipped with an internal bypass, inspect the inlet rack (or inlet chamber on underground units) and outlet chamber and note whether there are any broken or missing parts. In the unlikely event that internal parts are broken or missing, contact Oldcastle Storm water at (800) 579-8819 to determine appropriate corrective action.
- Note whether the curb inlet, inlet pipe, or inlet rack is blocked or obstructed.
- If the unit is equipped with an internal bypass, observe, quantify and record the accumulation of trash and debris in the inlet rack or inlet chamber. The significance of accumulated trash and debris is a matter of judgment. Often, much of the trash and debris may be removed manually at the time of inspection if a separate maintenance visit is not yet warranted.
- If it has not rained within the past 24 hours, note whether standing water is observed in the biofiltration chamber.
- Finally, observe, quantify and record presence of invasive vegetation and the amount of trash and debris and sediment load in the biofiltration chamber. Erosion of the mulch and biofiltration media bed should also be recorded. Often, much of the invasive vegetation and trash and debris may be removed manually at the time of inspection if a separate maintenance visit is not yet warranted. Sediment load may be rated light, medium or heavy depending on the conditions. Loading characteristics may be determined as follows:
  - **Light sediment load** – sediment is difficult to distinguish among the mulch fibers at the top of the mulch layer; the mulch appears almost new.
  - **Medium sediment load** – sediment accumulation is apparent and may be concentrated in some areas; probing the mulch layer reveals lighter sediment loads under the top 1" of mulch.
  - **Heavy sediment load** – sediment is readily apparent across the entire top of the mulch layer; individual mulch fibers are difficult to distinguish; probing the mulch layer reveals heavy sediment load under the top 1" of mulch.

MAINTENANCE INDICATORS

Maintenance should be scheduled if any of the following conditions are identified during inspection:

- The concrete structure is damaged or the tree grate or access cover is damaged or missing
- The inlet obstructed
- Standing water is observed in the biofiltration chamber more than 24 hours after a rainfall event (use discretion if the BioPod is located downstream of a storage system that attenuates flow)
- Trash and debris in the inlet rack cannot be easily removed at the time of inspection
- Trash and debris, invasive vegetation or sediment load in the biofiltration chamber is heavy or excessive erosion has occurred

MAINTENANCE EQUIPMENT

The following equipment is helpful when conducting BioPod maintenance:

- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- PPE as required for entry
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Rake, hoe, shovel and broom
- Bucket
- Pruners
- Vacuum truck (optional)
- Socket

MAINTENANCE PROCEDURES

Maintenance should be conducted during dry weather when no flows are entering the system. In most cases, maintenance may be conducted without entering. Entry may be required to maintain BioPod Underground units, depending on system depth. Once safety measures such as traffic control are deployed, the access covers may be removed and the following activities may be conducted to complete maintenance:

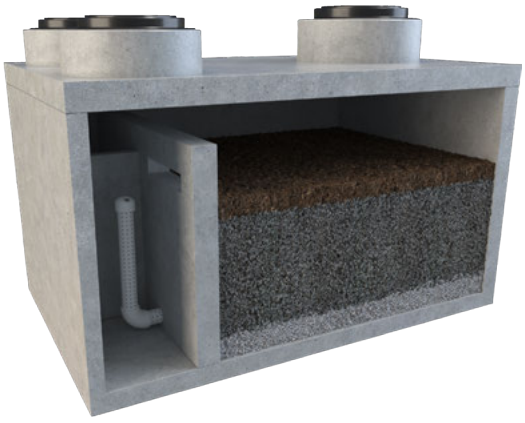
- Remove all trash and debris from the curb inlet and inlet rack manually or by using a vacuum truck as required.
- Remove all trash and debris and invasive vegetation from the biofiltration chamber manually or by using a vacuum truck as required.
- If the sediment load is medium or light but erosion of the biofiltration media bed is evident, redistribute the mulch with a rake or replace missing mulch as appropriate. If erosion persists, rocks may be placed in the eroded area to help dissipate energy and prevent recurring erosion.
- If the sediment load is heavy, remove the mulch layer using a hoe, rake, shovel and bucket, or by using a vacuum truck as required. If the sediment load is particularly heavy, inspect the surface of the biofiltration media once the mulch has been removed. If the media appears clogged with sediment, remove and replace one or two inches of biofiltration media prior to replacing the mulch* layer.
- Prune vegetation as appropriate and replace damaged or dead plants as required.
- Replace the tree grate and/or access covers and sweep the area around the BioPod to leave the site clean.
- All material removed from the BioPod during maintenance must be disposed of in accordance with local environmental regulations. In most cases, the material may be handled in the same manner as disposal of material removed from sumped catch basins or manholes.

* Natural, shredded hardwood mulch should be used in the BioPod. Timely replacement of the mulch layer according to the maintenance indicators described above should protect the biofiltration media below the mulch layer from clogging due to sediment accumulation. However, whenever the mulch is replaced, the BioPod should be visited 24 hours after the next major storm event to ensure that there is no standing water in the biofiltration chamber. Standing water indicates that the biofiltration media below the mulch layer is clogged and must be replaced. Please contact Oldcastle Infrastructure at (800) 579-8819 to purchase the proprietary StormMix™ biofiltration media.

BIOPOD SURFACE

BIOPOD TREE

BIOPOD PLANTER



BIOPOD UNDERGROUND

BIOPOD INSPECTION & MAINTENANCE LOG

BioPod Model _____ Inspection Date _____

Location _____

Condition of Internal Components *NOTES:*

☐ **GOOD** ☐ **DAMAGED** ☐ **MISSING**

Curb Inlet or Inlet Rack Blocked *NOTES:*

☐ **YES** ☐ **NO**

Standing Water in Biofiltration Chamber *NOTES:*

☐ **YES** ☐ **NO**

Trash and Debris in Inlet Rack *NOTES:*

☐ **YES** ☐ **NO**

Trash and Debris in Biofiltration Chamber *NOTES:*

☐ **YES** ☐ **NO**

Invasive Vegetation in Biofiltration Chamber *NOTES:*

☐ **YES** ☐ **NO**

Sediment in Biofiltration Chamber *NOTES:*

☐ **LIGHT** ☐ **MEDIUM** ☐ **HEAVY**

Erosion in Biofiltration Chamber *NOTES:*

☐ **YES** ☐ **NO**

Maintenance Requirements

☐ **YES - Schedule Maintenance** ☐ **NO - Schedule Re-Inspection**

NOTES

APPENDIX E

Noise Impact Analysis

503 WEST MISSION COMMERCIAL PROJECT NOISE IMPACT ANALYSIS

City of Escondido
February 22, 2024
Revised June 17, 2024

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

503 WEST MISSION COMMERCIAL PROJECT NOISE IMPACT ANALYSIS

City of Escondido
February 22, 2024
Revised June 17, 2024

prepared by
Roma Stromberg, INCE, MS
Catherine Howe, MS

GANDDINI GROUP INC.
555 Parkcenter Drive, Suite 225
Santa Ana, CA 92705
(714) 795-3100 | ganddini.com

Project No. 19703

TABLE OF CONTENTS

EXECUTIVE SUMMARY ..... **III**

1. INTRODUCTION **1**

Purpose and Objectives 1
Project Location 1
Project Description 1

2. NOISE AND VIBRATION FUNDAMENTALS **5**

Noise Fundamentals 5
Vibration Fundamentals 5

3. EXISTING NOISE ENVIRONMENT **9**

Existing Land Uses and Sensitive Receptors 9
Ambient Noise Measurements 9

4. REGULATORY SETTING **13**

Federal Regulation 13
Federal Noise Control Act of 1972 13
Federal Transit Administration (FTA) 13
State Regulations 14
State of California General Plan Guidelines 2017 14
Local Regulations 14
City of Escondido General Plan 14
City of Escondido Municipal Code 15

5. ANALYTICAL METHODOLOGY AND MODEL PARAMETERS **24**

Construction Noise Modeling 24
SoundPLAN Noise Model 24
Mobile Source Noise Modeling 25
Existing and Existing Plus Project Traffic Noise Levels 26
Groundborne Vibration Modeling 26

6. NOISE AND VIBRATION IMPACTS **31**

Noise Impacts 31
Project Construction 31
Project Operational Noise 33
Groundborne Vibration Impacts 34
Air Traffic Impacts 36

7. REFERENCES **45**

Appendices

Appendix A List of Acronyms
Appendix B Glossary
Appendix C Noise Measurement Field Worksheets
Appendix D Construction Noise Modeling
Appendix E SoundPLAN Input and Output
Appendix F FHWA Worksheets
Appendix G Vibration Worksheets

List of Tables

Table 1. Short-Term Noise Measurement Summary (dBA) 11
Table 2. Construction Vibration Damage Criteria 19
Table 3. Ground-Borne Vibration (GBV) Impact Criteria for General Vibration Assessment 20
Table 4. Land Use Noise Exposure Levels 21
Table 5. Exterior Incremental Environmental Noise Impact Standards for Noise-Sensitive Uses (dBA) 22
Table 6. City of Escondido Sound Level Limits 23
Table 7. CA/T Equipment Noise Emissions and Acoustical Usage Factor Database 27
Table 8. Project Average Daily Traffic Volumes and Roadway Parameters 29
Table 9. Construction Equipment Vibration Source Levels 30
Table 10. Construction Noise Levels (dBA Leq) 37
Table 11. On-Site Operational Noise (dBA, Leq) 40
Table 12. Increase in Existing Noise Levels Along Roadways as a Result of Project (dBA CNEL) 41
Table 13. Construction Vibration Levels at the Nearest Receptors 42

List of Figures

Figure 1. Project Location Map 3
Figure 2. Site Plan 4
Figure 3. A-Weighted Comparative Sound Levels 7
Figure 4. Typical Levels of Groundborne Vibration 8
Figure 5. Noise Measurement Location Map 12
Figure 6. Operational Noise Levels 43
Figure 7. Operational Noise Level Contours 44

EXECUTIVE SUMMARY

The 1.5-acre (net) project site is located at 503 West Mission Avenue, situated at the southwest corner of the intersection of Mission Avenue and Centre City Parkway, in the City of Escondido, California. The project site is currently occupied with a sit-down restaurant, unpaved parking, and a pool for the adjacent hotel (Quality Inn).

The proposed project involves demolition of the existing restaurant and redevelopment of the site with three new commercial/food service uses totaling 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. Project site access is proposed via one existing driveway at Mission Avenue and one new driveway at Centre City Parkway. The proposed project is anticipated to be constructed and fully operational by year 2025.

Existing Noise Environment

Sensitive receptors that may be affected by project generated noise include the existing motel use located adjacent to the west and the multi-family residential uses located adjacent to the south and approximately 165 feet southeast of the project site boundaries. Other land uses in the project vicinity include commercial (an auto repair) adjacent to the site on the west, commercial land uses to the east (including a car wash), and restaurant and commercial land uses to the northwest. There is also a private school located approximately 315 feet east of the project site.

Measured short-term ambient noise levels in the project vicinity ranged between 60.5 and 75.9 dBA L_{eq}. The dominant noise source was vehicle traffic associated with Centre City Parkway, Mission Avenue, Quince Street, and other surrounding roadways as well as noise associated with a car wash (i.e., dryers and music).

Project Construction Impacts – Onsite Equipment

Construction noise sources are regulated within the City of Escondido Municipal Code Section 17-234, which prohibits construction activities except on Monday through Friday between the hours of 7:00 AM and 6:00 PM and on Saturdays between the hours of 9:00 AM and 5:00 PM, construction activities are not permitted on Sundays and on days designated by the president, governor, or city council as public holidays. In addition, no construction equipment or combination of equipment, shall be operated so as to cause noise in excess of a one-hour average sound level limit of seventy-five (75) dB at any time, unless a variance has been obtained in advance from the city manager.

Modeled construction noise levels with Best Management Practices (BMPs) implemented (as described in the project description provided in Section 1 of this report) are expected to reach up to 74.7 dBA L_{eq} at the nearest commercial property line to the west, 75 dBA L_{eq} at the nearest hotel property line to the west, 63.2 dBA L_{eq} at the nearest residential property line to the south, 61.2 dBA L_{eq} at the nearest residential property line to the southeast, 62.2 dBA L_{eq} at the nearest school property line to the east, 64.8 dBA L_{eq} at the nearest property line of the Super Star Car Wash Express commercial use to the east, 67 dBA L_{eq} at the nearest property line of the Banfield Pet Hospital/Yoshinoya Restaurant commercial use to the east, 69 dBA L_{eq} at the nearest property line of the Habit Burger commercial use to the east, 66.4 dBA L_{eq} at the nearest commercial property line to the northeast, and 71.9 dBA L_{eq} at the nearest commercial property line to the north of the project site.

Project construction will not occur outside of the hours outlined as "exempt" in City of Escondido Municipal Code Section 7-234 and will not exceed the City's 75 dBA L_{eq} noise standard. Impacts would be less than significant, and no mitigation is required.

Project Construction Impacts – Offsite Vehicle Trips

Construction truck trips would occur throughout the construction period. Given the project site's proximity to State Route 78 and Interstate 15 Freeway, it is anticipated that vendor and/or haul truck traffic would take the most direct route to the appropriate freeway ramps.

According to the FHWA, the traffic volumes need to be doubled in order to increase noise levels by 3 dBA CNEL.[1] The estimated existing weekday average daily trips along Centre City Parkway range between 15,200 to 24,200 and the estimated existing weekday average daily trips along Mission Avenue range between 10,600 and 18,000 average daily vehicle trips.[2] As shown in the CalEEMod output files provided in the Air Quality, Global Climate Change, and Energy Impact Analysis prepared for the proposed project (Ganddini Group, 2024) the greatest number of construction-related vehicle trips per day would be during grading at up to 40 vehicle trips per day (7.5 for worker trips and 32.5 for vendor trips). Therefore, the addition of project vendor/haul trucks and worker vehicles per day along off-site roadway segments would not be anticipated to result in a doubling of traffic volumes. Off-site project generated construction vehicle trips would result in a negligible noise level increase and would not result in a substantial increase in ambient noise levels in light of the City's exterior incremental environmental noise impact standards for noise sensitive uses. Impacts would be less than significant. No mitigation measures are required.

Operational Noise Impacts – Offsite Vehicle Trips

During operation, the proposed project is expected to generate approximately 1,740 weekday net average daily trips with 135 trips during the AM peak-hour, 121 trips during the mid-day peak hour, and 122 trips during the PM peak-hour and 2,051 Saturday net average daily trips with 128 trips during the mid-day peak hour. Modeled existing traffic noise level noise levels range between 66-77 dBA CNEL at the right-of-way; and the modeled Existing Plus Project traffic noise levels range between 66-77 dBA CNEL at the right-of-way of each modeled roadway segment. Project generated vehicle traffic is anticipated to increase the noise by up to approximately 0.5 dBA CNEL and will not result in a substantial increase in ambient noise levels in light of the City's exterior incremental environmental noise impact standards for noise sensitive uses. This impact would be less than significant. No mitigation is required.

Operational Noise Impacts – Onsite Sources

Sensitive receptors that may be affected by project generated noise include the existing motel use located adjacent to the west and the multi-family residential uses located adjacent to the south and approximately 165 feet southeast of the project site boundaries. Other land uses in the project vicinity include commercial (an auto repair) adjacent to the site on the west, commercial land uses to the east (including a car wash), and restaurant and commercial land uses to the northwest. There is also a private school located approximately 315 feet east of the project site.

Ambient noise levels were conducted to establish existing noise levels in the vicinity of these land uses. Subsequently, the SoundPLAN noise model was used to model operational noise (discussed in Section 4 of this report). Existing measured noise levels near receptors that may be affected by project noise, range between and 61 and 76 dBA L_{eq}; and project generated noise is expected to range between 42 and 55 dBA L_{eq}. Project operation will not result in more than a one-decibel increase at any offsite location. Project generated noise would not cause a violation of the daytime standard of (55 dBA L_{eq}) or the nighttime noise standard (50 dBA L_{eq}) at multiple family residential land uses located to the south, west and southeast of the project site; or cause an exceedance of the stationary noise standard (60 dBA L_{eq}) at nearby commercial land uses. Furthermore, project operation would not noticeably increase ambient noise levels in light of the City's

[1] Federal Highway Administration, Highway Noise Prediction Model, December 1978.

[2] The existing average daily traffic volumes were obtained from the In-N-Out & Coffee Bean (Mission/Centre City) Transportation Impact Analysis (TIA), Ganddini Group, Inc. (October 26, 2022).

exterior incremental environmental noise impact standards for noise sensitive uses. This impact would be less than significant. No mitigation is required.

Groundborne Vibration Impacts – Architectural Damage

The nearest off-site structures include the motel use to the west, with associated structures located as close as approximately 30 feet from the project's western property line, the commercial uses to the west, northwest, north, northeast, and east of the project site, with structures located between 50 to 300 feet from the nearest project property lines, and the multi-family residential uses to the south and southeast, with structures located as close as approximately 175 feet to the southeast and 62 feet to the south of the project's southern property line. Temporary vibration levels associated with project construction would not exceed the threshold at which there is a risk to "architectural" damage of 0.2 PPV in/sec or higher at residential structures and/or a PPV of 0.3 in/sec or higher at commercial structures. The project does not propose any non-construction related sources of ground-borne vibration. Temporary vibration levels associated with project construction would be less than significant. No mitigation is required.

Groundborne Vibration Impacts - Annoyance

The FTA identifies a level of 80 VdB as the level in which vibration becomes strongly perceptible to sensitive receptors. Due to distance, temporary vibration levels associated with project construction would not cause annoyance to receptors in the project vicinity. Furthermore, any potential annoyance would be short-term and will occur only during site grading, preparation, and paving which will be limited to daytime hours. Impacts are less than significant.

Air Traffic Impacts

The closest airports to the project site are the Ramona Airport, with associated airport runways located as close as approximately 11.4 miles southeast of the project site, and the McClellan-Palomar Airport, with associated airport runaways located as close as approximately 10.4 miles to the northwest of the project site. As stated in the City of Escondido General Plan, Downtown Specific Plan and Climate Action Plan Environmental Impact Report (EIR) (April 2012), the project site is not located within the 60 dBA CNEL noise contour of either the Ramona Airport or the McClellan-Palomar Airport. Therefore, the proposed project would not expose people residing or working in the area to excessive noise levels. There is no impact, and no mitigation is required.

1. INTRODUCTION

This section describes the purpose of this study and the proposed project.

PURPOSE AND OBJECTIVES

The purpose of this report is to provide an assessment of the noise impacts resulting from development of the proposed 503 West Mission Commercial project and to identify mitigation measures that may be necessary to reduce those impacts. The noise issues related to the proposed land use and development have been evaluated in light of applicable federal, state and local policies, including those of the City of Escondido, in the context of the California Environmental Quality Act (CEQA).

Although this is a technical report, effort has been made to write the report clearly and concisely. A list of acronyms and glossary are provided in Appendix A and Appendix B of this report to assist the reader with technical terms related to noise analysis.

PROJECT LOCATION

The 1.5-acre (net) project site is located at 503 West Mission Avenue, situated at the southwest corner of the intersection of Mission Avenue and Centre City Parkway, in the City of Escondido, California. The project site is currently occupied with a sit-down restaurant, unpaved parking, and a pool for the adjacent hotel (Quality Inn). A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The proposed project involves demolition of the existing restaurant and redevelopment of the site with three new commercial/food service uses totaling 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. Project site access is proposed via one existing driveway at Mission Avenue and one new driveway at Centre City Parkway. The proposed project is anticipated to be constructed and fully operational by year 2025. Figure 2 illustrates the project site plan.

The following Best Management Practices (BMPs) are part of the proposed project and will be included on the project plans and any other related contract specifications:

1. Construction equipment will be required to follow the following measures during each specified construction phase:

    - Demolition:
        - Install mufflers on all rubber-tired dozers and tractors/loaders/backhoes (and any similar equipment) that will result in a reduction of at least 6 dB per piece of equipment.
        - Utilize enclosures or acoustic tents for all concrete/industrial saws that will result in a reduction of at least 6 dB per piece of equipment.

    - Site Preparation:
        - Install mufflers on all graders, rubber-tired dozers, and tractors/loaders/backhoes (and any similar equipment) that will result in a reduction of at least 6 dB per piece of equipment.

- Grading:
  - Install mufflers on all rubber-tired dozers, excavators, and tractors/loaders/backhoes (and any similar equipment) that will result in a reduction of at least 9 dB per piece of equipment.

- Building Construction:
  - Install mufflers on all cranes and tractors/loaders/backhoes (and any similar equipment) that will result in a reduction of at least 8 dB per piece of equipment.
  - Utilize enclosures or acoustic tents for all generator sets that will result in a reduction of at least 8 dB per piece of equipment.

- Paving:
  - Install mufflers on all pavers, rollers, and tractors/loaders/backhoes (and any similar equipment) that will result in a reduction of at least 4 dB per piece of equipment.
  - Utilize either mufflers and/or enclosures or acoustic tents (as applicable) for all paving equipment and cement and mortar mixers that will result in in a reduction of at least 4 dB per piece of equipment.

2. All stationary construction equipment will be placed so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

3. As applicable, all equipment shall be shut off when not in use.

4. To the degree possible, equipment staging will be located in acres that create the greatest distance between construction-related noise and vibration sources and existing sensitive receptors.

5. Jackhammers, pneumatic equipment, and all other portable stationary noise sources will be directed away and shielded from existing residences in the vicinity of the project site. Either one-inch plywood or sound blankets can be utilized for this purpose. They should reach up from the ground and block the line of sight between equipment and existing residences. The shielding should be without holes and cracks.

6. No amplified music and/or voice will be allowed on the project site.

7. Haul truck deliveries will not occur outside of the hours presented as exempt for construction per City of Escondido Municipal Code Section 7-234.

Figure 1
Project Location Map

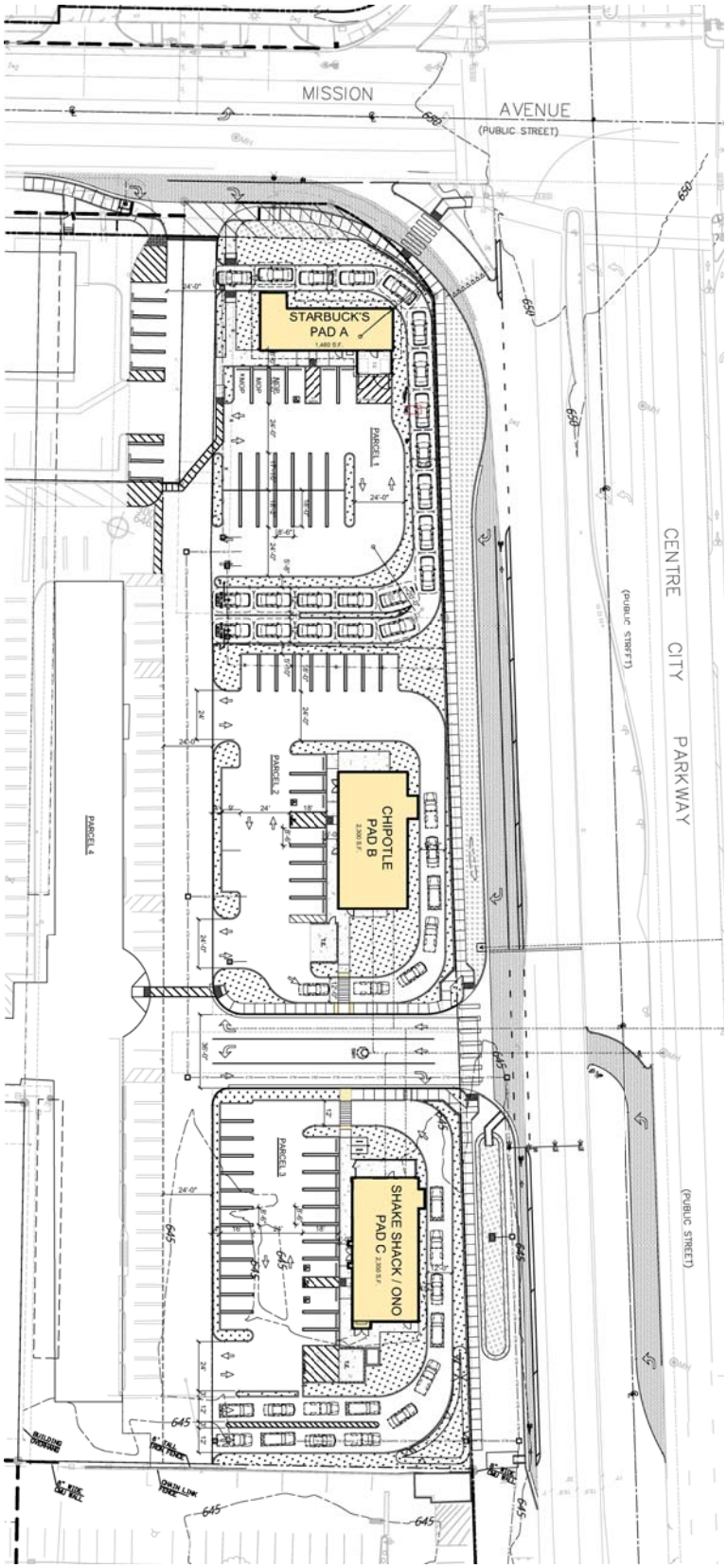


Figure 2
Site Plan

2. NOISE AND VIBRATION FUNDAMENTALS

This section provides an overview of key noise and vibration concepts.

NOISE FUNDAMENTALS

Sound is a pressure wave created by a moving or vibrating source that travels through an elastic medium such as air. Noise is defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in extreme circumstances, hearing impairment.

Commonly used noise terms are presented in Appendix B. The unit of measurement used to describe a noise level is the decibel (dB). The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, the "A-weighted" noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are written dB(A) or dBA.

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise 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, radiates 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). 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.

Decibels are measured on a logarithmic scale, which quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as a doubled traffic volume, would increase the noise levels by 3 dBA; halving of the energy would result in a 3 dBA decrease. Figure 3 shows the relationship of various noise levels to commonly experienced noise events.

Average noise levels over a period of minutes or hours are usually expressed as dBA L_{eq}, or the equivalent noise level for that period of time. For example, $L_{eq(3\text{-}hr)}$ would represent a 3-hour average. When no period is specified, a one-hour average is assumed.

Noise standards for land use compatibility are stated in terms of the Community Noise Equivalent Level (CNEL) and the Day-Night Average Noise Level (DNL). CNEL is a 24-hour weighted average measure of community noise. CNEL is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours. DNL is a very similar 24-hour average measure that weights only the nighttime hours.

It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA; that a change of 5 dBA is readily perceptible, and that an increase (decrease) of 10 dBA sounds twice (half) as loud. This definition is recommended by the California Department of Transportation's Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013).

VIBRATION FUNDAMENTALS

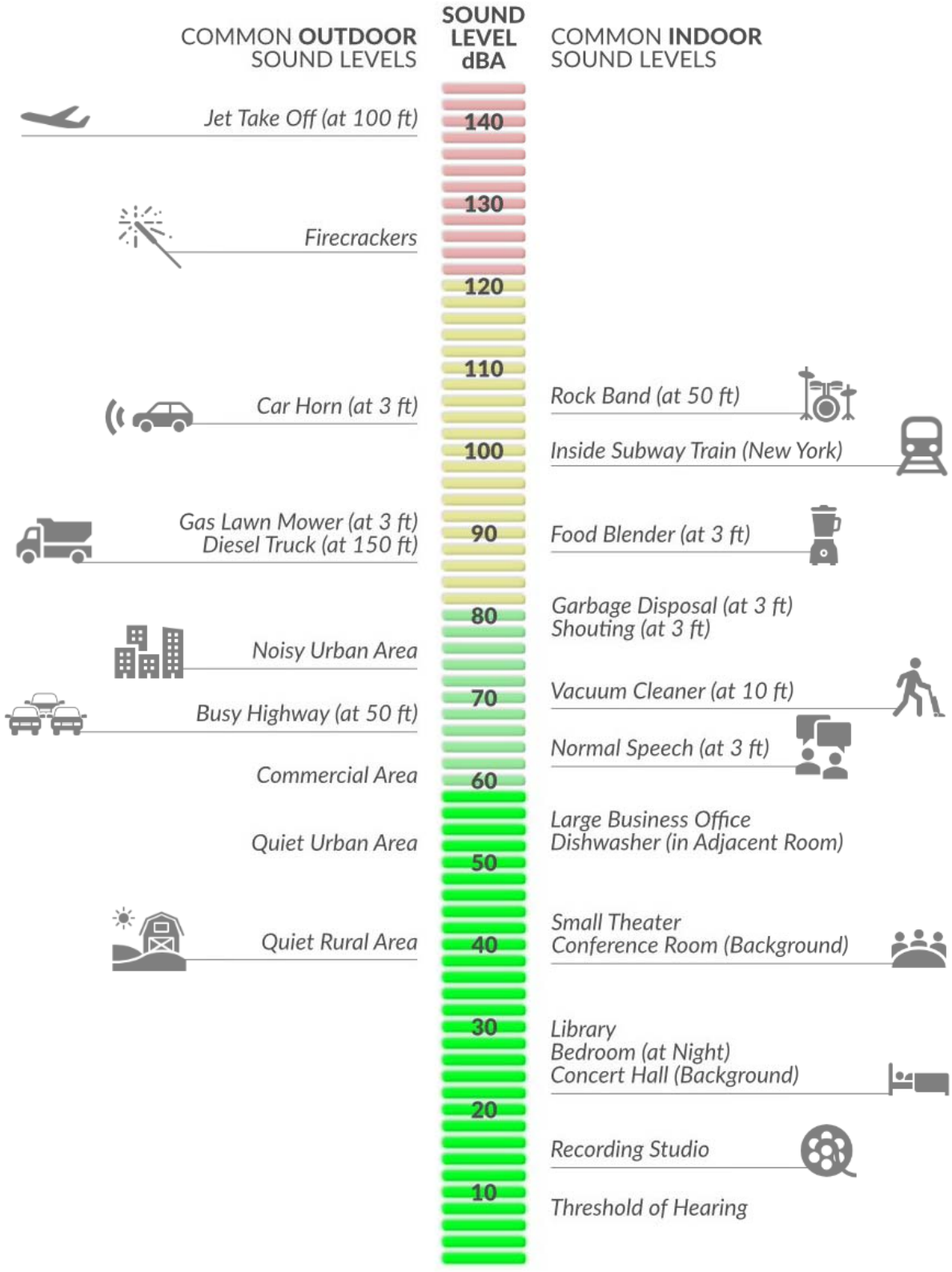
The way in which vibration is transmitted through the earth is called propagation. Propagation of earthborn vibrations is complicated and difficult to predict because of the endless variations in the soil through which

waves travel. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Raleigh 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. Compression waves, or P-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. Shear waves, or S-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 energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

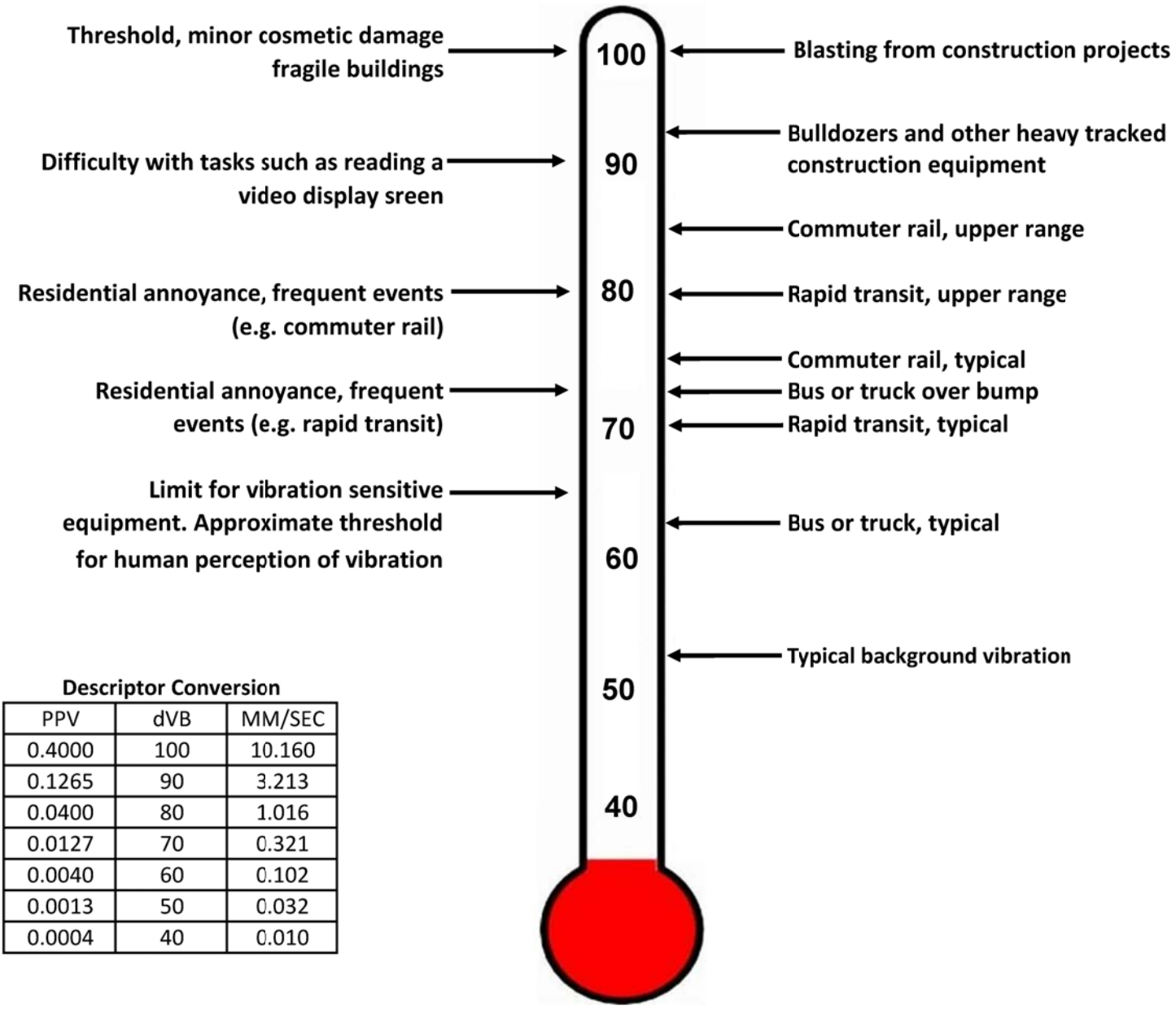
Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal in inches per second. The RMS of a signal is the average of the squared amplitude of the signal in vibration decibels (VdB), ref one micro-inch per second. The Federal Railroad Administration uses the abbreviation "VdB" for vibration decibels to reduce the potential for confusion with sound decibel.

PPV is appropriate for evaluating the potential of building damage and VdB is commonly used to evaluate human response. Decibel notation acts to compress the range of numbers required in measuring vibration. Similar to the noise descriptors, L_{eq} and L_{max} can be used to describe the average vibration and the maximum vibration level observed during a single vibration measurement interval. Figure 4 illustrates common vibration sources and the human and structural responses to ground-borne vibration. As shown in the figure, the threshold of perception for human response is approximately 65 VdB; however, human response to vibration is not usually substantial unless the vibration exceeds 70 VdB. Vibration tolerance limits for sensitive instruments such as magnetic resonance imaging (MRI) or electron microscopes could be much lower than the human vibration perception threshold.



Based on Policy & Guidance from Federal Aviation Administration

Figure 3
A-Weighted Comparative Sound Levels



Descriptor Conversion

PPV	dVB	MM/SEC
0.4000	100	10.160
0.1265	90	3.213
0.0400	80	1.016
0.0127	70	0.321
0.0040	60	0.102
0.0013	50	0.032
0.0004	40	0.010

Source: FRA, 2012. Federal Railroad Administration High-Speed Ground Transportation Noise and Vibration Impact Assessment. Office of Railroad Policy Development, Washington, D.C. DOT/FRA/ORD-12/15. September.

Figure 4
Typical Levels of Groundborne Vibration

3. EXISTING NOISE ENVIRONMENT

This section describes the existing noise setting in the project vicinity.

EXISTING LAND USES AND SENSITIVE RECEPTORS

The project site is bordered by City Centre Parkway to the east, multi-family residential uses to the south, transient lodging and commercial use to the west, and Mission Avenue to the north of the project site.

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, single and multiple-family residential, including transient lodging, motels and hotel uses make up the majority of these areas.

Sensitive receptors that may be affected by project generated noise include the existing motel use located adjacent to the west and the multi-family residential uses located adjacent to the south and approximately 165 feet southeast of the project site boundaries. Other land uses in the project vicinity include commercial (an auto repair) adjacent to the site on the west, commercial land uses to the east (including a car wash), and restaurant and commercial land uses to the northwest. There is also a private school located approximately 315 feet east of the project site.

AMBIENT NOISE MEASUREMENTS

An American National Standards Institute (ANSI Section SI4 1979, Type 1) Larson Davis model LxT sound level meter was used to document existing ambient noise levels. In order to document existing ambient noise levels in the project area, six (6) 15-minute daytime noise measurements were taken between 1:50 PM and 4:30 PM on October 25, 2022. Field worksheets and noise measurement output data are included in Appendix C.

As shown in Figure 5, the noise meter was placed at the following locations:

- NM1: represents the existing noise environment of the hotel use located to the west of the boundaries of the project site (Quality Inn Escondido Downtown, 501 Mission Avenue, Escondido). The noise meter was placed within the hotel parking lot just west of the western project site boundary and associated hotel pool.

- NM2: represents the existing noise environment of the multi-family residential uses to the south of the boundaries of the project site (Village Grove Apartments. 660 N Quince Street, Escondido). The noise meter was placed just south of the project site near the northern boundary of the multi-family residential uses.

- NM3: represents the existing noise environment of the multi-family residential uses located just east of Centre City Parkway and southeast of the boundaries of the project site (Alcove 650 Centre City Parkway, Escondido). The noise meter was placed near the northwest corner of the multi-family residential use and just east of Centre City Parkway.

- NM4: represents the existing noise environment of the commercial uses along the eastern side of Centre City Parkway as well as the school use to the east of the project site boundaries (700 Centre City Parkway, Escondido and Epiphany Prep Charter School, 725 N Escondido Boulevard, Escondido). The noise meter was placed near the western side of the school use just east of the commercial uses along Centre City Parkway.

- NM5: represents the existing noise environment of the commercial uses located at the southeastern corner of the intersection of Centre City Parkway and Mission Avenue (720 Centre City Parkway, Escondido). The noise meter was just east of Centre City Parkway and west of the drive-through associated with the commercial use.

- NM6: represents the existing noise environment of the commercial auto repair shop use to the west of the project site (Ben's Auto Repair, 515 Mission Avenue, Escondido). The noise meter was placed in the northern portion of the project site just east of Ben's Auto Repair and northeast of the Quality Inn Escondido Downtown.

Table 1 provides a summary of the short-term ambient noise data. Ambient noise levels were measured between 60.5 and 75.9 dBA L_{eq}. The dominant noise source was vehicle traffic associated with Centre City Parkway, Mission Avenue, Quince Street, and other surrounding roadways as well as noise associated with a car wash (i.e., dryers and music).

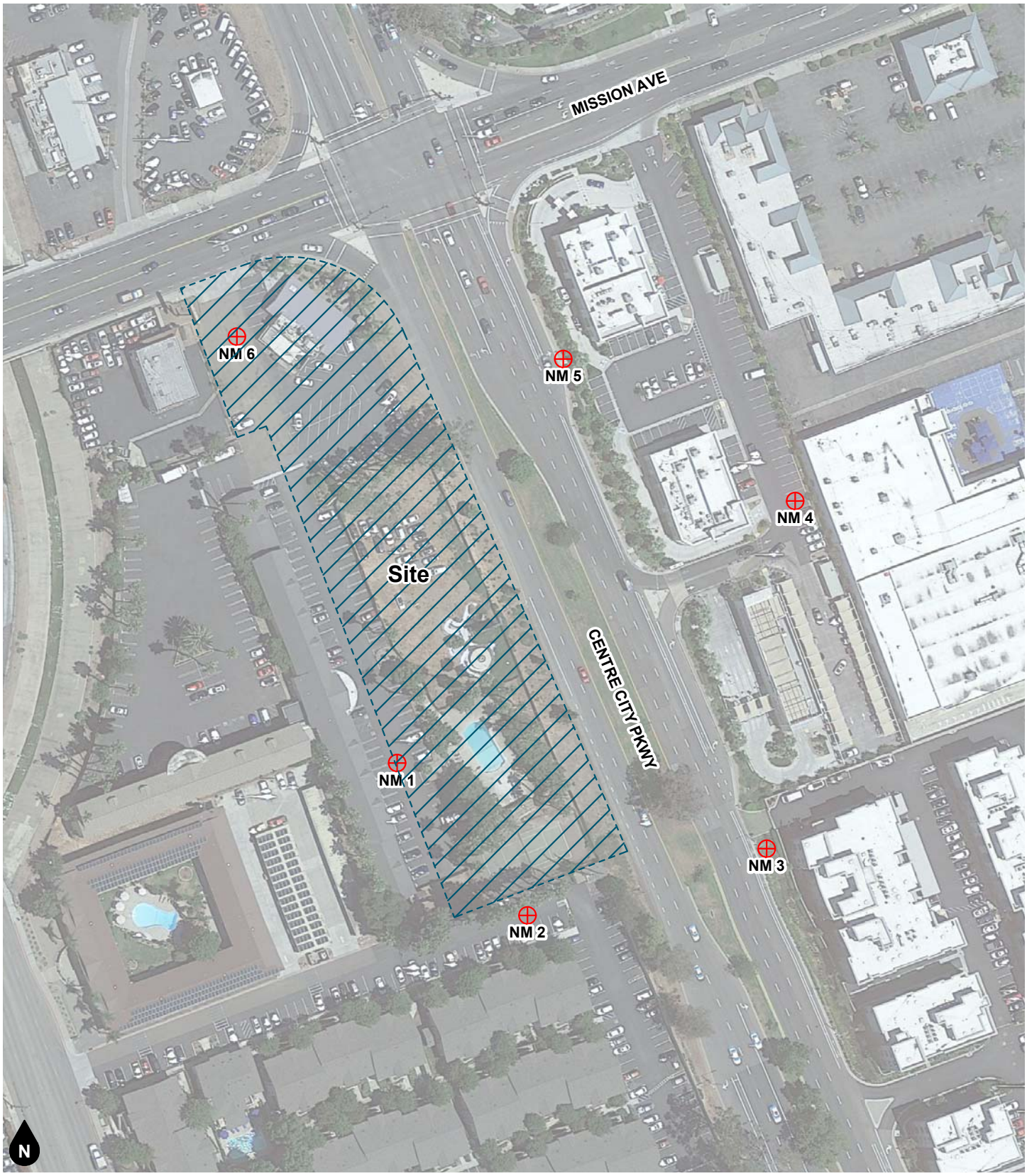
Table 1
Short-Term Noise Measurement Summary (dBA)

Daytime Measurements[1,2]								
Site Location	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
NM1	1:50 PM	60.5	72.4	50.9	64.8	62.7	61.6	60.2
NM2	2:27 PM	61.8	69.0	51.8	65.1	64.0	63.0	62.1
NM3	3:00 PM	71.3	87.5	55.2	76.9	74.8	72.5	68.5
NM4	3:22 PM	75.9	78.9	63.7	78.5	78.1	77.4	76.3
NM5	3;48 PM	69.3	84.4	56.1	76.6	73.8	69.6	65.2
NM6	4:15 PM	63.0	78.1	55.3	72.1	65.4	62.2	60.0

Notes:

(1) See Figure 5 for noise measurement locations. Each noise measurement was performed over a 15-minute duration.

(2) Noise measurements performed on October 25, 2022.



Legend

NM 1 Noise Measurement Location

Figure 5
Noise Measurement Location Map

4. REGULATORY SETTING

FEDERAL REGULATION

Federal Noise Control Act of 1972

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In response, the EPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Levels of Environmental Noise). The Levels of Environmental Noise recommended that the Ldn should not exceed 55 dBA outdoors or 45 dBA indoors to prevent significant activity interference and annoyance in noise-sensitive areas.

In addition, the Levels of Environmental Noise identified five (5) dBA as an "adequate margin of safety" for a noise level increase relative to a baseline noise exposure level of 55 dBA Ldn (i.e., there would not be a noticeable increase in adverse community reaction with an increase of five dBA or less from this baseline level). The EPA did not promote these findings as universal standards or regulatory goals with mandatory applicability to all communities, but rather as advisory exposure levels below which there would be no risk to a community from any health or welfare effect of noise.

In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to State and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated Federal agencies, allowing more individualized control for specific issues by designated Federal, State, and local government agencies.

Federal Transit Administration (FTA)

Ground-borne noise refers to the noise generated by ground-borne vibration. Ground-borne noise that accompanies the building vibration is usually perceptible only inside buildings and typically is only an issue at locations with subway or tunnel operations where there is no airborne noise path or for buildings with substantial sound insulation such as a recording studio.[1] As such, available guidelines from the Federal Transit Administration (FTA) are utilized to assess impacts due to ground-borne vibration. The FTA has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities. As shown in Table 2, the threshold at which there is a risk to "architectural" damage to reinforced concrete, steel, or timber (no plaster) buildings is a peak particle velocity (PPV) of 0.5, at engineered concrete and masonry (no plaster) buildings a PPV of 0.3, at non-engineered timber and masonry buildings a PPV of 0.2 and at buildings extremely susceptible to vibration damage a PPV of 0.1.

The FTA has also adopted standards associated with human annoyance for groundborne vibration impacts for the following three land-use categories:

(1) Vibration Category 1 – High Sensitivity,

(2) Vibration Category 2 – Residential, and

(3) Vibration Category 3 – Institutional.

[1] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2018, pp 108, 112.

The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference. The vibration criteria associated with human annoyance for these three land-use categories are shown in Table 3. Table 3 shows that 80 VdB is the threshold for annoyance from groundborne vibration at sensitive receptors.

Therefore, impacts related to building damage would be significant if construction activities result in groundborne vibration of 0.2 PPV or higher at residential structures and/or a PPV of 0.3 or higher at commercial structures. Impacts related to human annoyance would be significant if they result in groundborne vibration levels that exceed 80 VdB at sensitive receptor locations.

STATE REGULATIONS

State of California General Plan Guidelines 2017

Though not adopted by law, the State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research (OPR) (OPR Guidelines), provides guidance for the compatibility of projects within areas of specific noise exposure. The OPR Guidelines identify the suitability of various types of construction relative to a range of outdoor noise levels and provide each local community some flexibility in setting local noise standards that allow for the variability in community preferences. Findings presented in the Levels of Environmental Noise Document (EPA 1974) influenced the recommendations of the OPR Guidelines, most importantly in the choice of noise exposure metrics (i.e., Ldn or CNEL) and in the upper limits for the normally acceptable outdoor exposure of noise-sensitive uses.

The OPR Guidelines include a Noise and Land Use Compatibility Matrix which identifies acceptable and unacceptable community noise exposure limits for various land use categories. Where the "normally acceptable" range is used, it is defined as the highest noise level that should be considered for the construction of the buildings which do not incorporate any special acoustical treatment or noise mitigation. The "conditionally acceptable" or "normally unacceptable" ranges include conditions calling for detailed acoustical study prior to the construction or operation of the proposed project. The City has adopted their own version of these guidelines in the Community Protection Element of the City's General Plan.

LOCAL REGULATIONS

City of Escondido General Plan

The City's General Plan Community Protection Element establishes noise and land use compatibility standards and outlines goals and policies to achieve these standards. Table 4 summarizes the land use compatibility standards. The Community Protection Element (page VI-23) also includes standards for projects that could significantly alter existing noise levels. It states that "noise impacts of proposed projects on existing land uses should be evaluated in terms of potential for adverse community response based on a significant increase in existing noise levels. For example, if an area is currently below the maximum normally acceptable noise level, an increase in noise up to the maximum allowable level should not necessarily be allowed. Projects increasing noise levels by 5 dB or greater should be considered as generating a significant impact and should require mitigation." Table 5 summarizes the exterior incremental environmental noise impact standards for noise-sensitive uses.

The goals and policies from the City of Escondido General Plan Community Protection Element that are applicable to the proposed project are present below:

Goal 5 Protection of the community from excessive noise exposure.

Policy 5.1 Require development to meet acceptable exterior noise level standards as established in Table 4 and use the future noise contour map (FigureVI-17 of the City's General Plan) as a guide for evaluating the compatibility of new noise sensitive uses with projected noise levels. Noise shall be controlled at the source where possible.

Policy 5.2 Apply a CNEL of 60 dB or less for single family and 65 dB or less for multi-family as goals where outdoor use is a major consideration (back yards and single-family housing developments, and recreation areas in multifamily housing developments) as discussed in Figure VI-13 of the City's General Plan and recognize that such levels may not necessarily be achievable in all residential areas.

Policy 5.5 Require construction projects and new development to ensure acceptable vibration levels at nearby noise-sensitive uses based on Federal Transit Administrator criteria.

Policy 5.6 Require the preparation of noise studies, as deemed necessary by the Planning Department, to analyze potential noise impacts associated with new development which could significantly alter existing noise levels in accordance with provisions outlined in Figure VI-14 of the City's General Plan.

Policy 5.7 Encourage use of site and building design, noise barriers, and construction methods as outlined in Figure VI-15 of the City's General Plan to minimize impacts on and from new development.

Policy 5.10 Require development projects that are subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on these uses, to the extent feasible.

Policy 5.11 Limit direct access from individual properties along Major Roads and Prime Arterials in residential areas in order to minimize gaps in nose barrier sound walls.

City of Escondido Municipal Code

The City addresses noise in Article 12 Noise Abatement and Control of its Municipal Code. These ordinances are summarized below.

Section 17-229. Sound level limits.

a) Unless a variance has been applied for and granted pursuant to this article, it shall be unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level, at any point on or beyond the boundaries of the property on which the sound is produced, exceeds the applicable limits set forth in the Table 6, except that construction noise level limits shall be governed by Section 17-234 of this article.

b) Maximum Permissible Sound Levels by Receiving Land Use.

1) The noise standards for the various categories of land use as presented in subsection (a) of this section shall, unless otherwise specifically indicated, apply to each property or portion of property substantially used for a particular type of land use reasonably similar to the land use types shown in subsection (a) of this section. Where two (2) or more dissimilar land uses occur on a single property, the more restrictive noise limits shall apply.

2) Additional land use classifications may be added by action of the city council to reflect both lower and higher existing ambient levels than those shown.
3) Where doubt exists when making identification of receiving land use, the city manager shall make an interpretation.
4) No person shall operate or cause to be operated, any source of sound at any location within the city or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level to exceed the environmental and/or nuisance interpretation of the applicable limits given in subsection (a) of this section.
5) Environmental noise shall be measured by the equivalent sound level (L_{eq}) for such hours as are specified; Nuisance noise shall be measured as a sound level not to be exceeded at any time; Sound levels by receiving land use shall be measured at the boundary or at any point within the boundary of the property affected; Fixed location public utility distribution or fixed transmission facilities, located on or adjacent to a property line shall be subject to noise level limits of this section measured at or beyond six (6) feet from the boundary of the easement upon which the equipment is located.

c) Corrections to Exterior Noise Level Limits.

1) If the noise is continuous, the L_{eq} for any hour will be represented by any lesser time period within that hour. Noise measurements of a few minutes only will thus suffice to define the noise level.
2) If the noise is intermittent, the L_{eq} for any hour may be represented by a time period typical of the operating cycle. Measurement should be made of a representative number of noisy/quiet periods. A measurement period of not less than fifteen (15) minutes is, however, strongly recommended when dealing with intermittent noise.
3) In the event the alleged offensive noise, as judged by the enforcement officer, contains a steady, audible sound such as a whine, screech, or hum, or contains a repetitive impulsive noise such as hammering or riveting, the standard limits set forth in Table 17-229 shall be reduced by ten (10) dB or to the ambient noise level when such noises are not occurring.
4) If the measured ambient level exceeds that permissible in subsection (a) of this section, the allowable noise exposure standard shall be the ambient noise level. The ambient level shall be measured when the alleged noise violations source is not operating.
5) The sound level limit at a location on a boundary between two (2) land use classifications is the limit applicable to the receiving land use; provided, however, that the one-hour average sound level limit applicable to extractive industries including but not limited to borrow pits and mines, shall be seventy-five (75) decibels (dB) at the property line regardless of the zone where the extractive industry is actually located. Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of this section, measured at or beyond six (6) feet from the boundary of the easement upon which the equipment is located.

Section 17-232. Refuse vehicles and parking lot sweepers.

No person shall operate, or permit to be operated, a refuse compacting, processing, or collection vehicle or parking lot sweeper between the hours of ten (10) PM to six (6) AM in or adjacent to any residential zone unless a variance has been applied for and granted pursuant to this article.

Section 17-234. Construction equipment.

Except for emergency work, it shall be unlawful for any person, including the City of Escondido, to operate construction equipment as follows:

a) It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site, except on Monday through Friday during a week between the hours of seven 7:00 AM and 6:00 PM and on Saturdays between the hours of 9:00 AM and 5:00 PM, and provided that the operation of such construction equipment complies with the requirements of subsection (d) of this section.
b) It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site on Sundays and on days designated by the president, governor, or city council as public holidays.
c) A person may operate construction equipment at his/her residence or for the purpose of constructing or modifying a residence for himself/herself on Monday through Friday of a week between the hours of 7:00 AM and 6:00 PM, and on Saturdays, Sundays, and holidays between the hours of 9:00 AM and 5:00 PM; provided, that such operation of construction equipment is not carried on for profit or livelihood and complies with the requirements of subsection (d) of this section.
d) No construction equipment or combination of equipment, regardless of age or date of acquisition, shall be operated so as to cause noise in excess of a one-hour average sound level limit of seventy-five (75) dB at any time, unless a variance has been obtained in advance from the city manager.
e) Persons engaged in construction for profit or as a business shall post signs at conspicuous places on a construction site, indicating hours of work as prescribed by this article or authorized by permit and the applicable noise level limits.

Section 17-237. Landscape equipment.

It shall be unlawful for any person, including the City of Escondido to use any motorized landscape equipment, including but not limited to power blowers and vacuums, which causes a disturbing, excessive, or offensive noise as defined under section 17-227 (k) of this article.

Section 17-238. Grading.

a) It shall be unlawful for any person, including the City of Escondido, to do any authorized grading at any construction site, except on Mondays through Fridays during a week between the hours of 7:00 AM and 6:00 PM and, provided a variance has been obtained in advance from the city manager, on Saturdays from 10:00 AM to 5:00 PM.
b) For the purpose of this section, "grading" shall include but not be limited to compacting, drilling, rock crushing or splitting, bulldozing, clearing, dredging, digging, filling, and blasting.
c) In addition, any equipment used for grading shall not be operated so as to cause noise in excess of a one-hour sound level limit of seventy-five (75) dB at any time when measured at or within the property lines of any property which is developed and used in whole or in part for residential purposes, unless a variance has been obtained in advance from the city manager.

Section 17-240. General noise regulations.

a) General Prohibitions. In the absence of objective measurement by use of a sound level meter, it additionally shall be unlawful for any person to make, continue or cause to be made or continued, within the limits of said city, any disturbing, excessive, or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity.

   The characteristics and conditions which should be considered in determining whether a violation of the provisions of this section exists, include, but are not limited to, the following:

   6) Schools, Courts, Churches, Hospitals. The creation of any *noise* on any street, sidewalk or public place adjacent to any school, institution of learning (except recreational areas of schools), church, court, library or other *noise*-sensitive zone, while the same are in use, or

adjacent to a hospital, rest home, or long-term medical or mental care facility which *noise* interferes with the workings of such institution or which disturbs or annoys patients in the hospital, rest home, or long-term medical or mental care facility, provided conspicuous signs are displayed in such streets, sidewalks or public places indicating the presence of a school, institution of learning, church, court, library, rest home, long-term medical or mental care facility, or other *noise*-sensitive zones, is prohibited.

9) Loading, Unloading Vehicles—Opening, Destroying Bales, Boxes. The creation of a loud and excessive *noise* in connection with loading or unloading any vehicle or the opening and destruction of bales, boxes, crates, and containers is a violation of this article.

12) Pile Drivers, Pneumatic Hammers, etc. No person shall operate between the hours of 6:00 PM and 7:00 AM on weekdays, or on Saturdays, Sundays or any legal holidays, any pile driver, pneumatic hammer, derrick, or other similar appliance, the use of which is attended by loud or unusual *noise*, unless a variance has been obtained in advance from the city manager.

Table 2
Construction Vibration Damage Criteria

Building/Structural Category	PPV, in/sec	Approximate Lv*
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extemely susceptible to vibration damage	0.1	90

Notes:

Source: Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual (September 2018).

*RMS velocity in decibels, VdB re 1 micro-in/sec

Table 3
Ground-Borne Vibration (GBV) Impact Criteria for General Vibration Assessment

Land Use Category	GBV Impact Levels (VdB re 1 micro-inch/sec)		
	Frequent Events	Occasional Events	Infrequent Events
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB*	65 VdB*	65 VdB*
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

Notes:
Source:Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual (September 2018).
*This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical

Table 4
Land Use Noise Exposure Levels

Land Use Category	Community Noise Exposure Ldn or CNEL, dBA 55	60	65	70	75	80
Residential-Single Family, Duplex, Mobile Home						
Residential-Multi-Family, Residential Mixed Use						
Transient Lodging, Motels, Hotels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Auditoriums, Concert Halls, Amphitheaters						
Sports Arena, Outdoor Spectator Sports						
Playgrounds, Parks						
Golf Courses, Riding Stables, Water Recreation, Cemeteries						
Office Buildings, Businesses, Commercial and Professional						
Industrial, Manufacturing, Utilities, Agriculture						

Source: City of Escondido General Plan Communit Protection Element Figure VI-12 (May 2012).

Normally Acceptable: Specified land use is satisfactory based upon the assumption that buildings involved are of normal conventional construction, without any special noise insulation or 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 and development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

Table 5
Exterior Incremental Environmental Noise Impact Standards for Noise-Sensitive Uses (dBA)

Residences and Buildings Where People Normally Sleep[1]		Institutional Land Uses with Primarily Daytime and Evening Uses[2]	
Existing Ldn	Allowable Noise Increment	Existing Peak Hour Leq	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

Source: Federal Transit Administration, Transit Noise Impact and Vibration Assessment, May 2006

Notes: Noise Levels are measured at the property line of the noise senstitive use.

1) This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.

2) This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material.

Table 6
City of Escondido Sound Level Limits

Zone	Time	Applicable Limit One-hour Average Sound Level (Decibels)
Residential Zones	7:00 AM to 10:00 PM	50
	10:00 PM to 7:00 AM	45
Multi-Residential Zones	7:00 AM to 10:00 PM; 10:00 PM to 7:00 AM	55, 50
Commercial Zones	7:00 AM to 10:00 PM	60
	10:00 PM to 7:00 AM	55
Light Industrial/ Industrial Park Zones	Anytime	70*
General Industrial Zones	Anytime	75*

Notes:
(1) Source: City of Escondido Municipal Code Section 17-229.
*Subject to provisions of Ection 17-229(c)(5)

5. ANALYTICAL METHODOLOGY AND MODEL PARAMETERS

This section discusses the analysis methodologies used to assess noise impacts.

CONSTRUCTION NOISE MODELING

Construction noise will vary depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work.

Construction noise associated with the proposed project was calculated at the sensitive receptor locations utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters, including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site.

The equipment used to calculate the construction noise levels for each phase were based on the assumptions provided in the CalEEMod modeling in the Air Quality, Global Climate Change, and Energy Impact Analysis prepared for the proposed project (Ganddini Group, Inc., 2024). For analysis purposes, the distance measured from the project site to sensitive receptors was assumed to be the acoustical center of the project site to the property line of residential properties with existing residential buildings. Sound emission levels associated with typical construction equipment as well as typical usage factors are provided in Table 7. Construction noise worksheets are provided in Appendix D.

SOUNDPLAN NOISE MODEL

The SoundPLAN acoustical modeling software was utilized to model project operational worst-case stationary noise impacts from the proposed project to adjacent sensitive uses (e.g., residences). SoundPLAN is capable of evaluating stationary noise sources (e.g., parking lots, heating, and ventilation systems (HVAC) drive-thru menus, car wash equipment, vacuums, etc.). The SoundPLAN software utilizes algorithms (based on the inverse square law) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations. In addition to the information provided below, noise modeling input and outputs assumptions are provided in Appendix E.

Peak hour operational noise levels were modeled utilizing representative sound levels in the SoundPLAN model. Modeled noise sources include parking lot noise, speaker noise, exterior eating area/conversation noise and HVAC equipment noise. All noise sources were modeled to be in full operation for an entire hour. This is a conservative modeling effort, given that in actuality, several of the noise sources are not in operation continuously for an entire hour.

Parking Lot Noise

Parking lot noise was calculated using SoundPLAN methodology. Specifically, the traffic volume of the parking lot is entered with the number of moves per parking, the hour, and the number of parking bays. The user defines whether the parking lots are for automobiles, motorcycles, or trucks, and the emission level of a parking lot is automatically adjusted accordingly. The values for the number of parking moves for each time slice is the number of parking moves per reference unit (most often per parking bay), averaged for the hour[2].

SoundPLAN utilizes parking lot noise emission levels from the 6th revised edition of the parking lot study "Recommendations for the Calculation of Sound Emissions of Parking Areas, Motorcar Centers and Bus

[2] SoundPLAN Essential 4.0 Manual. SoundPLAN International, LLC. May 2016.

Stations as well as of Multi-Story Car Parks and Underground Car Parks" published by the Bavarian Landesamt für Umwelt provides calculation methods to determine the emissions of parking lots.

The parking lot emission table documents the reference level (Lw, ref) from the parking lot study.

Lw, ref = Lw0 + KPA + KI + KD + KStrO + 10 log(B) [dB(A)]

With the following parameters:

Lw0 = Basic sound power, sound power level of one motion / per hour on P+R areas = 63 dB(A)
KPA = Surcharge parking lot type
KI = Surcharge for impulse character
KD = Surcharge for the traffic passaging and searching for parking bays in the driving lanes 2,5 * lg (f * B - 9)
f = Parking bays per unit of the reference value
B = Reference value
KStrO = Surcharge for the road surface
B = Reference value

Mechanical Equipment (HVAC Units) Noise

A noise reference level of 67.7 dBA at 3 feet (sound power level of 78.7 dB) was utilized to represent rooftop 5 Ton Carrier HVAC units[3]. A rooftop HVAC plan is not available at the time of this analysis so the exact location and number of units per building were estimated. A total of 6 rooftop units were modeled on the proposed rooftops.

Drive-Thru Speakers and Queuing Line

The drive-thru speakers were modeled as point sources and a SoundPLAN noise reference level to represent loud human voices of 77 dBA (sound power level) was utilized.

A queuing line associated with vehicles waiting in line to order food at the proposed drive-thru was modeled utilizing a line noise source with a sound power level of 50 every square meter.

Outdoor Eating Area

The outdoor eating areas proposed at the project site were modeled by utilizing SoundPLAN noise reference level for a human voice (conversation) at 65 dBA.

MOBILE SOURCE NOISE MODELING

Noise from vehicular traffic (Existing, Existing Plus Project, and Future) was modeled using a computer program that replicates the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). The FHWA model arrives at the predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Key model parameters and REMEL adjustments are presented below:

- Roadway classification (e.g., freeway, major arterial, arterial, secondary, collector, etc.);
- Roadway active width (distance between the center of the outer most travel lanes on each side of the roadway);
- Average Daily Traffic (ADT) Volumes, Travel Speeds, Percentages of automobiles, medium trucks and heavy trucks;
- Roadway grade and angle of view;

[3] MD Acoustics, LLC Noise Measurement Data for RTU –Carrier 50TFQ0006.

- Site conditions (e.g., soft vs. hard); and
- Percentage of total ADT which flows each hour throughout a 24-hour period.

Traffic noise levels were calculated at the right-of-way based on distance from the centerline of the analyzed roadway. The modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. Therefore, the modeled noise levels are shown for comparative purposes only to show the difference between with and without project conditions. Traffic noise calculation worksheets are included in Appendix F.

Existing and Existing Plus Project Traffic Noise Levels

Project generated vehicle traffic is expected to utilize Centre City Parkway and Mission Avenue to access the project site. Existing average daily vehicle trips and trip distribution provided in the In-N-Out & Coffee Bean (Mission/Centre City) Transportation Impact Analysis (TIA), Ganddini Group, Inc. (February 21, 2023) and project average daily vehicle trips and trip distribution provided in the 503 West Mission Commercial Project Transportation Impact Comparison (Transportation Impact Comparison), Ganddini Group, Inc. (February 12, 2024) were utilized in the analysis. Per the Transportation Impact Comparison prepared for the proposed project, the project is anticipated to generate 1,740 net new daily weekday trips and 2,051 net new daily Saturday trips. Therefore, to provide a conservative analysis and as the project generates more daily trips on Saturdays, the Saturday volumes were analyzed in the analysis. Table 8 includes the modeled roadway segments as well as the average daily traffic volumes, posted speed limits, and vehicle mix utilized in this analysis.

GROUNDBORNE VIBRATION MODELING

Groundborne vibration modeling was performed using vibration propagation equations and construction equipment source levels obtained from the FTA *Transit Noise and Vibration Impact Assessment Manual* (2018). Table 9 shows typical vibration levels associated with commonly used construction equipment based on data from the FTA.

There are several types of construction equipment that can cause vibration levels high enough to annoy people in the vicinity and/or result in architectural or structural damage to nearby structures and improvements. For example, as shown in Table 9, a vibratory roller could generate up to 0.21 in/sec PPV at and operation of a large bulldozer could generate up to 0.089 PPV at a distance of 25 feet (two of the most vibratory pieces of construction equipment). Groundborne vibration at sensitive receptors associated with this equipment would drop off as the equipment moves away. For example, as the vibratory roller moves further than 100 feet from the sensitive receptors, the vibration associated with it would drop below 0.0026 in/sec PPV. 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. Groundborne vibration calculations are provided in Appendix G.

The fundamental equation used to calculate vibration propagation through average soil conditions and distance is as follows:

$$PPV_{equipment} = PPV_{ref} (25/D_{rec})^{n}$$

Where: PPV_{ref} = reference PPV at 25ft.
D_{rec} = distance from equipment to receiver in ft.
n = 1.5 (the value related to the attenuation rate through ground)

Table 7 (1 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
All Other Equipment > 5 HP	No	50	85	-N/A-	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	-N/A-	0
Blasting	Yes	-N/A-	94	-N/A-	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	-N/A-	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Forklift[2,3]	No	50	n/a	61	n/a
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	-N/A-	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydr. Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	-N/A-	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarafier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	50	85	77	9
Paving Equipment	No	50	85	77	9
Pneumatic Tools	No	50	85	85	90

Table 7 (2 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/chipping gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (Single Nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	-N/A-	0
Tractor	No	40	84	-N/A-	0
Vacuum Excavator (Vac-truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

Notes:

(1) Source: FHWA Roadway Construction Noise Model User's Guide January 2006.

(2) Warehouse & Forklift Noise Exposure - NoiseTesting.info Carl Stautins, November 4, 2014 http://www.noisetesting.info/blog/carl-strautins/page-3/

(3) Data provided Leq as measured at the operator. Sound Level at 50 feet is calculated using Inverse Square Law.

Table 8
Project Average Daily Traffic Volumes and Roadway Parameters

Roadway	Segment	Average Daily Traffic Volume[1]		Posted Travel Speeds (MPH)	Site Conditions
		Existing Saturday	Existing Plus Project Saturday		
Rock Spring Road	North of Mission Avenue	8,690	8,790	35	Soft
	Mission Avenue to Washington Avenue	7,730	7,830	35	Soft
Quince Street	Mission Avenue to Washington Avenue	5,870	6,030	35	Soft
Centre City Parkway	North of Mission Avenue	24,200	24,840	50	Soft
	Mission Avenue to Project Site	16,800	18,180	45	Soft
	Project Site to Washington Avenue	17,300	19,390	45	Soft
	South of Washington Avenue	15,160	15,370	45	Soft
Escondido Boulevard	North of Mission Avenue	8,380	8,480	35	Soft
Broadway	North of Lincoln Parkway	13,860	13,960	35	Soft
	Lincoln Parkway to Mission Avenue	16,900	17,210	35	Soft
	Mission Avenue to Washington Avenue	15,250	15,350	35	Soft
Lincoln Parkway	East of Broadway	21,700	21,910	40	Soft
Mission Avenue	West of Rock Spring Road	10,630	10,840	40	Soft
	Rock Spring Road to Quince Street	14,470	14,680	40	Soft
	Quince Street to Project Site	17,990	18,400	40	Soft
	Project Site to Centre City Parkway	18,160	18,720	40	Soft
	Centre City Parkway to Escondido Boulevard	16,830	17,600	40	Soft
	Escondido Boulevard to Broadway	12,360	12,980	40	Soft
	East of Broadway	11,620	11,830	40	Soft
Washington Avenue	West of Rock Spring Road	9,460	9,670	40	Soft
	Rock Spring Road to Quince Street	11,180	11,570	40	Soft
	Quince Street to Centre City Parkway	12,220	12,480	35	Soft
	Centre City Parkway to Escondido Boulevard	14,300	14,890	35	Soft

Vehicle Distribution (Light Mix)[2]			
Motor-Vehicle Type	Daytime % (7 AM-7 PM)	Evening % (7 PM-10 PM)	Night % (10 PM-7 AM)
Automobiles	75.56	13.96	10.49
Medium Trucks	48.91	2.17	48.91
Heavy Trucks	47.30	5.41	47.30

Notes:

(1) Existing Saturday average daily traffic volumes obtained from the In-N-Out & Coffee Bean (Mission/Centre City) Transportation Impact Analysis (TIA), Ganddini Group, Inc. (February 21, 2023). Project average Saturday daily traffic volumes obtained from the 503 West Mission Commercial Project Transportation Impact Comparison, Ganddini Group, Inc. (February 12, 2024). As since the project has more average daily trips on Saturday than weekdays, the Saturday volumes were utilized for a worst-case analysis.

(2) Existing and project vehicle percentages are based on the Riverside County Industrial Hygiene Letter for Traffic Noise.

Table 9
Construction Equipment Vibration Source Levels

Equipment		PPV at 25 ft, in/sec	Approximate Lv* at 25 ft
Pile Driver (impact)	upper range	1.518	112
	typical	0.644	104
Pile Driver (sonic)	upper range	0.734	105
	typical	0.170	93
clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: Federal Transit Administration: Transit Noise and Vibration Impact Assessment Manual, 2018.
*RMS velocity in decibels, VdB re 1 micro-in/sec

6. NOISE AND VIBRATION IMPACTS

This section analyzes the significance of project-related noise and groundborne vibration impacts relative to standards established by the City of Escondido and other applicable agencies in the context of CEQA. Appendix G of the California Environmental Quality Act Guidelines (Title 14, Division 6, Chapter 3 of the California Code of Regulations) includes an environmental checklist that identifies issues upon which findings of significance should be made. The CEQA Environmental Checklist Appendix G, XIII. Noise, requires determination if the project would result in:

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

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

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

NOISE IMPACTS

Would the project result in:

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

Finding: Less Than Significant

In relation to the Environmental Checklist noise issue "a", applicable standards established by the City of Escondido can be categorized into the following areas:

- Construction Noise
- Operational Noise

Project Construction

On-Site Equipment

Construction noise sources are regulated within the City of Escondido Municipal Code Section 17-234, which prohibits construction activities except on Monday through Friday between the hours of 7:00 AM and 6:00 PM and on Saturdays between the hours of 9:00 AM and 5:00 PM, construction activities are not permitted on Sundays and on days designated by the president, governor, or city council as public holidays. In addition, no construction equipment or combination of equipment, shall be operated so as to cause noise in excess of a one-hour average sound level limit of seventy-five (75) dB at any time, unless a variance has been obtained in advance from the city manager.

Construction activities will occur in phases including demolition, site preparation, grading, building construction, paving, and architectural coating. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. Construction activities are anticipated to begin no sooner than November 2024, with completion estimated by June 2025.

Construction noise will vary depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work.

The existing motel property line located adjacent to the west and the multi-family residential property lines located adjacent to the south, and approximately 165 feet southeast of the project site boundaries may be affected by short-term noise impacts associated with construction noise. Other land uses in the project vicinity include commercial (an auto repair) adjacent to the site on the west, commercial land uses to the east (including a car wash), and restaurant and commercial land uses to the northwest. There is also a private school located approximately 315 feet east of the project site.

Construction noise associated with the proposed project was calculated utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Distances to receptors were based on the acoustical center of the proposed construction activity. Construction noise levels were calculated for each phase. Anticipated noise levels during each construction phase with and without project BMPs are presented in Table 10. Worksheets for each phase are included as Appendix D.

Modeled construction noise levels with Best Management Practices (BMPs) implemented (as described in the project description provided in Section 1 of this report) are expected to reach up to 74.7 dBA L_{eq} at the nearest commercial property line to the west, 75 dBA L_{eq} at the nearest hotel property line to the west, 63.2 dBA L_{eq} at the nearest residential property line to the south, 61.2 dBA L_{eq} at the nearest residential property line to the southeast, 62.2 dBA L_{eq} at the nearest school property line to the east, 64.8 dBA L_{eq} at the nearest property line of the Super Star Car Wash Express commercial use to the east, 67 dBA L_{eq} at the nearest property line of the Banfield Pet Hospital/Yoshinoya Restaurant commercial use to the east, 69 dBA L_{eq} at the nearest property line of the Habit Burger commercial use to the east, 66.4 dBA L_{eq} at the nearest commercial property line to the northeast, and 71.9 dBA L_{eq} at the nearest commercial property line to the north of the project site.
Project construction will not occur outside of the hours outlined as "exempt" in City of Escondido Municipal Code Section 7-234 and will not exceed the City's 75 dBA L_{eq} noise standard. Impacts related to construction activities would be less than significant and no mitigation is required.

Off-Site Vehicle Trips

Construction truck trips would occur throughout the construction period. Given the project site's proximity to State Route 78 and Interstate 15 Freeway, it is anticipated that vendor and/or haul truck traffic would take the most direct route to the appropriate freeway ramps.

According to the FHWA, the traffic volumes need to be doubled in order to increase noise levels by 3 dBA CNEL.[4] The estimated existing weekday average daily trips along Centre City Parkway range between 15,200 to 24,200 and the estimated existing weekday average daily trips along Mission Avenue range between 10,600 and 18,000 average daily vehicle trips.[5] As shown in the CalEEMod output files provided in the Air Quality, Global Climate Change, and Energy Impact Analysis prepared for the proposed project (Ganddini Group, 2024) the greatest number of construction-related vehicle trips per day would be during grading at up to 40 vehicle trips per day (7.5 for worker trips and 32.5 for vendor trips). Therefore, the addition of project vendor/haul trucks and worker vehicles per day along off-site roadway segments would not be anticipated to result in a doubling of traffic volumes. Off-site project generated construction vehicle trips would result in a negligible noise level increase and would not result in a substantial increase in ambient

[4] Federal Highway Administration, Highway Noise Prediction Model, December 1978.

[5] The existing average daily traffic volumes were obtained from the In-N-Out & Coffee Bean (Mission/Centre City) Transportation Impact Analysis (TIA), Ganddini Group, Inc. (October 26, 2022).

noise levels in light of the applicable thresholds presented in Table 5. Impacts would be less than significant. No mitigation measures are required.

Project Operational Noise

Onsite Noise Sources

Article 12 *Section 17-229*. *Sound level limits*, sets forth noise level limits for noise generated on one property to another. These land use-based noise level limits are shown in Table5, Table 6 except that construction noise level limits shall be governed by Section 17-234 of Article 12.

Unless a variance has been applied for and granted pursuant to this article, it is unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level, at any point on or beyond the boundaries of the property on which the sound is produced, exceeds the applicable limits set forth in the

Sensitive receptors that may be affected by project generated noise include the existing motel use located adjacent to the west and the multi-family residential uses located adjacent to the south and approximately 165 feet southeast of the project site boundaries. Other land uses in the project vicinity include commercial (an auto repair) adjacent to the site on the west, commercial land uses to the east (including a car wash), and restaurant and commercial land uses to the northwest. There is also a private school located approximately 315 feet east of the project site.

Ambient noise levels were conducted to establish existing noise levels in the vicinity of these land uses. Subsequently, the SoundPLAN noise model was used to model operational noise (discussed in Section 4 of this report). SoundPLAN modeling results are shown on Figure 6 and Figure 7 and in Table 11. As shown in Table 11, existing measured noise levels near receptors that may be affected by project noise range between and 61 and 76 dBA L_{eq}; and project generated noise is expected to range between 42 and 55 dBA L_{eq}. Project operation will not result in more than a one-decibel increase at any offsite location. Project generated noise would not cause a violation of the daytime standard of (55 dBA L_{eq}) or the nighttime noise standard (50 dBA L_{eq}) at multiple family residential land uses located to the south, west and southeast of the project site; or cause an exceedance of the stationary noise standard (60 dBA L_{eq}) at nearby commercial land uses. Furthermore, project operation would not noticeably increase ambient noise levels and will not result in a significant incremental increase in ambient noise levels per the applicable standards presented in Table 5. This impact would be less than significant. No mitigation is required.

Offsite Operational Noise Sources

During operation, the proposed project is expected to generate approximately 1,740 weekday net average daily trips with 128 trips during the AM peak-hour, 128 trips during the mid-day peak hour, and 128 trips during the PM peak-hour and 2,051 Saturday net average daily trips with 128 trips during the mid-day peak hour. Existing and Existing Plus Project generated traffic noise levels were modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. Traffic noise levels were calculated at the right of way from the centerline of the analyzed roadway. The modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. Therefore, the levels are shown for comparative purposes only to show the difference in with and without project conditions. Roadway input parameters including Saturday average daily traffic volumes (ADTs), speeds, and vehicle distribution data is shown in Table 12. The potential off-site noise impacts caused by an increase of traffic from operation of the proposed project on the nearby roadways were calculated for the following scenarios:

Existing Year (without Project): This scenario refers to existing year traffic noise conditions and is demonstrated in Table 12.

Existing Year (With Project): This scenario refers to existing year plus project traffic noise conditions and is demonstrated in Table 12.

As shown in Table 12, modeled Existing traffic noise levels range between 66 to 77 dBA CNEL at the right-of-way; and the modeled Existing Plus Project traffic noise levels range between 66 to 77 dBA CNEL at the right-of-way.

As stated in the City of Escondido General Plan, Downtown Specific Plan and Climate Action Plan Environmental Impact Report (EIR) (April 2012), the City considers an increase in noise levels of 5 dB or greater as generating a significant impact.

As shown in Table 12, project generated vehicle traffic would result in increases of up to 0.5 dBA CNEL along affected roadway segments. Project generated operational vehicle traffic will not result in substantial increases in ambient noise levels in light of the applicable standards presented in Table 5. This impact would be less than significant. No mitigation is required.

GROUNDBORNE VIBRATION IMPACTS

Would the project result in:

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

Finding: Less Than Significant

There are several types of construction equipment that can cause vibration levels high enough to annoy persons in the vicinity and/or result in architectural or structural damage to nearby structures and improvements. For example, as shown in Table 9, a vibratory roller could generate up to 0.21 PPV at a distance of 25 feet; and operation of a large bulldozer (0.089 PPV) at a distance of 25 feet (two of the most vibratory pieces of construction equipment). Groundborne vibration at sensitive receptors associated with this equipment would drop off as the equipment moves away. For example, as the vibratory roller moves further than 100 feet from the sensitive receptors, the vibration associated with it would drop below 0.0026 PPV. 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.

The fundamental equation used to calculate vibration propagation through average soil conditions and distance is as follows:

$$PPV_{equipment} = PPV_{ref} (100/D_{rec})^{n}$$

Where: PPV_{ref} = *reference PPV at 100ft.*
D_{rec} = *distance from equipment to receiver in ft.*
n = 1.1 (*the value related to the attenuation rate through ground*)

Architectural Damage

Vibration generated by construction activity generally has the potential to damage structures. This damage could be structural damage, such as cracking of floor slabs, foundations, columns, beams, or wells, or cosmetic architectural damage, such as cracked plaster, stucco, or tile. (California Department of Transportation, 2020)

Table 2 identifies the threshold at which there is a risk to "architectural" damage to reinforced-concrete, steel, or timber (no plaster) buildings as a peak particle velocity (PPV) of 0.5, at engineered concrete and masonry (no plaster) buildings as a PPV of 0.3, at non-engineered timber and masonry buildings as a PPV of 0.2 and at buildings extremely susceptible to vibration damage as a PPV of 0.1. Therefore, impacts would be

significant if construction activities result in groundborne vibration of 0.2 PPV or higher at residential structures and/or a PPV of 0.3 or higher at commercial structures.

The nearest off-site structures include the motel use to the west, with associated structures located as close as approximately 30 feet from the project's western property line, the commercial uses to the west, northwest, north, northeast, and east of the project site, with structures located between 50 to 300 feet from the nearest project property lines, and the multi-family residential uses to the south and southeast, with structures located as close as approximately 175 feet to the southeast and 62 feet to the south of the project's southern property line. As stated by the project applicant, construction of the proposed project will not utilize any heavy vibration inducing construction equipment, such as vibratory rollers and large bulldozers. Therefore, construction-related project vibration was estimated with the use of a small bulldozer. As shown in Table 13, temporary vibration levels associated with project construction would not exceed the threshold at which there is a risk to "architectural" damage of 0.2 PPV in/sec or higher at residential structures and/or a PPV of 0.3 in/sec or higher at commercial structures. The project does not propose any non-construction related sources of ground-borne vibration.

Temporary vibration levels associated with project construction would be less than significant. No mitigation is required. Vibration worksheets are provided in Appendix G.

Annoyance to Persons

The primary effect of perceptible vibration is often a concern. However, secondary effects, such as the rattling of a china cabinet, can also occur, even when vibration levels are well below perception. Any effect (primary perceptible vibration, secondary effects, or a combination of the two) can lead to annoyance. The degree to which a person is annoyed depends on the activity in which they are participating at the time of the disturbance. For example, someone sleeping, or reading will be more sensitive than someone who is running on a treadmill. Reoccurring primary and secondary vibration effects often lead people to believe that the vibration is damaging their home, although vibration levels are well below minimum thresholds for damage potential. (California Department of Transportation, 2020)

As shown in Table 3, vibration becomes strongly perceptible to sensitive receptors at a level of 80 VdB[6]. A small bulldozer could generate 80 VdB at a distance of approximately 5 feet from the source.

The closest vibration-sensitive receptors include the motel use to the west, with associated structures located as close as approximately 30 feet from the project's western property line, and the multi-family residential uses to the south and southeast, with structures located as close as approximately 175 feet to the southeast and 62 feet to the south of the project's southern property line. Therefore, as shown in Table 13, due to distance, project construction would not cause annoyance to nearby receptors.

The next closest building to the west and the closest buildings to the northwest, north, northeast, and east west of the project site are those of commercial uses, which are not considered to be vibration-sensitive land uses. The FTA adopted standards associated with human annoyance for groundborne vibration impacts for three land-use categories: Vibration Category 1 – High Sensitivity, Vibration Category 2 – Residential, and Vibration Category 3 – Institutional. The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as

[6] The City of Escondido General Plan, Downtown Specific Plan and Climate Action Plan Environmental Impact Report (EIR) (April 2012) states that the FTA thresholds for infrequent events, defined as fewer than 30 vibration events of the same kind per day, are applicable to construction and mining operations. These thresholds are 65 VdB at vibration-sensitive land uses and 80 VdB at residences and buildings where people normally sleep.

schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference. Therefore, as commercial uses are not considered a vibration-sensitive land use, no further analysis in regard to annoyance is necessary to the commercial structures surrounding the project site.

Furthermore, any potential annoyance is expected to be short-term, occurring only during site grading, preparation, and paving. Impacts from vibration related annoyance would be less than significant. Vibration worksheets are provided in Appendix G.

AIR TRAFFIC IMPACTS

Would the project result in:

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 area to excessive noise levels?*

Finding: No Impact

The closest airports to the project site are the Ramona Airport, with associated airport runways located as close as approximately 11.4 miles southeast of the project site, and the McClellan-Palomar Airport, with associated airport runaways located as close as approximately 10.4 miles to the northwest of the project site. As stated in the City of Escondido General Plan, Downtown Specific Plan and Climate Action Plan Environmental Impact Report (EIR) (April 2012), the project site is not located within the 60 dBA CNEL noise contour of either the Ramona Airport or the McClellan-Palomar Airport. Therefore, the proposed project would not expose people residing or working in the area to excessive noise levels. There is no impact, and no mitigation is required.

Table 10 (1 of 3)
Construction Noise Levels (dBA Leq)

Receptor Location	Representative Noise Measurement[1]	Existing Ambient Noise Levels (dBA Leq)	Construction Noise Levels (dBA Leq)[2]	Exceeds 75 dBA Leq (Yes/No)	Construction Noise Levels with BMPs (dBA Leq)[3]	Exceeds 75 dBA Leq (Yes/No)
Phase: Demolition						
Commercial use to the west (Ben's Auto Repair, 515 Mission Ave)	NM6	63.0	80.7	Yes	74.7	No
Transient lodging use to the west (Quality Inn Escondido Downtown, 501 Mission Ave)	NM1	60.5	77.9	Yes	71.9	No
Multi-family residential uses to the south (Village Grove Apartments. 660 N Quince St)	NM2	61.8	66.5	No	60.5	No
Multi-family residential uses to the southeast (Alcove, 650 Centre City Pkwy)	NM3	71.3	65.8	No	59.8	No
School use to the east (Epiphany Prep Charter School, 725 N Escondido Blvd)	NM4	75.9	68.2	No	62.2	No
Commercial use to the east (Super Star Car Wash Express, 680 City Centre Pkwy)	NM3	71.3	68.7	No	62.7	No
Commercial use to the east (Banfield Pet Hospital/Restaurant Building, 700 City Centre Pkwy)	NM5	69.3	73	No	67	No
Commercial use to the east (The Habit Burger, 720 City Centre Pkwy)	NM5	69.3	75	No	69	No
Commercial use to the northeast (McDonald's, 340 W Mission Ave)	NM6	63.0	72.4	No	66.4	No
Commercial use to the north (Karz Plus, 506 W Mission Ave)	NM6	63.0	77.9	Yes	71.9	No
Phase: Site Preparation						
Commercial use to the west (Ben's Auto Repair, 515 Mission Ave)	NM6	63.0	72.5	No	66.5	No
Transient lodging use to the west (Quality Inn Escondido Downtown, 501 Mission Ave)	NM1	60.5	80.5	Yes	74.5	No
Multi-family residential uses to the south (Village Grove Apartments. 660 N Quince St)	NM2	61.8	68.8	No	62.8	No
Multi-family residential uses to the southeast (Alcove, 650 Centre City Pkwy)	NM3	71.3	66.8	No	60.8	No
School use to the east (Epiphany Prep Charter School, 725 N Escondido Blvd)	NM4	75.9	67.0	No	61	No
Commercial use to the east (Super Star Car Wash Express, 680 City Centre Pkwy)	NM3	71.3	70.4	No	64.4	No
Commercial use to the east (Banfield Pet Hospital/Restaurant Building, 700 City Centre Pkwy)	NM5	69.3	72.0	No	66	No
Commercial use to the east (The Habit Burger, 720 City Centre Pkwy)	NM5	69.3	71.5	No	65.5	No
Commercial use to the northeast (McDonald's, 340 W Mission Ave)	NM6	63.0	64.9	No	58.9	No
Commercial use to the north (Karz Plus, 506 W Mission Ave)	NM6	63.0	66.6	No	60.6	No

Table 10 (2 of 3)
Construction Noise Levels (dBA Leq)

Receptor Location	Representative Noise Measurement[1]	Existing Ambient Noise Levels (dBA Leq)	Construction Noise Levels (dBA Leq)[2]	Exceeds 75 dBA Leq (Yes/No)	Construction Noise Levels with BMPs (dBA Leq)[3]	Exceeds 75 dBA Leq (Yes/No)
Phase: Grading						
Commercial use to the west (Ben's Auto Repair, 515 Mission Ave)	NM6	63.0	71.9	No	66.1	No
Transient lodging use to the west (Quality Inn Escondido Downtown, 501 Mission Ave)	NM1	60.5	81.4	Yes	74.9	No
Multi-family residential uses to the south (Village Grove Apartments. 660 N Quince St)	NM2	61.8	69.6	No	63.2	No
Multi-family residential uses to the southeast (Alcove, 650 Centre City Pkwy)	NM3	71.3	67.7	No	61.2	No
School use to the east (Epiphany Prep Charter School, 725 N Escondido Blvd)	NM4	75.9	67.9	No	61.4	No
Commercial use to the east (Super Star Car Wash Express, 680 City Centre Pkwy)	NM3	71.3	71.3	No	64.8	No
Commercial use to the east (Banfield Pet Hospital/Restaurant Building, 700 City Centre Pkwy)	NM5	69.3	72.8	No	66.3	No
Commercial use to the east (The Habit Burger, 720 City Centre Pkwy)	NM5	69.3	72.3	No	65.8	No
Commercial use to the northeast (McDonald's, 340 W Mission Ave)	NM6	63.0	65.7	No	59.2	No
Commercial use to the north (Karz Plus, 506 W Mission Ave)	NM6	63.0	67.5	No	61.0	No
Phase: Building Construction						
Commercial use to the west (Ben's Auto Repair, 515 Mission Ave)	NM6	63.0	73.1	No	66.8	No
Transient lodging use to the west (Quality Inn Escondido Downtown, 501 Mission Ave)	NM1	60.5	81.2	Yes	74.9	No
Multi-family residential uses to the south (Village Grove Apartments. 660 N Quince St)	NM2	61.8	69.4	No	63.1	No
Multi-family residential uses to the southeast (Alcove, 650 Centre City Pkwy)	NM3	71.3	67.4	No	61.1	No
School use to the east (Epiphany Prep Charter School, 725 N Escondido Blvd)	NM4	75.9	67.6	No	61.3	No
Commercial use to the east (Super Star Car Wash Express, 680 City Centre Pkwy)	NM3	71.3	71.0	No	64.7	No
Commercial use to the east (Banfield Pet Hospital/Restaurant Building, 700 City Centre Pkwy)	NM5	69.3	72.6	No	66.3	No
Commercial use to the east (The Habit Burger, 720 City Centre Pkwy)	NM5	69.3	72.1	No	65.8	No
Commercial use to the northeast (McDonald's, 340 W Mission Ave)	NM6	63.0	65.5	No	59.2	No
Commercial use to the north (Karz Plus, 506 W Mission Ave)	NM6	63.0	67.2	No	60.9	No

Table 10 (3 of 3)
Construction Noise Levels (dBA Leq)

Receptor Location	Representative Noise Measurement[1]	Existing Ambient Noise Levels (dBA Leq)	Construction Noise Levels (dBA Leq)[2]	Exceeds 75 dBA Leq (Yes/No)	Construction Noise Levels with BMPs (dBA Leq)[3]	Exceeds 75 dBA Leq (Yes/No)
Phase: Paving						
Commercial use to the west (Ben's Auto Repair, 515 Mission Ave)	NM6	63.0	70.9	No	66.9	No
Transient lodging use to the west (Quality Inn Escondido Downtown, 501 Mission Ave)	NM1	60.5	79.0	Yes	75.0	No
Multi-family residential uses to the south (Village Grove Apartments. 660 N Quince St)	NM2	61.8	67.2	No	63.2	No
Multi-family residential uses to the southeast (Alcove, 650 Centre City Pkwy)	NM3	71.3	65.2	No	61.2	No
School use to the east (Epiphany Prep Charter School, 725 N Escondido Blvd)	NM4	75.9	65.5	No	61.5	No
Commercial use to the east (Super Star Car Wash Express, 680 City Centre Pkwy)	NM3	71.3	68.8	No	64.8	No
Commercial use to the east (Banfield Pet Hospital/Restaurant Building, 700 City Centre Pkwy)	NM5	69.3	70.4	No	66.4	No
Commercial use to the east (The Habit Burger, 720 City Centre Pkwy)	NM5	69.3	69.9	No	65.9	No
Commercial use to the northeast (McDonald's, 340 W Mission Ave)	NM6	63.0	63.3	No	59.3	No
Commercial use to the north (Karz Plus, 506 W Mission Ave)	NM6	63.0	65.0	No	61.0	No
Phase: Architectural Coating						
Commercial use to the west (Ben's Auto Repair, 515 Mission Ave)	NM6	63.0	61.9	No	-	-
Transient lodging use to the west (Quality Inn Escondido Downtown, 501 Mission Ave)	NM1	60.5	69.9	No	-	-
Multi-family residential uses to the south (Village Grove Apartments. 660 N Quince St)	NM2	61.8	58.2	No	-	-
Multi-family residential uses to the southeast (Alcove, 650 Centre City Pkwy)	NM3	71.3	56.2	No	-	-
School use to the east (Epiphany Prep Charter School, 725 N Escondido Blvd)	NM4	75.9	56.4	No	-	-
Commercial use to the east (Super Star Car Wash Express, 680 City Centre Pkwy)	NM3	71.3	59.8	No	-	-
Commercial use to the east (Banfield Pet Hospital/Restaurant Building, 700 City Centre Pkwy)	NM5	69.3	61.4	No	-	-
Commercial use to the east (The Habit Burger, 720 City Centre Pkwy)	NM5	69.3	60.8	No	-	-
Commercial use to the northeast (McDonald's, 340 W Mission Ave)	NM6	63.0	54.2	No	-	-
Commercial use to the north (Karz Plus, 506 W Mission Ave)	NM6	63.0	56.0	No	-	-

Notes:

(1) Per measured existing ambient noise levels. See Figure 5 for noise measurement locations.

(2) Construction noise worksheets are provided in Appendix D.

(3) The noise level reductions provided in the best management practices (bmps) are that of the minimal reduction required to achieve the noise standard.

Table 11
On-Site Operational Noise (dBA Leq)

dBA, Leq				
Site Location	Measured Noise Level	Project Opetrational Noise	Combined Existing and Project Noise	Increase Due to Project
NM1	61	53	62	1
NM2	62	51	62	0
NM3	71	43	71	0
NM4	76	42	76	0
NM5	69	46	69	0
NM6	63	55	64	1

Notes:

(1) See Figure 5 for noise measurement locations and Figure 6 for Modeled Operational Noise Levels. Each noise measurement was performed over a 15-minute duration.

Table 12
Increase in Existing Noise Levels Along Roadways as a Result of Project (dBA CNEL)

Roadway	Segment	Distance from roadway centerline to right-of-way (feet)[2]	Modeled Noise Levels (dBA CNEL)[1]				
			Existing Saturday Without Project at right-of-way	Existing Saturday Plus Project at right-of-way	Change in Noise Level	Exceeds Standards[3]	Increase of 5 dB or More?
Rock Spring Rd	North of Mission Ave	40	67.25	67.30	0.05	Yes	No
	Mission Ave to Washington Ave	40	66.74	66.80	0.06	Yes	No
Quince St	Mission Ave to Washington Ave	40	65.55	65.66	0.11	Yes	No
Centre City Pkwy	North of Mission Ave	51	77.35	77.47	0.12	Yes	No
	Mission Ave to Project Site	51	75.07	75.42	0.35	Yes	No
	Project Site to Washington Ave	51	75.20	75.70	0.50	Yes	No
	South of Washington Ave	51	74.63	74.69	0.06	Yes	No
Escondido Blvd	North of Mission Ave	40	67.09	67.15	0.06	Yes	No
Broadway	North of Lincoln Pkwy	51	72.71	72.74	0.03	Yes	No
	Lincoln Pkwy to Mission Ave	51	73.57	73.65	0.08	Yes	No
	Mission Ave to Washington Ave	51	73.12	73.15	0.03	Yes	No
Lincoln Parkway	East of Broadway	63	74.53	74.57	0.04	Yes	No
Mission Ave	West of Rock Spring Rd	51	72.35	72.43	0.08	Yes	No
	Rock Spring Rd to Quince St	51	73.69	73.75	0.06	Yes	No
	Quince St to Project Site	51	74.63	74.73	0.10	Yes	No
	Project Site to Centre City Pkwy	51	74.67	74.81	0.14	Yes	No
	Centre City Pkwy to Escondido Blvd	51	74.34	74.54	0.20	Yes	No
	Escondido Blvd to Broadway	51	73.00	73.22	0.22	Yes	No
	East of Broadway	51	72.73	72.81	0.08	Yes	No
Washington Ave	West of Rock Spring Rd	40	68.83	68.93	0.10	Yes	No
	Rock Spring Rd to Quince St	40	69.56	69.71	0.15	Yes	No
	Quince St to Centre City Pkwy	40	68.73	68.82	0.09	Yes	No
	Centre City Pkwy to Escondido Blvd	40	69.41	69.59	0.18	Yes	No

Notes:

(1) Exterior noise levels calculated 5 feet above pad elevation, perpendicular to subject roadway.

(2) Right of way per the City of Escondido General Plan Mobility and Infrastructure Element.

(3) Per the City of Escondido normally acceptable standard for single-family detached residential dwelling units of 60 dBA CNEL (see Table 5).

Table 13
Construction Vibration Levels at the Nearest Receptors

Receptor Location	Distance from Property Line to Nearest Structure (feet)	Equipment	Vibration Level[1]	Threshold Exceeded?[2]
Architectural Damage Analysis in (PPV)				
Motel to West (Quality Inn Escondido Dowtown, 501 W Missions Ave)	30	Small Bulldozer	0.002	No
Commercial to West (Ben's Auto Repair, 515 W Missions Ave)	50	Small Bulldozer	0.001	No
Commercial to Northwest (Denny's, 510 W Missions Ave)	158	Small Bulldozer	0.000	No
Commercial to North (Karz Plus, 506 W Missions Ave)	155	Small Bulldozer	0.000	No
Commercial to Northeast (McDonald's, 340 W Missions Ave)	300	Small Bulldozer	0.000	No
Commercial to East (The Habit Burger, 720 Centre City Parkway)	176	Small Bulldozer	0.000	No
Commercial to East (Yoshinoya, 700 Centre City Parkway)	179	Small Bulldozer	0.000	No
Commercial to East (Super Star Car Wash Express, 680 Centre City Parkway)	171	Small Bulldozer	0.000	No
Multi-Family Residential to Southeast (Alcove, 650 Centre City Parkway)	175	Small Bulldozer	0.000	No
Multi-Family Residential to South (Village Grove Apartments, 660 N Quince St)	62	Small Bulldozer	0.001	No
Annoyance Analysis (in dVB)				
Motel to West (Quality Inn Escondido Dowtown, 501 W Missions Ave)	30	Small Bulldozer	56	No
Multi-Family Residential to Southeast (Alcove, 650 Centre City Parkway)	175	Small Bulldozer	33	No
Multi-Family Residential to South (Village Grove Apartments, 660 N Quince St)	62	Small Bulldozer	46	No

Notes:

(1) Vibration levels are provided in PPV in/sec for architectural damage and VdB for annoyance.

Signs and symbols

- Proposed Project
- Proposed buildings
- Receiver
- Point source (HVAC and Speakers)
- Drives and Ques
- Area Source - Patios
- Parking lots
- Noise Level Tables (dBA, Leq)

Figure 6
Operational Noise Levels

Figure 7
Operational Noise Contours

7. REFERENCES

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

Environmental Protection Agency
1974 "Information on Levels of Environmental Noise Requisite to Protect Public Health And Welfare with an Adequate Margin of Safety," EPA/ONAC 550/9-74-004, March 1974.

Federal Transit Administration
2018 Transit Noise and Vibration Impact Assessment Manual. Typical Construction Equipment Vibration Emissions.

Ganddini Group, Inc.
2022 In-N-Out & Coffee Bean (Mission/Centre City) Transportation Impact Analysis. October 26.
2024 503 West Mission Commercial Project Transportation Impact Comparison. February 12.
2024 503 West Mission Commercial Project Air Quality, Global Climate Change, and Energy Impact Analysis. February.

Escondido, City of
2012 General Plan. May.
2022 Municipal Code. June.

Office of Planning and Research
2017 State of California General Plan Guidelines

Riverside, County of
2001 General Plan, Chapter 4, Figure C-3 "Link Volume Capacities/Level of Service for Riverside County Roadways".
2009 County of Riverside Industrial Hygiene Guidelines for Determining and Mitigating Traffic Noise Impacts to Residential Structures and County.

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

APPENDICES

Appendix A List of Acronyms
Appendix B Glossary
Appendix C Noise Measurement Field Worksheets
Appendix D Construction Noise Modeling
Appendix E SoundPLAN Input and Output
Appendix F FHWA Worksheets
Appendix G Vibration Worksheets

APPENDIX A

LIST OF ACRONYMS

Term	Definition
ADT	Average Daily Traffic
ANSI	American National Standard Institute
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
D/E/N	Day / Evening / Night
dB	Decibel
dBA or dB(A)	Decibel "A-Weighted"
dBA/DD	Decibel per Double Distance
dBA L_{eq}	Average Noise Level over a Period of Time
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
L_{02},L_{08},L_{50},L_{90}	A-weighted Noise Levels at 2 percent, 8 percent, 50 percent, and 90 percent, respectively, of the time period
DNL	Day-Night Average Noise Level
$L_{eq(x)}$	Equivalent Noise Level for '"x" period of time
L_{eq}	Equivalent Noise Level
L_{max}	Maximum Level of Noise (measured using a sound level meter)
L_{min}	Minimum Level of Noise (measured using a sound level meter)
LOS C	Level of Service C
OPR	California Governor's Office of Planning and Research
PPV	Peak Particle Velocities
RCNM	Road Construction Noise Model
REMEL	Reference Energy Mean Emission Level
RMS	Root Mean Square

APPENDIX B

GLOSSARY

Term	Definition
Ambient Noise Level	The all-encompassing noise environment associated with a given environment, at a specified time, usually a composite of sound from many sources, at many directions, near and far, in which usually no particular sound is dominant.
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear.
CNEL	Community Noise Equivalent Level. CNEL is a weighted 24-hour noise level that is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours.
Decibel, dB	A logarithmic unit of noise level measurement that relates the energy of a noise source to that of a constant reference level; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
DNL, Ldn	Day Night Level. The DNL, or Ldn is a weighted 24-hour noise level that is obtained by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the nighttime hours.
Equivalent Continuous Noise Level, L_{eq}	A level of steady state sound that in a stated time period, and a stated location, has the same A-weighted sound energy as the time-varying sound.
Fast/Slow Meter Response	The fast and slow meter responses are different settings on a sound level meter. The fast response setting takes a measurement every 100 milliseconds, while a slow setting takes one every second.
Frequency, Hertz	In a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., the number of cycles per second).
L_{02}, L_{08}, L_{50}, L_{90}	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level, 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period, respectively.
L_{max}, L_{min}	Lmax is the RMS (root mean squared) maximum level of a noise source or environment measured on a sound level meter, during a designated time interval, using fast meter response. Lmin is the minimum level.
Offensive/ Offending/Intrusive Noise	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of sound depends on its amplitude, duration, frequency, and time of occurrence, and tonal information content as well as the prevailing ambient noise level.
Root Mean Square (RMS)	A measure of the magnitude of a varying noise source quantity. The name derives from the calculation of the square root of the mean of the squares of the values. It can be calculated from either a series of lone values or a continuous varying function.

APPENDIX C

NOISE MEASUREMENT FIELD WORKSHEETS

Noise Measurement
Field Data

Project Name: 503 West Mission Commercial Project, City of Escondido **Date:** October 25, 2022

Project #: 19703

Noise Measurement #: NM1 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 501 W Mission Avenue, Escondido, CA 92025

Site Description (Type of Existing Land Use and any other notable features): NM1: Taken within Quality Hotel parking lot just west of pool (501 Mission Ave). Adjacent: Hotel use surrouding with swimming pool (empty) to east, parking lot to north, south, & west and hotel building further west. Centre City Pkwy past pool to E, mutifamily residences past parking lot to S.

Weather: Clear skies, sunny. Sunset: 6:05 PM **Settings:** SLOW FAST

Temperature: 77 deg F **Wind:** 9mph **Humidity:** 23% **Terrain:** Flat

Start Time: 1:50 PM **End Time:** 2:05 PM **Run Time:**

Leq: 60.5 dB **Primary Noise Source:** Traffic noise from vehicles traveling along Centre City Pkwy (~165' E of NM1),

Lmax 72.4 dB W Mission Ave (~500' NNW of NM1) & other roads.

L2 64.8 dB **Secondary Noise Sources:** Occasional overhead air traffic. Bird song. Leaf rustle from 9mph breeze. Parking

L8 62.7 dB lot, hotel & residential ambiance. Car wash ambiance from Centre City Pkwy.

L25 61.6 dB

L50 60.2 dB

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	10/25/2022		

Noise Measurement
Field Data

PHOTOS:

NM1 looking E across Quality Hotel swimming pool (501 W Mission Ave, Escondido) towards Centre City Pkwy & car wash (behind trees) (~165').

NM1 looking NNW towards Quality Hotel office, 501 W Mission Ave, Escondido.

Summary	
File Name on Meter	LxT_Data.127.s
File Name on PC	LxT_0003099-20221025 135032-LxT_Data.127.ldbin
Serial Number	0003099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM1 33° 7'36.88"N 117° 5'29.57"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19703 503 West Mission Commercial Poject,City of Escondido

Measurement	
Start	2022-10-25 13:50:32
Stop	2022-10-25 14:05:32
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2022-10-25 13:50:04
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	122.6 dB

Results						
LA_{eq}	60.5					
LAE	90.1					
EA	112.542	µPa²h				
EA8	3.601	mPa²h				
EA40	18.007	mPa²h				
$LA_{peak\ (max)}$	2022-10-25 13:54:27	90.9 dB				
LAS_{max}	2022-10-25 13:59:00	72.4 dB				
LAS_{min}	2022-10-25 13:50:54	50.9 dB				
			Statistics			
LC_{eq}	72.1 dB		**LA2.00**	64.8 dB		
LA_{eq}	60.5 dB		**LA8.00**	62.7 dB		
LC_{eq} - LA_{eq}	11.6 dB		**LA25.00**	61.6 dB		
LAI_{eq}	61.5 dB		**LA50.00**	60.2 dB		
LA_{eq}	60.5 dB		**LA66.60**	58.8 dB		
LAI_{eq} - LA_{eq}	1.0 dB		**LA90.00**	54.4 dB		
Overload Count	0					

Measurement Report

Report Summary

Meter's File Name	LxT_Data.127.s	Computer's File Name	LxT_0003099-20221025 135032-LxT_Data.12
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	NM1 33° 7'36.88"N 117° 5'29.57"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19703 West Mission Commercial Project, City of Escondido.		
Start Time	2022-10-25 13:50:32	Duration	0:15:00.0
End Time	2022-10-25 14:05:32	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	60.5 dB		
LAE	90.1 dB	SEA	--- dB
EA	112.5 µPa²h	LAFTM5	62.6 dB
EA8	3.6 mPa²h		
EA40	18.0 mPa²h		
LA_{peak}	90.9 dB	2022-10-25 13:54:27	
LAS_{max}	72.4 dB	2022-10-25 13:59:00	
LAS_{min}	50.9 dB	2022-10-25 13:50:54	
LA_{eq}	60.5 dB		
LC_{eq}	72.1 dB	LC_{eq} - LA_{eq}	11.6 dB
LAI_{eq}	61.5 dB	LAI_{eq} - LA_{eq}	1.0 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	5	0:00:36.1
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
--- dB	--- dB	0.0 dB

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

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	60.5 dB		72.1 dB		--- dB	
$L_{S(max)}$	72.4 dB	2022-10-25 13:59:00	--- dB		--- dB	
$L_{S(min)}$	50.9 dB	2022-10-25 13:50:54	--- dB		--- dB	
$L_{Peak(max)}$	90.9 dB	2022-10-25 13:54:27	--- dB		--- dB	

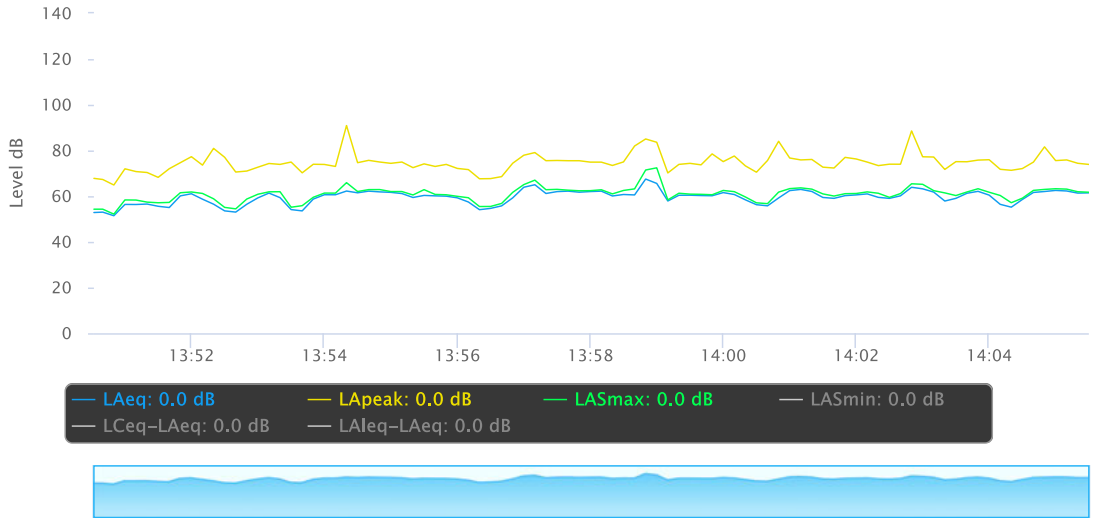
Overloads

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

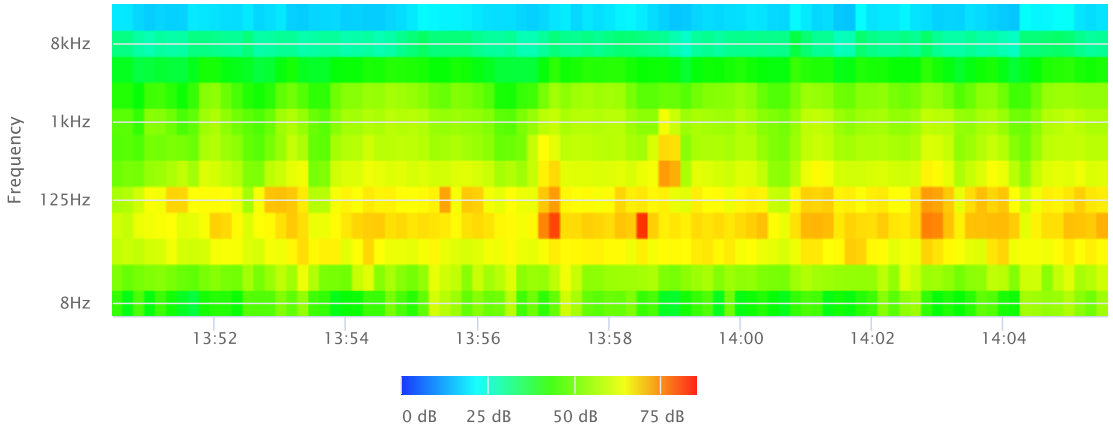
Statistics

LAS 2.0	64.8 dB
LAS 8.0	62.7 dB
LAS 25.0	61.6 dB
LAS 50.0	60.2 dB
LAS 66.6	58.8 dB
LAS 90.0	54.4 dB

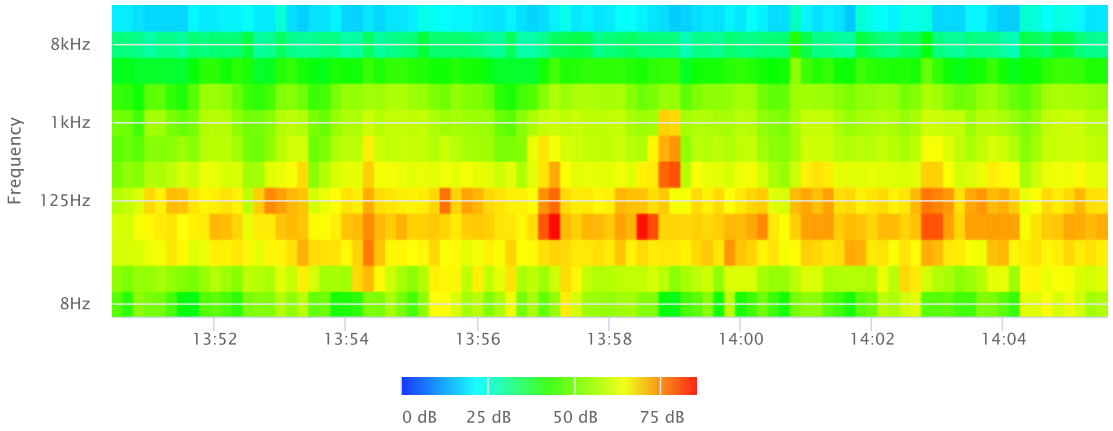
Time History



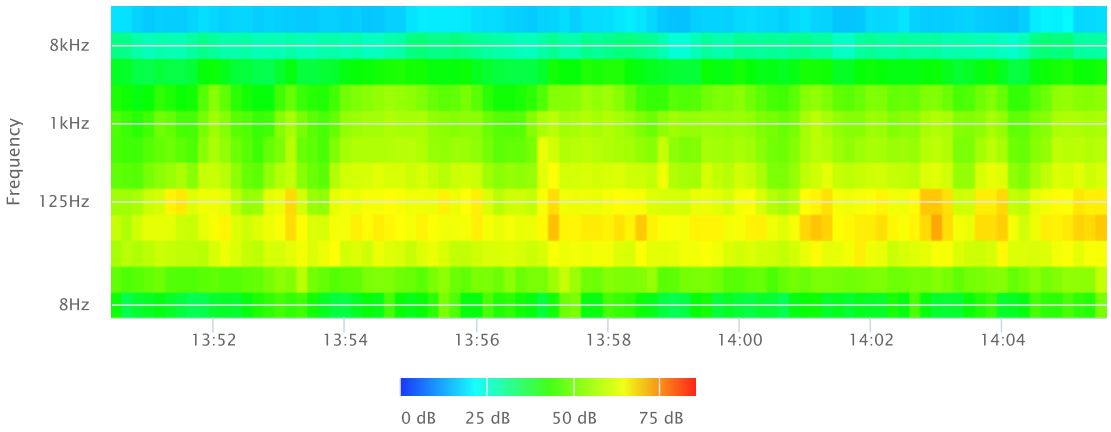
OBA 1/1 Leq



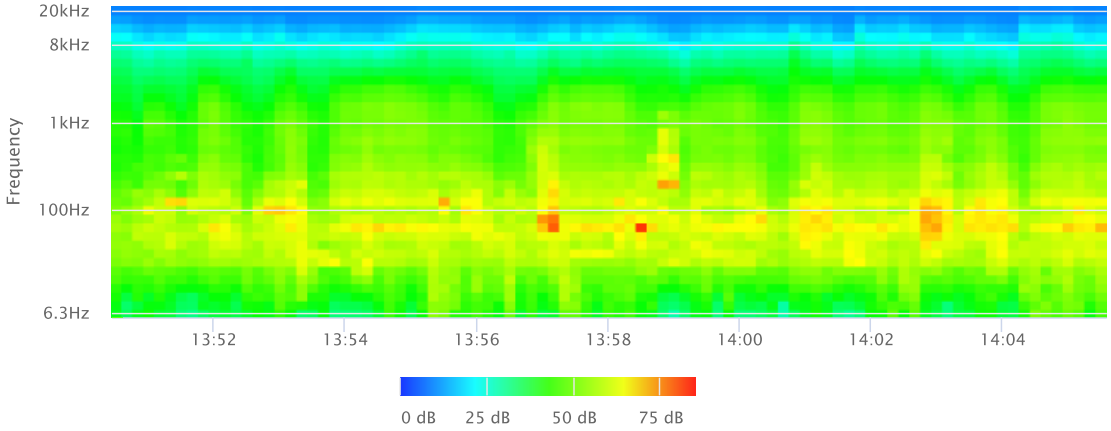
OBA 1/1 Lmax



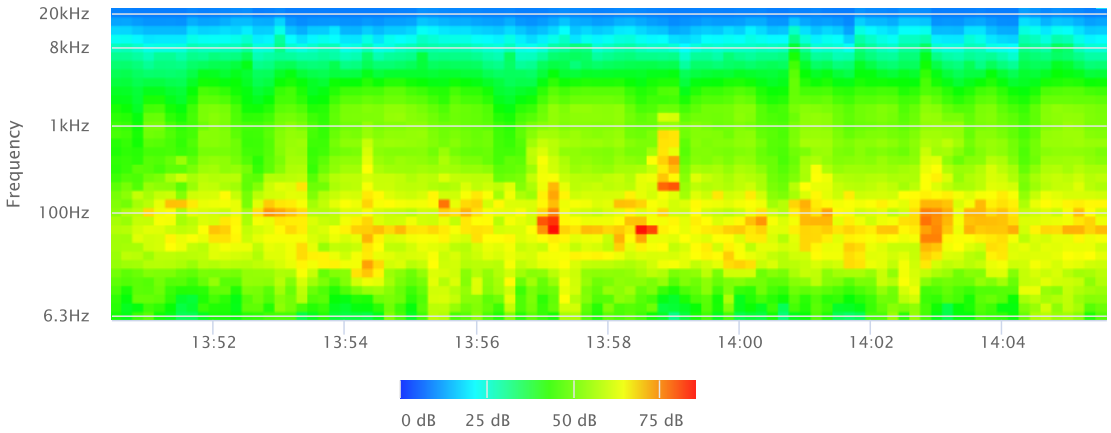
OBA 1/1 Lmin



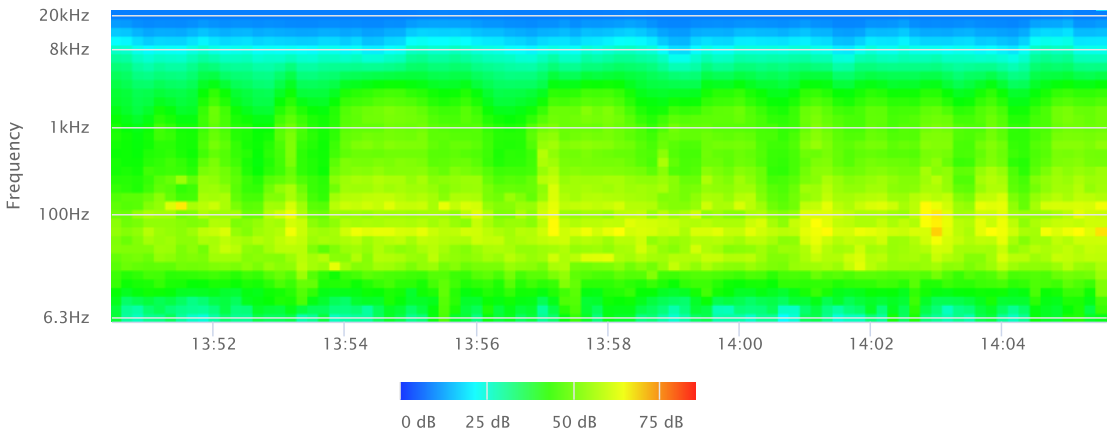
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
13:52
13:54
13:56
13:58
14:00
14:02
14:04
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: 503 West Mission Commercial Project, City of Escondido **Date:** October 25, 2022

Project #: 19703

Noise Measurement #: NM2 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: Village Grove Apartments, 660 N Quince Street, Escondido, CA 92025

Site Description (Type of Existing Land Use and any other notable features): NM2: Taken at near northern boundary of Village Grove Apartments, 660 N Quince St. Adjacent: Village Grove Apts & associated parking lot areas to S/SE/SW, Quince Park Apartments to the NW, Quality Inn w/ associated swimming pool & tennis court to the N, & Centre City Pkwy to the E.

Weather: Clear skies, sunny. Sunset: 6:05 PM **Settings:** SLOW FAST

Temperature: 77 deg F **Wind:** 9mph **Humidity:** 23% **Terrain:** Flat

Start Time: 2:27 PM **End Time:** 2:42 PM **Run Time:**

Leq:	61.8	dB
Lmax	69	dB
L2	65.1	dB
L8	64.0	dB
L25	63.0	dB
L50	62.1	dB

Primary Noise Source: Traffic noise from vehicles traveling along Centre City Pkwy (~130' E of NM2), W Mission Ave (~630' NNW of NM2), Quince St (~440' WSW of NM2) & other roads.

Secondary Noise Sources: Occasional overhead air traffic. Bird song. Leaf rustle from 9mph breeze. Parking lot, residential & hotel ambiance. Car wah ambiance from Centre City Pkwy.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	10/25/2022		

Noise Measurement
Field Data

PHOTOS:

NM2 looking SSE towards residence C06 Village Grove Apartments, 660 N Quince St, Escondido.

NM2 looking WSW down northern access road to Village Grove Apartments towards Quince St intersection (~440').

Summary	
File Name on Meter	LxT_Data.128.s
File Name on PC	LxT_0003099-20221025 142755-LxT_Data.128.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM2 33° 7'35.58"N 117° 5'28.54"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19703 503 West Mission Commercial Project, City of Escondido.

Measurement	
Start	2022-10-25 14:27:55
Stop	2022-10-25 14:42:55
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2022-10-25 14:27:30
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	122.6 dB

Results		
LA_{eq}	61.8	
LAE	91.3	
EA	151.0086	µPa²h
EA8	4.832277	mPa²h
EA40	24.16138	mPa²h
$LA_{peak\ (max)}$	2022-10-25 14:29:14	94.4 dB
LAS_{max}	2022-10-25 14:36:04	69.0 dB
LAS_{min}	2022-10-25 14:34:36	51.8 dB

		Statistics	
LC_{eq}	71.1 dB	**LA2.00**	65.1 dB
LA_{eq}	61.8 dB	**LA8.00**	64.0 dB
LC_{eq} - LA_{eq}	9.4 dB	**LA25.00**	63.0 dB
LAI_{eq}	62.8 dB	**LA50.00**	62.1 dB
LA_{eq}	61.8 dB	**LA66.60**	60.5 dB
LAI_{eq} - LA_{eq}	1.0 dB	**LA90.00**	55.6 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.128.s	Computer's File Name	LxT_0003099-20221025 142755-LxT_Data.128
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	NM2 33° 7'35.58"N 117° 5'28.54"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19703 503 West Mission Commercial Project), City of Escondido.		
Start Time	2022-10-25 14:27:55	Duration 0:15:00.0	
End Time	2022-10-25 14:42:55	Run Time 0:15:00.0	Pause Time 0:00:00.0

Results

Overall Metrics

LA_{eq}	61.8 dB		
LAE	91.3 dB	SEA	--- dB
EA	151.0 µPa²h	LAFTM5	63.7 dB
EA8	4.8 mPa²h		
EA40	24.2 mPa²h		
LA_{peak}	94.4 dB	2022-10-25 14:29:14	
LAS_{max}	69.0 dB	2022-10-25 14:36:04	
LAS_{min}	51.8 dB	2022-10-25 14:34:36	
LA_{eq}	61.8 dB		
LC_{eq}	71.1 dB	LC_{eq} - LA_{eq}	9.4 dB
LAI_{eq}	62.8 dB	LAI_{eq} - LA_{eq}	1.0 dB

Exceedances	Count	Duration
LAS > 65.0 dB	5	0:00:43.8
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

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

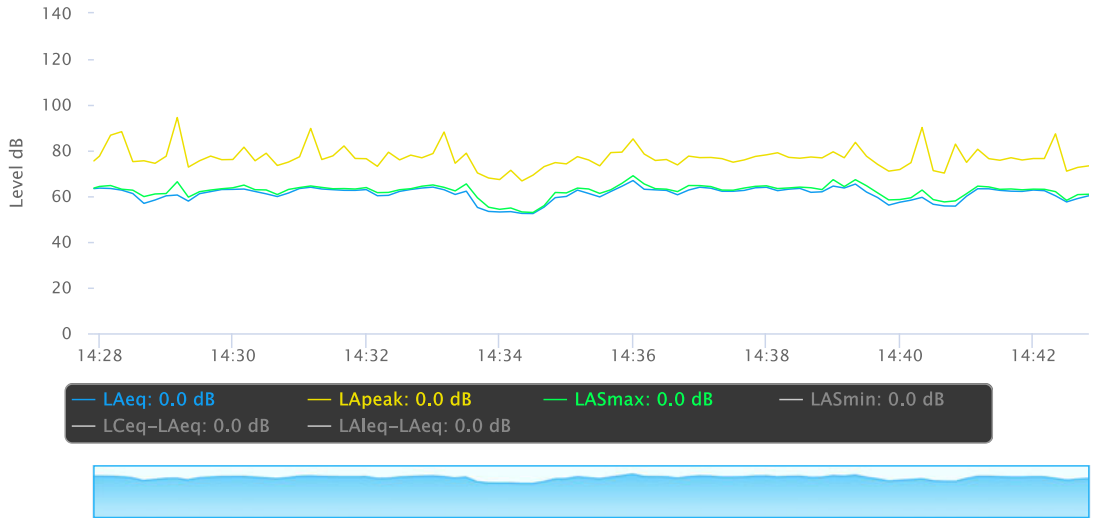
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	61.8 dB		71.1 dB		--- dB	
$L_{S(max)}$	69.0 dB	2022-10-25 14:36:04	--- dB		--- dB	
$L_{S(min)}$	51.8 dB	2022-10-25 14:34:36	--- dB		--- dB	
$L_{Peak(max)}$	94.4 dB	2022-10-25 14:29:14	--- dB		--- dB	

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

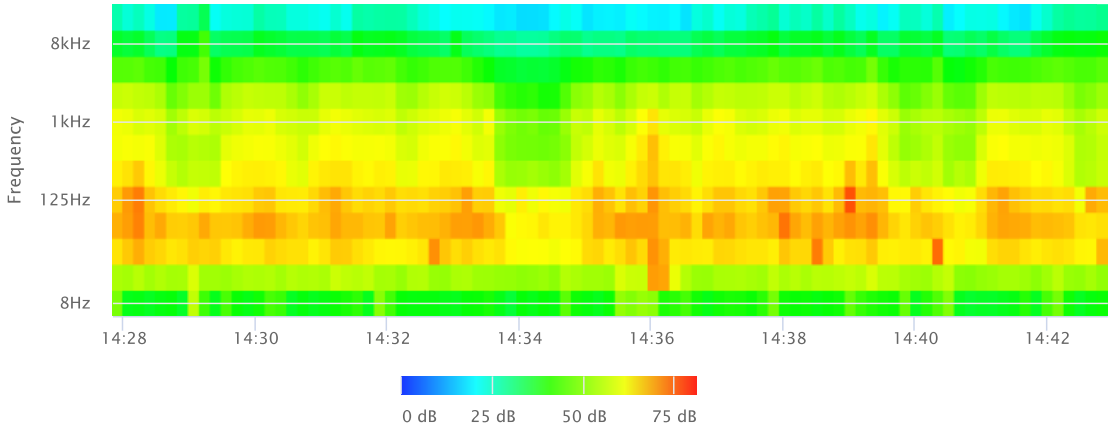
Statistics

LAS 2.0	65.1 dB
LAS 8.0	64.0 dB
LAS 25.0	63.0 dB
LAS 50.0	62.1 dB
LAS 66.6	60.5 dB
LAS 90.0	55.6 dB

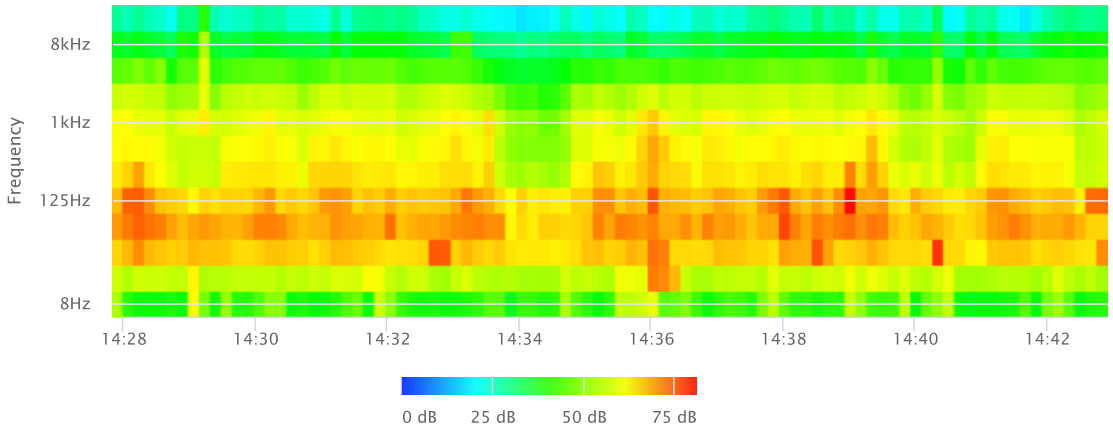
Time History



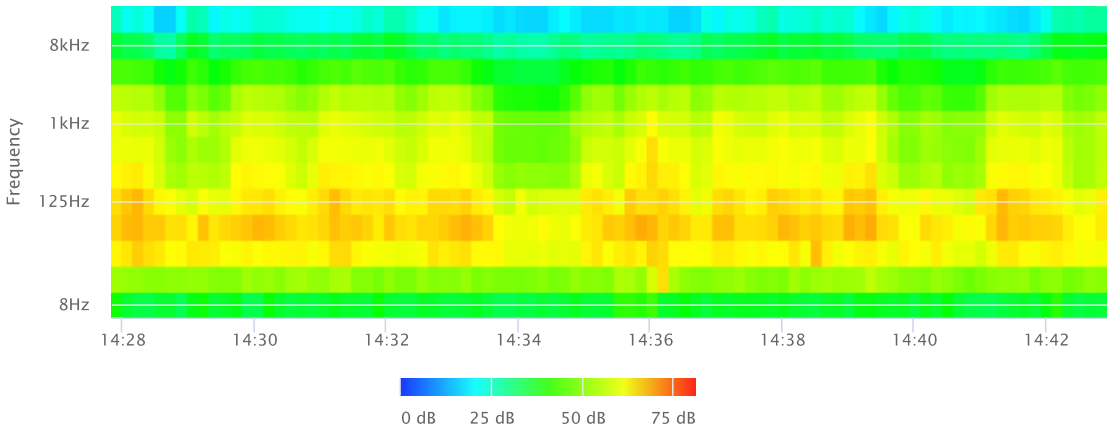
OBA 1/1 Leq



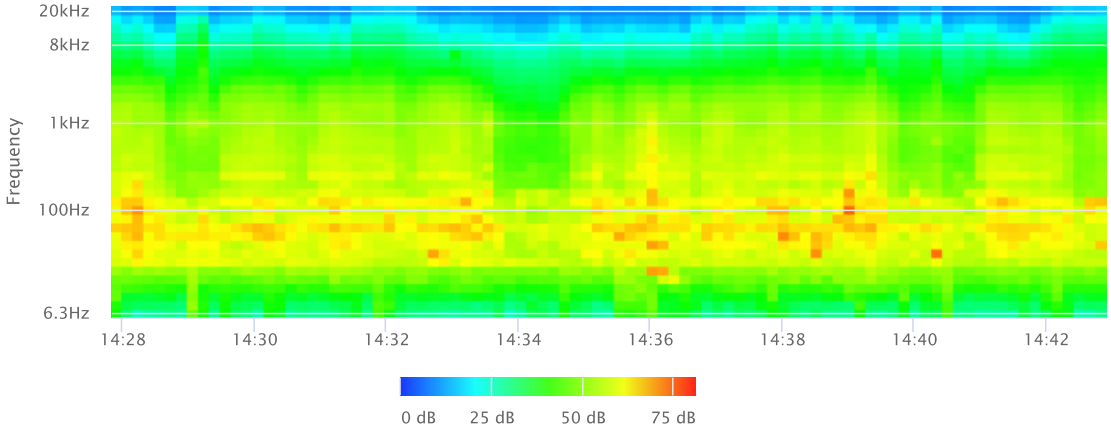
OBA 1/1 Lmax



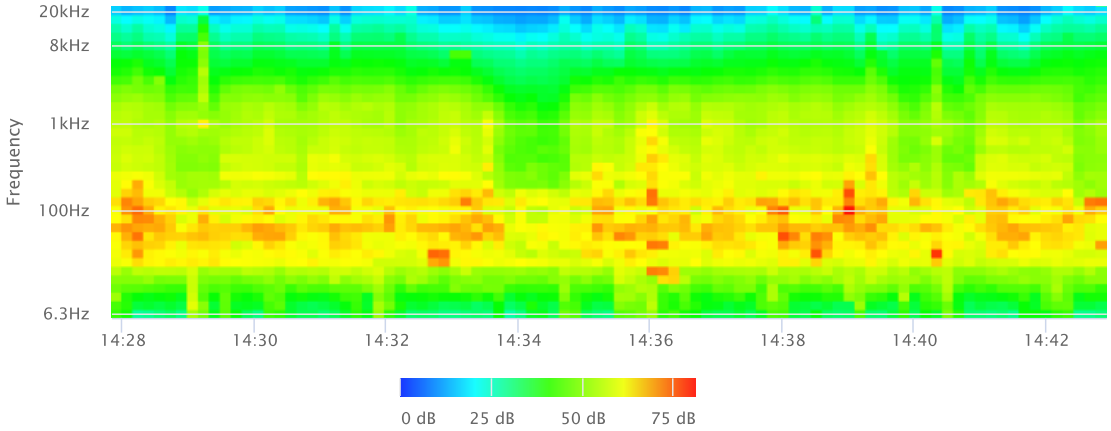
OBA 1/1 Lmin



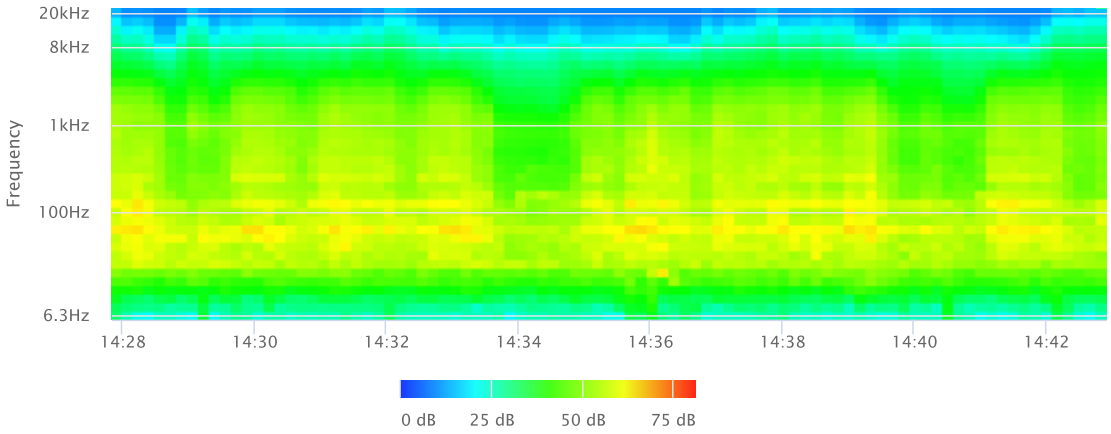
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
14:28
14:30
14:32
14:34
14:36
14:38
14:40
14:42
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: 503 West Mission Commercial Project, City of Escondido **Date:** October 25, 2022

Project #: 19703

Noise Measurement #: NM3 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 650 N Centre City Parkway, Escondido, CA 92025

Site Description (Type of Existing Land Use and any other notable features): NM3: Taken at NW corner gate to multifamily residences at 650 Centre City Pkwy. Adjacent: Centre City Pkwy to the W, car wash & various businesses to the N/NE, & multifamily residences to the E/SE.

Weather: Clear skies, sunny. Sunset: 6:05 PM **Settings:** SLOW FAST

Temperature: 77 deg F **Wind:** 9mph **Humidity:** 23% **Terrain:** Flat

Start Time: 3:00 PM **End Time:** 3:15 PM **Run Time:**

Leq:	71.3	dB
Lmax	87.5	dB
L2	76.9	dB
L8	74.8	dB
L25	72.5	dB
L50	68.5	dB

Primary Noise Source: Traffic noise from the 384 vehicles passing microphone traveling along Centre City Pkwy just W of NM3. Traffic ambiance from other roads.

Secondary Noise Sources: Occasional overhead air traffic. Bird song. Leaf rustle from 9mph breeze. Parking lot & residential ambiance. Noise from car wash blowers NE of NM3.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	10/25/2022		

Noise Measurement
Field Data

PHOTOS:

NM3 looking SSE down Centre City Pkwy towards W Washington Ave intersection (~610'). Building 650 N Centre City Pkwy, Escondido on the left of image.

NM3 looking NNE towards Super Star Carwash building, 680 Centre City Pkwy, Escondido. Car wash in operation.

Summary	
File Name on Meter	LxT_Data.129.s
File Name on PC	LxT_0003099-20221025 150011-LxT_Data.129.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM3 33° 7'36.37"N 117° 5'25.79"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19703 503 West Mission Commercial Project, City of Escondido.

Measurement	
Start	2022-10-25 15:00:11
Stop	2022-10-25 15:15:11
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2022-10-25 14:59:52
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	122.7 dB

Results			
LA_{eq}	71.3		
LAE	100.9		
EA	1.361008	mPa^2h	
EA8	43.55224	mPa^2h	
EA40	217.7612	mPa^2h	
$LA_{peak\ (max)}$	2022-10-25 15:12:15	104.9	dB
LAS_{max}	2022-10-25 15:12:16	87.5	dB
LAS_{min}	2022-10-25 15:12:02	55.2	dB

		Statistics	
LC_{eq}	79.0 dB	**LA2.00**	76.9 dB
LA_{eq}	71.3 dB	**LA8.00**	74.8 dB
LC_{eq} - LA_{eq}	7.7 dB	**LA25.00**	72.5 dB
LAI_{eq}	72.4 dB	**LA50.00**	68.5 dB
LA_{eq}	71.3 dB	**LA66.60**	66.4 dB
LAI_{eq} - LA_{eq}	1.1 dB	**LA90.00**	63.5 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.129.s	Computer's File Name	LxT_0003099-20221025 150011-LxT_Data.129
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	NM3 33° 7'36.37"N 117° 5'25.79"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19703 503 West Mission Commercial Project, City of Escondido.		
Start Time	2022-10-25 15:00:11	Duration 0:15:00.0	
End Time	2022-10-25 15:15:11	Run Time 0:15:00.0	Pause Time 0:00:00.0

Results

Overall Metrics

LA_{eq}	71.3 dB		
LAE	100.9 dB	SEA	--- dB
EA	1.4 mPa²h	LAFTM5	75.2 dB
EA8	43.6 mPa²h		
EA40	217.8 mPa²h		
LA_{peak}	104.9 dB	2022-10-25 15:12:15	
LAS_{max}	87.5 dB	2022-10-25 15:12:16	
LAS_{min}	55.2 dB	2022-10-25 15:12:02	
LA_{eq}	71.3 dB		
LC_{eq}	79.0 dB	LC_{eq} - LA_{eq}	7.7 dB
LAI_{eq}	72.4 dB	LAI_{eq} - LA_{eq}	1.1 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	9	0:13:29.6
LAS > 85.0 dB	1	0:00:02.9
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
--- dB	--- dB	0.0 dB

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

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	71.3 dB		79.0 dB		--- dB	
$L_{S(max)}$	87.5 dB	2022-10-25 15:12:16	--- dB		--- dB	
$L_{S(min)}$	55.2 dB	2022-10-25 15:12:02	--- dB		--- dB	
$L_{Peak(max)}$	104.9 dB	2022-10-25 15:12:15	--- dB		--- dB	

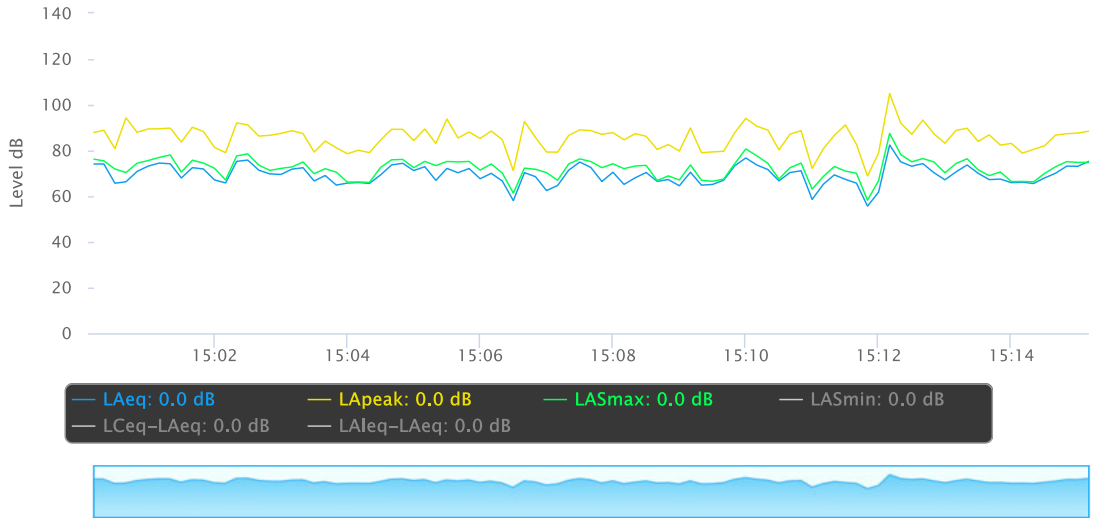
Overloads

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

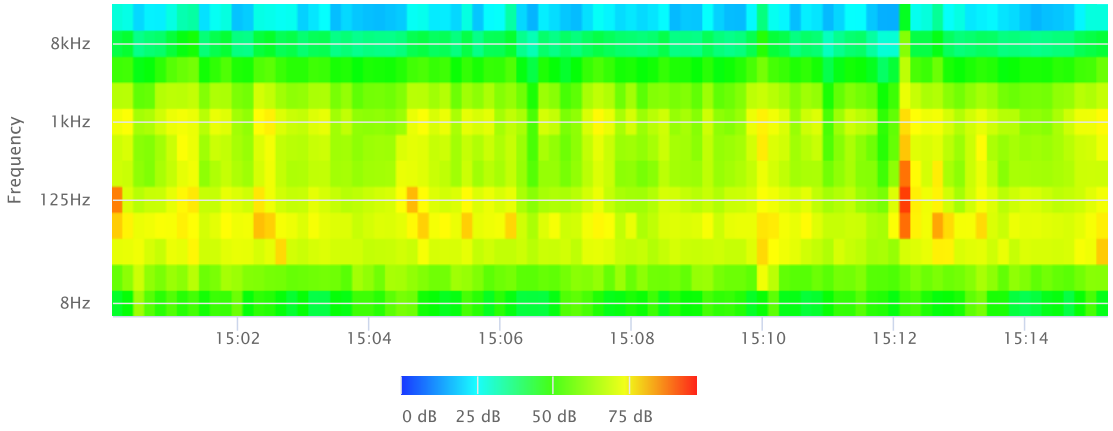
Statistics

LAS 2.0	76.9 dB
LAS 8.0	74.8 dB
LAS 25.0	72.5 dB
LAS 50.0	68.5 dB
LAS 66.6	66.4 dB
LAS 90.0	63.5 dB

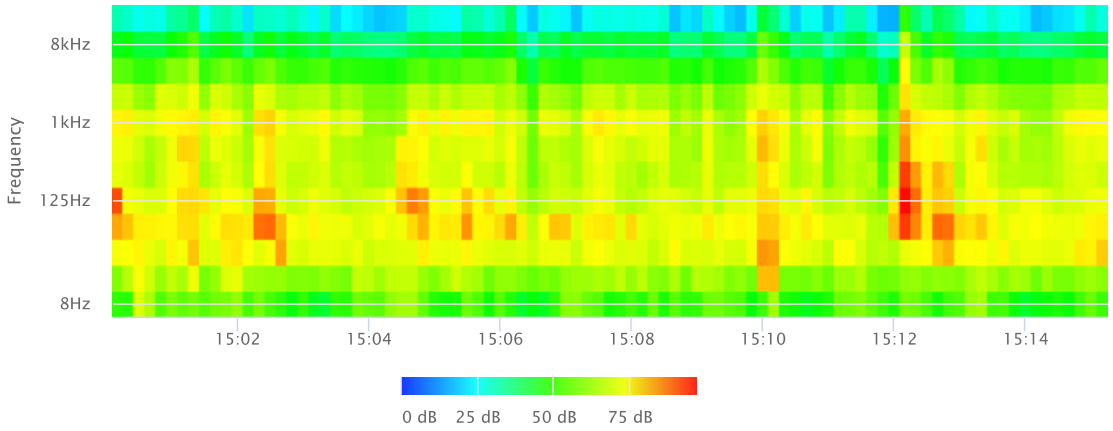
Time History



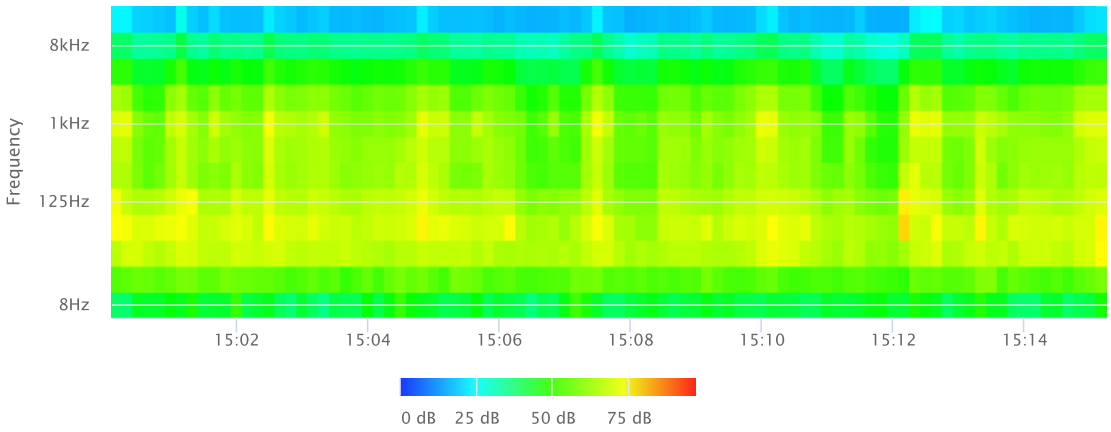
OBA 1/1 Leq



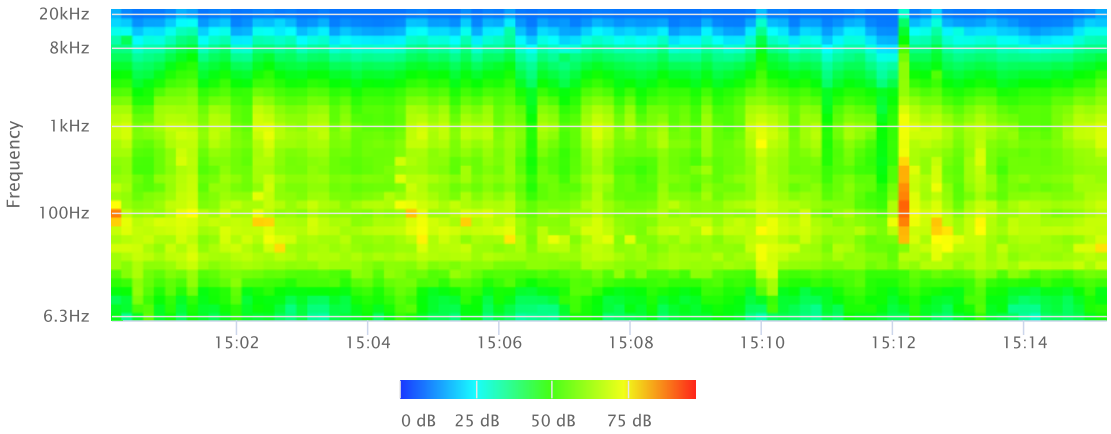
OBA 1/1 Lmax



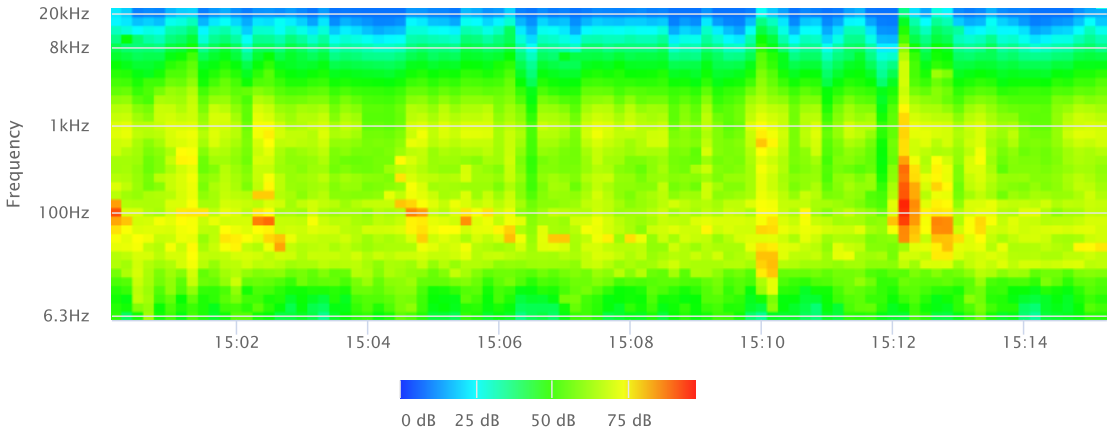
OBA 1/1 Lmin



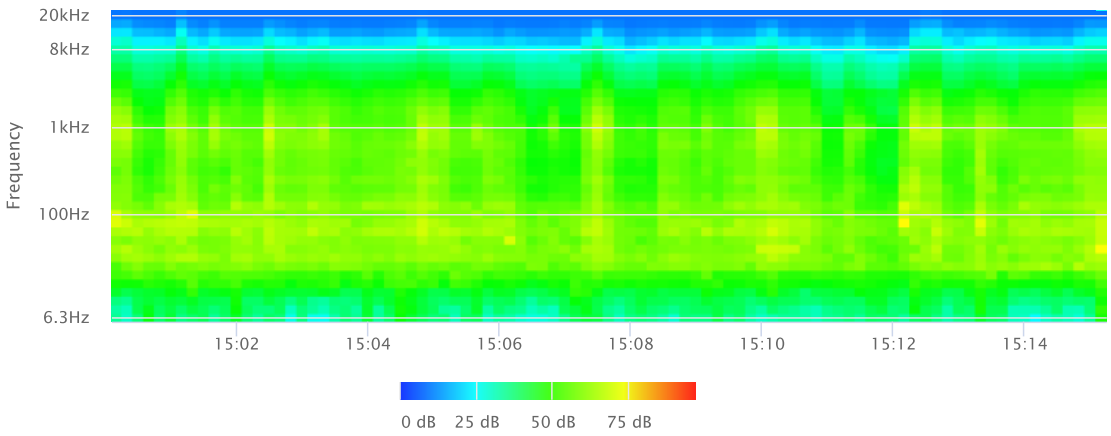
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
15:02
15:04
15:06
15:08
15:10
15:12
15:14
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: 503 West Mission Commercial Project, City of Escondido **Date:** October 25, 2022

Project #: 19703

Noise Measurement #: NM4 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 700 Centre City Parkway, Escondido, CA 92025

Site Description (Type of Existing Land Use and any other notable features): NM4: Taken within parking area near SE corner of Bldg 700 Centre City Pkwy. Adjacent: Centre City Pkwy ~150' to the W, car wash tunnel exit (blowers) ~70' to the SW, commercial uses w/ associated parking surrouding, & Epiphany Prep Charter School building to east.

Weather: Clear skies, sunny. Sunset: 6:05 PM **Settings:** SLOW FAST

Temperature: 77 deg F **Wind:** 9mph **Humidity:** 23% **Terrain:** Flat

Start Time: 3:22 PM **End Time:** 3:37 PM **Run Time:**

Leq:	75.9	dB	**Primary Noise Source:** Noise from carwash blowers ~65' SW of microphone & music being played
Lmax	78.9	dB	throughout carwash detailing area.
L2	78.5	dB	**Secondary Noise Sources:** Noise from traffic traveling on Centre City Pkwy. Occasional overhead air traffic.
L8	78.1	dB	Parking lot ambiance. Leaf rustle from breeze. Traffic ambiance from other roads.
L25	77.4	dB	
L50	76.3	dB	

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	10/25/2022		

Noise Measurement
Field Data

PHOTOS:

NM4 looking directly at exit & blowers to carwash building, 680 Centre City Pkwy, Escondido (~65' SW of microphone).

NM4 looking W down access road from parking lot to Centre City Pkwy intersection (~150'). Carwash, 680 Centre City Pkwy, on the left of image & commercial building, 700 Centre City Pkwy, on the right.

Summary	
File Name on Meter	LxT_Data.130.s
File Name on PC	LxT_0003099-20221025 152248-LxT_Data.130.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM4 33° 7'39.09"N 117° 5'25.47"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19703 503 West Mission Commercial Project, City of Escondido.

Measurement	
Start	2022-10-25 15:22:48
Stop	2022-10-25 15:37:48
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2022-10-25 15:22:32
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	122.8 dB

Results		
LA_{eq}	75.9	
LAE	105.5	
EA	3.933913	mPa^2h
EA8	125.8852	mPa^2h
EA40	629.4261	mPa^2h
$LA_{peak\ (max)}$	2022-10-25 15:28:21	92.9 dB
LAS_{max}	2022-10-25 15:28:30	78.9 dB
LAS_{min}	2022-10-25 15:31:31	63.7 dB

		Statistics	
LC_{eq}	80.2 dB	**LA2.00**	78.5 dB
LA_{eq}	75.9 dB	**LA8.00**	78.1 dB
LC_{eq} - LA_{eq}	4.3 dB	**LA25.00**	77.4 dB
LAI_{eq}	76.4 dB	**LA50.00**	76.3 dB
LA_{eq}	75.9 dB	**LA66.60**	75.0 dB
LAI_{eq} - LA_{eq}	0.4 dB	**LA90.00**	69.3 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.130.s	Computer's File Name	LxT_0003099-20221025 152248-LxT_Data.13(
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	NM4 33° 7'39.09"N 117° 5'25.47"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19703 503 West Mission Commercial Project, City of Escondido.		
Start Time	2022-10-25 15:22:48	Duration	0:15:00.0
End Time	2022-10-25 15:37:48	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	75.9 dB		
LAE	105.5 dB	SEA	--- dB
EA	3.9 mPa²h	LAFTM5	77.2 dB
EA8	125.9 mPa²h		
EA40	629.4 mPa²h		
LA_{peak}	92.9 dB	2022-10-25 15:28:21	
LAS_{max}	78.9 dB	2022-10-25 15:28:30	
LAS_{min}	63.7 dB	2022-10-25 15:31:31	
LA_{eq}	75.9 dB		
LC_{eq}	80.2 dB	LC_{eq} - LA_{eq}	4.3 dB
LAI_{eq}	76.4 dB	LAI_{eq} - LA_{eq}	0.4 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	1	0:14:59.9
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
--- dB	--- dB	0.0 dB

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

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	75.9 dB		80.2 dB		--- dB	
$L_{S(max)}$	78.9 dB	2022-10-25 15:28:30	--- dB		--- dB	
$L_{S(min)}$	63.7 dB	2022-10-25 15:31:31	--- dB		--- dB	
$L_{Peak(max)}$	92.9 dB	2022-10-25 15:28:21	--- dB		--- dB	

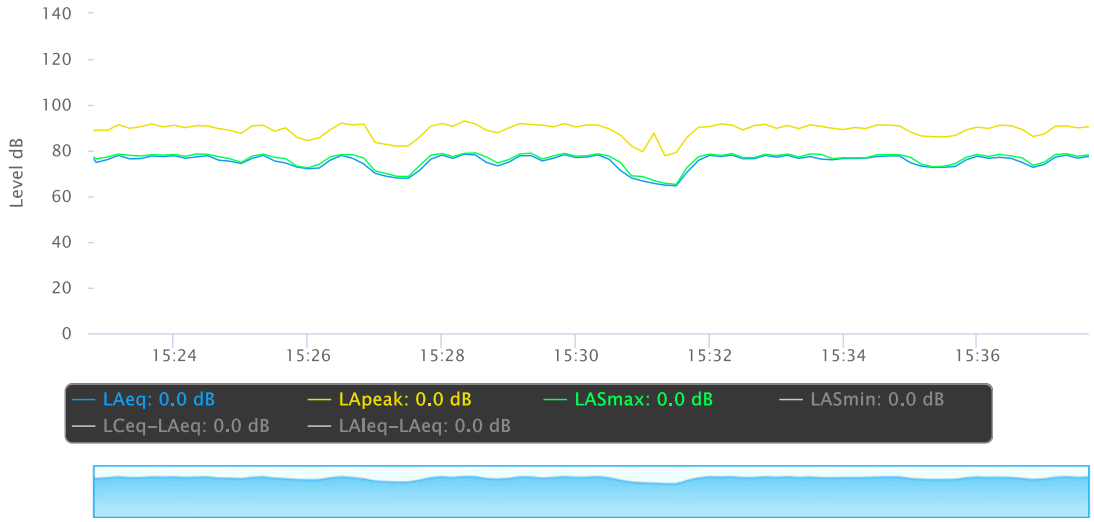
Overloads

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

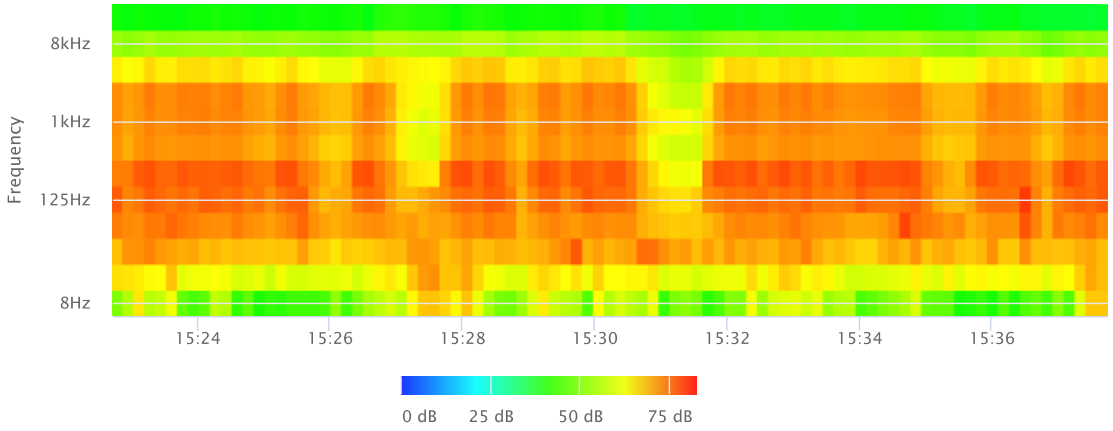
Statistics

LAS 2.0	78.5 dB
LAS 8.0	78.1 dB
LAS 25.0	77.4 dB
LAS 50.0	76.3 dB
LAS 66.6	75.0 dB
LAS 90.0	69.3 dB

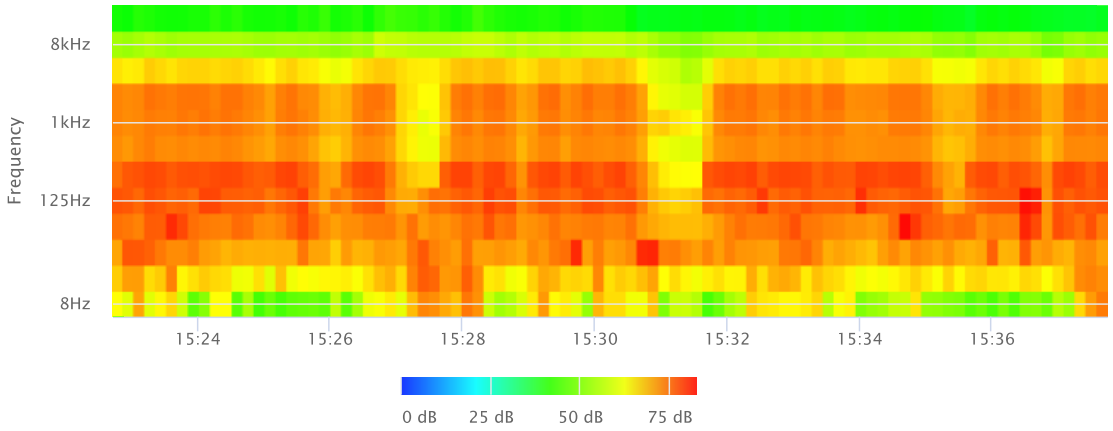
Time History



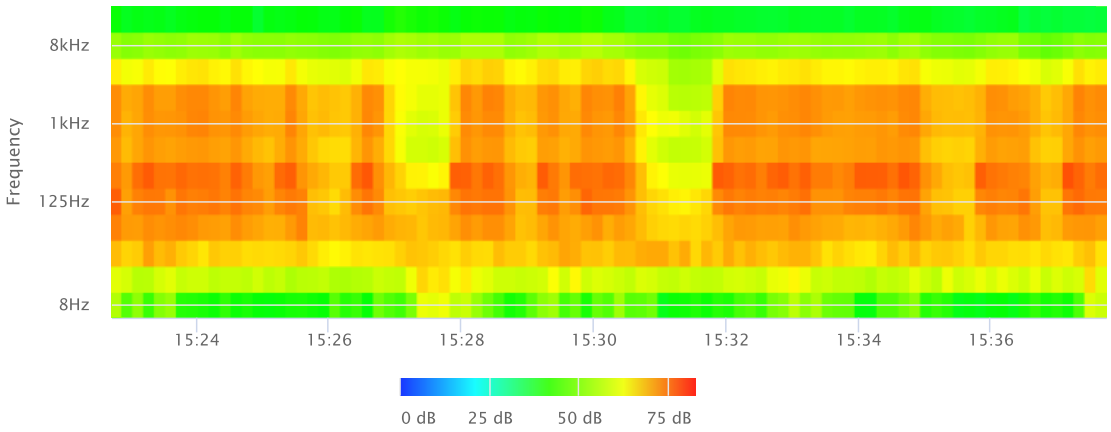
OBA 1/1 Leq



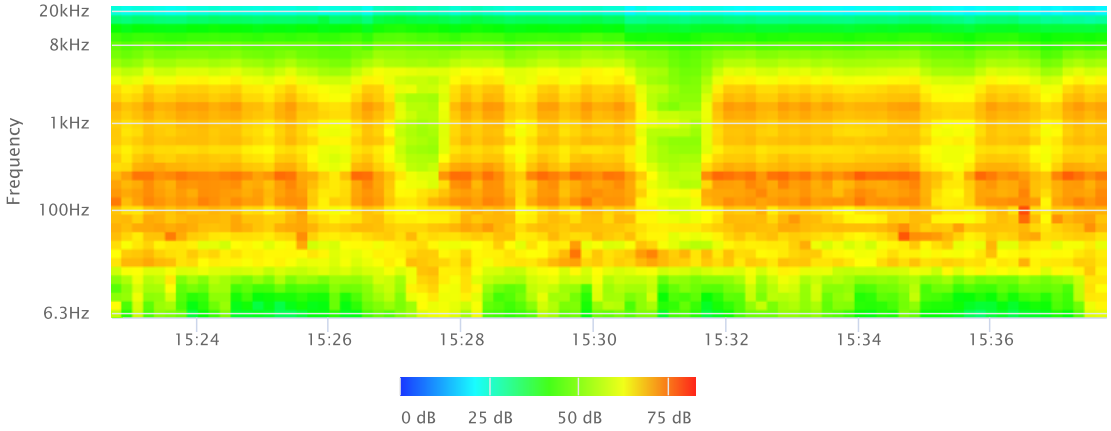
OBA 1/1 Lmax



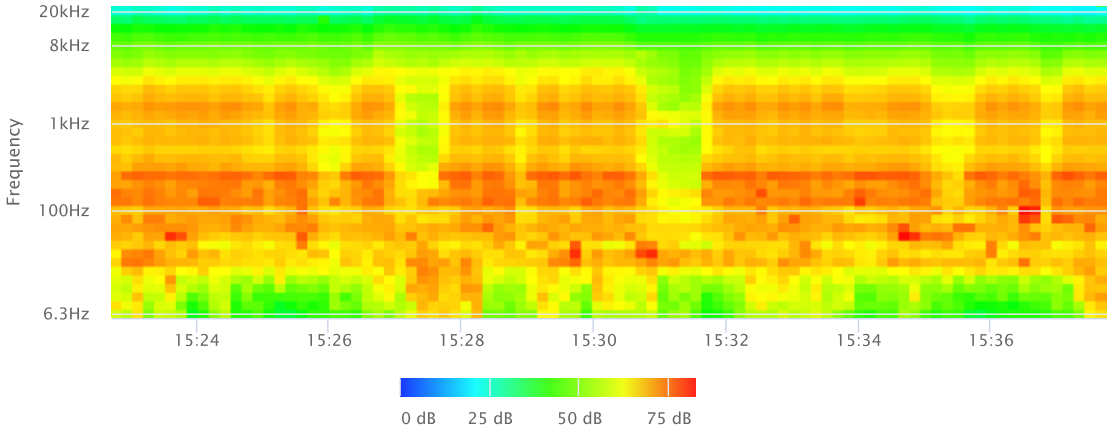
OBA 1/1 Lmin



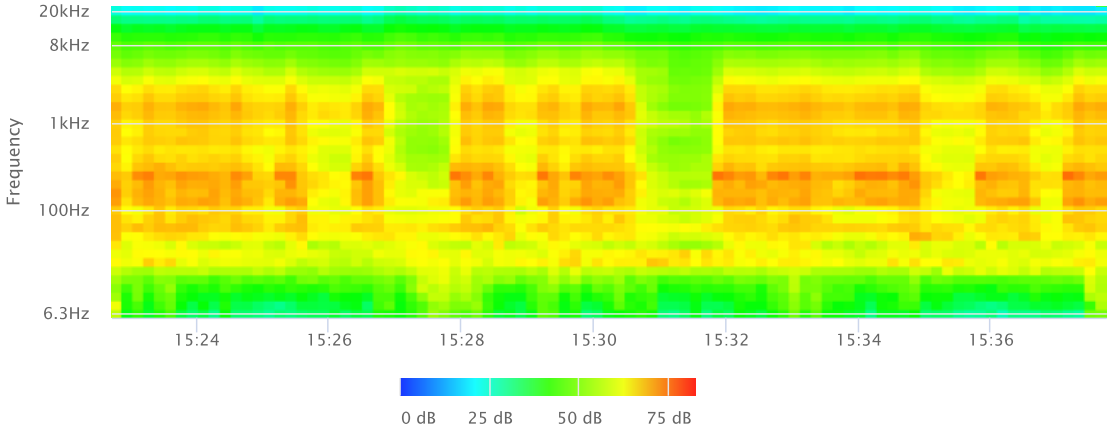
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
15:24
15:26
15:28
15:30
15:32
15:34
15:36
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: 503 West Mission Commercial Project, City of Escondido **Date:** October 25, 2022

Project #: 19703

Noise Measurement #: NM5 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 720 Centre City Parkway, Escondido, CA 92025

Site Description (Type of Existing Land Use and any other notable features): NM5: Taken just E of Centre City Pkwy & just W of the drive-trhough associated with 720 Centre City Pkwy. Adjacent: Centre City Pkwy to W, Centre City Pkwy & W Mission Ave intersection ~120' N, & fast-food restaurant to east.

Weather: Clear skies, sunny. Sunset: 6:05 PM **Settings:** SLOW FAST

Temperature: 77 deg F **Wind:** 9mph **Humidity:** 23% **Terrain:** Flat

Start Time: 3:48 PM **End Time:** 4:03 PM **Run Time:**

Leq: 69.3 dB

Lmax 84.4 dB

L2 76.6 dB

L8 73.8 dB

L25 69.6 dB

L50 65.2 dB

Primary Noise Source: Traffic noise from the 414 vehicles passing microphone traveling along Centre City Pkwy. Traffic noise from vehicles traveling along W Mission Ave.

Secondary Noise Sources: Carwash ambiance from bldg 680 Centre City Pkwy. Occasional overhead air traffic. Leaf rustle from breeze. Traffic ambiance from other roads.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	10/25/2022		

Noise Measurement
Field Data

PHOTOS:

NM5 looking NNW along Centre City Pkwy towards W Mission Ave intersection (~120').

NM5 looking W across Centre City Pkwy towards building 503 W Mission Ave, Escondido (at SW corner of intersection). Building is vacant.

Summary	
File Name on Meter	LxT_Data.131.s
File Name on PC	LxT_0003099-20221025 154823-LxT_Data.131.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM5 33° 7'41.09"N 117° 5'28.25"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19703 503 West Mission Commercial Project, City of Escondido.

Measurement	
Start	2022-10-25 15:48:23
Stop	2022-10-25 16:03:23
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2022-10-25 15:48:02
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	122.8 dB

Results			
LA_{eq}		69.3	
LAE		98.8	
EA		849.2092	µPa²h
EA8		27.17469	mPa²h
EA40		135.8735	mPa²h
$LA_{peak\ (max)}$	2022-10-25 15:57:50	104.8	dB
LAS_{max}	2022-10-25 15:57:50	84.4	dB
LAS_{min}	2022-10-25 15:52:51	56.1	dB

		Statistics	
LC_{eq}	78.7 dB	**LA2.00**	76.6 dB
LA_{eq}	69.3 dB	**LA8.00**	73.8 dB
LC_{eq} - LA_{eq}	9.4 dB	**LA25.00**	69.6 dB
LAI_{eq}	71.7 dB	**LA50.00**	65.2 dB
LA_{eq}	69.3 dB	**LA66.60**	63.5 dB
LAI_{eq} - LA_{eq}	2.4 dB	**LA90.00**	60.7 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.131.s	Computer's File Name	LxT_0003099-20221025 154823-LxT_Data.131
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	NM5 33° 7'41.09"N 117° 5'28.25"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19703 503 West Mission Commercial Project, City of Escondido.		
Start Time	2022-10-25 15:48:23	Duration 0:15:00.0	
End Time	2022-10-25 16:03:23	Run Time 0:15:00.0	Pause Time 0:00:00.0

Results

Overall Metrics

LA_{eq}	69.3 dB		
LAE	98.8 dB	SEA	--- dB
EA	849.2 µPa²h	LAFTM5	74.1 dB
EA8	27.2 mPa²h		
EA40	135.9 mPa²h		
LA_{peak}	104.8 dB	2022-10-25 15:57:50	
LAS_{max}	84.4 dB	2022-10-25 15:57:50	
LAS_{min}	56.1 dB	2022-10-25 15:52:51	
LA_{eq}	69.3 dB		
LC_{eq}	78.7 dB	LC_{eq} - LA_{eq}	9.4 dB
LAI_{eq}	71.7 dB	LAI_{eq} - LA_{eq}	2.4 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	23	0:09:06.0
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
--- dB	--- dB	0.0 dB

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

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	69.3 dB		78.7 dB		--- dB	
$L_{S(max)}$	84.4 dB	2022-10-25 15:57:50	--- dB		--- dB	
$L_{S(min)}$	56.1 dB	2022-10-25 15:52:51	--- dB		--- dB	
$L_{Peak(max)}$	104.8 dB	2022-10-25 15:57:50	--- dB		--- dB	

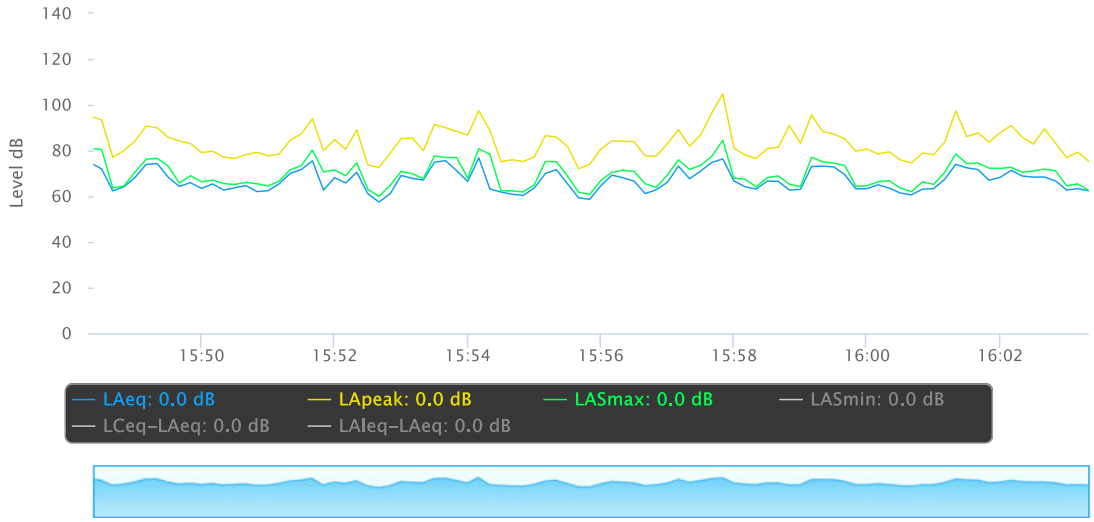
Overloads

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

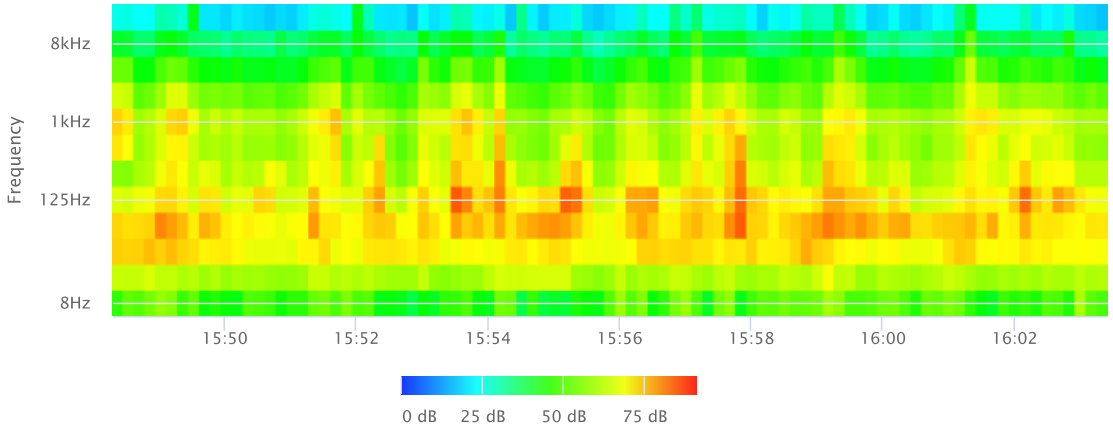
Statistics

LAS 2.0	76.6 dB
LAS 8.0	73.8 dB
LAS 25.0	69.6 dB
LAS 50.0	65.2 dB
LAS 66.6	63.5 dB
LAS 90.0	60.7 dB

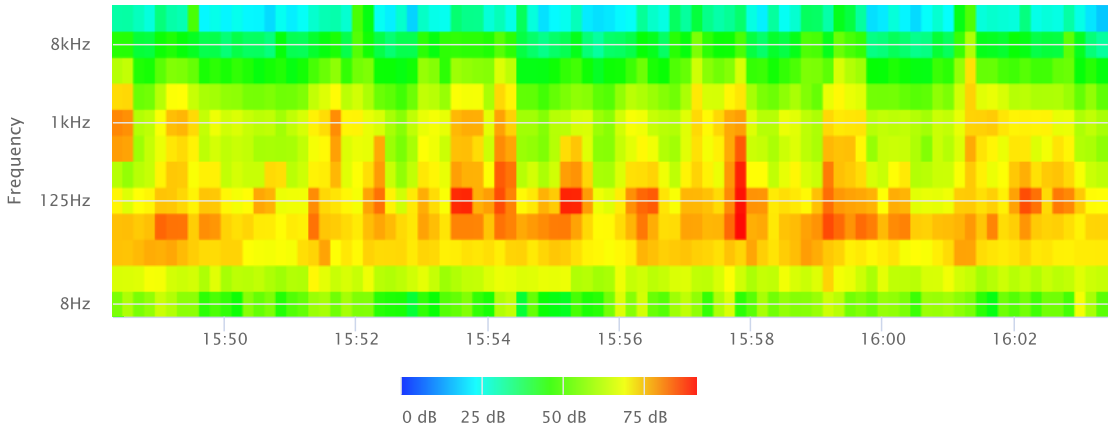
Time History



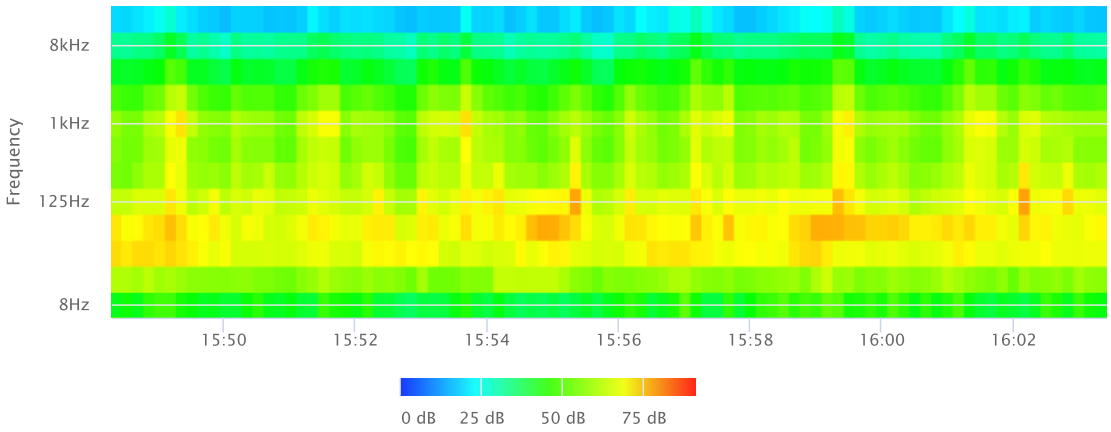
OBA 1/1 Leq



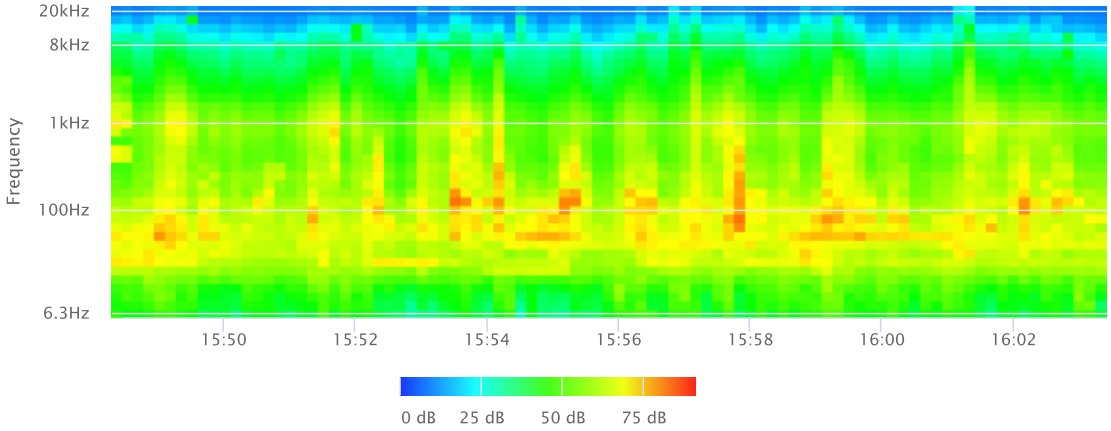
OBA 1/1 Lmax



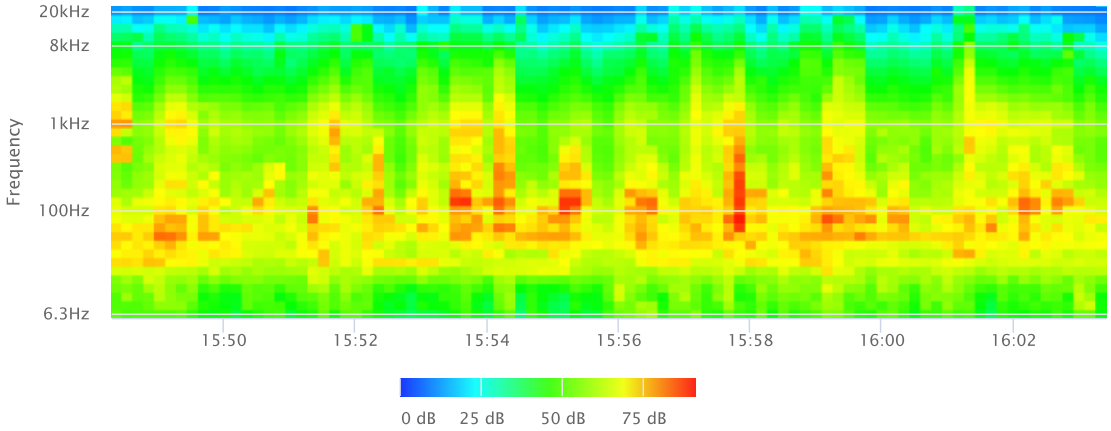
OBA 1/1 Lmin



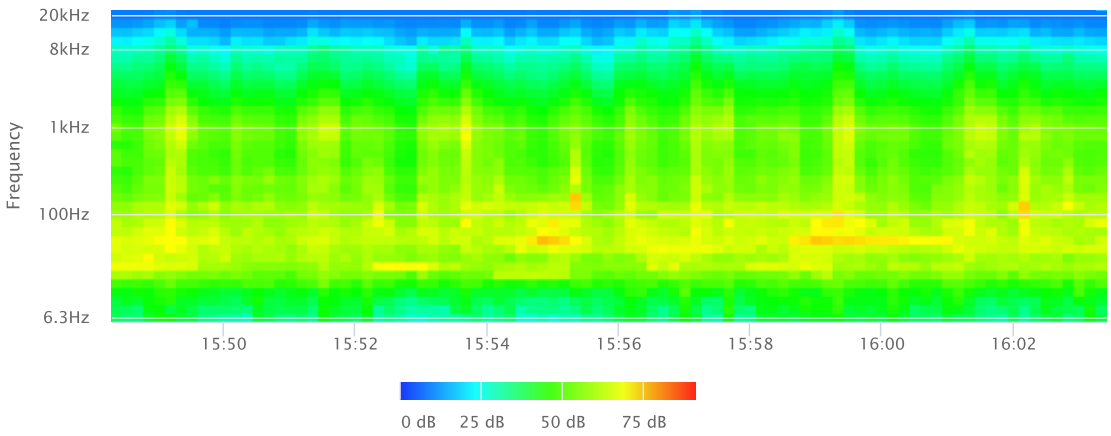
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
15:50
15:52
15:54
15:56
15:58
16:00
16:02
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: 503 West Mission Commercial Project, City of Escondido **Date:** October 25, 2022

Project #: 19703

Noise Measurement #: NM6 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 503 W Mission Ave, Escondido, CA 92025

Site Description (Type of Existing Land Use and any other notable features): NM6: Taken in northern portion of project site within the pavement located between 515 & 503 W Mission Ave, Escondido. Adjacent: Centre City Pkwy ~125' ENE, Centre City Parkway & W Mission Ave intersection ~100' NNW, auto repair building to west, emtpty commerial building to east, and hotel use to south.

Weather: Clear skies, sunny. Sunset: 6:05 PM **Settings:** SLOW FAST

Temperature: 77 deg F **Wind:** 9mph **Humidity:** 23% **Terrain:** Flat

Start Time: 4:15 PM **End Time:** 4:30 PM **Run Time:**

Leq:	63	dB	**Primary Noise Source:** Traffic noise from the 438 vehicles traveling along W Mission Ave during
Lmax	78.1	dB	measurement. Traffic noise from vehicles traveling on Centre City Pkwy.
L2	72.1	dB	**Secondary Noise Sources:** Carwash ambiance from bldg 680 Centre City Pkwy. Occasional overhead air traffic.
L8	65.4	dB	Leaf rustle from breeze. Traffic ambiance from other roads. Auto repair ambiance.
L25	62.2	dB	
L50	60.0	dB	

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	10/25/2022		

Noise Measurement
Field Data

PHOTOS:

NM6 looking W towards Ben's Auto Repair, 515 W Mission Ave, Escondido.

NM6 looking NNW atowards W mission Ave (~100').
Vacated building, 503 W Mission Ave, Escondido, on the right of image.

Summary	
File Name on Meter	LxT_Data.132.s
File Name on PC	LxT_0003099-20221025 161522-LxT_Data.132.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM6 33° 7'40.51"N 117° 5'31.24"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19703 503 West Mission Commercial Project,City of Escondido.

Measurement	
Start	2022-10-25 16:15:22
Stop	2022-10-25 16:30:22
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2022-10-25 16:15:03
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	122.7 dB

Results						
LA_{eq}	63.0					
LAE	92.5					
EA	198.172	µPa²h				
EA8	6.341505	mPa²h				
EA40	31.70753	mPa²h				
$LA_{peak\ (max)}$	2022-10-25 16:17:52	101.5 dB				
LAS_{max}	2022-10-25 16:17:52	78.1 dB				
LAS_{min}	2022-10-25 16:29:49	55.3 dB				
			Statistics			
LC_{eq}	76.2 dB		**LA2.00**	72.1 dB		
LA_{eq}	63.0 dB		**LA8.00**	65.4 dB		
LC_{eq} - LA_{eq}	13.3 dB		**LA25.00**	62.2 dB		
LAI_{eq}	65.3 dB		**LA50.00**	60.0 dB		
LA_{eq}	63.0 dB		**LA66.60**	58.9 dB		
LAI_{eq} - LA_{eq}	2.3 dB		**LA90.00**	57.3 dB		
Overload Count	0					

Measurement Report

Report Summary

Meter's File Name	LxT_Data.132.s	Computer's File Name	LxT_0003099-20221025 161522-LxT_Data.132
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	NM6 33° 7'40.51"N 117° 5'31.24"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19703 503 West Mission Commercial Project, City of Escondido.		
Start Time	2022-10-25 16:15:22	Duration 0:15:00.0	
End Time	2022-10-25 16:30:22	Run Time 0:15:00.0	Pause Time 0:00:00.0

Results

Overall Metrics

LA_{eq}	63.0 dB		
LAE	92.5 dB	SEA	--- dB
EA	198.2 µPa²h	LAFTM5	67.0 dB
EA8	6.3 mPa²h		
EA40	31.7 mPa²h		
LA_{peak}	101.5 dB	2022-10-25 16:17:52	
LAS_{max}	78.1 dB	2022-10-25 16:17:52	
LAS_{min}	55.3 dB	2022-10-25 16:29:49	
LA_{eq}	63.0 dB		
LC_{eq}	76.2 dB	LC_{eq} - LA_{eq}	13.3 dB
LAI_{eq}	65.3 dB	LAI_{eq} - LA_{eq}	2.3 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	13	0:01:45.9
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
--- dB	--- dB	0.0 dB

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

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	63.0 dB		76.2 dB		--- dB	
$L_{S(max)}$	78.1 dB	2022-10-25 16:17:52	--- dB		--- dB	
$L_{S(min)}$	55.3 dB	2022-10-25 16:29:49	--- dB		--- dB	
$L_{Peak(max)}$	101.5 dB	2022-10-25 16:17:52	--- dB		--- dB	

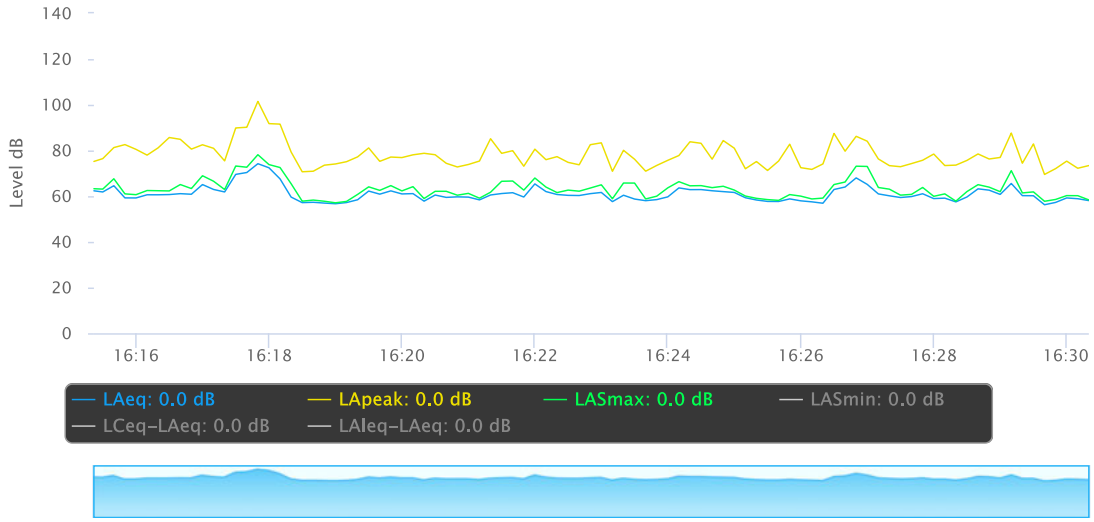
Overloads

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

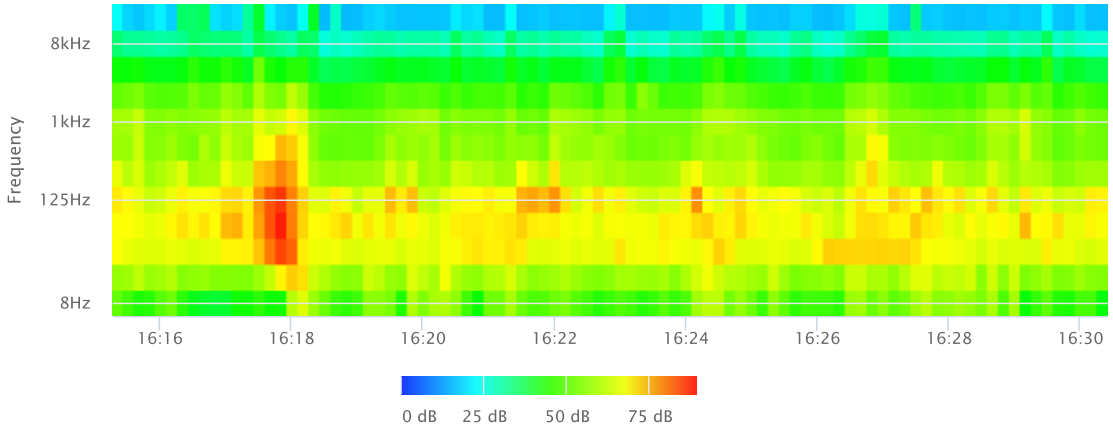
Statistics

LAS 2.0	72.1 dB
LAS 8.0	65.4 dB
LAS 25.0	62.2 dB
LAS 50.0	60.0 dB
LAS 66.6	58.9 dB
LAS 90.0	57.3 dB

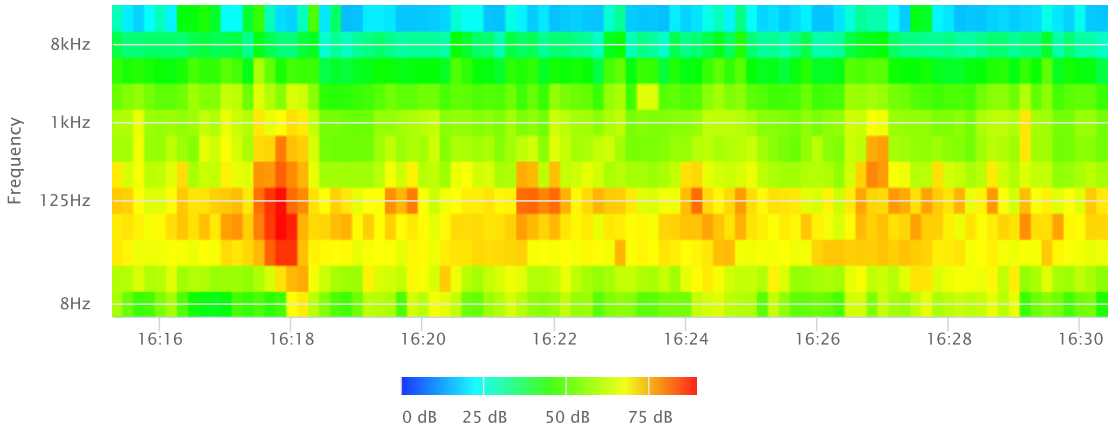
Time History



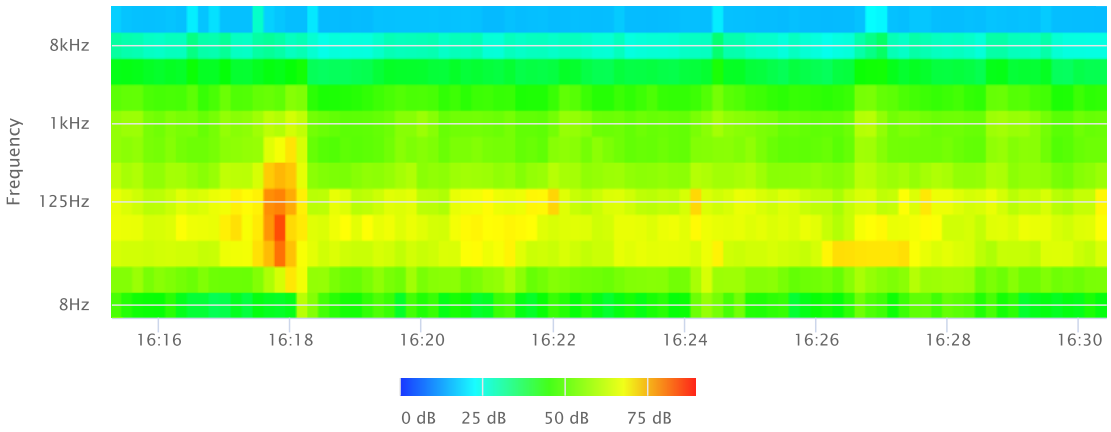
OBA 1/1 Leq



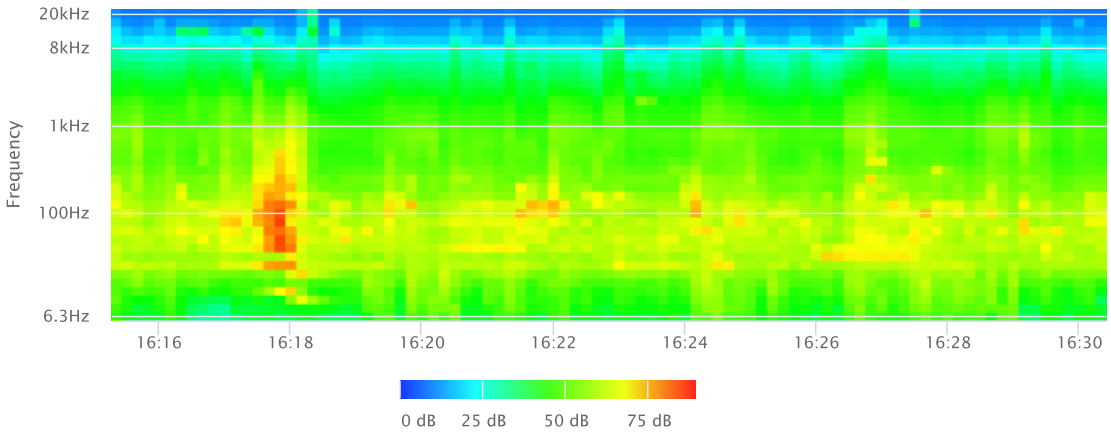
OBA 1/1 Lmax



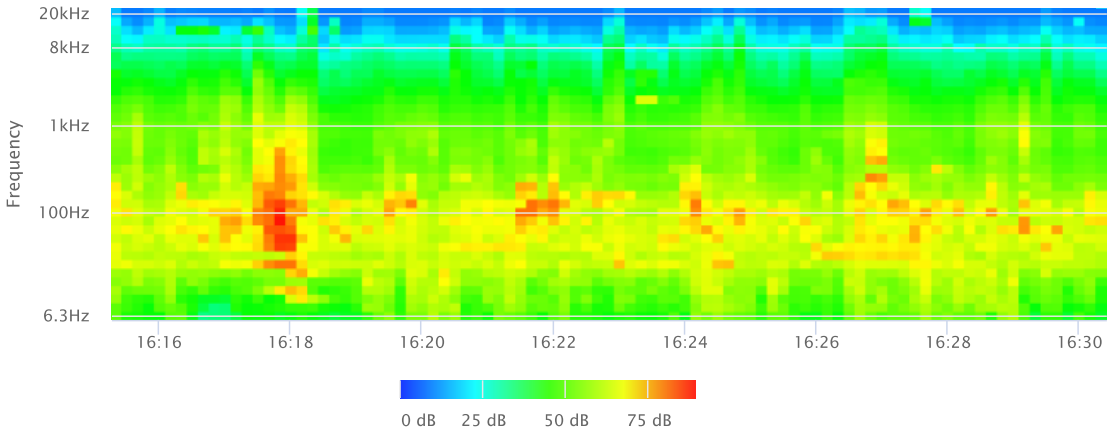
OBA 1/1 Lmin



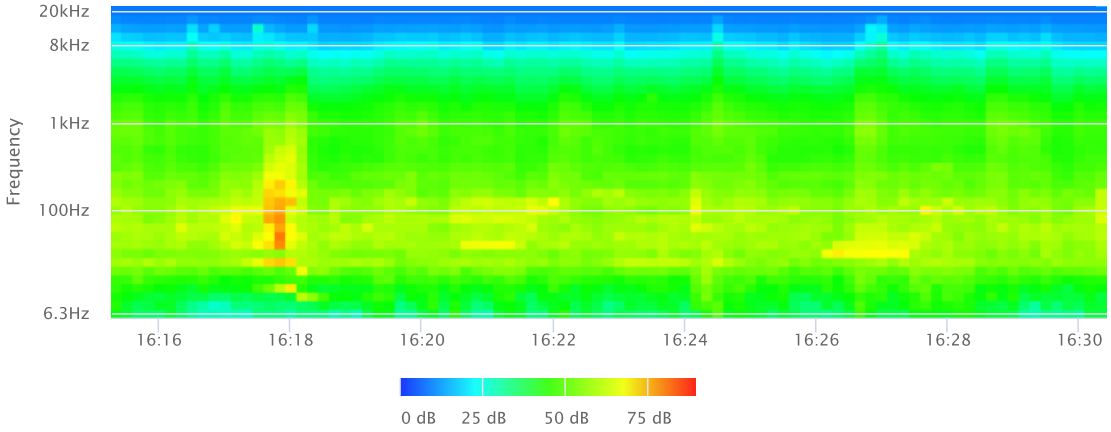
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
16:16
16:18
16:20
16:22
16:24
16:26
16:28
16:30
0 dB
25 dB
50 dB
75 dB

APPENDIX D

CONSTRUCTION NOISE MODELING

Receptor - Commercial use to the west (Ben's Auto Repair, 515 Mission Avenue, Escondido)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA	Best Management Practice (BMP)	Noise Level with BMP	Reduction (dBA Leq)
Demolition												
Concrete/Industrial Saws	1	90	110	20	0.20	-6.8	-7.0	83.2	76.2	Enclosure or Acoustic Tent (6 dB Reduction)	70.2	
Rubber Tired Dozers	1	82	110	40	0.40	-6.8	-4.0	75.2	71.2	Muffler (6 dB Reduction)	65.2	6.0
Tractors/Loaders/Backhoes	3	84	110	40	1.20	-6.8	0.8	77.2	77.9	Muffler (6 dB Reduction)	71.9	
								Log Sum	80.7		74.7	
Site Preparation												
Graders	1	85	202	40	0.40	-12.1	-4.0	72.9	68.9	Muffler (6 dB Reduction)	62.9	
Rubber Tired Dozers	1	82	202	40	0.40	-12.1	-4.0	69.9	65.9	Muffler (6 dB Reduction)	59.9	6.0
Tractors/Loaders/Backhoes	1	84	202	40	0.40	-12.1	-4.0	71.9	67.9	Muffler (6 dB Reduction)	61.9	
								Log Sum	72.5		66.5	
Grading												
Rubber Tired Dozers	1	82	202	40	0.40	-12.1	-4.0	69.9	65.9	Muffler (9 dB Reduction)	56.9	
Tractors/Loaders/Backhoes	1	84	202	40	0.40	-12.1	-4.0	71.9	67.9	Muffler (9 dB Reduction)	58.9	
Plate Compactor	1	83	202	20	0.20	-12.1	-7.0	70.9	63.9	n/a	63.9	5.8
Excavator	1	81	202	40	0.40	-12.1	-4.0	68.9	64.9	Muffler (9 dB Reduction)	55.9	
								Log Sum	71.9		66.1	
Building Construction												
Cranes	2	81	202	16	0.32	-12.1	-4.9	68.9	63.9	Muffler (8 dB Reduction)	55.9	
Forklifts[2]	2	48	202	40	0.80	-12.1	-1.0	35.9	34.9	n/a	34.9	
Generator Sets	1	81	202	50	0.50	-12.1	-3.0	68.9	65.9	Enclosure or Acoustic Tent (8 dB Reduction)	57.9	**6.3**
Welders	3	74	202	40	1.20	-12.1	0.8	61.9	62.7	n/a	62.7	
Tractors/Loaders/Backhoes	2	84	202	40	0.80	-12.1	-1.0	71.9	70.9	Muffler (8 dB Reduction)	62.9	
								Log Sum	73.1		66.8	
Paving												
Pavers	1	77	202	50	0.50	-12.1	-3.0	64.9	61.9	Muffler (4 dB Reduction)	57.9	
Paving Equipment	1	77	202	50	0.50	-12.1	-3.0	64.9	61.9	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	57.9	
Rollers	1	80	202	20	0.20	-12.1	-7.0	67.9	60.9	Muffler (4 dB Reduction)	56.9	**4.0**
Cement and Mortar Mixers	1	79	202	40	0.40	-12.1	-4.0	66.9	62.9	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	58.9	
Tractors/Loaders/Backhoes	1	84	202	40	0.40	-12.1	-4.0	71.9	67.9	Muffler (4 dB Reduction)	63.9	
								Log Sum	70.9		66.9	
Architectural Coating												
Air Compressors	1	78	202	40	0.40	-12.1	-4.0	65.9	61.9	-	-	-
								Log Sum	61.9		-	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Transient lodging use to the west (Quality Inn Escondido Downtown, 501 Mission Avenue, Escondido)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA	Best Management Practice (BMP)	Noise Level with BMP	Reduction (dBA Leq)
Demolition												
Concrete/Industrial Saws	1	90	151	20	0.20	-9.6	-7.0	80.4	73.4	Enclosure or Acoustic Tent (6 dB Reduction)	67.4	
Rubber Tired Dozers	1	82	151	40	0.40	-9.6	-4.0	72.4	68.4	Muffler (6 dB Reduction)	62.4	6.0
Tractors/Loaders/Backhoes	3	84	151	40	1.20	-9.6	0.8	74.4	75.2	Muffler (6 dB Reduction)	69.2	
								Log Sum	77.9		71.9	
Site Preparation												
Graders	1	85	80	40	0.40	-4.1	-4.0	80.9	76.9	Muffler (6 dB Reduction)	70.9	
Rubber Tired Dozers	1	82	80	40	0.40	-4.1	-4.0	77.9	73.9	Muffler (6 dB Reduction)	67.9	6.0
Tractors/Loaders/Backhoes	1	84	80	40	0.40	-4.1	-4.0	79.9	75.9	Muffler (6 dB Reduction)	69.9	
								Log Sum	80.5		74.5	
Grading												
Rubber Tired Dozers	1	82	80	40	0.40	-4.1	-4.0	77.9	73.9	Muffler (9 dB Reduction)	64.9	
Tractors/Loaders/Backhoes	2	84	80	40	0.80	-4.1	-1.0	79.9	78.9	Muffler (9 dB Reduction)	69.9	
Plate Compactor	1	83	80	20	0.20	-4.1	-7.0	78.9	71.9	n/a	71.9	6.5
Excavator	1	81	80	40	0.40	-4.1	-4.0	76.9	72.9	Muffler (9 dB Reduction)	63.9	
								Log Sum	81.4		74.9	
Building Construction												
Cranes	2	81	80	16	0.32	-4.1	-4.9	76.9	72.0	Muffler (8 dB Reduction)	64.0	
Forklifts[2]	2	48	80	40	0.80	-4.1	-1.0	43.9	42.9	n/a	42.9	
Generator Sets	1	81	80	50	0.50	-4.1	-3.0	76.9	73.9	Enclosure or Acoustic Tent (8 dB Reduction)	65.9	**6.3**
Welders	3	74	80	40	1.20	-4.1	0.8	69.9	70.7	n/a	70.7	
Tractors/Loaders/Backhoes	2	84	80	40	0.80	-4.1	-1.0	79.9	78.9	Muffler (8 dB Reduction)	70.9	
								Log Sum	81.2		74.9	
Paving												
Pavers	1	77	80	50	0.50	-4.1	-3.0	72.9	69.9	Muffler (4 dB Reduction)	65.9	
Paving Equipment	1	77	80	50	0.50	-4.1	-3.0	72.9	69.9	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	65.9	
Rollers	1	80	80	20	0.20	-4.1	-7.0	75.9	68.9	Muffler (4 dB Reduction)	64.9	**4.0**
Cement and Mortar Mixers	1	79	80	40	0.40	-4.1	-4.0	74.9	70.9	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	66.9	
Tractors/Loaders/Backhoes	1	84	80	40	0.40	-4.1	-4.0	79.9	75.9	Muffler (4 dB Reduction)	71.9	
								Log Sum	79.0		75.0	
Architectural Coating												
Air Compressors	1	78	80	40	0.40	-4.1	-4.0	73.9	69.9	-	-	-
								Log Sum	69.9		-	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Multi-family residential uses to the south (Village Grove Apartments, 660 N Quince Street, Escondido)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA	Best Management Practice (BMP)	Noise Level with BMP	Reduction (dBA Leq)
Demolition												
Concrete/Industrial Saws	1	90	561	20	0.20	-21.0	-7.0	69.0	62.0	Enclosure or Acoustic Tent (6 dB Reduction)	56.0	
Rubber Tired Dozers	1	82	561	40	0.40	-21.0	-4.0	61.0	57.0	Muffler (6 dB Reduction)	51.0	6.0
Tractors/Loaders/Backhoes	3	84	561	40	1.20	-21.0	0.8	63.0	63.8	Muffler (6 dB Reduction)	57.8	
								Log Sum	66.5		60.5	
Site Preparation												
Graders	1	85	310	40	0.40	-15.8	-4.0	69.2	65.2	Muffler (6 dB Reduction)	59.2	
Rubber Tired Dozers	1	82	310	40	0.40	-15.8	-4.0	66.2	62.2	Muffler (6 dB Reduction)	56.2	6.0
Tractors/Loaders/Backhoes	1	84	310	40	0.40	-15.8	-4.0	68.2	64.2	Muffler (6 dB Reduction)	58.2	
								Log Sum	68.8		62.8	
Grading												
Rubber Tired Dozers	1	82	310	40	0.40	-15.8	-4.0	66.2	62.2	Muffler (9 dB Reduction)	53.2	
Tractors/Loaders/Backhoes	2	84	310	40	0.80	-15.8	-1.0	68.2	67.2	Muffler (9 dB Reduction)	58.2	
Plate Compactor	1	83	310	20	0.20	-15.8	-7.0	67.2	60.2	n/a	60.2	6.5
Excavator	1	81	310	40	0.40	-15.8	-4.0	65.2	61.2	Muffler (9 dB Reduction)	52.2	
								Log Sum	69.6		63.2	
Building Construction												
Cranes	2	81	310	16	0.32	-15.8	-4.9	65.2	60.2	Muffler (8 dB Reduction)	52.2	
Forklifts[2]	2	48	310	40	0.80	-15.8	-1.0	32.2	31.2	n/a	31.2	
Generator Sets	1	81	310	50	0.50	-15.8	-3.0	65.2	62.1	Enclosure or Acoustic Tent (8 dB Reduction)	54.1	**6.3**
Welders	3	74	310	40	1.20	-15.8	0.8	58.2	58.9	n/a	58.9	
Tractors/Loaders/Backhoes	2	84	310	40	0.80	-15.8	-1.0	68.2	67.2	Muffler (8 dB Reduction)	59.2	
								Log Sum	69.4		63.1	
Paving												
Pavers	1	77	310	50	0.50	-15.8	-3.0	61.2	58.1	Muffler (4 dB Reduction)	54.1	
Paving Equipment	1	77	310	50	0.50	-15.8	-3.0	61.2	58.1	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	54.1	
Rollers	1	80	310	20	0.20	-15.8	-7.0	64.2	57.2	Muffler (4 dB Reduction)	53.2	**4.0**
Cement and Mortar Mixers	1	79	310	40	0.40	-15.8	-4.0	63.2	59.2	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	55.2	
Tractors/Loaders/Backhoes	1	84	310	40	0.40	-15.8	-4.0	68.2	64.2	Muffler (4 dB Reduction)	60.2	
								Log Sum	67.2		63.2	
Architectural Coating												
Air Compressors	1	78	310	40	0.40	-15.8	-4.0	62.2	58.2	-	-	-
								Log Sum	58.2		-	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Multi-family residential uses to the southeast (Alcove 650 Centre City Parkway, Escondido)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA	Best Management Practice (BMP)	Noise Level with BMP	Reduction (dBA Leq)
Demolition												
Concrete/Industrial Saws	1	90	610	20	0.20	-21.7	-7.0	68.3	61.3	Enclosure or Acoustic Tent (6 dB Reduction)	55.3	
Rubber Tired Dozers	1	82	610	40	0.40	-21.7	-4.0	60.3	56.3	Muffler (6 dB Reduction)	50.3	6.0
Tractors/Loaders/Backhoes	3	84	610	40	1.20	-21.7	0.8	62.3	63.1	Muffler (6 dB Reduction)	57.1	
								Log Sum	65.8		59.8	
Site Preparation												
Graders	1	85	390	40	0.40	-17.8	-4.0	67.2	63.2	Muffler (6 dB Reduction)	57.2	
Rubber Tired Dozers	1	82	390	40	0.40	-17.8	-4.0	64.2	60.2	Muffler (6 dB Reduction)	54.2	6.0
Tractors/Loaders/Backhoes	1	84	390	40	0.40	-17.8	-4.0	66.2	62.2	Muffler (6 dB Reduction)	56.2	
								Log Sum	66.8		60.8	
Grading												
Rubber Tired Dozers	1	82	390	40	0.40	-17.8	-4.0	64.2	60.2	Muffler (9 dB Reduction)	51.2	
Tractors/Loaders/Backhoes	2	84	390	40	0.80	-17.8	-1.0	66.2	65.2	Muffler (9 dB Reduction)	56.2	
Plate Compactor	1	83	390	20	0.20	-17.8	-7.0	65.2	58.2	n/a	58.2	6.5
Excavator	1	81	390	40	0.40	-17.8	-4.0	63.2	59.2	Muffler (9 dB Reduction)	50.2	
								Log Sum	67.7		61.2	
Building Construction												
Cranes	2	81	390	16	0.32	-17.8	-4.9	63.2	58.2	Muffler (8 dB Reduction)	50.2	
Forklifts[2]	2	48	390	40	0.80	-17.8	-1.0	30.2	29.2	n/a	29.2	
Generator Sets	1	81	390	50	0.50	-17.8	-3.0	63.2	60.1	Enclosure or Acoustic Tent (8 dB Reduction)	52.1	**6.3**
Welders	3	74	390	40	1.20	-17.8	0.8	56.2	56.9	n/a	56.9	
Tractors/Loaders/Backhoes	2	84	390	40	0.80	-17.8	-1.0	66.2	65.2	Muffler (8 dB Reduction)	57.2	
								Log Sum	67.4		61.1	
Paving												
Pavers	1	77	390	50	0.50	-17.8	-3.0	59.2	56.1	Muffler (4 dB Reduction)	52.1	
Paving Equipment	1	77	390	50	0.50	-17.8	-3.0	59.2	56.1	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	52.1	
Rollers	1	80	390	20	0.20	-17.8	-7.0	62.2	55.2	Muffler (4 dB Reduction)	51.2	**4.0**
Cement and Mortar Mixers	1	79	390	40	0.40	-17.8	-4.0	61.2	57.2	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	53.2	
Tractors/Loaders/Backhoes	1	84	390	40	0.40	-17.8	-4.0	66.2	62.2	Muffler (4 dB Reduction)	58.2	
								Log Sum	65.2		61.2	
Architectural Coating												
Air Compressors	1	78	390	40	0.40	-17.8	-4.0	60.2	56.2	-	-	-
								Log Sum	56.2		-	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - School use to the east (Epiphany Prep Charter School, 725 N Escondido Boulevard, Escondido)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA	Best Management Practice (BMP)	Noise Level with BMP	Reduction (dBA Leq)
Demolition												
Concrete/Industrial Saws	1	90	461	20	0.20	-19.3	-7.0	70.7	63.7	Enclosure or Acoustic Tent (6 dB Reduction)	57.7	6.0
Rubber Tired Dozers	1	82	461	40	0.40	-19.3	-4.0	62.7	58.7	Muffler (6 dB Reduction)	52.7	
Tractors/Loaders/Backhoes	3	84	461	40	1.20	-19.3	0.8	64.7	65.5	Muffler (6 dB Reduction)	59.5	
								Log Sum	68.2		62.2	
Site Preparation												
Graders	1	85	379	40	0.40	-17.6	-4.0	67.4	63.4	Muffler (6 dB Reduction)	57.4	6.0
Rubber Tired Dozers	1	82	379	40	0.40	-17.6	-4.0	64.4	60.4	Muffler (6 dB Reduction)	54.4	
Tractors/Loaders/Backhoes	1	84	379	40	0.40	-17.6	-4.0	66.4	62.4	Muffler (6 dB Reduction)	56.4	
								Log Sum	67.0		61.0	
Grading												
Rubber Tired Dozers	1	82	379	40	0.40	-17.6	-4.0	64.4	60.4	Muffler (9 dB Reduction)	51.4	6.5
Tractors/Loaders/Backhoes	2	84	379	40	0.80	-17.6	-1.0	66.4	65.4	Muffler (9 dB Reduction)	56.4	
Plate Compactor	1	83	379	20	0.20	-17.6	-7.0	65.4	58.4	n/a	58.4	
Excavator	1	81	379	40	0.40	-17.6	-4.0	63.4	59.4	Muffler (9 dB Reduction)	50.4	
								Log Sum	67.9		61.4	
Building Construction												
Cranes	2	81	379	16	0.32	-17.6	-4.9	63.4	58.5	Muffler (8 dB Reduction)	50.5	**6.3**
Forklifts[2]	2	48	379	40	0.80	-17.6	-1.0	30.4	29.4	n/a	29.4	
Generator Sets	1	81	379	50	0.50	-17.6	-3.0	63.4	60.4	Enclosure or Acoustic Tent (8 dB Reduction)	52.4	
Welders	3	74	379	40	1.20	-17.6	0.8	56.4	57.2	n/a	57.2	
Tractors/Loaders/Backhoes	2	84	379	40	0.80	-17.6	-1.0	66.4	65.4	Muffler (8 dB Reduction)	57.4	
								Log Sum	67.6		61.3	
Paving												
Pavers	1	77	379	50	0.50	-17.6	-3.0	59.4	56.4	Muffler (4 dB Reduction)	52.4	**4.0**
Paving Equipment	1	77	379	50	0.50	-17.6	-3.0	59.4	56.4	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	52.4	
Rollers	1	80	379	20	0.20	-17.6	-7.0	62.4	55.4	Muffler (4 dB Reduction)	51.4	
Cement and Mortar Mixers	1	79	379	40	0.40	-17.6	-4.0	61.4	57.4	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	53.4	
Tractors/Loaders/Backhoes	1	84	379	40	0.40	-17.6	-4.0	66.4	62.4	Muffler (4 dB Reduction)	58.4	
								Log Sum	65.5		61.5	
Architectural Coating												
Air Compressors	1	78	379	40	0.40	-17.6	-4.0	60.4	56.4	-	-	-
								Log Sum	56.4		-	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Commercial use to the east (Super Star Car Wash Express, 680 City Centre Parkway, Escondido)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA	Best Management Practice (BMP)	Noise Level with BMP	Reduction (dBA Leq)
Demolition												
Concrete/Industrial Saws	1	90	438	20	0.20	-18.9	-7.0	71.1	64.2	Enclosure or Acoustic Tent (6 dB Reduction)	58.2	6.0
Rubber Tired Dozers	1	82	438	40	0.40	-18.9	-4.0	63.1	59.2	Muffler (6 dB Reduction)	53.2	
Tractors/Loaders/Backhoes	3	84	438	40	1.20	-18.9	0.8	65.1	65.9	Muffler (6 dB Reduction)	59.9	
								Log Sum	68.7		62.7	
Site Preparation												
Graders	1	85	257	40	0.40	-14.2	-4.0	70.8	66.8	Muffler (6 dB Reduction)	60.8	6.0
Rubber Tired Dozers	1	82	257	40	0.40	-14.2	-4.0	67.8	63.8	Muffler (6 dB Reduction)	57.8	
Tractors/Loaders/Backhoes	1	84	257	40	0.40	-14.2	-4.0	69.8	65.8	Muffler (6 dB Reduction)	59.8	
								Log Sum	70.4		64.4	
Grading												
Rubber Tired Dozers	1	82	257	40	0.40	-14.2	-4.0	67.8	63.8	Muffler (9 dB Reduction)	54.8	6.5
Tractors/Loaders/Backhoes	2	84	257	40	0.80	-14.2	-1.0	69.8	68.8	Muffler (9 dB Reduction)	59.8	
Plate Compactor	1	83	257	20	0.20	-14.2	-7.0	68.8	61.8	n/a	61.8	
Excavator	1	81	257	40	0.40	-14.2	-4.0	66.8	62.8	Muffler (9 dB Reduction)	53.8	
								Log Sum	71.3		64.8	
Building Construction												
Cranes	2	81	257	16	0.32	-14.2	-4.9	66.8	61.8	Muffler (8 dB Reduction)	53.8	**6.3**
Forklifts[2]	2	48	257	40	0.80	-14.2	-1.0	33.8	32.8	n/a	32.8	
Generator Sets	1	81	257	50	0.50	-14.2	-3.0	66.8	63.8	Enclosure or Acoustic Tent (8 dB Reduction)	55.8	
Welders	3	74	257	40	1.20	-14.2	0.8	59.8	60.6	n/a	60.6	
Tractors/Loaders/Backhoes	2	84	257	40	0.80	-14.2	-1.0	69.8	68.8	Muffler (8 dB Reduction)	60.8	
								Log Sum	71.0		64.7	
Paving												
Pavers	1	77	257	50	0.50	-14.2	-3.0	62.8	59.8	Muffler (4 dB Reduction)	55.8	**4.0**
Paving Equipment	1	77	257	50	0.50	-14.2	-3.0	62.8	59.8	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	55.8	
Rollers	1	80	257	20	0.20	-14.2	-7.0	65.8	58.8	Muffler (4 dB Reduction)	54.8	
Cement and Mortar Mixers	1	79	257	40	0.40	-14.2	-4.0	64.8	60.8	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	56.8	
Tractors/Loaders/Backhoes	1	84	257	40	0.40	-14.2	-4.0	69.8	65.8	Muffler (4 dB Reduction)	61.8	
								Log Sum	68.8		64.8	
Architectural Coating												
Air Compressors	1	78	257	40	0.40	-14.2	-4.0	63.8	59.8	-	-	-
								Log Sum	59.8		-	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Commercial use to the east (Banfield Pet Hospital/Yoshinoya Japanese Restaurant Building, 700 City Centre Parkway, Escondido)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA	Best Management Practice (BMP)	Noise Level with BMP	Reduction (dBA Leq)
Demolition												
Concrete/Industrial Saws	1	90	267	20	0.20	-14.6	-7.0	75.4	68.5	Enclosure or Acoustic Tent (6 dB Reduction)	62.5	6.0
Rubber Tired Dozers	1	82	267	40	0.40	-14.6	-4.0	67.4	63.5	Muffler (6 dB Reduction)	57.5	
Tractors/Loaders/Backhoes	3	84	267	40	1.20	-14.6	0.8	69.4	70.2	Muffler (6 dB Reduction)	64.2	
								Log Sum	73.0		67.0	
Site Preparation												
Graders	1	85	215	40	0.40	-12.7	-4.0	72.3	68.4	Muffler (6 dB Reduction)	62.4	6.0
Rubber Tired Dozers	1	82	215	40	0.40	-12.7	-4.0	69.3	65.4	Muffler (6 dB Reduction)	59.4	
Tractors/Loaders/Backhoes	1	84	215	40	0.40	-12.7	-4.0	71.3	67.4	Muffler (6 dB Reduction)	61.4	
								Log Sum	72.0		66.0	
Grading												
Rubber Tired Dozers	1	82	215	40	0.40	-12.7	-4.0	69.3	65.4	Muffler (9 dB Reduction)	56.4	6.5
Tractors/Loaders/Backhoes	2	84	215	40	0.80	-12.7	-1.0	71.3	70.4	Muffler (9 dB Reduction)	61.4	
Plate Compactor	1	83	215	20	0.20	-12.7	-7.0	70.3	63.3	n/a	63.3	
Excavator	1	81	215	40	0.40	-12.7	-4.0	68.3	64.4	Muffler (9 dB Reduction)	55.4	
								Log Sum	72.8		66.3	
Building Construction												
Cranes	2	81	215	16	0.32	-12.7	-4.9	68.3	63.4	Muffler (8 dB Reduction)	55.4	**6.3**
Forklifts[2]	2	48	215	40	0.80	-12.7	-1.0	35.3	34.4	n/a	34.4	
Generator Sets	1	81	215	50	0.50	-12.7	-3.0	68.3	65.3	Enclosure or Acoustic Tent (8 dB Reduction)	57.3	
Welders	3	74	215	40	1.20	-12.7	0.8	61.3	62.1	n/a	62.1	
Tractors/Loaders/Backhoes	2	84	215	40	0.80	-12.7	-1.0	71.3	70.4	Muffler (8 dB Reduction)	62.4	
								Log Sum	72.6		66.3	
Paving												
Pavers	1	77	215	50	0.50	-12.7	-3.0	64.3	61.3	Muffler (4 dB Reduction)	57.3	**4.0**
Paving Equipment	1	77	215	50	0.50	-12.7	-3.0	64.3	61.3	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	57.3	
Rollers	1	80	215	20	0.20	-12.7	-7.0	67.3	60.3	Muffler (4 dB Reduction)	56.3	
Cement and Mortar Mixers	1	79	215	40	0.40	-12.7	-4.0	66.3	62.4	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	58.4	
Tractors/Loaders/Backhoes	1	84	215	40	0.40	-12.7	-4.0	71.3	67.4	Muffler (4 dB Reduction)	63.4	
								Log Sum	70.4		66.4	
Architectural Coating												
Air Compressors	1	78	215	40	0.40	-12.7	-4.0	65.3	61.4	-	-	-
								Log Sum	61.4		-	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Commercial use to the east (The Habit Burger, 720 City Centre Parkway, Escondido)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA	Best Management Practice (BMP)	Noise Level with BMP	Reduction (dBA Leq)
Demolition												
Concrete/Industrial Saws	1	90	211	20	0.20	-12.5	-7.0	77.5	70.5	Enclosure or Acoustic Tent (6 dB Reduction)	64.5	6.0
Rubber Tired Dozers	1	82	211	40	0.40	-12.5	-4.0	69.5	65.5	Muffler (6 dB Reduction)	59.5	
Tractors/Loaders/Backhoes	3	84	211	40	1.20	-12.5	0.8	71.5	72.3	Muffler (6 dB Reduction)	66.3	
								Log Sum	75.0		69.0	
Site Preparation												
Graders	1	85	228	40	0.40	-13.2	-4.0	71.8	67.8	Muffler (6 dB Reduction)	61.8	6.0
Rubber Tired Dozers	1	82	228	40	0.40	-13.2	-4.0	68.8	64.8	Muffler (6 dB Reduction)	58.8	
Tractors/Loaders/Backhoes	1	84	228	40	0.40	-13.2	-4.0	70.8	66.8	Muffler (6 dB Reduction)	60.8	
								Log Sum	71.5		65.5	
Grading												
Rubber Tired Dozers	1	82	228	40	0.40	-13.2	-4.0	68.8	64.8	Muffler (9 dB Reduction)	55.8	6.5
Tractors/Loaders/Backhoes	2	84	228	40	0.80	-13.2	-1.0	70.8	69.9	Muffler (9 dB Reduction)	60.9	
Plate Compactor	1	83	228	20	0.20	-13.2	-7.0	69.8	62.8	n/a	62.8	
Excavator	1	81	228	40	0.40	-13.2	-4.0	67.8	63.8	Muffler (9 dB Reduction)	54.8	
								Log Sum	72.3		65.8	
Building Construction												
Cranes	2	81	228	16	0.32	-13.2	-4.9	67.8	62.9	Muffler (8 dB Reduction)	54.9	6.3
Forklifts[2]	2	48	228	40	0.80	-13.2	-1.0	34.8	33.9	n/a	33.9	
Generator Sets	1	81	228	50	0.50	-13.2	-3.0	67.8	64.8	Enclosure or Acoustic Tent (8 dB Reduction)	56.8	
Welders	3	74	228	40	1.20	-13.2	0.8	60.8	61.6	n/a	61.6	
Tractors/Loaders/Backhoes	2	84	228	40	0.80	-13.2	-1.0	70.8	69.9	Muffler (8 dB Reduction)	61.9	
								Log Sum	72.1		65.8	
Paving												
Pavers	1	77	228	50	0.50	-13.2	-3.0	63.8	60.8	Muffler (4 dB Reduction)	56.8	4.0
Paving Equipment	1	77	228	50	0.50	-13.2	-3.0	63.8	60.8	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	56.8	
Rollers	1	80	228	20	0.20	-13.2	-7.0	66.8	59.8	Muffler (4 dB Reduction)	55.8	
Cement and Mortar Mixers	1	79	228	40	0.40	-13.2	-4.0	65.8	61.8	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	57.8	
Tractors/Loaders/Backhoes	1	84	228	40	0.40	-13.2	-4.0	70.8	66.8	Muffler (4 dB Reduction)	62.8	
								Log Sum	69.9		65.9	
Architectural Coating												
Air Compressors	1	78	228	40	0.40	-13.2	-4.0	64.8	60.8	-	-	-
								Log Sum	60.8		-	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Commercial use to the northeast (McDonald's, 340 W Mission Ave, Escondido)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA	Best Management Practice (BMP)	Noise Level with BMP	Reduction (dBA Leq)
Demolition												
Concrete/Industrial Saws	1	90	285	20	0.20	-15.1	-7.0	74.9	67.9	Enclosure or Acoustic Tent (6 dB Reduction)	61.9	6.0
Rubber Tired Dozers	1	82	285	40	0.40	-15.1	-4.0	66.9	62.9	Muffler (6 dB Reduction)	56.9	
Tractors/Loaders/Backhoes	3	84	285	40	1.20	-15.1	0.8	68.9	69.7	Muffler (6 dB Reduction)	63.7	
								Log Sum	72.4		66.4	
Site Preparation												
Graders	1	85	487	40	0.40	-19.8	-4.0	65.2	61.2	Muffler (6 dB Reduction)	55.2	6.0
Rubber Tired Dozers	1	82	487	40	0.40	-19.8	-4.0	62.2	58.2	Muffler (6 dB Reduction)	52.2	
Tractors/Loaders/Backhoes	1	84	487	40	0.40	-19.8	-4.0	64.2	60.2	Muffler (6 dB Reduction)	54.2	
								Log Sum	64.9		58.9	
Grading												
Rubber Tired Dozers	1	82	487	40	0.40	-19.8	-4.0	62.2	58.2	Muffler (9 dB Reduction)	49.2	6.5
Tractors/Loaders/Backhoes	2	84	487	40	0.80	-19.8	-1.0	64.2	63.3	Muffler (9 dB Reduction)	54.3	
Plate Compactor	1	83	487	20	0.20	-19.8	-7.0	63.2	56.2	n/a	56.2	
Excavator	1	81	487	40	0.40	-19.8	-4.0	61.2	57.2	Muffler (9 dB Reduction)	48.2	
								Log Sum	65.7		59.2	
Building Construction												
Cranes	2	81	487	16	0.32	-19.8	-4.9	61.2	56.3	Muffler (8 dB Reduction)	48.3	**6.3**
Forklifts[2]	2	48	487	40	0.80	-19.8	-1.0	28.2	27.3	n/a	27.3	
Generator Sets	1	81	487	50	0.50	-19.8	-3.0	61.2	58.2	Enclosure or Acoustic Tent (8 dB Reduction)	50.2	
Welders	3	74	487	40	1.20	-19.8	0.8	54.2	55.0	n/a	55.0	
Tractors/Loaders/Backhoes	2	84	487	40	0.80	-19.8	-1.0	64.2	63.3	Muffler (8 dB Reduction)	55.3	
								Log Sum	65.5		59.2	
Paving												
Pavers	1	77	487	50	0.50	-19.8	-3.0	57.2	54.2	Muffler (4 dB Reduction)	50.2	**4.0**
Paving Equipment	1	77	487	50	0.50	-19.8	-3.0	57.2	54.2	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	50.2	
Rollers	1	80	487	20	0.20	-19.8	-7.0	60.2	53.2	Muffler (4 dB Reduction)	49.2	
Cement and Mortar Mixers	1	79	487	40	0.40	-19.8	-4.0	59.2	55.2	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	51.2	
Tractors/Loaders/Backhoes	1	84	487	40	0.40	-19.8	-4.0	64.2	60.2	Muffler (4 dB Reduction)	56.2	
								Log Sum	63.3		59.3	
Architectural Coating												
Air Compressors	1	78	487	40	0.40	-19.8	-4.0	58.2	54.2	-	-	-
								Log Sum	54.2		-	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Commercial use to the north (Karz Plus, 506 W Mission Ave, Escondido)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA	Best Management Practice (BMP)	Noise Level with BMP	Reduction (dBA Leq)
Demolition												
Concrete/Industrial Saws	1	90	151	20	0.20	-9.6	-7.0	80.4	73.4	Enclosure or Acoustic Tent (6 dB Reduction)	67.4	
Rubber Tired Dozers	1	82	151	40	0.40	-9.6	-4.0	72.4	68.4	Muffler (6 dB Reduction)	62.4	6.0
Tractors/Loaders/Backhoes	3	84	151	40	1.20	-9.6	0.8	74.4	75.2	Muffler (6 dB Reduction)	69.2	
								Log Sum	77.9		71.9	
Site Preparation												
Graders	1	85	399	40	0.40	-18.0	-4.0	67.0	63.0	Muffler (6 dB Reduction)	57.0	
Rubber Tired Dozers	1	82	399	40	0.40	-18.0	-4.0	64.0	60.0	Muffler (6 dB Reduction)	54.0	6.0
Tractors/Loaders/Backhoes	1	84	399	40	0.40	-18.0	-4.0	66.0	62.0	Muffler (6 dB Reduction)	56.0	
								Log Sum	66.6		60.6	
Grading												
Rubber Tired Dozers	1	82	399	40	0.40	-18.0	-4.0	64.0	60.0	Muffler (9 dB Reduction)	51.0	
Tractors/Loaders/Backhoes	2	84	399	40	0.80	-18.0	-1.0	66.0	65.0	Muffler (9 dB Reduction)	56.0	
Plate Compactor	1	83	399	20	0.20	-18.0	-7.0	65.0	58.0	n/a	58.0	6.5
Excavator	1	81	399	40	0.40	-18.0	-4.0	63.0	59.0	Muffler (9 dB Reduction)	50.0	
								Log Sum	67.5		61.0	
Building Construction												
Cranes	2	81	399	16	0.32	-18.0	-4.9	63.0	58.0	Muffler (8 dB Reduction)	50.0	
Forklifts[2]	2	48	399	40	0.80	-18.0	-1.0	30.0	29.0	n/a	29.0	
Generator Sets	1	81	399	50	0.50	-18.0	-3.0	63.0	59.9	Enclosure or Acoustic Tent (8 dB Reduction)	51.9	**6.3**
Welders	3	74	399	40	1.20	-18.0	0.8	56.0	56.8	n/a	56.8	
Tractors/Loaders/Backhoes	2	84	399	40	0.80	-18.0	-1.0	66.0	65.0	Muffler (8 dB Reduction)	57.0	
								Log Sum	67.2		60.9	
Paving												
Pavers	1	77	399	50	0.50	-18.0	-3.0	59.0	55.9	Muffler (4 dB Reduction)	51.9	
Paving Equipment	1	77	399	50	0.50	-18.0	-3.0	59.0	55.9	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	51.9	
Rollers	1	80	399	20	0.20	-18.0	-7.0	62.0	55.0	Muffler (4 dB Reduction)	51.0	**4.0**
Cement and Mortar Mixers	1	79	399	40	0.40	-18.0	-4.0	61.0	57.0	Muffler, Enclosure or Acoustic Tent (4 dB Reduction)	53.0	
Tractors/Loaders/Backhoes	1	84	399	40	0.40	-18.0	-4.0	66.0	62.0	Muffler (4 dB Reduction)	58.0	
								Log Sum	65.0		61.0	
Architectural Coating												
Air Compressors	1	78	399	40	0.40	-18.0	-4.0	60.0	56.0	-	-	-
								Log Sum	56.0		-	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

APPENDIX E

SOUNDPLAN INPUT AND OUTPUT

Contribution levels of the receivers

Source name	Traffic lane	Level Day dB(A)
1 EG		53.3
1	-	18.8
2	-	26.0
Drive-Que 1	-	22.1
Drive-Que 2	-	20.7
Drive-Que 3	-	30.2
Drive-Que 4	-	35.2
Drive-Que 5	-	20.4
HVAC 1	-	29.2
HVAC 2	-	29.0
HVAC 3	-	28.8
HVAC 4	-	34.8
HVAC 5	-	35.7
HVAC 6	-	36.3
HVAC 7	-	36.3
HVAC 8	-	37.3
HVAC 9	-	36.4
HVAC 10	-	35.8
Park 1	-	35.6
Park 2	-	31.2
Park 3	-	35.5
Park 4	-	28.6
Park 5	-	26.3
Park 6	-	35.4
Park 7	-	39.7
Park 8	-	49.8
Park 9	-	46.1
Park 10	-	42.4
Patio 2	-	17.9
Speaker 1	-	18.8
Speaker 2	-	24.6
2 EG		51.4
1	-	15.2
2	-	15.2
Drive-Que 1	-	16.3
Drive-Que 2	-	12.7
Drive-Que 3	-	21.2
Drive-Que 4	-	37.8
Drive-Que 5	-	39.2
HVAC 1	-	25.1
HVAC 2	-	25.1
HVAC 3	-	20.3
HVAC 4	-	26.0
HVAC 5	-	30.6
HVAC 6	-	28.2
HVAC 7	-	28.2
HVAC 8	-	30.4
HVAC 9	-	32.9
HVAC 10	-	42.6
Park 1	-	32.1
Park 2	-	28.0
Park 3	-	29.4
Park 4	-	24.9
Park 5	-	21.9
Park 6	-	27.6
Park 7	-	32.2
Park 8	-	46.1
Park 9	-	44.0
Park 10	-	44.1
Patio 2	-	10.7
Speaker 1	-	5.4
Speaker 2	-	13.2

Contribution levels of the receivers

Source name	Traffic lane	Level Day dB(A)
3 EG		43.0
1	-	13.7
2	-	12.3
Drive-Que 1	-	12.7
Drive-Que 2	-	13.6
Drive-Que 3	-	19.4
Drive-Que 4	-	25.0
Drive-Que 5	-	19.2
HVAC 1	-	23.4
HVAC 2	-	23.6
HVAC 3	-	23.7
HVAC 4	-	27.3
HVAC 5	-	27.8
HVAC 6	-	28.7
HVAC 7	-	28.7
HVAC 8	-	32.5
HVAC 9	-	33.2
HVAC 10	-	33.8
Park 1	-	29.7
Park 2	-	26.6
Park 3	-	24.8
Park 4	-	18.2
Park 5	-	14.1
Park 6	-	24.8
Park 7	-	26.0
Park 8	-	36.4
Park 9	-	32.8
Park 10	-	29.8
Patio 2	-	0.7
Speaker 1	-	11.9
Speaker 2	-	17.0
4 EG		42.1
1	-	16.4
2	-	18.2
Drive-Que 1	-	17.3
Drive-Que 2	-	17.1
Drive-Que 3	-	20.8
Drive-Que 4	-	22.7
Drive-Que 5	-	13.3
HVAC 1	-	26.2
HVAC 2	-	26.7
HVAC 3	-	27.0
HVAC 4	-	29.8
HVAC 5	-	30.0
HVAC 6	-	30.1
HVAC 7	-	30.1
HVAC 8	-	29.9
HVAC 9	-	29.7
HVAC 10	-	29.4
Park 1	-	32.0
Park 2	-	29.3
Park 3	-	30.5
Park 4	-	25.2
Park 5	-	22.9
Park 6	-	16.3
Park 7	-	22.0
Park 8	-	30.8
Park 9	-	30.6
Park 10	-	27.6
Patio 2	-	13.2
Speaker 1	-	15.2
Speaker 2	-	17.9

Contribution levels of the receivers

Source name	Traffic lane	Level Day dB(A)
5 EG		45.6
1	-	23.7
2	-	18.3
Drive-Que 1	-	22.6
Drive-Que 2	-	25.4
Drive-Que 3	-	23.7
Drive-Que 4	-	21.8
Drive-Que 5	-	8.2
HVAC 1	-	32.0
HVAC 2	-	30.9
HVAC 3	-	35.7
HVAC 4	-	33.4
HVAC 5	-	31.4
HVAC 6	-	32.2
HVAC 7	-	32.2
HVAC 8	-	28.5
HVAC 9	-	27.4
HVAC 10	-	26.8
Park 1	-	38.2
Park 2	-	34.3
Park 3	-	35.7
Park 4	-	28.2
Park 5	-	26.5
Park 6	-	27.3
Park 7	-	28.5
Park 8	-	32.1
Park 9	-	32.3
Park 10	-	29.1
Patio 2	-	22.8
Speaker 1	-	24.7
Speaker 2	-	18.9
6 EG		54.6
1	-	28.9
2	-	17.3
Drive-Que 1	-	36.6
Drive-Que 2	-	29.8
Drive-Que 3	-	24.5
Drive-Que 4	-	21.3
Drive-Que 5	-	10.1
HVAC 1	-	43.4
HVAC 2	-	32.7
HVAC 3	-	28.9
HVAC 4	-	32.7
HVAC 5	-	30.2
HVAC 6	-	28.9
HVAC 7	-	28.9
HVAC 8	-	27.4
HVAC 9	-	26.2
HVAC 10	-	23.8
Park 1	-	43.7
Park 2	-	42.2
Park 3	-	36.7
Park 4	-	52.7
Park 5	-	39.6
Park 6	-	29.8
Park 7	-	34.4
Park 8	-	35.2
Park 9	-	33.2
Park 10	-	31.0
Patio 2	-	22.0
Speaker 1	-	26.3
Speaker 2	-	5.2

Noise emissions of industry sources

Source na	Referen	Level		Frequency spectrum [dB(A)]																												Correctio		
				31	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1	1.3	1.6	2	2.5	3.2	4	5	6.3	8	10	12.5	16	Cwa	Cl	CT
			dB(A	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	dB	dB	dB
Speaker 1	Lw/unit	Da	65.0	-	-	-	-	-	-	-	-	-	-	-	-	65.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Speaker 2	Lw/unit	Da	65.0	-	-	-	-	-	-	-	-	-	-	-	-	65.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HVAC 1	Lw/unit	Da	78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.	64.	66.	56.	58.	59.	68.	69.	70.	71.	71.	71.	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
HVAC 2	Lw/unit	Da	78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.	64.	66.	56.	58.	59.	68.	69.	70.	71.	71.	71.	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
HVAC 3	Lw/unit	Da	78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.	64.	66.	56.	58.	59.	68.	69.	70.	71.	71.	71.	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
HVAC 4	Lw/unit	Da	78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.	64.	66.	56.	58.	59.	68.	69.	70.	71.	71.	71.	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
HVAC 5	Lw/unit	Da	78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.	64.	66.	56.	58.	59.	68.	69.	70.	71.	71.	71.	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
HVAC 6	Lw/unit	Da	78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.	64.	66.	56.	58.	59.	68.	69.	70.	71.	71.	71.	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
HVAC 7	Lw/unit	Da	78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.	64.	66.	56.	58.	59.	68.	69.	70.	71.	71.	71.	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
HVAC 8	Lw/unit	Da	78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.	64.	66.	56.	58.	59.	68.	69.	70.	71.	71.	71.	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
HVAC 9	Lw/unit	Da	78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.	64.	66.	56.	58.	59.	68.	69.	70.	71.	71.	71.	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
HVAC 10	Lw/unit	Da	78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.	64.	66.	56.	58.	59.	68.	69.	70.	71.	71.	71.	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
Drive-Que	Lw/m	Da	50.0																													-	-	-
Drive-Que	Lw/m	Da	50.0																													-	-	-
Drive-Que	Lw/m	Da	50.0																													-	-	-
Drive-Que	Lw/m	Da	50.0																													-	-	-
Drive-Que	Lw/m	Da	50.0																													-	-	-
1	Lw/unit	Da	63.0	-	-	-	-	-	-	-	-	-	-	-	-	63.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Patio 2	Lw/unit	Da	63.0	-	-	-	-	-	-	-	-	-	-	-	-	63.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Lw/unit	Da	63.0	-	-	-	-	-	-	-	-	-	-	-	-	63.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Noise emissions of parking lot traffic

Name	Parking lot type	Size	Movements per hour			Road surface	Separated method	Lw,ref
			Day	Evening	Night			dB(A)
Park 1	Visitors and staff	12 Parking bays	1.500	0.000	0.000	Asphaltic driving lanes	no	75.0
Park 2	Visitors and staff	6 Parking bays	1.500	0.000	0.000	Asphaltic driving lanes	no	70.8
Park 3	Visitors and staff	9 Parking bays	1.500	0.000	0.000	Asphaltic driving lanes	no	72.5
Park 4	Visitors and staff	5 Parking bays	1.500	0.000	0.000	Asphaltic driving lanes	no	70.0
Park 5	Visitors and staff	2 Parking bays	1.500	0.000	0.000	Asphaltic driving lanes	no	66.0
Park 6	Visitors and staff	3 Parking bays	1.500	0.000	0.000	Asphaltic driving lanes	no	67.8
Park 7	Visitors and staff	8 Parking bays	1.500	0.000	0.000	Asphaltic driving lanes	no	72.0
Park 8	Visitors and staff	17 Parking bays	1.500	0.000	0.000	Asphaltic driving lanes	no	77.6
Park 9	Visitors and staff	13 Parking bays	1.500	0.000	0.000	Asphaltic driving lanes	no	75.6
Park 10	Visitors and staff	11 Parking bays	1.500	0.000	0.000	Asphaltic driving lanes	no	74.2

Receiver list

No.	Receiver name	Building side	Floor	Limit Day dB(A)	Level Day dB(A)	Conflict Day dB
1	1	-	EG	-	53.3	-
2	2	-	EG	-	51.4	-
3	3	-	EG	-	43.0	-
4	4	-	EG	-	42.1	-
5	5	-	EG	-	45.6	-
6	6	-	EG	-	54.6	-

APPENDIX F

FHWA WORKSHEETS

Existing Traffic Noise

1	:Id
Rock Spring Road	:Road
North of Mission Avenue	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	8690
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	532.95	6.52	2.53	393.86	1.16	1.16	98.65	8.69	3.38
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	21.52	2.39	-1.71	20.21	-5.11	-5.10	14.19	3.64	-0.46
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.53	53.12	54.24	61.22	45.61	50.84	55.20	54.37	55.49
	DAY LEQ	63.54		EVENING LEQ	61.71		NIGHT LEQ	59.82	

F	CNEL	67.25	
	DAY LEQ	63.54	

Day hour	89.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

1	:Id
Rock Spring Road	:Road
North of Mission Avenue	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	8790
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	539.09	6.59	2.56	398.39	1.17	1.17	99.79	8.79	3.42
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	21.57	2.44	-1.66	20.26	-5.07	-5.05	14.24	3.69	-0.41
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.58	53.17	54.29	61.27	45.66	50.89	55.25	54.42	55.54
	DAY LEQ	63.59		EVENING LEQ	61.75		NIGHT LEQ	59.87	

CNEL	67.30
DAY LEQ	63.59

Day hour	89.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

2	:Id	
Rock Spring Road	:Road	
Mission Avenue to Washington Avenue	:Segment	

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	7730
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	474.08	5.80	2.25	350.35	1.03	1.03	87.75	7.73	3.01
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	21.01	1.89	-2.22	19.70	-5.62	-5.61	13.69	3.14	-0.97
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.02	52.61	53.73	60.71	45.10	50.33	54.70	53.86	54.98
	DAY LEQ	63.03		EVENING LEQ	61.20		NIGHT LEQ	59.31	

CNEL	66.74
DAY LEQ	63.03

Day hour	90.00
Absorptive?	no
Use hour?	no
GRADE dB	1.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

2	:Id	
Rock Spring Road	:Road	
Mission Avenue to Washington Avenue	:Segment	

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	7830
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	480.21	5.87	2.28	354.88	1.04	1.04	88.89	7.83	3.05
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	21.07	1.94	-2.16	19.75	-5.57	-5.56	13.74	3.19	-0.91
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.08	52.67	53.79	60.76	45.16	50.39	54.75	53.92	55.03
	DAY LEQ	63.09		EVENING LEQ	61.25		NIGHT LEQ	59.36	

CNEL	66.80
DAY LEQ	63.09

Day hour	90.00
Absorptive?	no
Use hour?	no
GRADE dB	1.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

3	:Id	Vehicle Distribution (Light Truck Mix)				ADT	5870
Quince Street	:Road	Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow	Speed	35
Mission Avenue to Washington Avenue	:Segment	Automobiles	75.56	13.96	10.49	97.40	Distance	40
		Medium Trucks	48.91	2.17	48.91	1.84	Left Angle	-90
		Heavy Trucks	47.30	5.41	47.30	0.74	Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	360.00	4.40	1.71	266.05	0.78	0.78	66.64	5.87	2.28
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	19.82	0.69	-3.41	18.50	-6.82	-6.81	12.49	1.94	-2.16
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	60.83	51.42	52.53	59.51	43.91	49.14	53.50	52.67	53.78
	DAY LEQ	61.84		EVENING LEQ	60.00		NIGHT LEQ	58.11	

CNEL	65.55	Day hour	91.00
DAY LEQ	61.84	Absorptive?	no
		Use hour?	no
		GRADE dB	2.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

3	:Id
Quince Street	:Road
Mission Avenue to Washington Avenue	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	6030
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	369.82	4.52	1.76	273.30	0.80	0.80	68.46	6.03	2.35
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	19.93	0.81	-3.29	18.62	-6.70	-6.69	12.61	2.06	-2.04
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	60.94	51.53	52.65	59.63	44.03	49.25	53.62	52.78	53.90
	DAY LEQ	61.96		EVENING LEQ	60.12		NIGHT LEQ	58.23	

CNEL	65.66
DAY LEQ	61.96

Day hour	91.00
Absorptive?	no
Use hour?	no
GRADE dB	2.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

4	:Id
Centre City Parkway	:Road
North of Mission Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	24200
Speed	50
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1401.52	29.04	48.40	1040.47	4.84	8.07	258.02	40.33	67.22
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	24.17	7.33	9.55	22.88	-0.45	1.77	16.82	8.76	10.98
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	70.13	60.97	67.42	68.84	53.19	59.64	62.78	62.40	68.84
	DAY LEQ	72.33		EVENING LEQ	69.44		NIGHT LEQ	70.53	

CNEL	77.35
DAY LEQ	72.33

Day hour	92.00
Absorptive?	no
Use hour?	no
GRADE dB	3.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

4	:Id	
Centre City Parkway	:Road	
North of Mission Avenue	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	24840
Speed	50
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1438.58	29.81	49.68	1067.99	4.97	8.28	264.84	41.40	69.00
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	24.28	7.45	9.67	22.99	-0.33	1.88	16.93	8.87	11.09
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	70.25	61.09	67.53	68.95	53.30	59.75	62.90	62.51	68.96
	DAY LEQ	72.44		EVENING LEQ	69.55		NIGHT LEQ	70.64	

CNEL	77.47
DAY LEQ	72.44

Day hour	92.00
Absorptive?	no
Use hour?	no
GRADE dB	3.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

5	:Id
Centre City Parkway	:Road
Mission Avenue to Project Site	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	16800
Speed	45
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	972.96	20.16	33.60	722.31	3.36	5.60	179.12	28.00	46.67
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14
ADJUSTMENTS									
Flow	23.04	6.21	8.43	21.75	-1.57	0.64	15.69	7.63	9.85
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	67.23	58.67	65.41	65.94	50.89	57.63	59.88	60.10	66.84
	DAY LEQ	69.78		EVENING LEQ	66.65		NIGHT LEQ	68.34	

CNEL	75.07
DAY LEQ	69.78

Day hour	93.00
Absorptive?	no
Use hour?	no
GRADE dB	4.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

5	:Id
Centre City Parkway	:Road
Mission Avenue to Project Site	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	18180
Speed	45
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1052.88	21.82	36.36	781.64	3.64	6.06	193.83	30.30	50.50
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14
ADJUSTMENTS									
Flow	23.39	6.55	8.77	22.09	-1.23	0.99	16.04	7.98	10.19
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	67.57	59.02	65.75	66.28	51.23	57.97	60.22	60.44	67.18
	DAY LEQ	70.12		EVENING LEQ	67.00		NIGHT LEQ	68.68	

CNEL	75.42
DAY LEQ	70.12

Day hour	93.00
Absorptive?	no
Use hour?	no
GRADE dB	4.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

6	:Id
Centre City Parkway	:Road
Project Site to Washington Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	17300
Speed	45
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1001.91	20.76	34.60	743.81	3.46	5.77	184.45	28.83	48.06
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14
ADJUSTMENTS									
Flow	23.17	6.33	8.55	21.88	-1.45	0.77	15.82	7.76	9.98
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	67.36	58.80	65.54	66.07	51.02	57.76	60.01	60.23	66.97
	DAY LEQ	69.90		EVENING LEQ	66.78		NIGHT LEQ	68.47	

CNEL	75.20
DAY LEQ	69.90

Day hour	94.00
Absorptive?	no
Use hour?	no
GRADE dB	5.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

6	:Id
Centre City Parkway	:Road
Project Site to Washington Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	19390
Speed	45
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1122.95	23.27	38.78	833.67	3.88	6.46	206.73	32.32	53.86
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14
ADJUSTMENTS									
Flow	23.67	6.83	9.05	22.37	-0.95	1.27	16.32	8.26	10.47
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	67.85	59.30	66.03	66.56	51.51	58.25	60.50	60.72	67.46
	DAY LEQ	70.40		EVENING LEQ	67.28		NIGHT LEQ	68.96	

CNEL	**75.70**
DAY LEQ	70.40

Day hour	94.00
Absorptive?	no
Use hour?	no
GRADE dB	5.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

7	:Id
Centre City Parkway	:Road
South of Washington Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	15160
Speed	45
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	877.98	18.19	30.32	651.80	3.03	5.05	161.63	25.27	42.11
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14
ADJUSTMENTS									
Flow	22.60	5.76	7.98	21.30	-2.02	0.20	15.25	7.19	9.41
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	66.79	58.23	64.96	65.49	50.45	57.18	59.44	59.65	66.39
	DAY LEQ	69.33		EVENING LEQ	66.21		NIGHT LEQ	67.89	

CNEL	74.63
DAY LEQ	69.33

Day hour	95.00
Absorptive?	no
Use hour?	no
GRADE dB	6.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

7	:Id
Centre City Parkway	:Road
South of Washington Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	15370
Speed	45
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	890.14	18.44	30.74	660.83	3.07	5.12	163.87	25.62	42.69
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14
ADJUSTMENTS									
Flow	22.66	5.82	8.04	21.36	-1.96	0.26	15.31	7.25	9.47
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	66.85	58.29	65.02	65.55	50.51	57.24	59.50	59.71	66.45
	DAY LEQ	69.39		EVENING LEQ	66.27		NIGHT LEQ	67.95	

CNEL	**74.69**
DAY LEQ	69.39

Day hour	95.00
Absorptive?	no
Use hour?	no
GRADE dB	6.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

8	:Id
Escondido Boulevard	:Road
North of Mission Avenue	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	8380
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	513.94	6.28	2.44	379.81	1.12	1.12	95.13	8.38	3.26
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	21.36	2.24	-1.86	20.05	-5.27	-5.26	14.04	3.49	-0.62
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.37	52.96	54.08	61.06	45.45	50.68	55.05	54.21	55.33
	DAY LEQ	63.38		EVENING LEQ	61.55		NIGHT LEQ	59.66	

CNEL	67.09
DAY LEQ	63.38

Day hour	96.00
Absorptive?	no
Use hour?	no
GRADE dB	7.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

8	:Id
Escondido Boulevard	:Road
North of Mission Avenue	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	8480
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	520.07	6.36	2.47	384.34	1.13	1.13	96.27	8.48	3.30
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	21.41	2.29	-1.81	20.10	-5.22	-5.21	14.09	3.54	-0.56
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.42	53.01	54.13	61.11	45.51	50.74	55.10	54.26	55.38
	DAY LEQ	63.44		EVENING LEQ	61.60		NIGHT LEQ	59.71	

CNEL	67.15
DAY LEQ	63.44

Day hour	96.00
Absorptive?	no
Use hour?	no
GRADE dB	7.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

9	:Id
Broadway	:Road
North of Lincoln Parkway	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	13860
Speed	35
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	802.69	16.63	27.72	595.91	2.77	4.62	147.77	23.10	38.50
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.30	6.46	8.68	22.01	-1.32	0.90	15.95	7.89	10.11
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.25	56.14	63.57	61.96	48.35	55.79	55.90	57.56	65.00
	DAY LEQ	66.81		EVENING LEQ	63.05		NIGHT LEQ	66.15	

CNEL	72.71
DAY LEQ	66.81

Day hour	97.00
Absorptive?	no
Use hour?	no
GRADE dB	8.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

9	:Id	Vehicle Distribution (Heavy Truck Mix)				ADT	13960
Broadway	:Road	Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow	Speed	35
North of Lincoln Parkway	:Segment	Automobiles	75.54	14.02	10.43	92.00	Distance	51
		Medium Trucks	48.00	2.00	50.00	3.00	Left Angle	-90
		Heavy Trucks	48.00	2.00	50.00	5.00	Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	808.48	16.75	27.92	600.21	2.79	4.65	148.84	23.27	38.78
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.33	6.49	8.71	22.04	-1.29	0.93	15.98	7.92	10.14
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.28	56.17	63.60	61.99	48.38	55.82	55.93	57.59	65.03
	DAY LEQ	66.84		EVENING LEQ	63.08		NIGHT LEQ	66.18	

F		CNEL	72.74	Day hour	97.00
		DAY LEQ	66.84	Absorptive?	no
				Use hour?	no
				GRADE dB	8.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

10	:Id
Broadway	:Road
Lincoln Parkway to Mission Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	16900
Speed	35
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	978.75	20.28	33.80	726.61	3.38	5.63	180.18	28.17	46.94
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	24.16	7.32	9.54	22.87	-0.46	1.76	16.81	8.75	10.97
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.11	57.00	64.43	62.82	49.21	56.65	56.76	58.42	65.86
	DAY LEQ	67.67		EVENING LEQ	63.91		NIGHT LEQ	67.01	

CNEL	73.57
DAY LEQ	67.67

Day hour	98.00
Absorptive?	no
Use hour?	no
GRADE dB	9.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

10	:Id
Broadway	:Road
Lincoln Parkway to Mission Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	17210
Speed	35
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	996.70	20.65	34.42	739.94	3.44	5.74	183.49	28.68	47.81
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	24.24	7.40	9.62	22.95	-0.38	1.84	16.89	8.83	11.05
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.19	57.08	64.51	62.90	49.29	56.73	56.84	58.50	65.94
	DAY LEQ	67.75		EVENING LEQ	63.99		NIGHT LEQ	67.09	

CNEL	73.65
DAY LEQ	67.75

Day hour	98.00
Absorptive?	no
Use hour?	no
GRADE dB	9.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

11	:Id	
Broadway	:Road	
Mission Avenue to Washington Avenue	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	15250
Speed	35
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	883.19	18.30	30.50	655.67	3.05	5.08	162.59	25.42	42.36
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.71	6.88	9.10	22.42	-0.90	1.31	16.36	8.30	10.52
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.67	56.55	63.99	62.37	48.77	56.21	56.32	57.98	65.41
	DAY LEQ	67.23		EVENING LEQ	63.46		NIGHT LEQ	66.56	

CNEL	73.12
DAY LEQ	67.23

Day hour	99.00
Absorptive?	no
Use hour?	no
GRADE dB	10.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

11	:Id	
Broadway	:Road	
Mission Avenue to Washington Avenue	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	15350
Speed	35
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	888.98	18.42	30.70	659.97	3.07	5.12	163.66	25.58	42.64
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.74	6.91	9.12	22.45	-0.88	1.34	16.39	8.33	10.55
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.70	56.58	64.01	62.40	48.80	56.23	56.35	58.01	65.44
	DAY LEQ	67.26		EVENING LEQ	63.49		NIGHT LEQ	66.59	

CNEL	73.15
DAY LEQ	67.26

Day hour	99.00
Absorptive?	no
Use hour?	no
GRADE dB	10.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

12	:Id	
Lincoln Parkway	:Road	
East of Broadway	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	21700
Speed	40
Distance	63
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1256.73	26.04	43.40	932.98	4.34	7.23	231.36	36.17	60.28
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	24.67	7.83	10.05	23.37	0.05	2.27	17.32	9.26	11.48
Distance	-1.07	-1.07	-1.07	-1.07	-1.07	-1.07	-1.07	-1.07	-1.07
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	65.95	58.07	65.13	64.66	50.29	57.35	58.60	59.50	66.56
	DAY LEQ	68.94		EVENING LEQ	65.53		NIGHT LEQ	67.89	

CNEL	74.53
DAY LEQ	68.94

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

12	:Id	Vehicle Distribution (Heavy Truck Mix)				ADT	21910
Lincoln Parkway	:Road	Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow	Speed	40
East of Broadway	:Segment	Automobiles	75.54	14.02	10.43	92.00	Distance	63
		Medium Trucks	48.00	2.00	50.00	3.00	Left Angle	-90
		Heavy Trucks	48.00	2.00	50.00	5.00	Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1268.90	26.29	43.82	942.01	4.38	7.30	233.60	36.52	60.86
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	24.71	7.87	10.09	23.41	0.09	2.31	17.36	9.30	11.52
Distance	-1.07	-1.07	-1.07	-1.07	-1.07	-1.07	-1.07	-1.07	-1.07
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	65.99	58.11	65.18	64.70	50.33	57.39	58.64	59.54	66.60
	DAY LEQ	68.99		EVENING LEQ	65.57		NIGHT LEQ	67.93	

CNEL	74.57	Day hour	0.00
DAY LEQ	68.99	Absorptive?	no
		Use hour?	no
		GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

13	:Id
Mission Avenue	:Road
West of Rock Spring Road	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	10630
Speed	40
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	615.63	12.76	21.26	457.03	2.13	3.54	113.33	17.72	29.53
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	21.57	4.73	6.95	20.27	-3.05	-0.83	14.22	6.16	8.38
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.77	55.89	62.95	62.48	48.11	55.17	56.42	57.31	64.38
	DAY LEQ	66.76		EVENING LEQ	63.35		NIGHT LEQ	65.70	

CNEL	72.35
DAY LEQ	66.76

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

13	:Id	
Mission Avenue	:Road	
West of Rock Spring Road	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	10840
Speed	40
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	627.79	13.01	21.68	466.06	2.17	3.61	115.57	18.07	30.11
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	21.65	4.82	7.03	20.36	-2.97	-0.75	14.30	6.24	8.46
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.86	55.97	63.04	62.56	48.19	55.26	56.51	57.40	64.46
	DAY LEQ	66.85		EVENING LEQ	63.43		NIGHT LEQ	65.79	

CNEL	72.43
DAY LEQ	66.85

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

14	:Id
Mission Avenue	:Road
Rock Spring Road to Quince Street	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	14470
Speed	40
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	838.02	17.36	28.94	622.13	2.89	4.82	154.28	24.12	40.19
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	22.91	6.07	8.29	21.61	-1.71	0.51	15.56	7.50	9.72
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	65.11	57.23	64.29	63.82	49.45	56.51	57.76	58.65	65.72
	DAY LEQ	68.10		EVENING LEQ	64.69		NIGHT LEQ	67.04	

CNEL	73.69
DAY LEQ	68.10

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

14	:Id	ADT	14680
Mission Avenue	:Road	Speed	40
Rock Spring Road to Quince Street	:Segment	Distance	51
		Left Angle	-90
		Right Angle	90

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	850.18	17.62	29.36	631.16	2.94	4.89	156.51	24.47	40.78
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	22.97	6.13	8.35	21.67	-1.65	0.57	15.62	7.56	9.78
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	65.17	57.29	64.35	63.88	49.51	56.57	57.82	58.72	65.78
	DAY LEQ	68.16		EVENING LEQ	64.75		NIGHT LEQ	67.11	

CNEL	73.75	Day hour	0.00
DAY LEQ	68.16	Absorptive?	no
		Use hour?	no
		GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

15	:Id	Vehicle Distribution (Heavy Truck Mix)				ADT	17990
Mission Avenue	:Road	Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow	Speed	40
Quince Street to Project Site	:Segment	Automobiles	75.54	14.02	10.43	92.00	Distance	51
		Medium Trucks	48.00	2.00	50.00	3.00	Left Angle	-90
		Heavy Trucks	48.00	2.00	50.00	5.00	Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1041.87	21.59	35.98	773.47	3.60	6.00	191.81	29.98	49.97
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	23.85	7.02	9.23	22.56	-0.77	1.45	16.50	8.44	10.66
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	66.06	58.17	65.24	64.76	50.39	57.46	58.71	59.60	66.66
	DAY LEQ	69.05		EVENING LEQ	65.63		NIGHT LEQ	67.99	

CNEL	74.63	Day hour	0.00
DAY LEQ	69.05	Absorptive?	no
		Use hour?	no
		GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

15	:Id
Mission Avenue	:Road
Quince Street to Project Site	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	18400
Speed	40
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1065.62	22.08	36.80	791.10	3.68	6.13	196.18	30.67	51.11
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	23.95	7.11	9.33	22.66	-0.67	1.55	16.60	8.54	10.76
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	66.15	58.27	65.34	64.86	50.49	57.55	58.80	59.70	66.76
	DAY LEQ	69.14		EVENING LEQ	65.73		NIGHT LEQ	68.09	

CNEL	74.73
DAY LEQ	69.14

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

16	:Id
Mission Avenue	:Road
Project Site to Centre City Parkway	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	18160
Speed	40
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1051.72	21.79	36.32	780.78	3.63	6.05	193.62	30.27	50.44
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	23.89	7.06	9.28	22.60	-0.72	1.49	16.54	8.48	10.70
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	66.10	58.21	65.28	64.80	50.43	57.50	58.75	59.64	66.71
	DAY LEQ	69.09		EVENING LEQ	65.68		NIGHT LEQ	68.03	

CNEL	74.67
DAY LEQ	69.09

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

16	:Id
Mission Avenue	:Road
Project Site to Centre City Parkway	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	18720
Speed	40
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1084.15	22.46	37.44	804.86	3.74	6.24	199.59	31.20	52.00
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	24.02	7.19	9.41	22.73	-0.59	1.63	16.67	8.62	10.83
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	66.23	58.35	65.41	64.93	50.56	57.63	58.88	59.77	66.84
	DAY LEQ	69.22		EVENING LEQ	65.81		NIGHT LEQ	68.16	

CNEL	74.81
DAY LEQ	69.22

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

17	:Id
Mission Avenue	:Road
Centre City Parkway to Escondido Boulevard	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	16830
Speed	40
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	974.69	20.20	33.66	723.60	3.37	5.61	179.44	28.05	46.75
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	23.56	6.73	8.94	22.27	-1.06	1.16	16.21	8.15	10.37
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	65.77	57.88	64.95	64.47	50.10	57.17	58.42	59.31	66.37
	DAY LEQ	68.76		EVENING LEQ	65.34		NIGHT LEQ	67.70	

CNEL	74.34
DAY LEQ	68.76

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

17	:Id
Mission Avenue	:Road
Centre City Parkway to Escondido Boulevard	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	17600
Speed	40
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1019.29	21.12	35.20	756.71	3.52	5.87	187.65	29.33	48.89
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	23.76	6.92	9.14	22.46	-0.86	1.36	16.41	8.35	10.57
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	65.96	58.08	65.14	64.67	50.30	57.36	58.61	59.50	66.57
	DAY LEQ	68.95		EVENING LEQ	65.54		NIGHT LEQ	67.89	

CNEL	74.54
DAY LEQ	68.95

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

18	:Id
Mission Avenue	:Road
Escondido Boulevard to Broadway	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	12360
Speed	40
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	715.82	14.83	24.72	531.41	2.47	4.12	131.78	20.60	34.33
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	22.22	5.39	7.60	20.93	-2.40	-0.18	14.87	6.81	9.03
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.43	56.54	63.61	63.13	48.76	55.83	57.08	57.97	65.03
	DAY LEQ	67.42		EVENING LEQ	64.00		NIGHT LEQ	66.36	

CNEL	73.00
DAY LEQ	67.42

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

18	:Id
Mission Avenue	:Road
Escondido Boulevard to Broadway	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	12980
Speed	40
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	751.72	15.58	25.96	558.07	2.60	4.33	138.39	21.63	36.06
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	22.43	5.60	7.82	21.14	-2.18	0.04	15.08	7.02	9.24
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.64	56.75	63.82	63.34	48.97	56.04	57.29	58.18	65.25
	DAY LEQ	67.63		EVENING LEQ	64.22		NIGHT LEQ	66.57	

CNEL	73.22
DAY LEQ	67.63

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

19	:Id	
Mission Avenue	:Road	
East of Broadway	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	11620
Speed	40
Distance	51
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	672.96	13.94	23.24	499.60	2.32	3.87	123.89	19.37	32.28
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	21.95	5.12	7.34	20.66	-2.66	-0.45	14.60	6.54	8.76
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.16	56.27	63.34	62.86	48.49	55.56	56.81	57.70	64.77
	DAY LEQ	67.15		EVENING LEQ	63.74		NIGHT LEQ	66.09	

CNEL	72.73
DAY LEQ	67.15

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

19	:Id	Vehicle Distribution (Heavy Truck Mix)				ADT	11830
Mission Avenue	:Road	Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow	Speed	40
East of Broadway	:Segment	Automobiles	75.54	14.02	10.43	92.00	Distance	51
		Medium Trucks	48.00	2.00	50.00	3.00	Left Angle	-90
		Heavy Trucks	48.00	2.00	50.00	5.00	Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	685.12	14.20	23.66	508.63	2.37	3.94	126.13	19.72	32.86
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	22.03	5.20	7.41	20.74	-2.59	-0.37	14.68	6.62	8.84
Distance	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.24	56.35	63.42	62.94	48.57	55.64	56.89	57.78	64.84
	DAY LEQ	67.23		EVENING LEQ	63.81		NIGHT LEQ	66.17	

CNEL	72.81	Day hour	0.00
DAY LEQ	67.23	Absorptive?	no
		Use hour?	no
		GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

20	:Id
Washington Avenue	:Road
West of Rock Spring Road	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	9460
Speed	40
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	580.18	7.09	2.76	428.76	1.26	1.26	107.39	9.46	3.68
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	21.31	2.18	-1.92	20.00	-5.33	-5.31	13.98	3.43	-0.67
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.57	54.39	55.14	63.25	46.89	51.74	57.24	55.64	56.39
	DAY LEQ	65.40		EVENING LEQ	63.64		NIGHT LEQ	61.25	

CNEL	68.83
DAY LEQ	65.40

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

20	:Id
Washington Avenue	:Road
West of Rock Spring Road	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	9670
Speed	40
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	593.06	7.25	2.82	438.28	1.29	1.29	109.78	9.67	3.76
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	21.40	2.28	-1.82	20.09	-5.23	-5.22	14.08	3.53	-0.57
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.66	54.49	55.24	63.35	46.98	51.84	57.34	55.74	56.48
	DAY LEQ	65.49		EVENING LEQ	63.74		NIGHT LEQ	61.34	

CNEL	68.93
DAY LEQ	65.49

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

21	:Id
Washington Avenue	:Road
Rock Spring Road to Quince Street	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	11180
Speed	40
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	685.66	8.38	3.26	506.72	1.49	1.49	126.92	11.18	4.35
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	22.03	2.91	-1.19	20.72	-4.60	-4.59	14.71	4.16	0.06
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	65.29	55.12	55.87	63.98	47.61	52.47	57.97	56.37	57.12
	DAY LEQ	66.12		EVENING LEQ	64.37		NIGHT LEQ	61.97	

CNEL	69.56
DAY LEQ	66.12

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

21	:Id
Washington Avenue	:Road
Rock Spring Road to Quince Street	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	11570
Speed	40
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	709.58	8.68	3.37	524.39	1.54	1.54	131.35	11.57	4.50
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16
ADJUSTMENTS									
Flow	22.18	3.06	-1.04	20.87	-4.45	-4.44	14.86	4.31	0.21
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	65.44	55.27	56.01	64.13	47.76	52.62	58.12	56.52	57.26
	DAY LEQ	66.27		EVENING LEQ	64.52		NIGHT LEQ	62.12	

CNEL	69.71
DAY LEQ	66.27

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

22 :Id

Washington Avenue :Road

Quince Street to Centre City Parkway :Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	12220
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	749.45	9.16	3.56	553.85	1.63	1.63	138.73	12.22	4.75
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.00	3.87	-0.23	21.69	-3.63	-3.62	15.68	5.12	1.02
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.01	54.60	55.72	62.70	47.09	52.32	56.68	55.85	56.97
	DAY LEQ	65.02		EVENING LEQ	63.19		NIGHT LEQ	61.30	

CNEL	68.73
DAY LEQ	65.02

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

22	:Id
Washington Avenue	:Road
Quince Street to Centre City Parkway	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	12480
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	765.39	9.36	3.64	565.64	1.66	1.67	141.68	12.48	4.85
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.09	3.97	-0.14	21.78	-3.54	-3.53	15.77	5.22	1.11
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.10	54.69	55.81	62.79	47.18	52.41	56.78	55.94	57.06
	DAY LEQ	65.11		EVENING LEQ	63.28		NIGHT LEQ	61.39	

CNEL	68.82
DAY LEQ	65.11

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

23	:Id	
Washington Avenue	:Road	
Centre City Parkway to Escondido Boulevard	:Segment	

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	14300
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	877.01	10.72	4.17	648.13	1.90	1.91	162.34	14.30	5.56
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.68	4.56	0.46	22.37	-2.95	-2.94	16.36	5.81	1.71
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.69	55.28	56.40	63.38	47.78	53.01	57.37	56.53	57.65
	DAY LEQ	65.71		EVENING LEQ	63.87		NIGHT LEQ	61.98	

CNEL	69.41
DAY LEQ	65.71

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

23	:Id
Washington Avenue	:Road
Centre City Parkway to Escondido Boulevard	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	14890
Speed	35
Distance	40
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	913.20	11.17	4.34	674.87	1.98	1.99	169.04	14.89	5.79
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.86	4.73	0.63	22.55	-2.78	-2.76	16.53	5.98	1.88
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.87	55.46	56.58	63.55	47.95	53.18	57.54	56.71	57.83
	DAY LEQ	65.88		EVENING LEQ	64.04		NIGHT LEQ	62.16	

CNEL	69.59
DAY LEQ	65.88

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

APPENDIX G

VIBRATION WORKSHEETS

GROUNDBORNE VIBRATION ANALYSIS

Project:	19703 West Mission Commercial Project	Date:	2/21/24
Source:	Small Bulldozer		
Scenario:	Unmitigated		
Location:	Motel to West		
Address:	Quality Inn Escondido Dowtown, 501 W Missions Ave, Escondido		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	6	Small Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.003	Reference PPV (in/sec) at 25 ft.	
D =	30.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.002	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19703 West Mission Commercial Project	Date:	2/21/24
Source:	Small Bulldozer		
Scenario:	Unmitigated		
Location:	Commercial to West		
Address:	Ben's Auto Repair, 515 W Missions Ave, Escondido		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	6	Small Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.003	Reference PPV (in/sec) at 25 ft.	
D =	50.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.001	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19703 West Mission Commercial Project	Date:	2/21/24
Source:	Small Bulldozer		
Scenario:	Unmitigated		
Location:	Commercial to Northwest		
Address:	Denny's, 510 W Missions Ave, Escondido		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	6	Small Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.003	Reference PPV (in/sec) at 25 ft.	
D =	158.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.000	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19703 West Mission Commercial Project	Date:	2/21/24
Source:	Small Bulldozer		
Scenario:	Unmitigated		
Location:	Commercial to North		
Address:	Karz Plus, 506 W Missions Ave, Escondido		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	6	Small Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.003	Reference PPV (in/sec) at 25 ft.	
D =	155.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.000	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19703 West Mission Commercial Project	Date:	2/21/24
Source:	Small Bulldozer		
Scenario:	Unmitigated		
Location:	Commercial to Northeast		
Address:	McDonald's, 340 W Missions Ave, Escondido		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	6	Small Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.003	Reference PPV (in/sec) at 25 ft.	
D =	300.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.000	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19703 West Mission Commercial Project	Date:	2/21/24
Source:	Small Bulldozer		
Scenario:	Unmitigated		
Location:	Commercial to East		
Address:	The Habit Burger, 720 Centre City Parkway, Escondido		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment = Type	6	Small Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.003	Reference PPV (in/sec) at 25 ft.	
D =	176.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.000	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19703 West Mission Commercial Project	Date:	2/21/24
Source:	Small Bulldozer		
Scenario:	Unmitigated		
Location:	Commercial to East		
Address:	Yoshinoya, 700 Centre City Parkway, Escondido		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	6	Small Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.003	Reference PPV (in/sec) at 25 ft.	
D =	179.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.000	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19703 West Mission Commercial Project	Date:	2/21/24
Source:	Small Bulldozer		
Scenario:	Unmitigated		
Location:	Commercial to East		
Address:	Super Star Car Wash Express, 680 Centre City Parkway, Escondido		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	6	Small Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.003	Reference PPV (in/sec) at 25 ft.	
D =	171.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.000	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19703 West Mission Commercial Project	Date:	2/21/24
Source:	Small Bulldozer		
Scenario:	Unmitigated		
Location:	Multi-Family Residential to Southeast		
Address:	Alcove, 650 Centre City Parkway, Escondido		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	6	Small Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.003	Reference PPV (in/sec) at 25 ft.	
D =	175.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.000	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19703 West Mission Commercial Project	Date:	2/21/24
Source:	Small Bulldozer		
Scenario:	Unmitigated		
Location:	Multi-Family Residential to South		
Address:	Village Grove Apartments, 660 N Quince St, Escondido		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	6	Small Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.003	Reference PPV (in/sec) at 25 ft.	
D =	62.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.001	IN/SEC	OUTPUT IN BLUE

Construction Annoyance Vibration Calculations

Source: Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual (September 2018).

Eq. 7-3: $Lv_{distance} = Lv_{ref} - 30\log(D/25)$

Lvdistance = the rms velocity level adjsuted for distance, VdB
Lvref = the source reference vibration level at 25 feet, VdB
D = distance from the equipment to th receiver, ft.

Small Bulldozer:

Motel to West: Lvdistance = 58 - 30 log (30/25) = 55.62 VdB

MF to Southeast: Lvdistance = 58 - 30 log (175/25) = 32.65 VdB

MF to South: Lvdistance = 58 - 30 log (62/25) = 46.17 VdB

Under Threshold Distance: 58 - 30 log (5/25) = 79 VdB

GANDDINI GROUP INC.

714.795.3100 | ganddini.com

APPENDIX F

Transportation Impact Analysis

TECHNICAL MEMORANDUM

TO: For Applicant Submittal to CITY OF ESCONDIDO

FROM: Giancarlo Ganddini | GANDDINI GROUP, INC.

DATE: February 12, 2024

SUBJECT: 503 West Mission Commercial Project Transportation Impact Comparison
Project No. 19703

Ganddini Group, Inc. is pleased to provide this Transportation Impact Comparison for the proposed 503 West Mission Commercial Project. The purpose of this trip generation comparison analysis is to evaluate the change in trip generation that can be expected between the original project and the proposed project.

PROJECT LOCATION

The 1.5-acre (net) project site is located at 503 West Mission Avenue, situated at the southwest corner of the intersection of Mission Avenue and Centre City Parkway, in the City of Escondido, California. The project site is currently occupied with a sit-down restaurant, unpaved parking, and a pool for the adjacent hotel (Quality Inn).

ORIGINAL PROJECT DESCRIPTION

The proposed project originally involved demolition of the existing restaurant and redevelopment of the site with a new 3,885 square foot In-N-Out Burger restaurant with drive through window and an approximately 1,800 square foot coffee shop with drive through window. Project site access is proposed via one existing driveway at Mission Avenue and one new driveway at Centre City Parkway. The original project site plan is shown on Figure 1.

REVISED PROJECT DESCRIPTION

The revised proposed project involves demolition of the existing restaurant and redevelopment of the site with three new commercial/food service uses totaling 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. Project site access is proposed via one existing driveway at Mission Avenue and one new driveway at Centre City Parkway. The revised project site plan is shown on Figure 2.

ORIGINAL TRANSPORTATION IMPACT ANALYSIS

Transportation impacts associated with the original project description were evaluated in the draft *In-N-Out & Coffee Bean (Mission/Centre City) Transportation Impact Analysis* (Ganddini Group, Inc., February 21, 2021) ["2023 Project TIA"]. The 2023 Project TIA included evaluation of both vehicle miles traveled (VMT) impacts for compliance with California Environmental Quality Act (CEQA) requirements and a Local Mobility Analysis for non-CEQA review under the City's discretionary authority.

Original Project Trip Generation

The draft 2023 Project TIA evaluated a net increase of 1,841 daily trips on weekdays, including 137 trips during the AM peak hour, 187 trips during the mid-day (MD) peak hour, and 152 trips during the PM peak hour, and 1,807 daily trips on Saturdays, including 214 trips during the MD peak hour.

Original Transportation Impacts

For CEQA purposes, the draft 2023 Project TIA determined that the proposed project would have a less than significant impact on VMT since it satisfies local-serving retail screening criteria established by the City of Escondido. No additional VMT modeling or mitigation measures were required.

The Local Mobility Analysis of the draft 2023 Project TIA identified the following potential operational (i.e., Level of Service) impacts:

- Centre City Parkway (NS) at Washington Avenue (EW) – #7 (Saturday MD Peak Hour)
- Escondido Boulevard (NS) at Mission Avenue (EW) – #8 (MD, PM, and Saturday MD)

The following intersection improvements were recommended to address the project-related LOS impacts for both Existing Plus Project and Opening Year With Project conditions:

- Centre City Parkway (NS) at Washington Avenue (EW) – #7
  - Optimize signal timing/synchronization.

- Escondido Boulevard (NS) at Mission Avenue (EW) – #8
  - Optimize the signal timing splits for weekday MD, weekday PM, and Saturday MD conditions.

REVISED PROJECT TRIP GENERATION

Table 1 shows the revised project trip generation and comparison to the original project per the draft 2023 Project TIA.

As shown in Table 1, the revised project is forecast to result in a net increase 1,740 daily trips on weekdays, including 135 trips during the AM peak hour, 121 trips during the MD peak hour, and 122 trips during the PM peak hour, and 2,051 daily trips on Saturdays, including 186 trips during the MD peak hour. Therefore, the revised project is forecast to generate approximately 101 fewer daily trips on weekdays compared to the original project description evaluated in the draft 2023 Project TIA, including 2 fewer trips during the AM peak hour, 66 fewer trips during the MD peak hour, and 30 fewer trips during the PM peak hour; the revised project is forecast to generate approximately 244 additional daily trips on Saturdays compared to the original project description evaluated in the draft 2023 Project TIA, including 28 fewer trips during the MD peak hour.

REVISED PROJECT TRANSPORTATION IMPACTS

For CEQA purposes, the revised project description would continue to satisfy the local-serving retail screening criteria established by the City of Escondido and would result in a less than significant VMT impact; no additional VMT modeling or mitigation measures are required.

For Local Mobility Analysis, operational/Level of Service impacts associated with the revised project description would be the same or less as those identified in the draft 2023 Project TIA since the revised

project is forecast to result in fewer net trips generated compared to the draft 2023 Project TIA, except for a negligible increase in the Saturday daily trip generation.

To ensure the marginal increase for Saturday daily trip generation does not result in new impacts, Attachment A contains the revised Saturday roadway segment capacity analysis. As shown in Attachment A, the marginal increase for Saturday daily trip generation does not result in new impacts compared to the draft 2023 Project TIA.

Accordingly, the revised project would not result in new impacts with implementation of all applicable off-site improvements identified in the draft 2023 Project TIA.

Revised Pedestrian Connectivity

Since the project site plan has been revised, a revised on-site pedestrian circulation figure is shown on Figure 3. As shown on Figure 3, pedestrian connectivity is provided to each of the project site buildings via new/improved sidewalks along Mission Avenue and Centre City Parkway as well as internal circulation paths of travel. ADA-compliant pedestrian paths within the parking lot shall be indicated by blue hatched crosswalk markings as necessary.

Conclusion

We appreciate the opportunity to assist you on this project. Should you have any questions or if we can be of further assistance, please contact me at (714) 795-3100.

Sincerely,

GANDDINI GROUP, INC.
Giancarlo Ganddini, PE, PTP | Principal

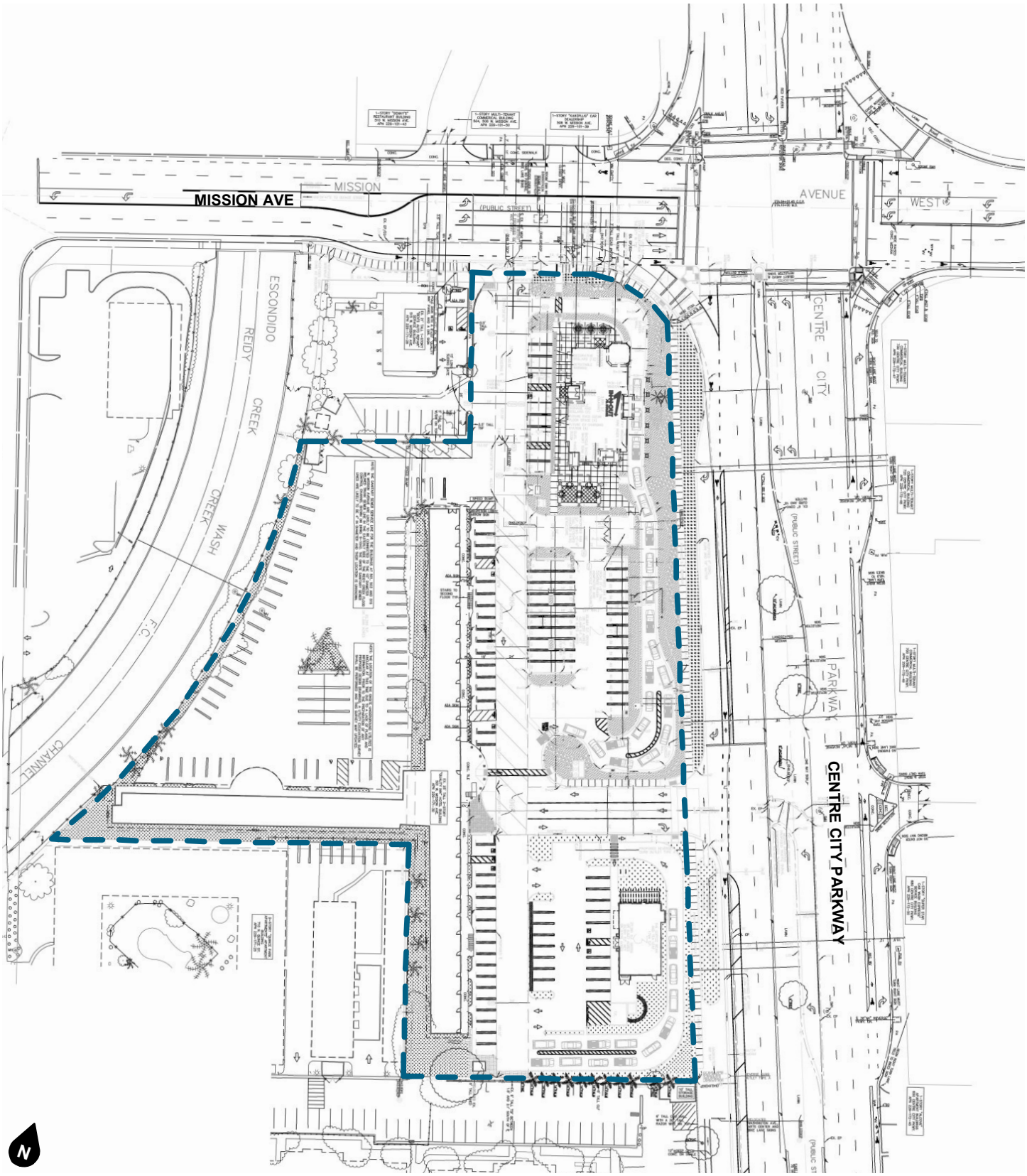
Table 1
Revised Project Trip Generation

Trip Generation Rates																
			Weekday										Saturday[3]			
			AM Peak Hour			MD Peak Hour[3]			PM Peak Hour			Daily	MD Peak Hour			Daily
Land Use	Source[1]	Land Use Variable[2]	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Rate	Rate	% In	% Out	Rate	Rate
High-Turnover (Sit-Down) Restaurant	SANDAG	TSF	50%	50%	12.80	50%	50%	12.80	60%	40%	12.80	160.00	50%	50%	12.80	160.00
Coffee Donut Shop with Drive-Through Window	ITE 937	TSF	51%	49%	85.88	48%	52%	36.82	50%	50%	38.99	533.57	50%	50%	87.91	533.57
Fast-Food Restaurant with Drive-Through Window	SANDAG	TSF	50%	50%	45.50	50%	50%	45.50	50%	50%	45.50	650.00	50%	50%	45.50	650.00

Trips Generated																
			Weekday										Saturday			
			AM Peak Hour			MD Peak Hour			PM Peak Hour				MD Peak Hour			
Land Use	Source	Quantity	In	Out	Total	In	Out	Total	In	Out	Total	Daily	In	Out	Total	Daily
EXISTING USES TO BE DISPLACED																
High-Turnover (Sit-Down) Restaurant	SANDAG	2.391 TSF	15	15	30	15	15	30	18	12	30	383	15	15	30	383
Pass-by Trips (40%)	[4]		*-6*	*-6*	*-12*	*-6*	*-6*	*-12*	*-7*	*-5*	*-12*	*-153*	*-6*	*-6*	*-12*	*-153*
Subtotal			9	9	18	9	9	18	11	7	18	230	9	9	18	230
PROPOSED USES (REVISED)																
Coffee Donut Shop with Drive-Through Window	ITE 937	1.460 TSF	64	61	125	26	28	54	28	28	56	779	64	64	128	779
Pass-by Trips (80%)	[4]		*-51*	*-49*	*-100*	*-21*	*-22*	*-43*	*-22*	*-22*	*-44*	*-623*	*-26*	*-26*	*-52*	*-312*
Subtotal			13	12	25	5	6	11	6	6	12	156	38	38	76	467
Fast-Food Restaurant with Drive-Through Window	SANDAG	4.650 TSF	106	106	212	106	106	212	106	106	212	3,023	106	106	212	3,023
Pass-by Trips (40%)	[4]		*-42*	*-42*	*-84*	*-42*	*-42*	*-84*	*-42*	*-42*	*-84*	*-1,209*	*-42*	*-42*	*-84*	*-1,209*
Subtotal			64	64	128	64	64	128	64	64	128	1,814	64	64	128	1,814
REVISED PROJECT TOTAL NET TRIP GENERATION			**+68**	**+67**	**+135**	**+60**	**+61**	**+121**	**+59**	**+63**	**+122**	**+1,740**	**+93**	**+93**	**+186**	**+2,051**
Original Trip Generation from 2023 Project TIA[5]			69	68	137	93	94	187	71	68	152	1,841	111	103	214	1,807
Net Difference (Revised Trip Generation - 2023 Project TIA			**-1**	**-1**	**-2**	**-33**	**-33**	**-66**	**-12**	**-5**	**-30**	**-101**	**-18**	**-10**	**-28**	**+244**

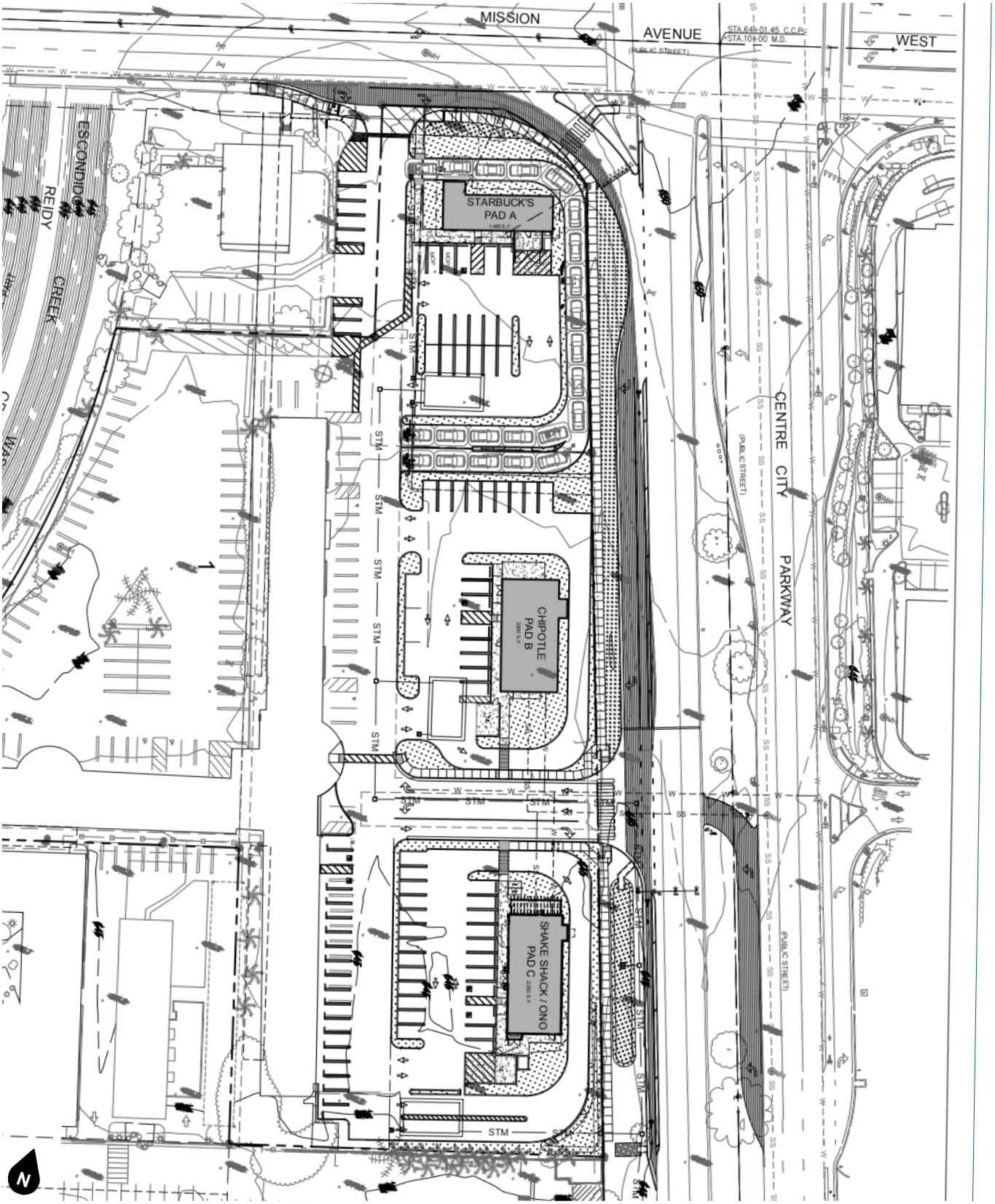
Notes:

1. ITE = Institute of Transportation Engineers *Trip Generation Manual* (11th Edition, 2021); ### = Land Use Code.
   SANDAG = San Diego Association of Governments *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region* (April 2002).
2. TSF = Thousand Square Feet
3. In the absence of MD peak hour or Saturday rates from SANDAG, the AM peak hour and weekday daily rates are used.
4. Based on ITE Trip Generation Manual (11th Edition, 2021) average pass-by rates rounded down to provide a more conservative analysis.
   Pass-by rate for fast-food restaurant per SANDAG.
5. Source: *In-N-Out & Coffee Bean (Mission/Centre City) Transportation Impact Analysis* (Ganddini Group, Inc., February 21, 2021).



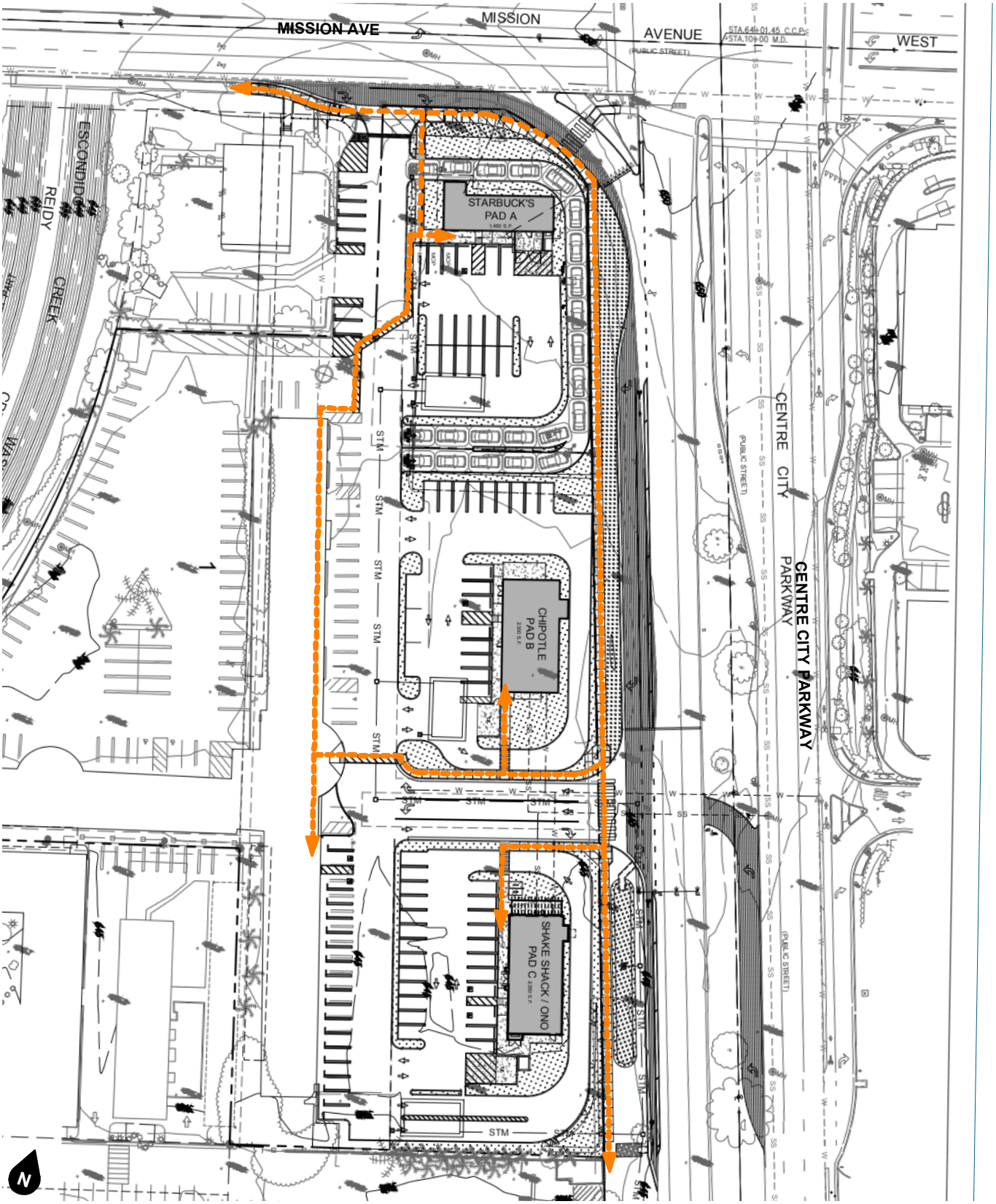
Source: MSL Engineering, Inc.

Figure 1
Original Site Plan (per 2023 Project TIA)



Source: Mour Group

Figure 2
Revised Site Plan



Legend

Pedestrian Circulation

Note: ADA-compliant pedestrian paths within the parking lot shall be indicated by blue hatched crosswalk markings as necessary.

Figure 3
On-Site Pedestrian Circulation

ATTACHMENT A

Revised Saturday Roadway Segment LOS

Table 7 (REVISED)
Existing Plus Project Saturday Roadway Segment LOS

Roadway Link			Roadway Classification	Number of Lanes	Roadway Capacity	ADT	V/C Ratio	LOS
A	Rock Springs Rd	North of Mission Ave	Collector	2	20,000	8,790	0.440	B
B	Rock Springs Rd	Mission Ave to Washington Ave	Collector	2	20,000	7,830	0.392	B
C	Quince St	North of Mission Ave	Local Street	2	10,000	4,640	0.464	B
D	Quince St	Mission Ave to Washington Ave	Collector	4	34,200	6,030	0.176	A
E	Quince St	South of Washington Ave	Collector	4	34,200	5,170	0.151	A
F	Centre City Pkwy	North of Mission Ave	Major	5	43,500	24,840	0.571	C
G	Centre City Pkwy	Mission Ave to Project Dwy B	Super Major	4	37,000	18,180	0.491	B
H	Centre City Pkwy	Project Dwy B to Washington Ave	Super Major	4	37,000	19,390	0.524	B
I	Centre City Pkwy	South of Washington Ave	Super Major	4	37,000	15,370	0.415	B
J	Escondido Blvd	North of Mission Ave	Collector	4	34,200	8,480	0.248	A
K	Escondido Blvd	Mission Ave to Washington Ave	Collector	4	34,200	10,870	0.318	A
L	Broadway	North of Lincoln Pkwy	Major	4	37,000	13,960	0.377	B
M	Broadway	Lincoln Pkwy to Mission Ave	Major	4	37,000	17,210	0.465	B
N	Broadway	Mission Ave to Washington Ave	Major	4	37,000	15,350	0.415	B
O	SR-78	West of Broadway	Prime Arterial	6	50,000	36,920	0.738	C
P	Lincoln Pkwy	East of Broadway	Prime Arterial	6	50,000	21,910	0.438	B
Q	Mission Ave	West of Rock Springs Rd	Super Major	4	37,000	10,840	0.293	A
R	Mission Ave	Rock Springs Rd to Quince St	Super Major	5	43,500	14,680	0.337	A
S	Mission Ave	Quince St to Project Dwy A	Super Major	4	37,000	18,400	0.497	B
T	Mission Ave	Project Dwy A to Centre City Pkwy	Super Major	4	37,000	18,720	0.506	B
U	Mission Ave	Centre City Pkwy to Escondido Blvd	Major	4	37,000	17,600	0.476	B
V	Mission Ave	Escondido Blvd to Broadway	Major	4	37,000	12,980	0.351	B
W	Mission Ave	East of Broadway	Major	4	37,000	11,830	0.320	A
X	Washington Ave	West of Rock Springs Rd	Collector	4	34,200	9,670	0.283	A
Y	Washington Ave	Rock Springs Rd to Quince St	Collector	4	34,200	11,490	0.336	A
Z	Washington Ave	Quince St to Centre City Pkwy	Collector	4	34,200	12,480	0.365	B
AA	Washington Ave	Centre City Pkwy to Escondido Blvd	Collector	4	34,200	14,890	0.435	B

Notes:

ADT = Average Daily Traffic; V/C = Volume / Capacity; LOS = Level of Service

Table 15 (REVISED)
Opening Year (2024) With Project Saturday Roadway Segment LOS

Roadway Link			Roadway Classification	Number of Lanes	Roadway Capacity	ADT	V/C Ratio	LOS
A	Rock Springs Rd	North of Mission Ave	Collector	2	20,000	10,780	0.539	B
B	Rock Springs Rd	Mission Ave to Washington Ave	Collector	2	20,000	8,520	0.426	B
C	Quince St	North of Mission Ave	Local Street	2	10,000	4,730	0.473	B
D	Quince St	Mission Ave to Washington Ave	Collector	4	34,200	6,250	0.183	A
E	Quince St	South of Washington Ave	Collector	4	34,200	5,370	0.157	A
F	Centre City Pkwy	North of Mission Ave	Major	5	43,500	26,150	0.601	C
G	Centre City Pkwy	Mission Ave to Project Dwy B	Super Major	4	37,000	19,570	0.529	B
H	Centre City Pkwy	Project Dwy B to Washington Ave	Super Major	4	37,000	20,790	0.562	C
I	Centre City Pkwy	South of Washington Ave	Super Major	4	37,000	16,580	0.448	B
J	Escondido Blvd	North of Mission Ave	Collector	4	34,200	9,090	0.266	A
K	Escondido Blvd	Mission Ave to Washington Ave	Collector	4	34,200	11,640	0.340	A
L	Broadway	North of Lincoln Pkwy	Major	4	37,000	14,590	0.394	B
M	Broadway	Lincoln Pkwy to Mission Ave	Major	4	37,000	18,020	0.487	B
N	Broadway	Mission Ave to Washington Ave	Major	4	37,000	16,020	0.433	B
O	SR-78	West of Broadway	Prime Arterial	6	50,000	37,760	0.755	D
P	Lincoln Pkwy	East of Broadway	Prime Arterial	6	50,000	22,540	0.451	B
Q	Mission Ave	West of Rock Springs Rd	Super Major	4	37,000	11,670	0.315	A
R	Mission Ave	Rock Springs Rd to Quince St	Super Major	5	43,500	16,190	0.372	B
S	Mission Ave	Quince St to Project Dwy A	Super Major	4	37,000	19,980	0.540	B
T	Mission Ave	Project Dwy A to Centre City Pkwy	Super Major	4	37,000	20,300	0.549	B
U	Mission Ave	Centre City Pkwy to Escondido Blvd	Major	4	37,000	18,890	0.511	B
V	Mission Ave	Escondido Blvd to Broadway	Major	4	37,000	13,960	0.377	B
W	Mission Ave	East of Broadway	Major	4	37,000	12,440	0.336	A
X	Washington Ave	West of Rock Springs Rd	Collector	4	34,200	10,360	0.303	A
Y	Washington Ave	Rock Springs Rd to Quince St	Collector	4	34,200	12,310	0.360	B
Z	Washington Ave	Quince St to Centre City Pkwy	Collector	4	34,200	14,170	0.414	B
AA	Washington Ave	Centre City Pkwy to Escondido Blvd	Collector	4	34,200	15,950	0.466	B

Table 16 (REVISED)
Opening Year (2024) With Project Roadway Segment Impact Evaluation

	Roadway Link		Saturday					
			Without Project		With Project		Project Increase (LOS D or worse)	Project Impact?
			V/C	LOS	V/C	LOS		
A	Rock Springs Rd	North of Mission Ave	0.534	B	0.539	B	-	No
B	Rock Springs Rd	Mission Ave to Washington Ave	0.421	B	0.426	B	-	No
C	Quince St	North of Mission Ave	0.473	B	0.473	B	-	No
D	Quince St	Mission Ave to Washington Ave	0.178	A	0.183	A	-	No
E	Quince St	South of Washington Ave	0.157	A	0.157	A	-	No
F	Centre City Pkwy	North of Mission Ave	0.586	C	0.601	C	-	No
G	Centre City Pkwy	Mission Ave to Project Dwy B	0.492	B	0.529	B	-	No
H	Centre City Pkwy	Project Dwy B to Washington Ave	0.505	B	0.562	C	-	No
I	Centre City Pkwy	South of Washington Ave	0.442	B	0.448	B	-	No
J	Escondido Blvd	North of Mission Ave	0.263	A	0.266	A	-	No
K	Escondido Blvd	Mission Ave to Washington Ave	0.339	A	0.340	A	-	No
L	Broadway	North of Lincoln Pkwy	0.392	B	0.394	B	-	No
M	Broadway	Lincoln Pkwy to Mission Ave	0.479	B	0.487	B	-	No
N	Broadway	Mission Ave to Washington Ave	0.430	B	0.433	B	-	No
O	SR-78	West of Broadway	0.755	D	0.755	D	0.000	No
P	Lincoln Pkwy	East of Broadway	0.447	B	0.451	B	-	No
Q	Mission Ave	West of Rock Springs Rd	0.310	A	0.315	A	-	No
R	Mission Ave	Rock Springs Rd to Quince St	0.367	B	0.372	B	-	No
S	Mission Ave	Quince St to Project Dwy A	0.529	B	0.540	B	-	No
T	Mission Ave	Project Dwy A to Centre City Pkwy	0.534	B	0.549	B	-	No
U	Mission Ave	Centre City Pkwy to Escondido Blvd	0.490	B	0.511	B	-	No
V	Mission Ave	Escondido Blvd to Broadway	0.361	B	0.377	B	-	No
W	Mission Ave	East of Broadway	0.331	A	0.336	A	-	No
X	Washington Ave	West of Rock Springs Rd	0.297	A	0.303	A	-	No
Y	Washington Ave	Rock Springs Rd to Quince St	0.351	B	0.360	B	-	No
Z	Washington Ave	Quince St to Centre City Pkwy	0.407	B	0.414	B	-	No
AA	Washington Ave	Centre City Pkwy to Escondido Blvd	0.449	B	0.466	B	-	No

Notes:

(1) V/C = Volume/Capacity Ratio; LOS = Level of Service

(2) Level of Service Threshold: Allowable change due to the project at roadway segments is 0.02 V/C for LOS D, E or F.