La Jolla Innovation Center Project

SCH No. 2020110344

Final Environmental Impact Report
Volume II
Part 1 : Appendices A - E

April 2021 | UCS-33.10

Prepared for:

University of California, San Diego
Campus Planning
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Prepared by:

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Appendix A

Notice of Preparation (NOP), Response Letters, and Scoping Meeting Comments

UNIVERSITY OF CALIFORNIA, SAN DIEGO UCSD

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November 20, 2020

State of California
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

NOTICE OF PREPARATION
DRAFT ENVIRONMENTAL IMPACT REPORT

Project Title: La Jolla Innovation Center

Lead Agency: University of California

Project Location: City of San Diego

County: San Diego

Project Description: The proposed La Jolla Innovation Center Project (Project) would develop a new building comprised of five levels of office and educational uses, two levels of above grade parking, and two levels of subterranean parking at 8980 Villa La Jolla Drive, San Diego, California (Figure 1, Project Vicinity, and Figure 2, Project Site and Surroundings). The Project site is located within an existing commercial center; limits of work would occur within an approximately 1.2-acre area of the commercial center, and include a 0.9-acre Project parcel that would be developed and sold to the University of California (UC) Regents, as well as an additional 0.3 acre of surface parking, landscaping, and hardscape immediately surrounding the parcel that would be improved as part of the Project and would not be sold to UC Regents (Figure 3, Limits of Work). The Project would provide leasable space for UC San Diego Health Sciences programs (including tenants such as Family and Preventative Medicine, Department of Neurosciences, Department of Psychiatry, and Department of Pediatrics) and UC San Diego Extension programs, both of which would serve the UC San Diego campus and the community at large.

The Project site is located within an existing 7-acre developed commercial center comprised of five existing buildings located west of Interstate 5 (I-5), at the southwestern corner of the intersection of La Jolla Village Drive and Villa La Jolla Drive. The Project site is surrounded by mixed uses consisting of the UC San Diego campus, a gas station, medical office buildings, a commercial center with shops and eateries, a hotel, and residences. The Project site is bounded by La Jolla Village Drive to the north, Villa La Jolla Drive to the east, the UC San Diego Health Urgent Care to the south, and three multi-story buildings occupied by medical and commercial offices to the west. The Project site is also located within 0.33-mile of two future UC San Diego Blue Line Light Rail Trolley (LRT) stations, which are expected to begin service in late 2021. The area is designated as a Transit Priority Area (TPA) in the San Diego Association of Governments (SANDAG) Regional Transportation Plan, which encourages greater development density in such areas. As such, the Project would redevelop the site at a greater density in an effort to tap into the synergy of the surrounding area, consolidate UC San Diego programs into one strategic location that would maximize programmatic efficiencies, and encourage the use of alternative transportation options in the Project vicinity.

The Project site is currently developed with the two-story, 13,213-square-foot (SF) restaurant building, as well as additional surface parking, landscaping, and hardscape. The site is currently within the jurisdiction of the City of San Diego and is zoned as Commercial (CO-1-2). The site is also within the City's Coastal Height Limit Overlay Zone, Community Plan Implementation Overlay Zone, and the Parking Impact Overlay Zone. Upon acquisition of the property, the Project site would be under the ownership of the UC Regents, subject to UC land management policies. The University would occupy the proposed office and instructional space and would include programs associated with UC San Diego Health Sciences and UC San Diego Extension; an ancillary retail amenity would be occupied by a retail operator.

The Project would demolish an existing restaurant building formerly occupied by the Rock Bottom Restaurant and Brewery; the remaining four buildings, which include the UC San Diego Health Urgent Care and three multi-story buildings occupied by medical and commercial offices, would be retained and are not included in the proposed Project. The 7-acre commercial center property is proposed to be subdivided and the 0.9-acre Project parcel would be sold to the UC Regents and leased to an affiliate of GPI Companies, the current landowner, to develop the Project.

The Project proposes a seven-story building above-grade that would include five levels of UC San Diego Health Sciences and UC San Diego Extension uses and two levels of above-grade parking, as well as two subterranean parking levels (four parking levels total). The building would be a maximum of 100 feet in height from the existing ground level. The building would include approximately 6,000 gross square feet (GSF) of meeting space; 24,210 GSF of classroom space; 62,510 GSF of office, support, and circulation; and 10,594 GSF of core, for a total of 103,314 GSF associated with office and educational uses. Approximately 1,420 GSF of ground-floor retail space (such as a café) would be provided within Parking Level P3 at the southeastern corner of the building. The Project would provide approximately 275 parking spaces spread between a four-level, 95,500-GSF parking garage and surface parking. Vehicular access to the Project site would be provided by the two existing driveways to the commercial center from Villa La Jolla Drive and the Villa Norte cul-de-sac. Pedestrian access to the Project site would be provided via a new sidewalk connection to La Jolla Village Drive and via an existing City owned pedestrian bridge that crosses La Jolla Village Drive and provides direct access to the Health Sciences portion of the UC San Diego campus. Utility connections would be required to provide potable water, sanitary sewer, storm drains, and electrical power to the Project site. The proposed Project would establish connections to these existing utilities located in the Project area.

The Project would implement the requirements within the UC Sustainable Practices Policy, oriented toward energy efficient and "green building" standards established by the U.S. Green Building Council (USGBC). The Project would seek to achieve a Leadership in Energy Efficient Design (LEED) Silver rating from USGBC through implementation of a variety of sustainability features focused on efficiency in mechanical applications, energy and water use, and building and site design.

Demolition, grading and excavation, site improvements, and building construction are anticipated to begin in mid-2021, shortly after all applicable approvals and permits are obtained from the required permitting agencies. Construction of the Project is anticipated to take approximately 18 months, with initial occupancy by the University anticipated in 2023. Demolition of the site would require removal of the existing vacant restaurant building (13,213 square feet); 51 existing surface parking spaces; the median located at the entrance to the commercial center, off of Villa La Jolla Drive; and all on-site paving, landscaping, and hardscape. Construction staging is proposed to occur entirely within the 1.2-acre limits of work.

Potential Environmental Effects of the Project: An Environmental Impact Report (EIR) will be prepared to address environmental issues associated with the construction and operation of the proposed Project. Potential key environmental considerations anticipated to be addressed in the EIR include: aesthetics, air quality, energy, greenhouse gas emissions, hydrology/water quality, land use and planning, noise, and transportation; these issues are described briefly below.

Aesthetics. The Project site is currently located within the Coastal Height Limit Overlay Zone under the jurisdiction of the City of San Diego. Upon acquisition of the property, the Project site would be under the ownership of the UC Regents subject to UC land management policies, including those related to building height limits, setbacks, and design. The EIR will analyze the compatibility of the Project with the visual environment of the coastal overlay zone, campus, and surrounding area, and evaluate the potential for the Project to conflict with applicable land use and other regulations governing scenic quality. This section will also address the degree to which the Project may result in adverse effects to scenic vistas or scenic resources within a state scenic highway or create a new source of light or glare. The analysis will include a description of the existing visual setting of the site and surrounding area, identification of key viewpoints and unique geographic or topographic features, and a discussion of the regulatory framework of the Project.

Air Quality. The Project has the potential to contribute criteria air pollutant emissions to the San Diego Air Basin. The EIR will include a project-specific analysis of potential impacts from air pollutant emissions estimated to be generated during Project construction and operation. Mobile source emissions related to vehicle trips based on the transportation impact analysis prepared for the Project will be evaluated in the EIR. An analysis of toxic air pollutant impacts, such as those from construction equipment diesel particulate emissions, and potential objectionable odors will be analyzed. The EIR also will evaluate the Project's consistency with regional air quality management plans.

Energy. The EIR will provide estimates of the energy consumed during construction and operation of the Project, including electrical energy demand, vehicular energy demand, and water- and solid waste-related energy demand. The EIR will address whether the Project would result in the wasteful, inefficient, or unnecessary consumption of energy resources. Consistency with applicable state and/or local plans for renewable energy or energy efficiency (e.g., UC Sustainable Practices Policy, UC San Diego Climate Action Plan, etc.), also will be evaluated.

Greenhouse Gas Emissions. The EIR will include a Project-specific analysis of direct and indirect greenhouse gas emissions associated with Project construction and operation. Greenhouse gas emissions from construction sources will be amortized over the anticipated life of the Project and added to annual operational emissions. Operational emissions will be based on traffic data provided by the project-specific transportation impact analysis and incorporation of sustainability features that are consistent with the UC Sustainable Practices Policy. The EIR will assess the Project's consistency with the UC Sustainable Practices Policy as well as the goals of Assembly Bill 32 and Senate Bill 32 with respect to achieving statewide greenhouse gas emission reduction targets.

Hydrology/Water Quality. Construction and operation of the Project has the potential to result in short- and long-term impacts, respectively, to on- and off-campus downstream surface water quality and flows (capacity and velocity). A Project-specific drainage design and hydrology study will be prepared to evaluate the existing and proposed drainage conditions of the Project site and provide recommendations on storm drain improvements, water quality treatment devices, and storm water storage necessary to convey storm water flows in the proposed condition. Low impact development and source control storm water management strategies aimed at reducing project-related water quality impacts would be integrated into the Project design and addressed in the EIR as best management practices (BMPs), in accordance with National Pollutant Discharge Elimination System regulations. The EIR will describe the existing hydrology and water quality conditions for the Project site and vicinity, identify plans and policies applicable to the discussion of hydrology and water quality issues, and evaluate potential project-related impacts. The EIR will also evaluate compliance with UC San Diego's Small Municipal Separate Storm Sewer System (MS4) Phase II permit requirements for flow volume and water quality.

Land Use and Planning. As noted above, the Project site is currently within the jurisdiction of the City of San Diego, is zoned as Commercial (CO-1-2) and is within the Coastal Height Limit Overlay Zone, Community Plan Implementation Overlay Zone, and the Parking Impact Overlay Zone. The 7-acre commercial center property is proposed to be subdivided and the 0.9-acre Project parcel would be sold to UC San Diego and leased to an affiliate of GPI Companies to develop the proposed Project. Upon acquisition of the property, the Project site would be under the ownership of the UC Regents and subject to UC land management policies. As a constitutionally created State entity, the UC is not subject to municipal regulations of surrounding local governments, such as the City of San Diego General Plan or land use ordinances or initiatives, for uses on property owned or controlled by the UC that are in furtherance of the UC's academic and research mission. The EIR will describe the existing land uses within the Project site and surrounding area, as well as local land use plans, policies, and regulations applicable to the Project. Although UC is not subject to local land use and zoning requirements, consistency of the Project with UC policies as well as applicable policies of the City of San Diego will be discussed. The EIR will also evaluate the potential for the Project to physically divide an established community or cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Noise. The proposed Project has the potential to result in noise impacts to nearby noise-sensitive land uses, such as residences located approximately 400 feet to the south of the Project site. The EIR will describe the existing noise conditions for the Project site and vicinity, identify plans and policies applicable to the discussion of noise issues, and address potential impacts related to the effect of Project-generated construction noise (e.g., worker and equipment noise) and operational noise (e.g., from the parking garage, ventilation equipment, and/or project-added traffic) on nearby noise-sensitive land uses.

Transportation. The EIR will describe the existing transportation conditions for the Project site and vicinity, identify plans and policies applicable to the discussion of transportation issues, and evaluate potential project-related traffic impacts. Potential impacts will be evaluated in a Project-specific transportation impact analysis. Vehicle miles traveled (VMT) impacts associated with the proposed Project will be evaluated pursuant to the California Environmental Quality Act (CEQA) guidelines, which utilize VMT as the measure of effectiveness pursuant to Senate Bill 743.

Alternatives. The EIR will also include a discussion of reasonable alternatives to the proposed Project. Pursuant to CEQA Guidelines Section 15126.6, alternatives will be developed that would avoid or lessen identified significant impacts of the proposed Project, while feasibly attaining most of the basic objectives of the Project.

The EIR will also include an analysis of cumulative effects, as well as other required CEQA sections.

CEQA Compliance: The University of California is the Lead Agency for the Project and UC San Diego will prepare a focused EIR to evaluate the environmental effects of the proposed Project. In compliance with the State and UC guidelines for implementation of CEQA, this Notice of Preparation (NOP) is hereby sent to inform you that UC San Diego is preparing a Draft EIR on the Project. As Lead Agency, we need to know the views of your agency as to the scope and content of the environmental information, which is germane to your agency's statutory responsibilities in connection with the proposed Project.

We appreciate your prompt acknowledgement and review of this NOP. As required by time limits mandated by state law, the 30-day scoping period will extend from **November 20** through **December 21, 2020**. Your comments on the proposed scope of the EIR must be sent at the earliest possible date, but not later than 5:00 PM on December 21, 2020.

Email comments to LJICcomment@helixepi.com

or

Mail comments to:

HELIX Environmental Planning
Attn: Joanne Dramko
7578 El Cajon Boulevard
La Mesa, California 91942

Informational EIR Scoping Meeting: As a result of the expanding outbreak of COVID-19 and restrictions placed on in-person gatherings throughout California, an online public session to receive public comments on the scope of the EIR in response to the NOP will be held, rather than holding an in-person event. The meeting will be in a webinar format with a presentation by representatives from UC San Diego and HELIX Environmental Planning.

The online public session will be hosted on the evening of Monday, December 7, 2020, from 6:00 PM to 7:00 PM (Pacific Time) and conducted via a live video feed in a webinar format; there will not be an in-person scoping meeting session. There are several ways to join the meeting:

1) Register in advance for the scoping meeting webinar using the link below:
   https://us02web.zoom.us/webinar/register/WN_NNQBQXtVTKORoUVS7BxVBg

   After registering, you will receive a confirmation email containing additional information about joining the webinar.

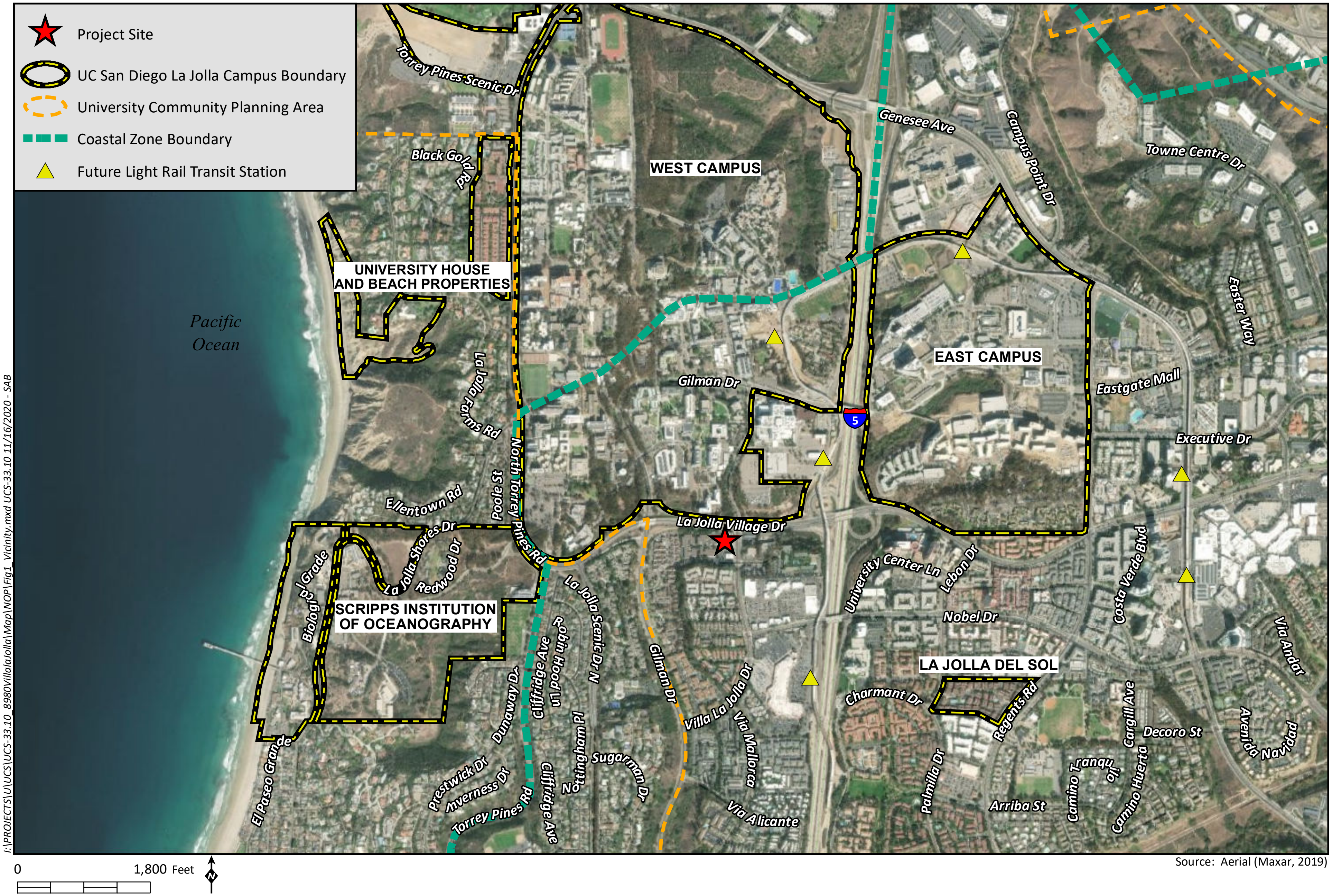
2) Go to www.zoom.us, Select "Join a Meeting," and enter the following:
   Webinar ID: 882 1825 1165, Passcode: 283636

3) Call into the meeting via telephone:
   +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 312 626 6799 or +1 646 876 9923 or +1 301 715 8592
   Webinar ID: 882 1825 1165

If you are unable to join the online public session, a recording will be provided on the project website linked below. The scoping meeting will also be advertised in the San Diego Union Tribune and by direct mailing to notify interested individuals, organizations, and associations on UC San Diego's mailing list. In addition, this NOP and additional project information is available on the project-specific website at https://blink.ucsd.edu/facilities/real-estate/ljic.html.

If you have any questions about the Project, please contact Julie Kilpatrick, Director: Real Estate, P3 Development, at (858) 534-7475.

Enclosures: Environmental Document Transmittal Form
Figure 1, Project Vicinity
Figure 2, Project Site and Surroundings
Figure 3, Limits of Work



Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Project Vicinity

Figure 1

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Source: Aerial (SanGIS, 2017)

HELIX
Environmental Planning

Project Site and Surroundings

Figure 2

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Limits of Work

Figure 3

The San Diego Union-Tribune

PROOF OF PUBLICATION

STATE OF CALIFORNIA
County of San Diego

The Undersigned, declares under penalty of perjury under the laws of the State of California: That he/she is the resident of the County of San Diego. That he/she is and at all times herein mentioned was a citizen of the United States, over the age of twenty-one years, and that he/she is not a party to, nor interested in the above entitled matter; that he/she is Chief Clerk for the publisher of

The San Diego Union-Tribune

a newspaper of general circulation, printed and published daily in the City of San Diego, County of San Diego, and which newspaper is published for the dissemination of local news and intelligence of a general character, and which newspaper at all the times herein mentioned had and still has a bona fide subscription list of paying subscribers, and which newspaper has been established, printed and published at regular intervals in the said City of San Diego, County of San Diego, for a period exceeding one year next preceding the date of publication of the notice hereinafter referred to, and which newspaper is not devoted to nor published for the interests, entertainment or instruction of a particular class, profession, trade, calling, race, or denomination, or any number of same; that the notice of which the annexed is a printed copy, has been published in said newspaper in accordance with the instruction of the person(s) requesting publication, and not in any supplement thereof on the following dates, to wit:

November 21, 2020

I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated in the City of San Diego, California
on this 23rd of November 2020

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Cris Gaza
San Diego Union-Tribune
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Name: Helix Environmental Planning Inc.

NOTICE OF PREPARATION AND PUBLIC SCOPING MEETING
DRAFT ENVIRONMENTAL IMPACT REPORT
LA JOLLA INNOVATION CENTER

Project Description: The University of California, San Diego (UC San Diego) is the lead agency for the proposed La Jolla Innovation Center project (proposed project). The proposed project would redevelop 1.2 acres of an existing 7-acre commercial center located at 8980 Villa La Jolla Drive, San Diego, California. The 1.2-acre project site includes a 0.9-acre parcel currently developed with a restaurant building that would be sold to University of California (UC) Regents and leased to an affiliate of GPI Companies, the current landowner, to develop the project. The remaining 0.3 acre consists of surface parking, landscaping, and hardscape immediately surrounding the parcel that would be improved as part of the proposed project but would not be sold to UC Regents. The proposed project would demolish the existing restaurant building and develop a new building comprised of five levels of office and educational uses, two levels of above grade parking, and two levels of subterranean parking. The proposed project would provide leasable space for UC San Diego Health Sciences and UC San Diego Extension programs, which would serve the UC San Diego campus and the community at large.

Compliance with the California Environmental Quality Act: A Notice of Preparation (NOP) has been prepared to inform you that UC San Diego will prepare a focused environmental impact report (EIR) to evaluate the environmental effects of the proposed project. A copy of the NOP is available at the project website at: https://blink.ucsd.edu/facilities/real-estate/ljic.html. As required by time limits mandated by state law, the 30-day scoping period will extend from **November 20** through **December 21, 2020.** Your comments on the proposed scope of the EIR must be sent at the earliest possible date, but not later than 5:00 PM on **December 21, 2020.** Email comments to LJICcomment@helixepi.com or mail comments to:

HELIX Environmental Planning
Attn: Joanne Dramko
7578 El Cajon Boulevard
La Mesa, California 91942

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If you are unable to join the online public session, a recording will be provided on the project website linked above.

La Jolla Innovation Center

Summary

SCH Number 2020110344

Lead Agency University of California, San Diego *(University of California San Diego)*

Document Title La Jolla Innovation Center

Document Type NOP - Notice of Preparation

Received 11/20/2020

Project Applicant University of California, San Diego

Present Land Use Commercial

Document Description The project would redevelop 1.2 acres of an existing commercial center into a five-story building containing office and instructional uses. The project would include two levels of above-grade parking and two levels of subterranean parking that would be occupied by UC San Diego.

Contact Information

Julie Kilpatrick
University of California, San Diego
9500 Gilman Drive
La Jolla, CA 92023
Phone : (858) 534-7475
jkilpatrick@ucsd.edu

Location

Cities La Jolla

Counties San Diego

Cross Streets La Jolla Village Drive/Villa La Jolla Drive

Zip 92037

Total Acres 1.2

Parcel # 344-250-04

State Highways I-5

Railways SANDAG, NCTD, Amtrak

Waterways Pacific Ocean, Rose Creek

Township 15 S

Range 3 W

Notice of Completion

Review Period Start	11/20/2020
Review Period End	12/21/2020
Development Type	Office (62,510 SF Sq. Ft.) · Commercial (1,420 SF Sq. Ft.) · Educational (Continuing Education)
Local Action	Site Plan
Project Issues	Aesthetic/Visual · Air Quality · Noise · Public Services · Traffic/Circulation · Water Quality · Land Use · Cumulative Effects · Other
Reviewing Agencies	California Air Resources Board · California Coastal Commission · California Department of Education · California Department of Fish and Wildlife, Marin Region 7 · California Department of Fish and Wildlife, South Coast Region 5 · California Department of Parks and Recreation · California Department of Transportation, District 11 · California Department of Water Resources · California Highway Patrol · California Natural Resources Agency · California Public Utilities Commission · California Regional Water Quality Control Board, San Diego Region 9 · California State Lands Commission · Department of Toxic Substances Control · Office of Historic Preservation · State Water Resources Control Board, Division of Drinking Water · State Water Resources Control Board, Division of Water Quality · California Native American Heritage Commission

Attachments

Environmental Document	LaJollaInnovationCenter_NOP PDF 1745 K
NOC	LaJollaInnovationCenter_NOC PDF 207 K
State Comments	2020110344_NAHC Comment PDF 320 K

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Question Report

Report Generated:	12/8/2020 8:39			
Topic	Webinar ID	Actual Start Time	Actual Duration (minutes)	# Question
La Jolla Innovation Center EIR Public Scoping Meeting	882 1825 1165	12/7/2020 17:43	78	6

Question Details

#	Question	Asker Name	Asker Email	Answer(s)
1	Joann Selleck, JS@OneSelleck.com:	joann selleck	JS@SelleckMediation.com	
2	(In response to your 11/20/20 notice) Isn't the coastal zone boundry running all along the 5, as opposed to dipping up to N. Torrey Pines Rd (etc) as your "figure1" demonstrates. Thus, this 7 story building is too high for the coastal zone, given its ownership.	joann selleck	JS@SelleckMediation.com	
3	still responding to the 11/20 notice - your notice indicates that "development density" in this transit priority area is one of the reasons for the project. However, don't the transit density provisions pertain to residential as opposed to office buildings?	joann selleck	JS@SelleckMediation.com	
4	Still referring to the 11/20 notice. The increased density reason, even IF consistent with transit density goals is somewhat misleading becasuse as I understand the project, the goal is to move the UCSD occupancy from the adjacent, non-sizemically-compliant office building into a new one to be constructed. That is not an increase in density, it is simply moving people in the same congested area.	joann selleck	JS@SelleckMediation.com	
5	Still referring to the 11/20/20 notice: What is GPI's anticipated use of the adjacent "the campus on villa lajolla?" Demolition? Sale to UCSD?	joann selleck	JS@SelleckMediation.com	
6	Finally, it is great to see the brewery/restaurant being replaced however, the proposed has too many stories. Thank you.	joann selleck	JS@SelleckMediation.com	Thank you for your comments and questions. They will be added to the record and considered/answered.

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

November 23, 2020

Governor's Office of Planning & Research

Nov 25 2020

STATE CLEARINGHOUSE

Julie Kilpatrick
University of California, San Diego
9500 Gilman Drive, MC 0982
La Jolla, CA 92093-0982

Re: 2020110344, La Jolla Innovation Center Project, San Diego County

Dear Ms. Kilpatrick:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
- **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
- **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
- **a.** If part or all of the APE has been previously surveyed for cultural resources.
- **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
- **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
- **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
- **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
- **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

From:	Sean Silva
To:	La Jolla Innovation Center Project
Subject:	Public Records Request - 8980 Villa La Jolla Project
Date:	Thursday, December 03, 2020 4:20:43 PM

December 3, 2020

Via Email and U.S. Mail

HELIX Environmental Planning
Attn: Joanne Dramko
7578 El Cajon Blvd.
La Mesa, CA 91942
ljiccomment@helixepi.com

RE: Public Records Act Request and Request for Mailed Notice of Public Hearings and Actions – 8980 Villa La Jolla La Jolla, CA 92037

Dear Ms. Dramko,

CREED LA is writing to request a copy of any and all records related to the project at 8980 Villa La Jolla Drrive in La Jolla.The project will be a 7-story building with 62,500 sf of office space, 24,200 sf of classroom space, 6,000 sf of meeting space, and 1,400 sf of ground-floor retail space.We are also writing to request copies of all communications and mailed notice of any and all hearings and/or actions related to the Project.

Our request for mailed notice of all hearings includes hearings, study sessions and community meetings related to the Project, certification of the MND (or recirculated DEIR), and approval of any Project entitlements. This request is made pursuant to Public Resources Code Sections 21092.2, 21080.4, 21083.9, 21092, 21108 and 21152 and Government Code Section 65092, which require local agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body. Our request includes notice to any City actions, hearings or other proceedings regarding the Project, Project approvals and any actions taken, or additional documents released pursuant to the California Environmental Quality Act.

Our request for all records related to the Project is made pursuant to the California Public Records Act. (Government Code § 6250 et seq.) This request is also made pursuant to Article I, section 3(b) of the California Constitution, which provides a constitutional right of access to information concerning the conduct of government. Article I, section 3(b) provides that any statutory right to information shall be broadly construed to provide the greatest access to government information and further requires that any statute that limits the right of access to information shall be narrowly construed.

We will pay for any direct costs of duplication associated with filling this request up to $200. However, please contact me at (877) 810-7473 with a cost estimate before copying/scanning the materials.

Pursuant to Government Code Section 6253.9, if the requested documents are in electronic format and are 10 MB or less (or can be easily broken into sections of 10 MB or less), please email them to me as attachments.

My contact information is:

U.S. Mail
Jeff Modrzejewski
CREED LA
501 Shatto Place, Suite 200
Los Angeles, CA. 90020

Email
Jeff@creedla.com

Please call me if you have any questions. Thank you for your assistance with this matter.

Sincerely,
Jeff Modrzejewski
Executive Director

From: Ferchaw, Tracy <Tracy.Ferchaw@sandag.org>
Sent: Thursday, December 17, 2020 6:24 PM
To: Kilpatrick, Julie <jkilpatrick@UCSD.EDU>
Cc: Litchney, Seth <Seth.Litchney@sandag.org>
Subject: La Jolla Innovation Center NOP (SCH #2020110344)

Dear Ms. Kilpatrick,

Thank you for the opportunity to comment on the University of San Diego's La Jolla Innovation Center NOP. Please consider the following active transportation comments below:

- Bicycle access does not appear to have been discussed in the NOP. Please include the following in the project design:
    - High quality bike parking, such as secure bike lockers. Bike parking should be located as close as possible to entrances of buildings or open spaces in highly visible areas. Secure lockers can be included in the parking garage if proper bicycle access is included.
    - Facilities that encourage people to bike or walk to work, such as secure bike parking, showers, locker rooms, etc.
- It is suggested that any transportation analysis take into account the impacts of the project on multimodal transportation, including impacts to walking and biking. Impact mitigation should include consideration of how to provide safe and comfortable bicycling and walking connections to surrounding destinations.

Please let Seth Litchney (seth.litchney@sandag.org) know if you have any questions.

Thank you,

Tracy Ferchaw, MBA
Associate Business Analyst

(619) 699-1977
401 B Street, Suite 800, San Diego, CA 92101

SANDAG

DEPARTMENT OF TRANSPORTATION
DISTRICT 11
4050 TAYLOR STREET, MS-240
SAN DIEGO, CA 92110
PHONE (619) 688-3137
FAX (619) 688-4299
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

Governor's Office of Planning & Research

Dec 21 2020

STATE CLEARINGHOUSE

December 21, 2020

11-SD-5
PM 28.455
La Jolla Innovation Center
NOP/SCH#2020110344

Ms. Julie Kilpatrick
University of California, San Diego
9500 Gilman Drive
La Jolla, CA 92023

Dear Ms. Kilpatrick:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Notice of Preparation (NOP) for the La Jolla Innovation Center located near Interstate 5 (I -5). The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Local Development-Intergovernmental Review (LD-IGR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities.

Caltrans has the following comments:

Traffic Impact Study

- A Vehicle Miles of Travel (VMT) based Traffic Impact Study (TIS) should be provided for this project. Please use the Governor's Office of Planning and Research Guidance to identify VMT related impacts.[i]

- The TIS may also need to identify the proposed project's near-term and long-term safety or operational issues, on or adjacent any existing or proposed State facilities.

[i] California Governor's Office of Planning and Research (OPR) 2018. "Technical Advisory on Evaluating Transportation Impacts in CEQA." http://opr.ca.gov/docs/20190 I 22-743_Technical_Advisory.pdf

Environmental

Caltrans recommends that this project specifically identifies and assesses potential impacts caused by the project or impacts from mitigation efforts that occur within Caltrans R/W that includes impacts to the natural environment, infrastructure (highways/roadways/on- and off-ramps) and appurtenant features (lighting/signs/guardrail). Caltrans is interested in the analysis for resources listed in the Draft Environmental Impact Report that are contained within Caltrans' R/W.

An encroachment permit will be required for any work within the Caltrans' R/W prior to construction. As part of the encroachment permit process, the applicant must provide approved final environmental documents for this project, corresponding technical studies, and necessary regulatory and resource agency permits. Specifically, CEQA determination or exemption. The supporting documents must address all environmental impacts within the Caltrans' R/W and address any impacts from avoidance and/or mitigation measures.

Right-of-Way

- Per Business and Profession Code 8771, perpetuation of survey monuments by a licensed land surveyor is required, if they are being destroyed by any construction.
- Any work performed within Caltrans R/W will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans R/W prior to construction.

Additional information regarding encroachment permits may be obtained by contacting the Caltrans Permits Office at (619) 688-6158 or by visiting the website at http://www.dot.ca.gov/trafficops/ep/index.html. Early coordination with Caltrans is strongly advised for all encroachment permits.

If you have any questions, please contact Kimberly Dodson, of the Caltrans Development Review Branch, at (619) 985-1587 or by e-mail sent to Kimberly.Dodson@dot.ca.gov.

Sincerely,

electronically signed by

MAURICE EATON, Branch Chief
Local Development and Intergovernmental Review

From: Chris Nielsen
To: La Jolla Innovation Center Project
Subject: LJIC EIR Comment
Date: Monday, December 21, 2020 12:24:19 PM

Dear Joanne Dramko,

Please accept the following comments for the La Jolla Innovation Center's proposed EIR. These comments are my own and do not reflect the views of the University Community Planning Group, of which I am chair.

Transportation / Circulation:

The EIR should consider the modification of the existing pedestrian bridge between the north and south side of La Jolla Village Drive to add a connection with the proposed building and its possible environmental benefits.

The EIR should consider proposed traffic modifications on the south side of the proposed building and effects on circulation of automobile traffic through the site to the proposed building. If the current entrance and exit to Villa La Jolla between Villa Norte and La Jolla Village Drive is closed, access to the site for bicycles and pedestrians should be analyzed for this location.

My understanding is that there is a traffic circulation easement along Villa Norte through the Residence Inn property to Gilman Drive. The EIR should study potential traffic volume through this route to determine if the level of traffic and potential speeds justify adding traffic calming measures to this route. How might bicycles be better accommodated for site access using this route? If a signal were added on Gilman Drive at the location of the Residence Inn, the EIR should consider the potential effect on automobile and bicycle volume.

Parking:

How will the pay parking rates and permit regulations be set with respect to nearby parking, UCSD Osler, and the VA in order to minimize the environmental impacts of traffic to the site? The EIR should consider ways to restrict site parking to those using the proposed building.

UC San Diego Extension is expected to generate evening visits to the site. The EIR should study the difference in traffic mix (auto, bicycle, and pedestrian) between day and evening use, and the effect of parking regulations on this mix.

If a meeting room were offered to the Community for occasional use, how would such a meeting be accommodated with respect to parking?

Visual:

The proposed building is in a low elevation point for the area. The EIR should illustrate before and after views from many locations in the area. If any current (taller) vegetation is likely to be removed by the project, the EIR should consider and render the visual effect.

The EIR should analyze the effect of headlamps from circulating autos on the first two floors of the proposed building causing excessive light glare to the surrounding property and its possible mitigation.

Noise:

The building will have HVAC units installed on its roof for building air handling. The traffic noise from La Jolla Village Drive and its intersection with Villa La Jolla is substantial. The EIR should consider any increase in noise due to the building.

Storm water:

The EIR should compare the proposed building's storm water system to the current City of San Diego regulations as a point of reference. The 7 acre site will have a common developer and will be a mix of old and new construction; the EIR should specify and analyze how any mixing of storm water handling will be done.

Thank you,

Chris Nielsen

IPAI

SAN PASQUAL BAND OF MISSION INDIANS

SAN PASQUAL RESERVATION

December 28, 2020

University of California
9500 Gilman Dr.
La Jolla, CA 92093

RE: LA Jolla Innovation center project

Sent via E-mail- Due to COVID -19

Dear Mis Kilpatrick ,

The San Pasqual Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of David L. Toler THPO Officer.
We have consulted our maps and determined that the project as described is not within the boundaries of the recognize San Pasqual Indian Reservation. The project is within the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). Therefore, we request to be kept in the information loop as the project progresses and would appreciate being maintained on the receiving list for project updates, reports of investigations, and/or any documentation that might be generated regarding previously reported or newly discovered sites. Further, we may recommend archaeological monitoring pending the results of site surveys and records searches associated with the project. If the project boundaries are modified to extend beyond the currently proposed limits, we request updated information and the opportunity to respond to your changes. Also, San Pasqual Band of Mission Indians can provide Native American monitoring if needed for this project.

We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact me by telephone 760-651-5142 or by e-mail at Thpo@sanpasqualtribe.org please CC: Angelinag@sanpasqualtribe.org thank you.

Respectfully,

Angelina Gutierrez

Angelina Gutierrez
Tribal Historic Preservation Office, Monitor Supervisor
San Pasqual Band of Mission Indians

From:	Andrew Wiese
To:	La Jolla Innovation Center Project
Subject:	LJIC EIR Comments
Date:	Tuesday, December 22, 2020 3:08:08 PM

Please accept the following comments for the La Jolla Innovation Center's proposed EIR.

Transportation / Circulation:

The EIR should consider the modification of the existing pedestrian

bridge between the north and south side of La Jolla Village Drive to enhance multi-modal transportation connections between UCSD campus, Pepper Canyon trolley station, and the proposed building.

The EIR should consider impacts - pro and con - of completing modifications of pedestrian bridge with completion of project.

The EIR should study enhanced bike and pedestrian connections to La Jolla Square trolley station to ensure that the project enhances multi-modal transportation options, reduces VMT, and minimizes automobile transportation to the location and ghg emissions related to the project.

The EIR should consider proposed traffic modifications on the south side of the proposed building and effects on circulation of automobile traffic through the site to the proposed building. If the current entrance and exit to Villa La Jolla between Villa Norte and La Jolla Village Drive is closed, access to the site for bicycles and pedestrians should be analyzed for this location.

The EIR should consider bicycle and pedestrian pathways through the site and via the reported traffic circulation easement along Villa Norte through the Residence Inn property to Gilman Drive and Coastal Rail Trail.

The EIR should study potential traffic volume through this route to determine if the level of traffic and potential speeds justify adding traffic calming measures to this route. How might bicycles be better accommodated for site access using this route? If a signal were added on Gilman Drive at the location of the Residence Inn, the EIR should consider the potential effect on automobile and bicycle volume.

The EIR should study all available options to provide safe and direct bicycle connectivity between the project site and the Coastal Rail Trail on Gilman Drive.

The EIR should study the impact of on site facilities such as bike lockers, showers, repair stations, etc to maximize bicycle transportation to the site.

The EIR should study the impact of other TDM strategies, including transit passes, car and vanpool programs, to maximize multimodal transportation and minimize VMT related to the site.

The EIR should study the impact of the project on pedestrian safety and potential crossings on La Jolla Village Drive and Villa La Jolla Drive.

Parking:

The EIR should study alternative parking ratios for the project (including low or no parking options) and identify the parking option that will minimize automobile traffic, minimize VMT, and minimize Ghg emissions related to the project.

The EIR should address paid parking and other strategies to minimize auto reliance ad maximize multi-modal transportation solutions. How will the pay parking rates and permit regulations be set with respect to nearby parking, UCSD Osler, and the VA in order to. minimize the environmental impacts of traffic to the site? The EIR should consider ways to restrict site parking to those using the proposed building.

UC San Diego Extension is expected to generate evening visits to the site. The EIR should study the difference in traffic mix (auto, bicycle, and pedestrian) between day and evening use, and the effect of parking regulations on this mix.

If a meeting room were offered to the Community for occasional
use, how would such a meeting be accommodated with respect to parking?

Visual:

The proposed building is in a low elevation point for the area.
The EIR should illustrate before and after views from many locations in the area. If any current (taller) vegetation is likely to be removed by the project, the EIR should consider and render the visual effect.

The EIR should analyze the effect of headlamps from circulating autos on the first two floors of the proposed building causing excessive light glare to the surrounding property and its possible mitigation.

Storm water:

The EIR should compare the proposed building's storm water system to the current City of San Diego regulations as a point of reference. The 7 acre site will have a common developer and will be a mix of old and new construction; the EIR should specify and analyze how any mixing of storm water handling will be done.

Biological:
The EIR should study the impact of the project on resident and migratory birds and it should outline strategies to minimize bird strikes.

The EIR should study the impact of project landscaping and storm water retention facilities on native pollinators, including Monarch butterflies, and other native species.

Thank you,

Andrew Wiese
Resident, University City
Board Member, UCPG

UCSD LA JOLLA INNOVATION CENTER
NOTICE OF PREPARATION OF DRAFT ENVIRONMENTAL IMPACT REPORT

City of San Diego Stormwater Division Comments 12/10/20

Notice of Preparation

Page 4, Hydrology/Water Quality. We appreciate inclusion of this topic among key environmental considerations to be addressed in the Environmental Impact Report (EIR), and the commitment to prepare a project-specific drainage design and hydrology study to inform EIR analysis and proposed project design and implementation.

Please include the following in this work.

- Any potential effects on the City of San Diego storm drain system.
- Compliance with discharge limitations involving the San Diego Marine Life Refuge Area of Special Biological Significance (ASBS) and San Diego-La Jolla Ecological Reserve ASBS located downstream and offshore from the project site.
- Some La Jolla locations have experienced issues involving groundwater discharges, and the proposed project would include two subterranean parking levels.

Contact:

Mark G. Stephens, AICP
Associate Planner
City of San Diego
Transportation & Stormwater Department
Stormwater Division
9370 Chesapeake Dr., Suite 100, MS 1900
San Diego, CA 92123-1024

T (858) 541-4361 / (619) 954-5444 (cell)
www.sandiego.gov

Appendix B

Air Quality and Greenhouse Gas Emissions Technical Report

La Jolla Innovation Center Project
8980 Villa La Jolla Drive

Air Quality and Greenhouse Gas Emissions Technical Report

January 2021 | UCS-33.10

Prepared for:

University of California, San Diego
Campus Planning
9500 Gilman Drive, MC 0074
La Jolla, CA 92093-0175

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

La Jolla Innovation Center Project
8980 Villa La Jolla Drive

Air Quality and Greenhouse Gas Emissions Technical Report

Prepared for:

University of California, San Diego
Campus Planning
9500 Gilman Drive, MC 0074
La Jolla, CA 92093-0175

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

January 2021 | UCS-33.10

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ADT	average daily trips
APCD	Air Pollution Control District
ASHRAE	American Society of Heating, Refrigeration, and Air-Conditioning Engineers
BAAQMD	Bay Area Air Quality Management District
BMPs	best management practices
C_2F_6	hexafluoroethane
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CF_4	tetrafluoromethane
CFC	chlorofluorocarbon
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CY	cubic yard
DPM	diesel particulate matter
EIR	Environmental Impact Report
EO	Executive Order
g/L	grams per liter
GHG	greenhouse gas
GWP	global warming potential
H_2S	hydrogen sulfide
HAP	hazardous air pollutant
HFC	hydrofluorocarbon
HRA	health risk assessment
HVAC	heating, ventilation, and air-conditioning

ACRONYMS AND ABBREVIATIONS (cont.)

I-	Interstate
ICLEI	International Council for Local Environmental Initiatives
IPCC	Intergovernmental Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LED	light emitting diode
LEED	Leadership in Energy and Environmental Design
LLG	Linscott, Law & Greenspan Engineers
LRDP	Long Rage Development Plan
LRT	light rail transit
MEI	maximally exposed individual
mg/m^3	milligrams per cubic meter
MMT	million metric tons
mph	miles per hour
MPO	Metropolitan Planning Organizations
MT	metric ton
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_X	nitrogen oxides
O_3	ozone
OPR	Governor’s Office of Planning and Research
Pb	lead
PFC	perfluorocarbon
PM	particulate matter
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
ppm	parts per million
PV	photovoltaic
ROG	reactive organic gas
RTP	Regional Transportation Plan
SAFE	Safer Affordable Fuel-Efficient
SANDAG	San Diego Association of Governments
SB	Senate Bill

ACRONYMS AND ABBREVIATIONS (cont.)

SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDG&E	San Diego Gas and Electric
SEP	Strategic Energy Plan
SF	square foot/feet
SF_6	hexafluoride
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SOV	single-occupant vehicle
SO_X	sulfur oxides
SP	service population
SWMP	storm water management plan
SWPPP	storm water pollution prevention plan
TACs	toxic air contaminants
TCR	The Climate Registry
TDM	Transportation Demand Management
TIA	Transportation Impact Analysis
TOD	Transit Oriented Development
TPA	Transit Priority Area
UC	University of California
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOC	volatile organic compound
ZEV	zero emissions vehicle

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality and greenhouse gas (GHG) emission impacts during construction and operation of the proposed La Jolla Innovation Center Project (Project), located at 8980 Villa La Jolla Drive, adjacent to the southern boundary of the University of California (UC), San Diego (UC San Diego or University) La Jolla campus in the City of San Diego (City).

The Project would result in emissions of criteria air pollutants during construction and operation. Construction emissions include fugitive dust, heavy construction equipment exhaust, and vehicle trips associated with workers commuting to and from the site and trucks hauling materials. In accordance with San Diego Air Pollution Control District (SDAPCD) Rule 55, fugitive dust control measures including the use of an on-site water truck to water down active grading areas and unpaved and paved roads at least twice daily are incorporated into the Project design. During operations, sources of emissions would include area, on-site energy use, and transportation. Project emissions of criteria pollutants during construction and operations would remain below SDAPCD emissions thresholds.

The Project would be consistent with air quality policies set forth by the SDAPCD as presented in the 2020 Attainment Plan for San Diego County.

Construction and operation of the Project would not result in exposure of sensitive receptors to significant quantities of toxic air contaminants (TACs). In addition, evaluation of potential odors from the Project indicated that associated impacts would be less than significant.

Construction sources of GHG emissions would include heavy construction equipment, worker vehicle miles traveled (VMT), and water use. Operational sources of GHG emissions would include area, energy, transportation, water use, and solid waste sources. The Project would conform to the UC Sustainable Practices Policy, achieve Leadership in Energy and Environmental Design (LEED) Silver certification, and implement a number of design features that would further reduce GHG emissions. Design features include, but are not limited to, exceeding the 2019 Title 24 energy efficiency standards by 20 percent, achieving a 35 percent reduction in potable water use compared to the statewide average, and implementing a Zero Waste Plan during operations. In addition, the Project would participate in the SDG&E *Savings by Design Program*, with the goal to obtain 100 percent clean energy by 2025.

Project-related construction GHG emissions are estimated to be 610 metric tons (MT) of carbon dioxide equivalent (CO_2e). Construction emissions are amortized over 30 years, such that the proposed construction activities would contribute an average of 20 MT per year of CO_2e emissions. Annual Project-related operational and amortized construction GHG emissions for the anticipated first full year of operations (2024) are estimated to be 2,551 MT CO_2e.

The GHG emissions impact significance determination is based on an efficiency standard of GHG emissions per service population (SP) (i.e., occupants of the Project) for the Project's first full year of operations (2024). The efficiency standard was developed to achieve compliance with California's Assembly Bill (AB) 32 target of reducing 2020 GHG emissions to 1990 levels and compliance with California's Senate Bill (SB) 32 target of reducing 2030 GHG emissions to 40 percent below 1990 levels. The Project's emissions per SP are estimated to be 2.69 metric tons/service population/year (MT/SP/year), which is below the applicable 2024 efficiency standard of 4.26 MP/SP/year. As such, the Project would be consistent with the goals of Assembly Bill (AB) 32 and Senate Bill (SB) 32. Furthermore, the Project would be consistent with the UC Sustainable Practices Policy goals for climate neutrality by 2025 and 2050.

1.0 INTRODUCTION

This report presents an assessment of potential air quality and greenhouse gas (GHG) emissions impacts during construction and operation of the proposed La Jolla Innovation Center Project (Project), located at 8980 Villa La Jolla Drive, adjacent to the southern boundary of the University of California (UC), San Diego (UC San Diego or University) La Jolla campus.

1.1 PROJECT LOCATION

The La Jolla campus encompasses approximately 1,200 acres extending from the Pacific Ocean to the east side of Interstate 5 (I-5), in the northwest portion of the City of San Diego (City) and adjacent to the La Jolla and University City communities (see Figure 1, *Regional Location,* and Figure 2, *Project Vicinity*).

The proposed Project site is adjacent to the southern boundary of the west campus of UC San Diego. The west campus is located primarily between Genesee Avenue to the north, La Jolla Village Drive to the south, North Torrey Pines road to the west, and I-5 to the east (refer to Figure 2). The west campus is the largest of the three areas of the main UC San Diego campus, located on approximately 669 acres of land. The undergraduate colleges and four professional schools—the Rady School of Management, the School of Medicine, the School of Pharmacy and Pharmaceutical Services, and the Graduate School of International Relations and Pacific Studies—are in this portion of campus. In addition to academic instruction and research facilities, the west campus includes libraries, theaters, student activity, administrative, sports/recreational, housing, dining, and parking facilities.

Proposed to be developed within the 1.2-acre limits of work, the 0.9-acre Project site is located at 8980 Villa La Jolla Drive, which is at the southwestern corner of the intersection of La Jolla Village Drive and Villa La Jolla Drive, approximately 1,400 feet west of I-5 (see Figure 3, *Project Site and Surroundings*). The site is currently developed with an approximately 13,213-square-foot (SF) restaurant. The UC San Diego School of Medicine portion of campus is located to the north of the Project site across La Jolla Village Drive. Medical office buildings are located to the west of the Project site, the UC San Diego Health Urgent Care-La Jolla is located to the south, and additional medical office buildings, as well as a gas station and car wash, are located to the east.

1.2 PROJECT DESCRIPTION

The proposed Project would consist of a new building comprised of five levels of office and educational uses, two levels of above grade parking, and two levels of subterranean parking at 8980 Villa La Jolla Drive, San Diego, California. The Project site is currently developed with an approximately 13,213-SF restaurant, surface parking, and landscaping. The property is proposed to be subdivided and the building demolished, and the 0.9-acre parcel within the 1.2-acre limits of work would be sold to UC San Diego and leased to GPI Companies to develop the Project; the 0.3-acre portion of the site would not be sold to the UC Regents.

The new building would consist of seven stories above grade and two stories below grade. The two stories below grade and the first two stories above grade would primarily consist of parking (totaling approximately 94,800 SF and 275 parking spaces); the remaining five upper stories would consist of leasing office and classroom space (totaling 103,314 SF). A 1,420-SF retail space (potentially a café) is proposed within the ground level of the building to serve the building occupants. Vehicular access to the

Project site would be provided by the two existing driveways to the commercial center from Villa La Jolla Drive and the Villa Norte cul-de-sac. Pedestrian access to the Project site would be provided via a new sidewalk connection to La Jolla Village Drive and via an existing City owned pedestrian bridge that crosses La Jolla Village Drive and provides direct access to the Health Sciences portion of the UC San Diego campus.

Earthwork associated with the Project would involve approximately 18,700 cubic yards (CY) of cut and 240 CY of fill, for a net export of 18,460 CY of earthwork material. The maximum cut depth is proposed to be approximately 23.5 feet. Construction is anticipated to commence in mid-2021, with initial occupancy anticipated to be in 2023.

1.3 CONSTRUCTION BEST MANAGEMENT PRACTICES

The Project would incorporate best management practices (BMPs) during construction to reduce emissions of fugitive dust. San Diego Air Pollution Control District (SDAPCD) Rule 55 – Fugitive Dust Control states that no dust and/or dirt shall leave the property line. SDAPCD Rule 55 requires the following:

(1) **Airborne Dust Beyond the Property Line:** No person shall engage in construction or demolition activity subject to this rule 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) **Track-Out/Carry-Out:** Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall:

   (i) be minimized by the use of any of the following or equally effective track-out/carry-out and erosion control measures that apply to the Project or operation:

      (a) track-out grates or gravel beds at each egress point,

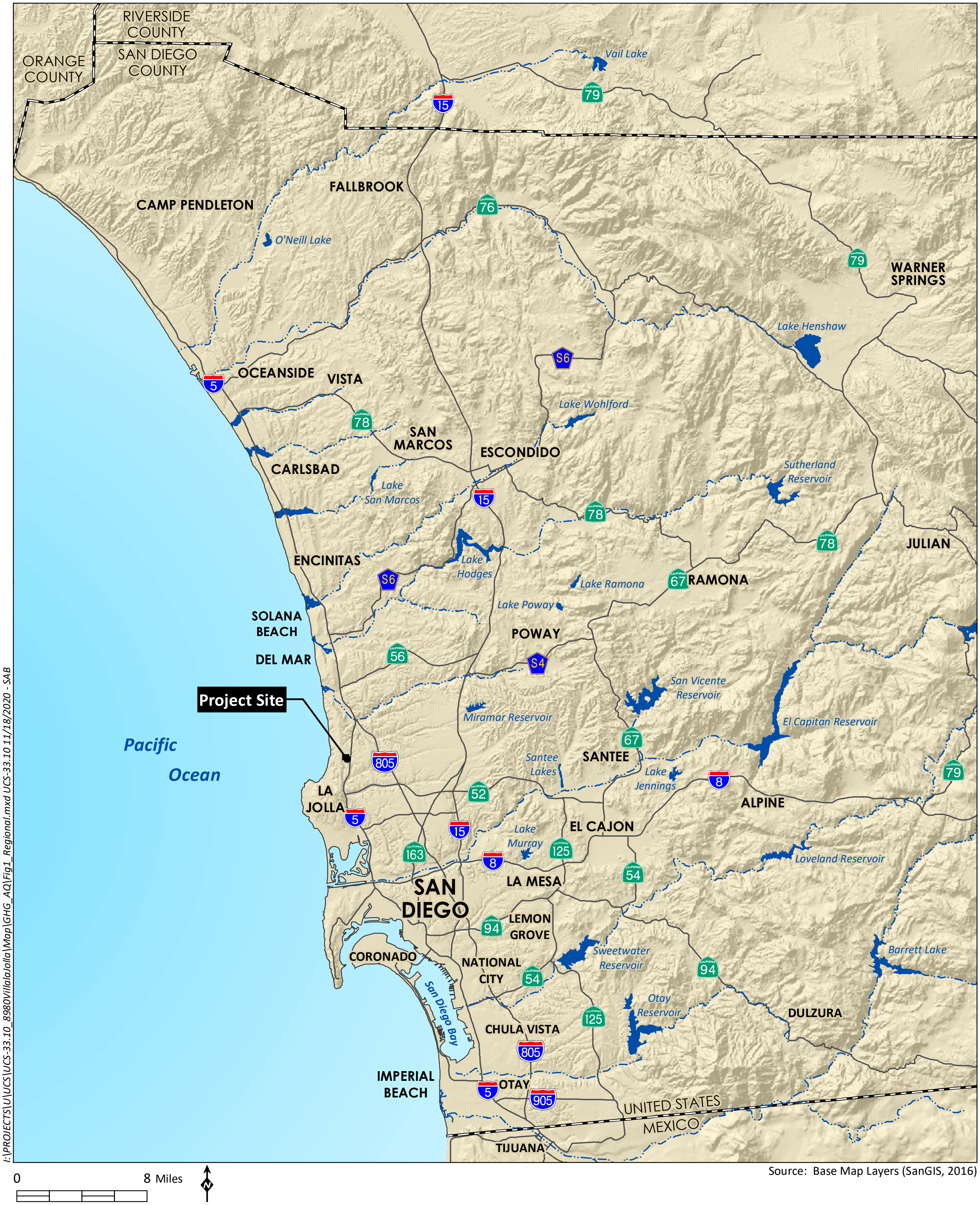
      (b) wheel-washing at each egress during muddy conditions, soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; and for outbound transport trucks;

      (c) using secured tarps or cargo covering, watering, or treating of transported material; and

   (ii) be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. If a street sweeper is used to remove any track-out/ carry-out, only PM_{10}-efficient (particulate matter less than 10 microns) street sweepers certified to meet the most current South Coast Air Quality Management District (SCAQMD) Rule 1186 requirements shall be used. The use of blowers for removal of track-out/carry-out is prohibited under any circumstances.

The control measures listed below are the BMPs that the Project would incorporate for dust control:

- A minimum of two applications of water per day during grading;
- Paving, chip sealing, or chemical stabilization of internal roadways after completion of grading;
- Termination of grading if winds exceed 25 miles per hour (mph);



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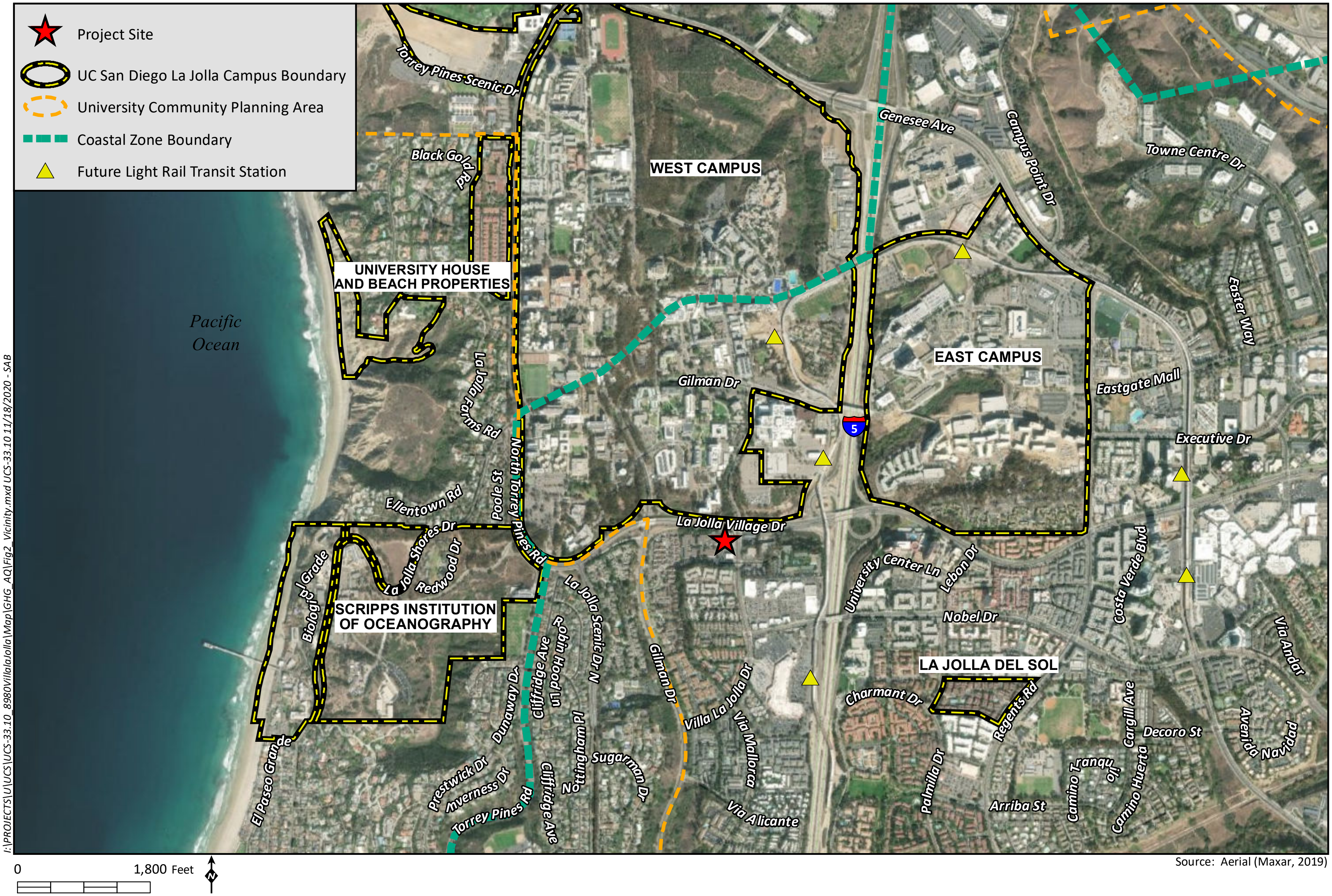
Source: Base Map Layers (SanGIS, 2016)

HELIX
Environmental Planning

Regional Location

Figure 1



Source: Aerial (Maxar, 2019)

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HELIX Environmental Planning

Project Vicinity

Figure 2

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Project Site and Surroundings

Figure 3

- Ensure that all exposed surfaces maintain a minimum soil moisture of 12 percent;
- Stabilization of dirt storage piles by chemical binders, tarps, fencing, or other erosion control; and
- Vehicle speeds would be limited on unpaved roads to 15 mph.

1.4 PROJECT DESIGN FEATURES

The following Project design features would be implemented by the Project.

1.4.1 Mechanical

- Compliance with the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 62 for indoor air quality.
- No chlorofluorocarbon- (CFC-) based refrigerants would be used in the heating, ventilation, and air-conditioning (HVAC) system.
- Installation of demand-controlled ventilation system.
- Zones designed for natural ventilation and maximization of natural light.

1.4.2 Energy

- Exceedance of the current 2019 Title 24 energy efficiency standards by at least 20 percent.
- Participate in the San Diego Gas and Electric (SDG&E) *Savings by Design* program, as available.
- Obtain 100 percent clean energy by 2025 in compliance with the UC Sustainable Practices Policy.
- Installation of light emitting diode (LED) lighting for all fixtures to reduce energy demands and meet the mandatory requirements outlined in the California Energy Code. Design would include corridor lighting featuring LED luminaries with occupancy sensing controls, restrooms with recessed LED downlights and cove lighting, lobby with decorative architectural LED lighting, exterior pedestrian scale LED pathway lighting and low-level decorative lighting, and linear LED luminaries with local occupancy sensing and daylighting controls for the parking structure. Additionally, Project lighting would meet Title 24 Dark Sky requirements.
- All interior light fixtures would not be connected to the building main lighting control system but would be programmed to function as local groups via local controllers.
- Incorporation of lighting control systems to integrate time-based, daylight based, sensor-based, and manual lighting control schemes.
- Provision of infrastructure for electric vehicle charging for approximately six percent of the total parking allotment per California Green Building Standards Code (CALGreen) requirements.

- Incorporate sustainable design features to reduce energy consumption, conserve natural resources, and achieve Leadership in Energy and Environmental Design (LEED) Silver rating for the Project.

1.4.3 Water Use

- Efficient building equipment to reduce water consumption at all fixtures (e.g., urinals, toilets, and faucets) to achieve a potable water reduction of 35 percent compared to the statewide average.

- Faucets would be installed with infrared automatic flush valves and hands free on/off controls.

- The irrigation system would be tied to a dedicated irrigation meter and controlled by an evapotranspiration-based weather-sensing controller with central control capability.

- Trees and groundcover would be irrigated on separate irrigation systems. Trees would be watered by a bubbler system, while shrub and groundcover areas would be watered by a high-efficiency subsurface in-line drip tubing.

- Management of storm water runoff through installation of a BioClean modular biofiltration wetland system, a stormtrap storage vault, and landscaped areas.

- Use of drought-tolerant native and adapted low-medium water use plant species in the landscape plan.

1.4.4 Building Design

- Incorporation of low-energy, high-performance mechanical, electrical, and plumbing systems and building envelopes.

- Use of full cut-off and/or fully shielded exterior light fixtures.

- Use of low volatile organic compound (VOC) emitting adhesives, sealants, paints and coatings, and flooring systems.

- Use of building materials and finishes that would contain both post-consumer and pre-consumer recycled content (minimum value of 20 percent of total cost).

1.4.5 Site Design

- Incorporation of bioretention basins to filter and dissipate water and slow runoff dispersal into the storm drain system.

- Integration of appropriate BMPs into a project-specific storm water pollution prevention plant (SWPPP) and storm water management plan (SWMP).

- Striping of at least eight percent of the total allocated parking for low emission/fuel efficient “clean air” vehicles.

- Striping of at least six percent of the total allocated parking for electric vehicles, including providing infrastructure for electric vehicle-ready charging.

- Provision of covered, secured bicycle parking/storage for 15 bicycles to encourage the use of non-motorized transportation options.

- Construction Waste Management would comply with the LEED Rating system for the Project.

- As a UC San Diego facility, the UC San Diego building users would comply with the recommendations of the campus' Zero Waste Plan to the extent practicable and would report data on building waste quantities to the UC San Diego Sustainability Office and Zero Waste Working group on an annual basis. While not all programs recommended by the Zero Waste Plan have been implemented, the UC San Diego Zero Waste Working Group is actively working to roll out its programs and campus-wide requirements. As programs become available, UC San Diego building users would be required to participate. The Zero Waste Plan includes waste reduction, reuse, and diversion as well as educational programs to encourage campus users to reduce waste streams. The campus's Zero Waste Plan strives to achieve a 90 percent waste diversion rate campus-wide and is updated on a regular basis to meet new policies and regulations, incorporate new technologies and best practices, and alter existing programs based on lessons learned.

2.0 REGULATORY SETTING

2.1 AIR QUALITY

2.1.1 Criteria Pollutants

Six air pollutants have been identified by the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) as being of concern both on a nationwide and statewide level: ground-level ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, and particulate matter (PM), which is subdivided into two classes based on particle size: coarse PM equal to or less than 10 micrometers in diameter (PM_{10}) and fine PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). These air pollutants are commonly referred to as "criteria air pollutants" because air quality standards are regulated using human health and environmentally based criteria. Criteria pollutants can be emitted directly from sources (primary pollutants; e.g., CO, SO_2, PM_{10}, $PM_{2.5}$, and lead), or they may be formed through chemical and photochemical reactions of precursor pollutants (secondary pollutants; e.g., ozone, NO_2, PM_{10}, and $PM_{2.5}$) in the atmosphere. PM_{10} and $PM_{2.5}$ can be both primary pollutants emitted directly from a source and secondary pollutants formed through chemical reactions in the atmosphere. The principal precursor pollutants of concern are reactive organic gasses (ROGs; also known as VOCs)[1] and nitrogen oxides (NO_X).

The descriptions of sources and general health effects for each of the criteria air pollutants are shown in Table 1, *Summary of Common Sources and Human Health Effects of Criteria Air Pollutants,* based on information provided by the California Air Pollution Control Officers Association ([CAPCOA] 2019).

[1] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

Specific adverse health effects to individuals or population groups induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individuals [e.g., age, gender]). Criteria pollutant precursors (ROG and NO_X) affect air quality on a regional scale, typically after significant delay and distance from the pollutant source emissions. Health effects related to ozone and NO_2 are, therefore, the product of emissions generated by numerous sources throughout a region. As such, specific health effects from these criteria pollutant emissions cannot be directly correlated to the incremental contribution from a single project.

Table 1
SUMMARY OF COMMON SOURCES AND HUMAN HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS

Pollutant	Major Man-Made Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to climate change and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrogen oxides (NO_X) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and other sources.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned, when gasoline is extracted from oil, or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron, and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2019

2.1.2 Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For carcinogenic TACs, there is no level of exposure that is considered safe and impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

2.1.3 Federal Air Quality Regulations

2.1.3.1 Federal Clean Air Act

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several criteria pollutants, which are introduced above. Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. Table 2, *Ambient Air Quality Standards*, shows the federal and State ambient air quality standards for these pollutants.

Table 2
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards Primary[1]	Federal Standards Secondary[2]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary

Table 2 (cont.)
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards Primary[1]	Federal Standards Secondary[2]
SO_2	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	**No Federal Standards**
Sulfates	24 Hour	25 µg/m^3	**No Federal Standards**	**No Federal Standards**
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	**No Federal Standards**	**No Federal Standards**
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	**No Federal Standards**	**No Federal Standards**

Source: CARB 2020a

[1] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.

[2] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

AAM = Annual Arithmetic Mean; CO = carbon monoxide; km = kilometer; mg/m^3 = milligrams per cubic meter; NO_2 = nitrogen dioxide; O_3 = ozone; ppm = parts per million; PM_{10} = coarse particulate matter with an aerodynamic diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with an aerodynamic diameter of 2.5 microns or less; SO_2 = sulfur dioxide; – = No Standard; µg/m^3 = micrograms per cubic meter

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants described in Table 1 through the California Clean Air Act (CCAA) of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. Similar to the NAAQS, the CAAQS incorporate a margin of safety to protect sensitive individuals from adverse health effects related to air pollutants. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be “nonattainment areas” for that pollutant.

The USEPA has classified air basins (or portions thereof) as being in “attainment,” “nonattainment,” or “unclassified” for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. The Project site is located within the San Diego Air Basin (SDAB) and, as such, is in an area designated a nonattainment area for certain pollutants that are regulated under the CAA. Table 3, *San Diego Air Basin Attainment Status*, lists the federal and State attainment status of the SDAB for the criteria pollutants. As shown in Table 3, the SDAB currently meets the NAAQS for all criteria air pollutants except ozone, and meets the CAAQS for all criteria air pollutants except ozone, PM_{10}, and $PM_{2.5}$. The SDAB currently falls under a federal maintenance plan for 8-hour ozone.

Table 3
SAN DIEGO AIR BASIN ATTAINMENT STATUS

Criteria Pollutant	Federal Designation	State Designation
O_3 (1-hour)	(No federal standard)	Nonattainment
O_3 (8-hour)	Marginal Nonattainment	Nonattainment
CO	Attainment	Attainment
PM_{10}	Unclassifiable	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassifiable
Visibility	(No federal standard)	Unclassifiable

Source: SDAPCD 2017a

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The USEPA has the responsibility to review all SIPs to determine whether they conform to the requirements of the CAA.

2.1.4 California Air Quality Regulations

2.1.4.1 California Clean Air Act

The federal CAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. 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, including setting the CAAQS. CARB also conducts research, 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. CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

Table 3, above, lists the State attainment status of the SDAB for the criteria pollutants. Under State designation, the SDAB is currently in attainment for CO, NO_2, SO_2, and lead; and is nonattainment for ozone, PM_{10}, and $PM_{2.5}$.

2.1.4.2 Toxic Air Contaminants

California's air toxics control program began in 1983 with the passage of the Toxic Air Contaminant Identification and Control Act, better known as AB 1807 or the Tanner Bill. When a compound becomes listed as a TAC under the Tanner process, CARB normally establishes minimum statewide emission control measures to be adopted by local air pollution control districts (APCDs). Later legislative amendments (Assembly Bill [AB] 2728) required CARB to incorporate all 189 federal hazardous air pollutants (HAPs) into the State list of TACs.

Supplementing the Tanner process, AB 2588–the Air Toxics “Hot Spots” Information and Assessment Act of 1987–currently regulates over 600 air compounds, including all of the Tanner-designated TACs. Under AB 2588, specified facilities must quantify emissions of regulated air toxics and report them to the local APCD. If the APCD determines that a potentially significant public health risk is posed by a given facility, the facility is required to perform a health risk assessment (HRA) and notify the public in the affected area if the calculated risks exceed specified criteria.

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is known as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, the CARB identified DPM as a toxic air contaminant based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a significant impact on California’s population—it is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2020b).

In September 2000, CARB approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Diesel Risk Reduction Plan; CARB 2000). The Diesel Risk Reduction Plan outlined a comprehensive and ambitious program that included the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). These requirements are now in force on a statewide basis.

2.1.5 Local Regulations

2.1.5.1 San Diego Air Pollution Control District

The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations for the County. The SDAPCD and San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. SDAPCD has prepared an Attainment Plan for San Diego County (SDAPCD 2020) demonstrating how the SDAB will further reduce air pollutant emissions to attain the current NAAQS for ozone. The Attainment Plan was approved by the SDAPCD Board on October 14, 2020 and by CARB on November 19, 2020. The plan will be submitted to the USEPA as a revision to the SIP. The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The current federal and State attainment status for San Diego County is presented in Table 3.

2.2 GREENHOUSE GASES

2.2.1 Climate Change Overview

Global climate change refers to changes in average climatic conditions on Earth, as a whole, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by atmospheric gases. These gases are commonly referred to as GHGs because they function like a greenhouse by letting sunlight in but preventing heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with: (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The temperature record shows a decades-long trend of warming, with 2016 global surface temperatures ranking as the warmest year on record since 1880 and 2017 as the second warmest. The 2017 global average surface temperatures were 0.9 degrees Celsius warmer than the 1951 to 1980 mean temperature (National Aeronautics and Space Administration [NASA] 2018). GHG emissions from human activities are the most significant driver of observed climate change since the mid-20th century (Intergovernmental Panel on Climate Change [IPCC] 2013). The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The statistical models show a "high confidence" that temperature increase caused by anthropogenic GHG emissions could be kept to less than two degrees Celsius relative to pre-industrial levels if atmospheric concentrations are stabilized at about 450 parts per million (ppm) carbon dioxide equivalent (CO_2e) by the year 2100 (IPCC 2014).

2.2.2 Types of Greenhouse Gases

The GHGs defined under California's AB 32, as discussed below in Section 2.2.4.4., include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Carbon Dioxide. CO_2 is the most important and common anthropogenic GHG. CO_2 is an odorless, colorless GHG. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of CO_2 include burning fuels, such as coal, oil, natural gas, and wood. Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. The atmospheric CO_2 concentration in 2010 was 390 ppm, 39 percent above the concentration at the start of the Industrial Revolution (approximately 280 ppm in 1750). In May 2020, the CO_2 concentration was 417 ppm, a 49 percent increase since 1750 (National Oceanic and Atmospheric Administration [NOAA] 2020).

Methane. CH_4 is the main component of natural gas used in homes. A natural source of methane is from the decay of organic matter. Geological deposits known as natural gas fields contain methane, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

Nitrous Oxide. N_2O is produced by both natural and human-related sources. N_2O is emitted during agricultural and industrial activities, as well as during the combustion of fossil fuels and solid waste. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production.

Hydrofluorocarbons. Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. Chlorofluorocarbons are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth's surface). Chlorofluorocarbons were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the 1989 Montreal Protocol.

Sulfur Hexafluoride. SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.

GHGs have long atmospheric lifetimes that range from one year to several thousand years. Long atmospheric lifetimes allow for GHG emissions to disperse around the globe. Because GHG emissions vary widely in the power of their climatic effects, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO_2. For example, because methane and N_2O are approximately 25 and 298 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO_2 has a GWP of 1). CO_2e is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO_2e. The atmospheric lifetime and GWP of selected GHGs are summarized in Table 4, *Global Warming Potentials and Atmospheric Lifetimes*.

Table 4
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-134a	14	1,430
PFC: Tetraflouromethane (CF_4)	50,000	7,390
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC 2007
HFC: hydrofluorocarbon; PFC: perfluorocarbon

2.2.3 Federal Greenhouse Gas Regulations

2.2.3.1 Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency* that CO_2 is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, HFC, PFC, and SF_6) threaten the public health and welfare of the American people.

2.2.3.2 Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) worked together on developing a national program of regulations to reduce GHG emissions and to improve fuel economy of light-duty vehicles. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking establishing standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. On August 2, 2018, the agencies released a notice of proposed rulemaking—the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks. The purpose of the SAFE Vehicles Rule is "to correct the national automobile fuel economy and GHG emissions standards to give the American people greater access to safer, more affordable vehicles that are cleaner for the environment." The direct effect of the rule is to eliminate the standards that were put in place to gradually raise average fuel economy for passenger cars and light trucks under test conditions from 37 miles per gallon in 2020 to 50 miles per gallon in 2025. By contrast, the new SAFE Vehicles Rule freezes the average fuel economy level standards indefinitely at the 2020 levels. The new SAFE Vehicles Rule also results in the withdraw of the waiver previously provided to California for that State's GHG and zero emissions vehicle (ZEV) programs under Section 209 of the CAA.

2.2.3.3 Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA published the Final Mandatory Greenhouse Gas Reporting Rule (Reporting Rule) in the Federal Register. The Reporting Rule requires reporting of GHG data and other relevant information from fossil fuel and industrial GHG suppliers, vehicle and engine manufacturers, and all facilities that would emit 25,000 metric tons (MT) or more of CO_2e per year. Facility owners are required to submit an annual report with detailed calculations of facility GHG emissions on March 31 for emissions from the previous calendar year. The Reporting Rule also mandates recordkeeping and administrative requirements to enable EPA to verify the annual GHG emissions reports.

2.2.4 California Greenhouse Gas Regulations

There are numerous State plans, policies, regulations, and laws related to GHG emissions and global climate change. Following is a discussion of some of these plans, policies, and regulations that (1) establish overall State policies and GHG emission reduction targets; (2) require State or local actions that result in direct or indirect GHG emission reductions for the proposed Project; and (3) require California Environmental Quality Act (CEQA) analysis of GHG emissions.

2.2.4.1 California Code of Regulations, Title 24, Part 6

California Code of Regulations (CCR) Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions.

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest update to the Title 24 standards occurred in 2019 and went into effect on January 1, 2020. The Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential standards include improvements for attics, walls, water heating, and lighting. The standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards – the energy budgets – that vary by climate zone (of which there are 16 in California) and building type; thus, the standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that are basically a recipe or a checklist compliance approach.

2.2.4.2 California Green Building Standards Code

CALGreen (CCR Title 24, Part 11) is a code with mandatory requirements for new residential and nonresidential buildings (including industrial buildings) throughout California. The code is Part 11 of the California Building Standards Code in Title 24 of the CCR (California Building Standards Commission 2019). The current 2019 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings went into effect on January 1, 2020.

The development of CALGreen is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

CALGreen contains requirements for storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

2.2.4.3 Executive Order S-3-05

On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

2.2.4.4 Assembly Bill 32 – Global Warming Solution Act of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that the CARB develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 also established several programs to achieve GHG emission reductions, including the Low Carbon Fuel Standard (LCFS) and the Cap-and-Trade program. The cap-and-trade program is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. UC San Diego is a covered entity under the cap-and-trade program.

2.2.4.5 Executive Order B-30-15

On April 29, 2015, EO B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28 nation European Union. California is on track to meet or exceed the target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050.

2.2.4.6 Senate Bill 32

As a follow-up to AB 32 and in response to EO-B-30-15, Senate Bill (SB) 32 was passed by the California legislature in August 2016 to codify the EO's California GHG emission reduction target of 40 percent below 1990 levels by 2030.

2.2.4.7 Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal CAFE rules for passenger vehicles (CARB 2013). In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. However, as described previously, the adoption of the new SAFE Vehicles Rule results in the withdrawal of the waiver previously provided to California for that State's GHG and ZEV programs, freezing the average fuel economy level standards indefinitely at the 2020 levels.

2.2.4.8 Executive Order S-01-07

EO S-01-07, signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a LCFS for transportation fuels be established for California and directs CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS statewide.

2.2.4.9 Senate Bill 97 – CEQA: Greenhouse Gas Emissions

SB 97 required the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, including but not limited to, effects associated with transportation or energy consumption. The Resources Agency certified and adopted the guidelines on December 31, 2009. The OPR guidance states that the lead agency can rely on qualitative or other performance-based standards for estimating the significance of GHG emissions, although the new CEQA Guidelines did not establish a threshold of significance.

2.2.4.10 Senate Bill 375

Approved by Governor Schwarzenegger on September 30, 2008, SB 375 aligns regional transportation planning efforts, regional GHG emission reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPOs' Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy categorized as "transit priority projects" would receive incentives to streamline CEQA processing. The MPO for the Project region, SANDAG, approved final 2050 Regional Transportation Plan with a SCS on October 28, 2011 making it the first agency in California to do so.

2.2.4.11 Senate Bill 350

Approved by Governor Brown on 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 eligible resources, including solar, wind, biomass, and geothermal. In addition, large utilities are required to develop and submit Integrated Resource Plans to detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions, and increase the use of clean energy.

2.2.4.12 California Air Resources Board: Scoping Plan

In December 2008, CARB adopted its first version of its Climate Change Scoping Plan (Scoping Plan), which contained the main strategies California will implement to achieve the mandate of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program.

On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan (2017 Scoping Plan), which lays out the framework for achieving the mandate of SB 32 (2016) to reduce statewide GHG emissions to at least 40 percent below 1990 levels by the end of 2030 (CARB 2017).

The 2017 Scoping Plan includes guidance to local governments in Chapter 5, including plan-level GHG emissions reduction goals and methods to reduce communitywide GHG emissions. In its guidance, CARB recommends that "local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals." CARB further states that "it is appropriate for local jurisdictions to derive evidence-based local per capita goals [or some other metric] that the local jurisdiction deems appropriate, such as mass emissions or per service population, based on local emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets" (CARB 2017).

2.2.4.13 University of California

The UC is a national leader in sustainability and effective actions to reduce GHG emissions to mitigate the effects of climate change.

University of California Sustainable Practices Policy

The UC Sustainable Practices Policy provides specific scope, direction, and expectations for implementing sustainable new capital projects, facility operations, and campus transportation resources. It commits UC to implementing actions intended to minimize the UC's impact on the environment and reduce the UC's dependence on non-renewable energy. The most recent version of the policy was issued in July 2020 (UC 2020). The UC Sustainable Practices Policy has nine topic areas: green building, clean energy, transportation, climate protection, sustainable operations, waste reduction and recycling, environmentally preferable purchasing, sustainable foodservice, and sustainable water systems. The UC Sustainable Practices Policy establishes guidelines and includes climate change goals for all campuses, and also requires each campus to complete an update of its climate action plan for reducing GHG emissions to 1990 levels by 2020 and achieving goals of the UC Carbon Neutrality Initiative (further discussed below). GHG reduction efforts focus on energy efficiency and conservation efforts; reducing the University's dependence on non-renewable energy sources; incorporating alternative means of transportation; tracking, reporting, and minimizing GHG emissions; minimizing UC-generated waste sent to a landfill; and utilizing the UC's purchasing power to meet its sustainability objectives. Relevant policies included in the UC Sustainable Practices Policy are summarized below.

Green Building Design

- Requires 20 percent better energy performance than Title 24 for new building construction, and strives to achieve 30 percent, or meet the energy performance targets.
- All new buildings must meet a minimum standard of LEED Silver and strive for LEED Gold when possible.
- No new building or major renovation that is approved after June 30, 2019 shall use onsite fossil fuel combustion (e.g., natural gas) for space and water heating (except those projects connected to an existing campus central thermal infrastructure).
- All new buildings achieve at least two points in LEED Water Efficiency category.

Clean Energy

- Implementation of energy efficiency actions in buildings and infrastructure systems to reduce the location's energy use intensity by average of at least two percent annually.

- Installation of additional on-site renewable electricity supplies and energy storage systems whenever cost-effective and/or supportive of the location's CAP or other goals.

- By 2025, each campus will obtain 100 percent clean electricity.

- By 2025, at least 40 percent of the natural gas combusted on-site at each campus will be biogas.

Climate Protection

- Each campus will develop strategies for meeting the following carbon neutrality goals:

    - Climate neutrality from scope 1 and scope 2 sources by 2025

    - Climate neutrality from specific scope 3 sources by 2050

- And at a minimum, meet the following goal in pursuit of climate neutrality: reduce GHG emissions to 1990 levels by 2020, pursuant to AB 32.

Scope 1 sources, also referred to as direct sources, are defined as "direct emissions from sources that are owned or controlled by the organization." These include all area source emissions, such as landscaping equipment exhaust and consumer product use, and on-site natural gas consumption for space and water heating. Scope 2 sources, also referred to as electricity indirect sources, are defined as "indirect emissions from sources that are owned or controlled by the organization." Scope 2 includes emissions that result from the generation of electricity, heat, or steam purchased by the Agency from a utility provider. Scope 3 sources, also referred to as other indirect sources, are defined as "emissions from sources not owned or directly controlled by an organization, but related to the organizations activities." Scope 3 emissions include employee or patron travel and commuting, organic solid waste disposal such as food waste, and wastewater treatment.

Sustainable Transportation

- Develop goals for reducing transportation related GHGs and report on progress annually;

    - By 2025, zero emission vehicles or hybrid vehicles shall account for at least 50 percent of all new light-duty vehicle acquisitions.

- For single-occupant vehicles (SOV):

    - By 2025, each location shall strive to reduce its percentage of employees and students commuting by SOV by 10 percent relative to its 2015 SOV commute rates.

    - By 2050, each location shall strive to have no more than 40 percent of its employees and no more than 30 percent of all employees and students commuting to the location by SOV.

- By 2025, each location shall strive to have at least 4.5 percent of commuter vehicles be zero-emissions vehicles.

- By 2050, each location shall strive to have at least 30 percent of commuter vehicles be zero-emissions vehicles.

- Each location to develop business-case analysis for any parking structures to document how a capital investment in parking aligns with each campus Climate Action Plan and/or sustainable transportation policies.

Sustainable Building Operations for Campuses

- Each campus will submit one pilot LEED for Operations and Maintenance building for certification.

- Each campus shall seek to certify as many buildings as possible through the LEED for Operations and Maintenance.

Zero Waste

- Reduce per capita total municipal waste generation as follows:

    - Reduce waste generation per capita to 2015/16 levels by 2020;

    - Reduce waste generation by 25 percent per capita from 2015/16 levels by 2025;

    - Reduce waste generation by 50 percent per capita from 2015/16 levels by 2030.

- Achieve zero waste by 2020 (minimum compliance for zero waste is 90 percent diversion of municipal solid waste from landfill).

Sustainable Procurement

- Allocate a minimum of 15 percent of the points utilized in solicitation evaluations to sustainability criteria, effective July 1, 2019.

- Contracting with suppliers of products (e.g. electronics, furniture, lab consumables) that have established (preferably non-manufacturer specific) end-of-life reuse, recycling, and/or takeback programs at no extra cost to the University, and in compliance with applicable federal, State, and University regulations regarding waste disposal.

- All procurement staff will consult the UC Sustainable Procurement Guidelines document for minimum mandatory sustainability requirements to be included in solicitations for a given product or service category.

Sustainable Foodservices

- Purchase 20 percent sustainable food products by 2020, while maintaining accessibility and affordability for all students and Medical Center foodservice patrons.

Sustainable Water Systems

- Develop a Water Action Plan and reduce potable water consumption by 20 percent by 2020, 36 percent by 2025, when compared to a three-year average baseline of fiscal year 2005-2008.

University of California Strategic Energy Plan

In February 2009, the UC Strategic Energy Plan (SEP) was prepared for all UC campuses, to fulfill a goal of UC's Policy on Sustainable Practices to implement energy efficiency projects in existing buildings. The initial goal for the retrofit projects is to reduce systemwide, growth adjusted energy consumption by 10 percent or more by 2014 from the year 2000 base consumption level. The SEP analyzes energy use and GHG trends and identifies potential energy efficiency retrofit projects at all buildings over 50,000 SF (primarily lighting, HVAC, commissions, and central plant measures) for all UC campuses. Energy savings, GHG emissions savings, and financial returns are estimated for hundreds of projects, which are grouped into Tier 1 (committed projects to be completed over the next six years) and Tier 2 (additional planned projects) projects based on their savings and financial payback. The SEP project list is intended to be regularly updated by each campus to evaluate the feasibility of additional energy-saving measures.

University of California Carbon Neutrality Initiative

In November 2013, UC President Janet Napolitano announced the UC Carbon Neutrality Initiative, which commits the UC to achieving climate neutrality from Scope 1 and 2 sources by 2025 and climate neutrality from specific Scope 3 sources by 2050 or sooner. The Scope 1, 2, and 3 sources are described above in Section 2.2.4.13.

2.2.5 Regional and Local Greenhouse Gas Regulations

2.2.5.1 San Diego Air Pollution Control District

In San Diego County, SDAPCD is the agency responsible for protecting public health and welfare through the administration of federal and State air quality laws and policies. The SDAPCD has no regulations relative to GHG emissions.

2.2.5.2 University of California Strategic Energy Plan: UC San Diego and UC San Diego Medical Center

As described above in Section 2.2.4.13, The UC Sustainable Practices Policy directed the development of a SEP for each campus. The SEP for UC San Diego and the UC San Diego Medical Center (UC 2008) describes the plan for implementing energy efficiency retrofit projects in existing campus buildings. The initial goal for the UC--wide retrofit program is to reduce energy consumption to 1990 levels by 2020. Because electricity and natural gas usage is expected to represent 75 percent of a campus' GHG emissions, the energy use reduction goals of the SEP are closely linked to the UC's overall GHG reduction goals in the Sustainable Practices Policy. As such, the retrofit projects that are being implemented under UC San Diego's SEP are thought to be one of the most important tools the campus is using to work towards meeting its GHG emissions reduction targets.

Since its initial implementation, UC San Diego's SEP has completed energy efficiency retrofit projects at all buildings over 50,000 sf at UC San Diego and UC San Diego Medical Center. The retrofit projects primarily include lighting, HVAC, recommissioning for efficient and proper equipment operations, and central plant efficiency measures. Current efforts are being made in the area of energy storage. Energy storage serves as a method to advance the relationship between energy consumption and production in order to increase efficiency and reduce production costs. Current renewable and energy generation and storage projects include:

- FuelCell Energy, Inc. 2.8-megawatt fuel cell turning waste methane gas from the Point Loma Wastewater Treatment Plant into electricity;
- Expansion of the 2.2-megawatt solar network including flat photovoltaic (PV) panels and solar energy storage;
- A 2.5-megawatt, 5-megawatt-hour energy storage system using high performance lithium-ion iron-phosphate batteries;
- Thermal Energy Storage totaling 7.6 million gallons; and
- California Energy Commission funded testing of ultracapacitors – devices that charge quickly and store energy from an electric source and discharge it on demand. Maxwell Technologies is testing ultracapacitors connected to a 30-kW flat panel system at the La Jolla Playhouse to better integrate solar panels with the campus microgrid.

2.2.5.3 UC San Diego Climate Action Plan

In 2008, UC San Diego approved the first campus Climate Action Plan for implanting the UC's climate strategy to meet State and UC climate policies and objectives, including:

- Reducing GHG emissions to 20 percent below 1990 levels by 2020;
- Achieving climate neutrality for Scope I and II emissions by 2025; and
- Continuing to certify new and existing building under the LEED rating system.

The 2019 update to the Climate Action Plan (UC San Diego 2019a), which is a complete revision of the 2008 Climate Action Plan, analyzes UC San Diego's current, historical, and projected emissions and then incorporates this analysis into a climate change mitigation strategy for meeting the UC carbon neutrality goals. Mitigation strategies are included in the following categories: existing building energy efficiency planning; high performance new buildings; renewable energy; campus fleet; commute options; air travel; space utilization; behavioral and institutional change; and carbon offsets. In developing the recommended strategies included in the 2019 update to the Climate Action Plan, the first priority was given to avoiding carbon intensive activities, followed by reducing campus energy use, then replacing high-carbon resources with low carbon resources, with the last option being to offset those emissions that cannot otherwise reasonably be eliminated.

2.2.5.4 UC San Diego Student and Faculty Programs

UC San Diego has also established academic and research programs focused on climate change education and finding clean energy solutions for the future. UC San Diego faculty are engaged in a variety of interdisciplinary, community-based projects regarding climate change, combining both technical and social science expertise from across the campus, such as the "Deep De-Carbonization Initiative." Some examples include:

- Development of forecasting models for integrating renewable generation into the utility grid and predicting energy demand.
- Applying cloud tracking and solar forecasting models to help promote the economic penetration of large amount of solar generation onto the utility grid
- Investigation of green engineering strategies to reduce energy consumption in urban areas.
- Energy storage research to determine how to more efficiently capture and deliver the growing amount of intermittent renewable energy resources to the distribution grid.
- Improving energy storage and fuel cell technologies.

In addition, UC San Diego's "Campus Neutrality Initiative Student Fellows" program provides students an opportunity to engage in projects ranging from climate action planning to carbon offset studies.

2.2.5.5 UC San Diego Zero Waste Plan

The UC San Diego Zero Waste Plan (UC San Diego 2019b) contains updated campus-wide strategies to promote reduction, reuse, recycling, anaerobic digestion, and composting with the goal of achieving zero waste, and in turn assisting the campus in reaching carbon neutrality. The campus-wide goal is to achieve zero waste by 2020 (the minimum compliance for zero waste is 90 percent diversion of municipal solid waste from the landfill). Per capita waste generation goals include the following:

- Reduce waste generation per capita to fiscal year 2015/2016 levels by 2020;
- Reduce waste generation by 25 percent per capita from fiscal year 2015/2016 levels by 2025; and
- Reduce waste generation by 50 percent per capita from fiscal year 2015/2016 levels by 2030.

2.2.5.6 UC San Diego Water Action Plan

In response to the statewide drought and in compliance with the UC Sustainable Water Systems Policy, UC San Diego implemented a 2013 Water Action Plan and a strategy to meet the UC President's January 2014 call for a 20-percent reduction in water use by 2020. The Water Action Plan was updated in 2017 (UC San Diego 2017). The purpose of the updated Water Action Plan is to (1) identify the present and future measures UC San Diego will implement to reduce potable water use by 36 percent, (2) develop and implement an education and outreach platform to encourage behavior change, and (3) establish benchmark goals to go beyond the 36 percent reduction in potable water use.

3.0 EXISTING CONDITIONS

3.1 CLIMATE AND METEOROLOGY

The climate in southern California, including the SDAB, is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. Areas within 30 miles of the coast experience moderate temperatures and comfortable humidity.

Due to its climate, the SDAB experiences frequent temperature inversions (temperature increases as altitude increases, which is the opposite of general patterns). Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and NO_2 react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving the air pollutants inland, toward the foothills. During the fall and winter, air quality problems are created due to CO and NO_2 emissions. High NO_2 levels usually occur during autumn or winter, on days with summer-like conditions.

The predominant wind direction near the Project site is from the west to northwest and the average wind speed is 4.6 miles per hour (Iowa Environmental Mesonet 2020). The annual average maximum temperature as measured at the San Diego International Airport climatic station is 69.9°F. The highest monthly average maximum temperature (76.3°F) occurs in August and the lowest monthly average minimum temperature (48.1°F) occurs in January. Total precipitation in the Project area averages approximately 10 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center 2016).

3.2 EXISTING AIR QUALITY

3.2.1 Criteria Pollutants

3.2.1.1 Attainment Designations

Attainment designations are discussed in Section 2.1.5.1 and Table 3. The SDAB is classified as a marginal nonattainment area for the 8-hour NAAQS for ozone. The SDAB is currently classified as a nonattainment area under the CAAQS for ozone (serious nonattainment), PM_{10}, and $PM_{2.5}$. The SDAB is an attainment area for all other criteria pollutants.

3.2.1.2 Monitored Air Quality

SDAPCD maintains monitoring stations to measure ambient concentrations of pollutants in the SDAB. The nearest monitoring station to the Project site is the Del Mar-Mira Costa College monitoring station, which is located approximately 5.9 miles north of the Project site in the City of Del Mar. The Del Mar-Mira Costa College station monitors ozone; however, the most recent available data from this station is only through 2017. The San Diego-Kearny Villa Road monitoring station, located approximately 6.7 miles east of the Project site in the City of San Diego monitors ozone, NO_2, PM_{10}, and $PM_{2.5}$ and has data through 2019; therefore, data from the San Diego-Kearny Villa Road monitoring station is used. No stations near the Project site currently monitor CO; the Beardsley Street monitoring station, located approximately 11 miles south of the Project site in the City of San Diego, last monitored CO at 1.81 ppm in 2012, which was below the 9 ppm State and national standards. Table 5, *Air Quality Monitoring Data*, presents a summary of the ambient pollutant concentrations monitored at the San Diego-Kearny Villa Road air quality monitoring station during the last three years (2017 through 2019) for which the SDAPCD has reported data.

Table 5
AIR QUALITY MONITORING DATA

Pollutant Standards	2017	2018	2019
Ozone (O_3)			
Maximum concentration 1-hour period (ppm)	0.097	0.102	0.083
Maximum concentration 8-hour period (ppm)	0.083	0.077	0.075
Days above 1-hour State standard (>0.09 ppm)	2	1	0
Days above 8-hour State standard (>0.070 ppm)	6	5	1
Days above 8-hour federal standard (>0.070 ppm)	6	5	1
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.054	0.045	0.046
Days above State 1-hour standard (0.18 ppm)	0	0	0
Days above federal 1-hour standard (0.100 ppm)	0	0	0
Suspended Particulates (PM_{10})			
Maximum 24-hour concentration (μg/m^3)	47.0	38.0	*
Days above State standard (>50 μg/m^3)	0	0	*
Days above federal standard (>150 μg/m^3)	0	0	*
Suspended Particulates ($PM_{2.5}$)			
Maximum 24-hour concentration (μg/m^3)	27.5	32.2	16.2
Days above federal standard (>35 μg/m^3)	0	0	0

Source: CARB 2020c
ppm = parts per million; μg/m^3 = micrograms per cubic meter
* Data not available.

The 8-hour federal and State standards for ozone were exceeded six times in 2017, five times in 2018 and once in 2019. The 1--hour State standard for ozone was exceeded twice in 2017 and once in 2018. As shown in Table 5, no other standards were exceeded.

3.2.1.3 Existing On-site Use Emissions

The Project site is currently developed with a 13,213-SF building that formerly contained a restaurant/brewpub, which closed in March 2020 and is currently vacant. The building would be demolished as part of the proposed Project. Operational emissions for the existing on-site restaurant/brewpub use were estimated using the California Emissions Estimator Model, Version 2016.3.2 (CalEEMod) as described in further detail in Section 4.2.3. Table 6, *Existing Land Use Maximum Daily Operational Emissions*, presents the summary of operational emissions for the existing on-site restaurant.

Table 6
EXISTING LAND USE (RESTAURANT) MAXIMUM DAILY OPERATIONAL EMISSIONS

Category	VOC*	NO_X*	CO*	SO_2*	PM_{10}*	$PM_{2.5}$*
Area	<0.5	<0.5	<0.5	0	0	0
Energy	<0.5	1	1	<0.5	<0.5	<0.5
Mobile	2	7	17	<0.5	4	1
Total Daily Emissions	**2**	**7**	**17**	**<0.5**	**4**	**1**

Source: CalEEMod (output data is provided in Appendix A)
* Pollutant Emissions (pounds per day)
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

3.2.2 Toxic Air Contaminants

SDAPCD samples for TACs at the El Cajon and Chula Vista monitoring stations. Excluding DPM, data from these stations indicate that the background cancer risk in 2014 due to TACs was 345 in one million in Chula Vista and 394 in one million in El Cajon (AECOM 2018). CARB estimates the excess cancer risk from DPM in California in 2012 as 520 in a million (SDAPCD 2017b).

3.3 EXISTING GREENHOUSE GASES

In an effort to evaluate and reduce the potential adverse impact of global climate change, international, state, and local organizations have conducted GHG inventories to estimate their levels of GHG emissions and removals. The following summarizes the results of these global, national, state, countywide, and local GHG inventories.

For 2018, total GHG emissions worldwide were estimated at 47,515 million metric tons (MMT) CO_2e (World Resources Institute 2020). The U.S. contributed the second largest portion of GHG emissions (behind China) at 13 percent of global emissions, with 6,018 MMT CO_2e in 2018. On a national level in 2018, approximately 28 percent of GHG emissions are associated with transportation and about 27 percent are associated with electricity generation (USEPA 2020).

3.3.1 California Greenhouse Gas Emissions

CARB performs statewide GHG inventories. The inventory is divided into six broad sectors: agriculture and forestry, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in MMT CO_2e. Table 7, *California Greenhouse Gas Emissions by Sector*, shows the estimated statewide GHG emissions for the years 1990, 2000, 2010, and 2018.

Table 7
CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR
(MMT CO_2e)

Sector	1990	2000	2010	2018
Agriculture and Forestry	23.4 (5%)	31.0 (7%)	34.7 (8%)	32.6 (8%)
Commercial	14.4 (3%)	14.1 (3%)	20.1 (4%)	23.9 (6%)
Electricity Generation	110.6 (26%)	105.3 (22%)	90.6 (20%)	63.2 (15%)
Industrial	103.0 (24%)	105.8 (22%)	101.8 (23%)	101.3 (24%)
Residential	29.7 (7%)	31.7 (7%)	32.1 (7%)	30.45(6%)
Transportation	150.7 (35%)	183.2 (39%)	170.2 (38%)	174.3 (41%)
TOTAL	**433.3**	**471.7**	**448.1**	**425.3**

Source: CARB 2007 and CARB 2020d
MMT = million metric tons; CO_2e = carbon dioxide equivalent

As shown in Table 7, statewide GHG emissions totaled approximately 433 MMT CO_2e in 1990, 472 MMT CO_2e in 2000, 448 MMT CO_2e in 2010, and 425 MMT CO_2e in 2018. Transportation-related emissions consistently contribute the most GHG emissions, followed by industrial emissions and electricity generation.

3.3.2 County of San Diego Greenhouse Gas Emissions

In February 2018, in conjunction with the County of San Diego Climate Action Plan, the County of San Diego published a GHG inventory for County operations and the activities occurring within the unincorporated communities of San Diego County. The GHG inventory includes a discussion of the primary sources and annual levels of GHG emissions for 2014 (baseline year) and describes likely trends if emissions are not reduced for 2020, 2030, and 2050. The inventory was developed using the best available data and following the International Council for Local Environmental Initiatives (ICLEI) *U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions* and *ICLEI Local Government Operations Protocol*.

Total GHG emissions in San Diego County in 2014 were estimated to be 3.2 MMT CO_2e from the following sectors: transportation (on- and off-road), electricity, solid waste, natural gas, agriculture, water, wastewater, and propane (County of San Diego 2018). On-road transportation is the largest emissions sector, accounting for approximately 1.5 MMT CO_2e, or 45 percent of total emissions. Energy consumption, including electricity and natural gas use, is the next largest source of emissions, accounting for approximately 1.1 MMT CO_2e, or 35 percent of the total. The County of San Diego prepares GHG inventories every two years for comparison to the 2014 inventory to track progress in reducing emissions. In 2019, the County reduced GHG emissions by 130,075 MT CO_2e through reduction measures related to the built environment and transportation, energy, water and wastewater, and agriculture and conservation sectors (County 2020).

3.3.3 City of San Diego Greenhouse Gas Emissions

According to the City of San Diego's 2019 Climate Action Plan Annual Report (City of San Diego 2019), the total GHG emissions from the City of San Diego in 2018 was approximately 9.8 MMT CO_2e. Changes in emissions were primarily driven by two sectors: natural gas and water use. In 2018, natural gas emissions decreased by 12 percent, while water-related emissions increased by 19 percent due to low rainfall in 2017 and 2018 and the subsequent increase in imported water.

3.3.4 UC San Diego Greenhouse Gas Emissions

3.3.4.1 The Climate Registry GHG Emissions Inventory

UC San Diego reports the annual GHG emissions inventory to an independent reporting organization, The Climate Registry (TCR). The UC San Diego TCR inventory reported a total of 279,330 MT CO_2e for the UC San Diego main campus for the 2016 emissions year. As shown in Table 8, *2016 UC San Diego La Jolla Campus GHG Emissions,* the emissions reported to the TCR included 164,806 MT CO_2e from Scope 1 emissions, 35,413 MT CO_2e from Scope 2 emissions, and 79,111 MT CO_2e from Scope 3 emissions (UC San Diego 2019a).

Table 8
2016 UC SAN DIEGO LA JOLLA CAMPUS GHG EMISSIONS

GHG Emission Scope and Source	MT CO_2e
Scope 1 – Stationary Combustion	159,607 (57%)
Scope 1 – Mobile Combustion	3,462 (1%)
Scope 1 – Fugitive/Other Emissions	1,737 (<1%)
Scope 2 – Purchased Electricity	35,413 (13%)
Scope 3 – Commuting	61,564 (22%)
Scope 3 – Air Travel	17,547 (6%)
TOTAL	**279,330**

Source: UC San Diego 2019a
MT = metric tons; CO_2e = carbon dioxide equivalent

3.3.4.2 UC San Diego Climate Action Plan

As mentioned in Section 2.2.5.3, the 2019 update to Climate Action Plan (UC San Diego 2019a) includes UC San Diego's current, historical, and projected emissions. According to the 2019 update to the Climate Action Plan, despite the steady growth in campus population and infrastructure since 2009, the UC San Diego campus has not seen a corresponding increase in GHG emissions. Figure 4, *2009 to 2017 Scope 1 and 2 CO_2e Emissions,* and Figure 5, *Historical GHG Emissions – 2009 to 2017,* depict UC San Diego's emission trend and emissions by source since 2009.

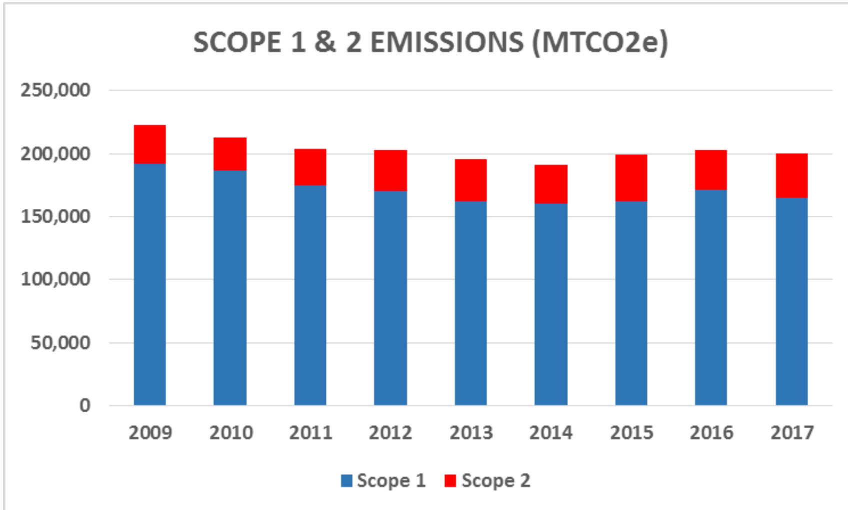

Figure 4 – 2009 to 2017 Scope 1 and 2 CO_2e Emissions

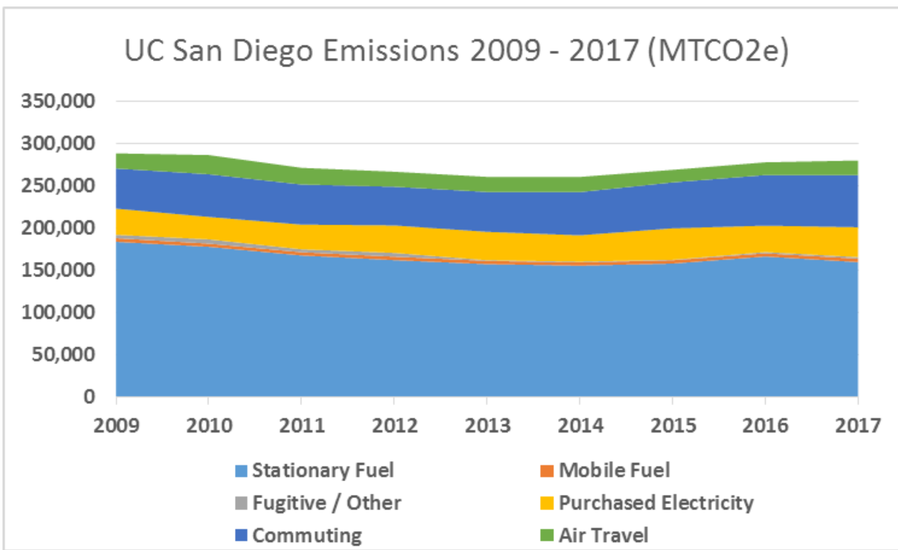

Figure 5 – Historical GHG Emissions – 2009 to 2017

Overall, campus-wide emissions have decreased since adoption of the 2008 Climate Action Plan and other policies due to implementation of an aggressive energy efficiency program, development of the campus microgrid, and commitments to reduce emissions from the campus fleet and community by students, faculty, and staff. The slight increase in emissions starting in 2015 was due to several new large facilities coming online during this period, including the Jacobs Medical Center, the Altman Clinical and Transitional Research Institute, and Tata Hall for the Sciences.

3.3.5 Existing Land Use On-site Emissions

The Project site is currently developed with a 13,213-SF building that formerly contained a restaurant/brewpub, which closed in March 2020 and is currently vacant. The building and would be demolished as part of the Project. Operational emissions for the former on-site restaurant use were estimated using CalEEMod as described in further detail in Section 4.2.3. As shown in Table 9, *Existing*

Land Use (Restaurant) Operational GHG Emissions, the restaurant use was estimated to result in annual GHG emissions of 1,190 MT CO_2e in 2024 if it were to continue operations.

Table 9
EXISTING LAND USE (RESTAURANT) OPERATIONAL GHG EMISSIONS

Emission Sources	Emissions (MT CO_2e)
Scope 1 Sources	
Area Sources	<0.5
Energy Sources – Natural Gas	124
Scope 2 Sources	
Energy Sources – Electricity	168
Scope 3 Sources	
Vehicular (Mobile) Sources	821
Solid Waste Sources	59
Water Sources	19
TOTAL OPERATIONAL EMISSIONS	**1,190**

Source: CalEEMod output data is provided in Appendix A
Note: Totals may not add up exactly due to rounding.
MT = metric tons; CO_2e = carbon dioxide equivalent

4.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.1 METHODOLOGY

Criteria pollutant and GHG emissions were calculated using CalEEMod, Version 2016.3.2 (SCAQMD 2017). CalEEMod is a computer model used to estimate emissions resulting from construction and operation of land development projects throughout the State of California. CalEEMod was developed by the SCAQMD with the input of several air quality management and pollution control districts. The model calculates emissions of CO, PM_{10}, $PM_{2.5}$, SO_2, the ozone precursors VOC and NO_X, and the GHG emissions for CO_2, CH_4, and N_2O. The input data and construction and operation assumptions for the proposed Project are discussed below. CalEEMod output files are included in Appendix A, *CalEEMod Outputs*.

4.2 ASSUMPTIONS

4.2.1 Project Construction

As described above, construction emissions were assessed using the CalEEMod. CalEEMod contains OFFROAD2011 emission factors and EMFAC2014 emission factors from CARB's models for off-road equipment and on-road vehicles, respectively. The construction analysis included modeling of the projected construction equipment that would be used during each construction activity and quantities of earth and debris to be moved.

Construction input data for CalEEMod include, but are not limited to, (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; (3) areas to be excavated and graded; and (4) volumes of materials to be exported from and imported to the Project area. This analysis assesses maximum daily emissions from individual construction activities, including demolition/site preparation; trenching; shoring, excavation, and pile foundation installation; construction of the physical structure; and structure finishes. Project grading is estimated to require 18,700 CY of cut and 240 CY of fill for a net export of 18,460 CY of material. Construction would require heavy equipment during each construction activity. Equipment estimates are based on assumptions provided by GPI Companies and CalEEMod default data. Table 10, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each stage of construction.

Table 10
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Phase	Equipment	Number
Demolition/Site Preparation	Concrete/Industrial Saw	1
	Rubber Tired Dozer	1
	Tractor/Loader/Backhoe	3
Trenching	Excavator	1
	Tractor/Loader/Backhoe	2
Shoring, Excavation, and Piles	Excavator	2
	Rubber Tired Dozer	1
	Tractor/Loader/Backhoe	2
Structure	Aerial Lift	1
	Crane	1
	Forklift	2
	Generator Set	1
	Tractor/Loader/Backhoe	1
	Welder	3
Finishes	Air Compressor	1

Source: GPI Companies (data, including equipment horsepower, is provided in Appendix A)

The construction schedule was based on information provided by GPI Companies. As shown in Table 11, *Anticipated Construction Schedule*, physical Project construction is assumed to start in June 2021 and projected to be complete in August 2022. Testing and inspections would follow physical building construction and last for seven months, resulting in initial occupancy in mid-2023.

Table 11
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Activity	Construction Period Start	Construction Period End	Construction Period Number of Working Days
Site Preparation/Demolition	6/1/2021	7/12/2021	30
Trenching	7/13/2021	8/2/2021	15
Shoring, Excavation, and Pile Foundations	8/3/2021	9/27/2021	40
Structure	9/28/2021	8/17/2022	232
Finishes	4/27/2022	8/18/2022	82

Source: GPI Companies (data is provided in Appendix A)

The quantity, duration, and the intensity of construction activity influence the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in the CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report.

CalEEMod has the capability to calculate reductions in construction emissions from the effects of dust control, diesel-engine classifications, and other selected emissions reduction measures. Construction emission calculations presented herein assume the implementation of BMPs listed in Section 1.3, including watering two times daily during grading, ensuring that all exposed surfaces maintain a minimum soil moisture of 12 percent, limiting vehicle speeds on unpaved roads to 15 mph.

The Project would also conform to the VOC limits included in SDAPCD Rule 67 (as described in Section 1.4). According to Rule 67, non-residential coatings must have a VOC content less than or equal to 100 grams per liter (g/L). The quantities of coatings that would be applied to the interior and exterior of the new building were estimated according to CalEEMod default assumptions.

CalEEMod estimates construction emissions for each year of construction activity based on the annual construction equipment profile and other factors determined as needed to complete all phases of construction by the target completion year. As such, each year of construction activity has varying quantities of GHG emissions. Per City Guidance, total construction GHG emissions resulting from the Project are amortized over 30 years and added to operational GHG emissions.

4.2.2 Project Operations

The Project's operational emissions were estimated using CalEEMod. Operational sources of emissions include area sources, mobile sources, energy use, water use, and solid waste generation. Operational emissions from area sources include the use of consumer products, engine emissions from landscape maintenance equipment, and VOC emissions from repainting of buildings. Low-VOC coatings (less than or equal to 100 g/L) were assumed in the model per SDAPCD Rule 67.

Operational mobile source emissions would be associated with Project-related vehicle trip generation and trip length. According to the Transportation Impact Analysis (TIA) prepared for the Project by Linscott, Law & Greenspan Engineers (LLG; 2021), the Project would generate 1,920 average daily trips (ADT). CalEEMod default average trip lengths, vehicle speeds, and fleet mix were used.

The Project would be designed to exceed the 2019 Title 24 standards to reduce electrical energy usage by 20 percent. Annual electrical usage incorporated into the model for the Project's office, classroom, and retail uses was provided by the Project applicant. Model default electrical usage for the proposed parking garage was used. The Project would not include the use of natural gas.

Model default indoor and outdoor water usage was used. The Project would achieve a 35 percent reduction in indoor water use compared to the statewide average. This reduction was incorporated into the model. A 20 percent outdoor water use reduction per CALGreen requirements was also incorporated into the model.

Project tenants would implement a Zero Waste Action Plan during operations as required by the UC Sustainable Practices Policy; however, because specific solid waste reduction metrics are not available at this stage in the planning process, model default solid waste generation was used and a 75 percent reduction per AB 341 was assumed.

4.2.3 Existing Land Use On-site Operations

The Project site was formerly developed with a 13,213-SF restaurant that generated emissions through area sources, mobile sources, energy use, water use, and solid waste generation. Emissions associated with the former restaurant land use have been provided for informational purposes. According to the TIA prepared for the Project (LLG 2021), the former restaurant use generated 1,718 ADT. Model defaults for area sources, energy use, water use, and solid waste generation associated with the restaurant use were used.

4.3 SIGNIFICANCE CRITERIA

4.3.1 Air Quality

The following significance thresholds are based on Appendix G of the State CEQA Guidelines. A significant impact is identified if the Project would:

(1) Conflict with or obstruct implementation of the applicable air quality plan;

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

(3) Expose sensitive receptors to substantial pollutant concentrations; or

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

To determine whether the Project would result in a cumulatively considerable increase of $PM_{2.5}$, PM_{10}, or exceed quantitative thresholds for ozone precursors (i.e., NO_X and VOCs), contribute substantially to a projected air quality violation, or have an adverse effect on human health, Project emissions may be evaluated based on the quantitative emission thresholds established by the SDAPCD. As part of its air quality permitting process, the SDAPCD has established thresholds in Rule 20.2 for the preparation of Air Quality Impact Assessments. In the absence of a SDAPCD adopted threshold for $PM_{2.5}$, the SCAQMD's screening threshold of 55 pounds per day or 10 tons per year is used.

The screening criteria were developed by SDAPCD and SCAQMD with the purpose of attaining the NAAQS and CAAQS. The NAAQS and CAAQS, as discussed in Section 2.1, identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. Therefore, for CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality or an adverse effect on human health. The screening thresholds are included in Table 12, *Screening-level Thresholds for Air Quality Impact Analysis*.

Table 12
SCREENING-LEVEL THRESHOLDS FOR AIR QUALITY IMPACT ANALYSIS

Pollutant	Total Emissions		
Construction Emissions (Pounds/Day)			
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_X)	250		
Oxides of Sulfur (SO_X)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOCs)	137		
Operational Emissions			
	Pounds/Hour	**Pounds/Day**	**Tons/Year**
Respirable Particulate Matter (PM_{10})	---	100	15
Fine Particulate Matter ($PM_{2.5}$)	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOCs)	---	137	15
Toxic Air Contaminant Emissions			
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT		
Non-Cancer Hazard	1.0		

Source: SDAPCD Rule 20.2 and Rule 1210.
T-BACT = Toxics-Best Available Control Technology

The State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, commonly referred to as public nuisance law, prohibits emissions from any source whatsoever in such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The provisions of these regulations do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals. It is generally accepted that the considerable number of persons requirement in Rule 51 is normally satisfied when 10 different individuals/households have made separate complaints within 90 days. Odor complaints from a “considerable” number of persons or businesses in the area are considered a significant, adverse odor impact. Therefore, any unreasonable odor discernible at the property line of the campus will be considered a significant odor impact.

4.3.2 Greenhouse Gases

Given the relatively small levels of emissions generated by a typical development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change; however, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts.

The following significance thresholds are based on Appendix G of the State CEQA Guidelines. A significant impact is identified if the Project would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The determination of significance is governed by CEQA Guidelines 15064.4, entitled "Determining the Significance of Impacts from Greenhouse Gas Emissions." CEQA Guidelines 15064.4(a) states, "[t]he determination of the significance of greenhouse gas emissions calls for *a careful judgment by the lead agency consistent with the provisions in section 15064*. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, *in the context of a particular project*, whether to … [use a quantitative model or qualitative model]" (emphasis added). In turn, CEQA Guidelines 15064.4(b) clarifies that "[a]n iron clad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

The analysis contained herein therefore relies upon a threshold chosen after the exercise of careful judgment about the setting of the project, believed to be appropriate in the context of this particular project.

"A project's contribution is less than cumulatively considerable if the project is required to implement…its fair share of a mitigation measure or measures designed to alleviate the cumulative impact" (CEQA Guidelines 15130(a)(3)). Measures to mitigate a project's GHG impacts broadly include "reductions in emissions resulting from a project though implementation of project features, project design, or other measures" and that such measures must have an "essential nexus" and be "roughly proportionate" to the project (CEQA Guidelines 15126.4 (a)(4),(c)(2)). Finally, "[t]he mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable" (CEQA Guidelines 15064 (h)(4)).

The California Supreme Court in *Center for Biological Diversity v. California Department of Fish and Wildlife* (November 30, 2015, Case No. 217763), suggested several approaches for determining significance of GHG emissions that would be appropriate, but did not foreclose other methodologies that may be used by lead agencies. One method for determining a fair share contribution quantitatively is to determine if a project's per service population (SP; i.e., residents and/or employees of a project) GHG efficiency level is more or less than the GHG efficiency level that would be needed to achieve the State's 2020 GHG target set forth in AB 32 and the State's 2030 GHG target set forth in SB 32. AB 32 and SB 32 demonstrate the State's commitment to reducing GHG emissions and the State's associated contribution to climate change, without intending to limit population or economic growth within the State. Table 13, *Statewide Emissions Inventory and Reduction Targets,* shows California's 2020, 2030, and 2050 emissions targets based on CARB's approved 1990 limit of 431 MMT CO_2e (CARB 2020e).

Table 13
STATEWIDE EMISSIONS INVENTORY AND REDUCTION TARGETS

	1990	2020	2030	2050
Statewide Emissions Targets ($MMT\ CO_2e$)	431.0[1]	431.0[1]	258.6[2]	86.2[3]
Amount below 1990 Levels	0%	0%	40%	80%

[1] CARB 2020e
[2] 40 percent below 1990 levels per Senate Bill 32
[3] 80 percent below 1990 levels per Executive Order S-3-05
MMT = million metric tons; CO_2e = carbon dioxide equivalent

To achieve the goals of AB 32 and SB 32, which are tied to statewide GHG emission levels of a specific benchmark year (i.e., 1990), California would have to achieve a lower rate of emissions per SP than its current rate. The per SP metrics represent the rates of emissions needed to achieve a fair share of California's emission reduction mandate. Fair share indicates the level of GHG efficiency that, if applied statewide or to a defined geographic area, such as the UC San Diego campus or the proposed Project, would meet the State's emissions targets for 2020 and 2030. For this reason, land uses need to be GHG "efficient" to attain AB 32 and SB 32 goals while also accommodating population and job growth. As such, this analysis focuses on the annual operational GHG emissions for the proposed Project per SP, where SP is the occupancy associated with operation of the Project.

The proposed Project would be located adjacent to the UC San Diego La Jolla campus and would be primarily occupied by UC San Diego. The Project's proposed type of development and uses are similar to the types of development and uses located at the UC San Diego La Jolla campus. As such, land use-related sectors in California's 1990 GHG Emissions Inventory were identified and GHG emissions were separated to tailor the inventory to emission sources relevant to the UC San Diego La Jolla campus. This exercise was completed to identify the emissions sources over which the UC San Diego La Jolla campus can have some influence through planning and development approval, as it would be infeasible for the UC San Diego campus to develop reduction strategies that address the full scope of statewide emissions. Emissions sources not present on campus are not included in the development of the GHG efficiency threshold. For example, this approach excludes emissions associated with agriculture, mining, ship and commercial boats, and other emissions sources not associated with campus activities. Table 14, *Adjusted Statewide Emissions Inventory – Land Use-Related Sectors,* presents a revised version of the 1990 statewide emissions that includes only the sectors and subsectors relevant to the UC San Diego La Jolla campus, with which the proposed Project would be associated.

Table 14
ADJUSTED STATEWIDE EMISSIONS INVENTORY – LAND-USE RELATED SECTORS

Main Sector / Sub Sector Level 1	Total Emissions ($MMT\ CO_2e$/year)[1]	Adjusted Land Use-Related Emissions ($MMT\ CO_2e$/year)	Notes / Adjustments
Agriculture and Forestry	18.9	0.0	Not included in land use sector
Commercial	14.4	13.9	Excludes National Security emissions from Sub Sector 1
Electricity Generation (imports)	61.5	61.5	Land use sector includes all emissions

Table 14 (cont.)
ADJUSTED STATEWIDE EMISSIONS INVENTORY – LAND-USE RELATED SECTORS

Main Sector / Sub Sector Level 1	Total Emissions (MMT CO_2e/year)[1]	Adjusted Land Use-Related Emissions (MMT CO_2e/year)	Notes / Adjustments
Electricity Generation (in state	49.0	49.0	Land use sector includes all emissions (including CHP: Industrial from Sub Sector Level 1)
Industrial	105.3	11.7	Industrial emissions excluded from land use sector, except as described in sub sectors below
CHP: Industrial	9.7	*0.0*	Not included in land use sector
Flaring	0.1	*0.0*	Not included in land use sector
Landfills	7.4	*7.4*	Land use sector includes all emissions
Manufacturing	32.1	*0.0*	Construction emissions from Sub Sector Level 2 included in land use sector
Mining	0.03	*0.0*	Not included in land use sector
Not Specified	2.7	*0.0*	Not included in land use sector
Oil and Gas Extraction	14.8	*0.0*	Not included in land use sector
Petroleum Marketing	0.02	*0.0*	Not included in land use sector
Petroleum Refining	32.8	*0.0*	Not included in land use sector
Pipelines	1.92	*0.0*	Not included in land use sector
Waste Water Treatment	3.6	*3.6*	Waste water treatment emissions are included
Not Specified	1.3	1.3	Land use sector includes all emissions
Residential	29.7	29.7	Land use sector includes all emissions
Transportation	150.6	140.9	Excludes Aviation, Rail, and Water-borne emissions from Sub Sector Level 1
TOTAL	431.0	308.0	

Source: UC San Diego 2018
Note: Sectors/sub sectors may not sum exactly due to rounding.
[1] CARB 2020e
MMT = million metric tons; CO_2e = carbon dioxide equivalent

The statewide inventory was tailored to emissions sources that are relevant to the UC San Diego La Jolla campus so that emissions in future years can be compared with California's own targets for the relevant land uses–namely for 2020 under AB 32, for 2030 under SB 32, and for 2050 under EO S-3-05. After culling the emissions sources to those that are relevant for the UC San Diego La Jolla campus, which results in an emissions level of 308,013,066 MT CO_2e per year, the second step is developing an appropriate "rate" of emissions, which is determined by dividing the mass emissions by the SP to get a rate of emissions.

California has mass emissions targets for future years. State agencies also forecast future residential population and employment for future years. If one simply divides the mass emissions target by the total residential population and employment, this yields emissions "budget" per population plus employment that is consistent with State GHG goals. If a project or plan has a rate of GHG emissions per SP that is equal to, or less than the State's GHG rate for future years, then that project or plan can demonstrate consistency with the State's GHG goals. In this case, if the proposed Project emissions rates are consistent with the State's goals, it can be concluded that implementation of the project would make progress toward the State's 2020 and 2030 goals and set a trajectory that is consistent with the State's 2050 goal. The application of an efficiency-based metric as is described herein is consistent with the discussion in CARB's 2017 Scoping Plan (CARB 2017) of the importance of GHG efficiency in land use planning. The 2017 Scoping Plan provides the following guidance on the application of an efficiency-based metric:

> "Since the statewide per capita targets are based on the statewide GHG emissions inventory that includes all emissions sectors in the State, it is appropriate for local jurisdictions to derive evidence-based on local per capita goals based on local emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets. The resulting GHG emissions trajectory should show a downward trend consistent with the statewide objectives."

Thus, future development would have to improve efficiency to be consistent with the goals of AB 32 and SB 32.

Table 15, *Service Population Efficiency Targets,* shows the estimated statewide land-use related GHG emissions per SP for 2020 (to achieve the goals of AB 32), 2030 (to achieve the goals of SB 32), and 2050 (to achieve the goals of EO S-3-05). The table also includes the estimated statewide land-use related GHG emissions per SP for 2024, the first full year that the proposed Project is anticipated to be operational. The emissions target for 2024 was linearly extrapolated from 2020 and 2030 emissions goals, and then divided by the SP to achieve an emissions rate per SP for the proposed Project's operational year of 2024. This operational year rate demonstrates consistency with both AB 32 and SB 32.

Table 15
SERVICE POPULATION EFFICIENCY TARGETS

	2020	2024	2030	2050
Emissions Target (MT CO_2e/year)	308,013,066	258,730,974	184,807,640	61,602,613
Population[1]	40,129,160	40,938,929	42,263,654	44,856,461
Employment	19,143,220[2]	19,777,860[2]	20,615,599[3]	21,880,333[3]
Service Population (SP)	59,272,380	60,716,789	62,879,253	66,736,794
Emissions per SP (MT CO_2e/year)	5.20	4.26	2.94	0.92

1 Department of Finance 2020
2 Interpolated from the California Employment Development Department (2020) employment projections for 2018 (18,825,900) and 2028 (20,412,500).
3 The Employment Development Department provides 10-year employment estimates that currently extend to 2028, so the ratio of employment to population estimated in 2028 (48.8 percent) was applied to the Department of Finance population estimates for 2030 and 2050.
MT = million tons; CO_2e = carbon dioxide equivalent

In addition to the 2024 efficiency target, significance will be assessed based on compliance with the UC Sustainable Practices Policy (UC 2020).

5.0 AIR QUALITY IMPACT ANALYSIS

This section evaluates potential direct impacts of the proposed Project related to the air pollutant emissions. Project-level air quality modeling was completed as part of this analysis. Complete modeling results are included as Appendix A to this report.

5.1 CONSISTENCY WITH AIR QUALITY PLANS

Air quality plans describe air pollution control strategies to be implemented by a city, county, or regional air district. The primary purpose of an air quality plan is to bring an area that does not attain federal and State air quality standards into compliance with those standards pursuant to the requirements of the CAA and CCAA.

The regional air quality plan for San Diego County is SDAPCD's 2020 Attainment Plan. The Attainment Plan, which would be a revision to the SIP once approved by the USEPA, outlines SDAPCD's plans and control measures designed to attain the NAAQS for ozone. These plans accommodate emissions from all sources, including natural sources, through implementation of control measures, where feasible, on stationary sources to attain the standards. Mobile sources are regulated by the USEPA and CARB, and the emissions and reduction strategies related to mobile sources are considered in the Attainment Plan and SIP.

The two principal criteria for conformance to the Attainment Plan are (1) whether the Project will not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards, and (2) whether the Project will exceed the assumptions in the Attainment Plan.

Project implementation would contribute emissions of PM_{10}, $PM_{2.5}$, and the ozone precursors VOC and NO_X to the area during short-term construction and long-term operations. As described under Section 5.2 and shown in Table 16, *Maximum Daily Construction Emissions,* and Table 17, *Maximum Daily Operational Emissions,* below, projected pollutant emissions during Project construction and operation would be well below the significance criteria. Therefore, the Project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards.

Assumption for land use development used in the Attainment Plan are taken from local and regional planning documents. Emission forecasts rely on projections of vehicle miles traveled (VMT) by MPOs, such as SANDAG, and population, employment, and land use projections made by local jurisdictions during development of the area and general plans.

The Project site is currently subject to the City's General Plan and has an existing land use designation of Commercial and Office. Upon acquisition of the Project site by the UC Regents, the site would not be subject to the City's General Plan. The Project would involve land use types (office, educational, and retail) that are generally consistent with the site's existing land use designation under the City's General Plan, which had been used in development of the Attainment Plan. Further, while the Attainment Plan acknowledges mobile and area sources, minor changes in the assumptions relative to these sources would not obstruct successful implementation of the strategies for improvement of SDAB's air quality. Additionally, the Project site is within a Transit Priority Area (TPA) and along a high-quality transit corridor (La Jolla Village Drive). The Project site is also within 0.33 mile of two future UC San Diego Blue Line light rail transit (LRT) system stations (Nobel Drive Station and VA Medical Center Station). The Project's location would therefore reduce vehicle trips and VMT and associated pollutant emissions. According to the TIA prepared for the Project (LLG 2021), the Project VMT per employee for the proposed office uses is less than 85 percent of the regional average and the proposed classroom and retail uses would not result in a net increase in the total regional VMT. As such, the Project would not exceed the assumptions of the Attainment Plan or conflict with or obstruct implementation of the Attainment Plan. Impacts related to conflict with an applicable air quality plan would be less than significant, and no mitigation would be required.

5.2 CUMULATIVELY CONSIDERABLE NET INCREASE OF NONATTAINMENT CRITERIA POLLUTANTS

In analyzing cumulative impacts from a project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SDAB is listed as nonattainment for the CAAQS and the NAAQS. The SDAB has been designated as a federal nonattainment area for ozone, and a State nonattainment area for ozone, PM_{10}, and $PM_{2.5}$. Since few sources emit ozone directly, and ozone is caused by complex chemical reactions, control of ozone is accomplished by the control of emissions of NO_X and ROGs. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the air basin. Thus, this regional impact is a cumulative impact, and projects would contribute to this impact only on a cumulative basis. No single project would be sufficient in size, by itself, to result in nonattainment of the regional air quality standards. Consequently, if a project's emissions do not exceed identified significance thresholds, its emissions would not result in a cumulatively considerable contribution to the significant cumulative impact (Sacramento Metropolitan Air Quality Management District [SMAQMD] 2014, Bay Area Air Quality Management District [BAAQMD] 2010).

The Project would generate criteria pollutants in the short term during construction and the long term during operation. To determine whether the Project would result in a cumulatively considerable increase of $PM_{2.5}$, PM_{10} or exceed quantitative thresholds for ozone precursors (i.e., NO_X and VOCs), contribute substantially to a projected air quality violation, or have an adverse effect on human health, the Project's emissions are evaluated based on the quantitative emission thresholds established by the SDAPCD (as shown in Table 12).

5.2.1 Project Construction Emissions

The Project's construction emissions were estimated using CalEEMod as described in Section 4.2.1. Project-specific input was based on general information provided in Section 1.0, assumptions provided by GPI Companies, and default model settings to estimate reasonably conservative conditions. The results of the calculations for Project construction are shown in Table 16. The data are presented as the maximum anticipated daily emissions for comparison with the SDAPCD thresholds.

Table 16
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Phase	ROG*	NO_X*	CO*	SO_X*	PM_{10}*	$PM_{2.5}$*
Demolition/Site Preparation (2021)	2	20	15	<0.5	1	1
Trenching (2021)	1	6	8	<0.5	<0.5	<0.5
Shoring, Excavation, and Pile Foundations (2021)	2	34	19	<0.5	5	3
Structure (2021)	2	20	19	<0.5	2	1
Structure (2022)	2	19	18	<0.5	2	1
Finishes (2022)	12	1	2	<0.5	<0.5	<0.5
Maximum Daily Emissions[1]	**15**	**34**	**20**	**<0.5**	**5**	**3**
SDAPCD Thresholds	*137*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
Note: Totals may not sum due to rounding.
* Pollutant Emissions (pounds/day)
[1] Maximum daily emissions of ROG and CO occur when the Structure and Finishes phases overlap in 2022. Maximum daily emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ occur during the Shoring, Excavation, and Pile Foundations phase.
ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 16, emissions of all criteria pollutants related to Project construction are estimated to be below the SDAPCD's significance thresholds. Therefore, construction of the Project would not result in a cumulatively considerable increase of $PM_{2.5}$, PM_{10} or exceed quantitative thresholds for ozone precursors (i.e., NO_X and VOCs), contribute substantially to a projected air quality violation, or have an adverse effect on human health. Impacts associated with a cumulatively considerable increase in criteria pollutants during Project construction would be less than significant, and no mitigation would be required.

5.2.2 Project Operational Emissions

The Project's operational emissions were estimated using CalEEMod as described in Section 4.2.2. As described in Section 3.2.1.3, the Project site was formerly developed with a 13,213-SF restaurant that would be replaced by the Project. Table 17, *Maximum Daily Operational Emissions*, presents the summary of the proposed Project's maximum daily operational emissions. For informational purposes, the existing land use's daily emissions have also been provided as context for the overall net increase in emissions.

Table 17
MAXIMUM DAILY OPERATIONAL EMISSIONS

Category	VOC*	NO_X*	CO*	SO_2*	PM_{10}*	$PM_{2.5}$*
Area	3	<0.5	<0.5	0	<0.5	<0.5
Energy	0.0	0.0	0.0	0.0	0.0	0.0
Mobile	3	10	30	<0.5	10	3
Stationary	<0.5	1	1	<0.5	<0.5	<0.5
Total Project Daily Emissions	**5**	**11**	**31**	**<0.5**	**10**	**3**
Total Existing Land Use Daily Emissions[1]	2	7	17	<0.5	4	1
Net Increase Daily Emissions	**3**	**3**	**13**	<0.5	**6**	**2**
SDAPCD Thresholds	*75*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
* Pollutant Emissions (pounds per day)
[1] Refer to Table 6.
Note: Totals may not sum due to rounding.
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 17, when conservatively assessing the Project's emissions as new to the region without the consideration of the recent former restaurant use, daily maximum Project emissions of all criteria pollutants during operation would be below the daily thresholds. Therefore, operation of the Project would not result in a cumulatively considerable increase of $PM_{2.5}$, PM_{10} or exceed quantitative thresholds for ozone precursors (i.e., NO_X and VOCs), contribute substantially to a projected air quality violation, or have an adverse effect on human health. Impacts associated with a cumulatively considerable increase in criteria pollutants during Project operations would be less than significant, and no mitigation would be required.

5.3 IMPACTS TO SENSITIVE RECEPTORS

5.3.1 Construction

Construction activities would result in short-term, Project-generated emissions of DPM from the exhaust of off-road, heavy-duty diesel equipment used for the Project's various construction activities. CARB identified DPM as a TAC in 1998. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual (MEI) are higher if a fixed exposure occurs over a longer time period. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the Project.

The nearest potential sensitive receptors are the on-campus Rita Atkinson Residences located approximately 350 feet from the Project site, across La Jolla Village Drive. These residences represent the potentially sensitive receptors with the greatest potential to be exposed to the highest levels of DPM; however, as presented earlier in Table 16, maximum daily particulate emissions, which include

DPM, are estimated at 5 pounds per day for PM_{10} and 3 pounds per day for $PM_{2.5}$, which are well below their respective SDAPCD screening-level thresholds of 100 pounds per day and 55 pounds per day. Additionally, the construction period would be relatively short, especially when compared to 30-year exposure duration period that typically requires a full health risk assessment. Combined with the highly dispersive properties of DPM, construction-related emissions of TACs would not expose sensitive receptors to substantial emissions of TACs. Construction impacts to sensitive receptors would be less than significant, and no mitigation would be required.

5.3.2 Operations

With regard to long-term operations, the CARB *Air Quality and Land Use Handbook* (CARB 2005) lists prominent air pollution sources as high traffic freeways and roads; distribution centers; rail yards; ports; refineries; chrome plating facilities; dry cleaners; and large gas dispensing facilities. The proposed Project would develop office and classroom space and a retail use; the Project would not include the types of uses that have been identified as sources of air pollution by CARB. Further, while the Project is estimated to result in emissions of 6 pounds per day of PM_{10} and 2 pounds per day of $PM_{2.5}$ during operation, such emissions would be well below the respective SDAPCD screening level thresholds of 100 pounds per day for PM_{10} and 55 pounds per day for $PM_{2.5}$. In addition, the Project would not place sensitive receptors within the CARB siting distances of the listed air pollutant sources. Operational impacts to sensitive receptors would be less than significant, and no mitigation would be required.

5.4 ODORS AND OTHER EMISSIONS

As discussed above, the State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. Any emissions that adversely affect a substantial number of people, such as unreasonable odor discernible from the Project site, would be considered a significant impact.

The Project could produce other emissions such as odors during proposed construction activities resulting from construction equipment exhaust, application of asphalt, and/or the application of architectural coatings; however, standard construction practices such as the five-minute diesel idling limit and use of low-VOC coatings would minimize odors. Furthermore, odors emitted during construction would be temporary, short-term, and intermittent in nature, and would cease upon the completion of the respective phase of construction. Accordingly, the proposed Project would not create emissions, such as those leading to objectionable odors, adversely affecting a substantial number of people during construction. Short-term impacts associated with adverse emissions would be less than significant, and no mitigation would be required.

The proposed development would not result in substantial emissions such as operational odors. Emissions from office and classroom uses do not typically emit detectible odors. The on-site retail use, which may include a café, could emit odors related to food service; however, such odors are generally not objectionable and would be similar to the recent conditions at the site, which was developed with a restaurant. Furthermore, in 2014 UC San Diego implemented a smoke-free policy that prohibits smoking and smokeless tobacco products at all indoor and outdoor spaces on campus, that would apply to the Project site. Therefore, operations of the proposed Project would not create emissions adversely affecting a substantial number of people. Impacts associated with adverse emissions would be less than significant, and no mitigation would be required.

6.0 GREENHOUSE GAS IMPACT ANALYSIS

This section evaluates potential impacts of the proposed Project related to the generation of GHG emissions.

6.1 GREENHOUSE GAS EMISSIONS

6.1.1 Construction Emissions

Project construction GHG emissions were estimated using the CalEEMod model as described in Section 4.2.1. Project-specific input was based on general information provided in Section 1.0, assumptions provided by GPI Companies, and default model settings to estimate reasonably conservative conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

Emissions of GHGs related to the construction of the Project would be temporary. As shown in Table 18, *Estimated Construction GHG Emissions*, total GHG emissions associated with construction of the Project are estimated at 610 MT CO_2e. For construction emissions, City guidance recommends that the emissions be amortized (i.e., averaged) over 30 years and added to operational emissions. Averaged over 30 years, the proposed construction activities would contribute approximately 20 MT CO_2e per year.

Table 18
ESTIMATED CONSTRUCTION GHG EMISSIONS

Phase	Emissions (MT CO_2e)
Demolition/Site Preparation	35
Trenching	8
Shoring, Excavation, and Pile Foundations	133
Structure	419
Finishes	15
TOTAL[1]	**610**
Amortized Construction Emissions[2]	20

Source: CalEEMod (output data is provided in Appendix A)

[1] The total may not sum due to rounding.

[2] Construction emissions are amortized over 30 years in accordance with City of San Diego guidance.

MT = metric tons; CO_2e = carbon dioxide equivalent

6.1.2 Operational Emissions

Operational sources of GHG emissions include: (1) area sources; (2) energy use; (3) vehicle use; (4) stationary sources; (5) solid waste generation; and (6) water conveyance and treatment.

6.1.2.1 Area Source Emissions

Area sources include emissions from landscaping equipment, architectural coatings, and consumer products. GHG emissions associated with area sources were estimated using the CalEEMod default values for the Project. The annual GHG emissions from area sources are estimated to be negligible (<0.5 MT CO_2e per year) in 2024.

6.1.2.2 Energy Source Emissions

Buildings use electricity for lighting, heating, and cooling. Electricity generation typically entails the combustion of fossil fuels, including natural gas and coal, which are then stored and transported to end users. A building's electricity use is thus associated with the off-site or indirect emission of GHGs at the source of electricity generation (power plant). The Project would be designed to outperform the 2019 Title 24 electricity requirements by 20 percent. The Project would not require the use of natural gas. In compliance with the UC Sustainable Practices Policy, the Project would participate in the SDG&E *Savings by Design Program* to the extent the program is available and accepting new projects. The Project would also obtain 100 percent clean energy by 2025; however, because the Project would be operational before 2025, emissions modeling for the Project conservatively assumes the use of non-renewable electricity sources to estimate emissions in the Project's first full year operations, which is anticipated to be 2024. The Project's annual GHG emissions from electricity consumption are estimated to be 628 MT CO_2e in 2024.

6.1.2.3 Vehicular (Mobile) Source Emissions

Operational mobile source emissions would be associated with Project-related vehicle trip generation and trip length. According to the TIA prepared for the Project by LLG (2021), the Project would generate 1,920 ADT. The Project's annual GHG emissions from vehicular sources are estimated to be 1,769 MT CO_2e in 2024.

6.1.2.4 Stationary Source Emissions

An emergency generator would be used for power during electrical power failures. Generator emissions were estimated based on assumed testing frequency of 15 minutes per month. The Project annual GHG emissions from stationary sources are estimated to be 0.6 MT CO_2e in 2024.

6.1.2.5 Solid Waste Source Emissions

Solid waste generated by the Project would also contribute to GHG emissions. Treatment and disposal of solid waste produces emissions of methane. The Project would implement a Zero Waste Action Plan during operations; however, because specific solid waste reduction metrics are not available at this stage in the planning process, model default solid waste generation was used and a 75 percent reduction per AB 341 was assumed. The Project's annual GHG emissions from solid waste sources are estimated to be 46 MT CO_2e in 2024.

6.1.2.6 Water Source Emissions

Water-related GHG emissions are from the conveyance and treatment of water. The California Energy Commission's 2006 Refining Estimates of Water-Related Energy Use in California defines average energy values for water in southern California. These values are used in CalEEMod to establish default water-related emission factors. Model default indoor and outdoor water usage was used. The Project would achieve a 35 percent reduction in indoor water use compared to the statewide average. This reduction was incorporated into the model. A 20 percent outdoor water use reduction per CALGreen requirements was also incorporated into the model. The Project's annual GHG emissions from water sources are estimated to be 86 MT CO_2e.

6.1.3 Other GHG Emission Sources

Ozone is also a GHG; however, unlike other GHGs, ozone in the troposphere is relatively short lived and therefore is not global in nature. According to CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NO_X and VOCs) to global warming (CARB 2006). Therefore, it is assumed that emission of ozone precursors associated with the Project would not significantly contribute to climate change.

At present, there is a federal ban on CFCs and, and as noted in Section 1.4.2, the Project would not use CFC-based refrigerants in the HVAC systems; therefore, the Project would not generate emissions of this GHG. Implementation of the Project may emit a small amount of HFC emissions from leakage, service of, and from disposal at the end of the life of refrigeration and air conditioning equipment. However, these emissions are not quantifiable and are assumed to be negligible. PFCs and sulfur hexafluoride are typically used in heavy-duty industrial applications. The proposed Project would not include heavy-duty industrial applications. Therefore, it is not anticipated that the Project would contribute significant emissions of these GHGs.

6.1.4 Summary

Table 19, *Estimated Operational (Year 2024) GHG Emissions*, includes the annual emissions associated with the Project. The emissions include the Project's anticipated amortized annual construction emissions. As shown in Table 19, the Project would result in an annual increase in GHG emissions of 2,551 MT CO_2e in 2024. For informational purposes, the recent former restaurant use has also been provided as context for the overall net increase in regional GHG emissions

Table 19
ESTIMATED OPERATIONAL (YEAR 2024) GHG EMISSIONS

Emission Sources	Emissions (MT CO_2e)
Scope 1 Sources	
Area Sources	<0.5
Stationary Sources	1
Energy Sources – Natural Gas	0
Scope 2 Sources	
Energy Sources – Electricity	628
Scope 3 Sources	
Vehicular (Mobile) Sources	1,769
Solid Waste Sources	46
Water Sources	86

Table 19 (cont.)
ESTIMATED OPERATIONAL (YEAR 2024) GHG EMISSIONS

Emission Sources	Emissions (MT CO_2e)
Operational Subtotal	2,531
Construction (Annualized over 30 years)	20
TOTAL OPERATIONAL EMISSIONS	**2,551**
Total Existing Land Use Operational Emissions[1]	1,190
Net Increase in Emissions	**1,361**

Source: CalEEMod output data is provided in Appendix A
Note: Totals may not sum due to rounding.
[1] Refer to Table 9.
MT = metric tons; CO_2e = carbon dioxide equivalent

As detailed in Section 4.3.2, the efficiency target for the Project's first full year of operations, 2024, is 4.26 MT CO_2e/SP/year. The Project is estimated to support an occupancy of 947 individuals. As shown in Table 20, *GHG Emissions Significance Determination for Consistency with AB 32 and SB 32 (Scope 1, 2, and 3)*, based on the conservative assumption that emissions would be new to the area, the Project would result in emissions of 2.69 MT CO_2e/SP/year in 2024, which would be below the efficiency target. Therefore, impacts related to consistency with the AB 32 and SB 32 efficiency targets would be less than significant, and no mitigation would be required.

Table 20
GHG EMISSIONS SIGNIFICANCE DETERMINATION FOR CONSISTENCY WITH AB 32 AND SB 32 (SCOPES 1, 2, AND 3)

Category	2024
Total Project Emissions (MT CO_2e)	2,551
Project Service Population	947
Project Emissions per Service Population (MT CO_2e/SP/year)	**2.69**
Efficiency Target (MT CO_2e/SP/year)	4.26
Significant Impact?	**No**

MT = metric tons; CO_2e = carbon dioxide equivalent; SP = service population

6.2 CONSISTENCY WITH LOCAL PLANS ADOPTED FOR THE PURPOSE OF REDUCING GHG EMISSIONS

UC San Diego has adopted goals, policies, and strategies for the purpose of reducing the emission of GHGs, including the UC Policy of Sustainable Practices, UC San Diego Climate Action Plan, UC San Diego Zero Waste Plan, and the UC San Diego Water Action Plan. The Project's consistency with these plans is described below.

6.2.1 University of California Sustainable Practices Policy

As discussed in Section 2.2.4.13, the most recent version of the UC Sustainable Practices Policy, issued in July 2020, provides specific scope, direction, and expectations for implementing sustainable new capital projects, facility operations, and campus transportation resources. It commits UC to implementing actions intended to minimize the UC's impact on the environment and reduce the UC's dependence on non-renewable energy. The proposed Project incorporates a number of features that demonstrate consistency with the goals of the UC Sustainable Practices Policy, including:

- Exceedance of the current 2019 Title 24 energy efficiency standards by at least 20 percent.
- Incorporation of sustainable design features to reduce energy consumption, conserve natural resources, and achieve LEED Silver rating for the Project.
- No use of on-site fossil fuel combustion (e.g., natural gas) for space and water heating.
- Water consumption strategies to achieve a potable water reduction of 35 percent compared to the statewide average.
- Implementation of a Zero Waste Action Plan for Project operations.
- Striping of at least six percent of the total allocated parking for electric vehicles, including providing electric vehicle charging stations.

With respect to the UC 2025 climate neutrality target for Scope 1 and 2 GHG emission sources, as shown above in Table 19, the Project would result in negligible Scope 1 emissions, as area source and stationary source emissions would be minimal (estimated at 0.00379 MT CO_2e and 0.6 MT CO_2e per year, respectively) and the Project would not use natural gas. In addition, the stationary source emissions are estimated based on assumed testing for an emergency generator. This stationary source would not represent a regular or constant GHG emissions source. While the Project is modeled to generate Scope 2 (electricity-related) emissions in its first full year of operations (2024), the Project would participate in the SDG&E *Savings by Design* program to the extent the program is available and accepting new projects to obtain 100 percent renewable energy by 2025 per the UC Sustainable Practices Policy directive. This would result in the Project having no Scope 2 emissions by 2025, and the Project would thereby be consistent with the UC 2025 climate neutrality target for Scope 1 and Scope 2 GHG emission sources.

The UC Sustainable Practices Policy also sets forth the goal of achieving climate neutrality from Scope 3 sources by 2050. The primary Scope 3 source associated with the Project would be vehicle trip generation and associated VMT (through implementation of a Zero Waste Plan and increasingly stringent water use requirements, emissions from waste generation and water use are anticipated to be minimal by 2050). According to the TIA prepared for the Project (LLG 2021), the Project VMT per employee for the proposed office uses would be less than 85 percent of the regional average and the proposed classroom and retail uses would not result in a net increase in the total regional VMT. The Project site is within a TPA and along a high-quality transit corridor (La Jolla Village Drive). The Project would promote Transit Oriented Development (TOD) by redeveloping a currently underutilized site within a TPA that has abundant alternative transportation options, including access to the under-construction UC San Diego Blue Line LRT system with two stations (the Nobel Drive Station and the VA Medical Center Station) within 0.33 mile of the Project site.

Further, by locating the Project adjacent to the main UC San Diego campus, the Project would consolidate UC San Diego programs and uses, allowing for greater efficiency and less vehicular travel associated with commutes between the Project's uses and the main campus. As part of UC San Diego, the Project would also be subject to campus-wide sustainable transportation efforts that will be implemented to achieve Scope 3 emissions reductions by 2050. Requirements in the UC Sustainable

Practices Policy call for UC campuses to have no more than 40 percent of employees and no more than 30 percent of all employees and students commuting by SOV by 2050. The UC San Diego's extensive Transportation Demand Management (TDM) measures would also continue to be implemented at a campus-wide level to reduce VMT and associated emissions. These characteristics associated with the location of the Project effectively minimize the number of VMT for the population that would occupy and use the proposed Project. As such, the Project is considered a net benefit in terms of regional transportation. Therefore, the Project is considered consistent with the 2050 Scope 3 climate neutrality goal.

6.2.2 UC San Diego Climate Action Plan

The UC San Diego Climate Action Plan has set a goal for the campus of being net neutral for Scope I and II sources by 2025. As detailed above in Section 6.2.1, the Project would achieve net neutrality for these sources. Therefore, GHG emissions associated with the Project would not adversely affect GHG reduction targets within the UC San Diego Climate Action Plan.

6.2.3 UC San Diego Zero Waste Plan

As a UC San Diego facility, the UC San Diego building users would comply with the recommendations of the campus' Zero Waste Plan to the extent practicable and would report data on building waste quantities to the UC San Diego Sustainability Office and Zero Waste Working group on an annual basis. While not all programs recommended by the Zero Waste Plan have been implemented, the UC San Diego Zero Waste Working Group is actively working to roll out its programs and campus-wide requirements. As programs become available, UC San Diego building users would be required to participate. The Zero Waste Plan includes waste reduction, reuse, and diversion as well as educational programs to encourage campus users to reduce waste streams. The campus' Zero Waste Plan strives to achieve a 90 percent waste diversion rate campus-wide and is updated on a regular basis to meet new policies and regulations, incorporate new technologies and best practices, and alter existing programs based on lessons learned.

In addition, construction waste management would comply with the LEED Rating system for the Project. Therefore, the Project would be consistent with the UC San Diego Zero Waste Plan.

6.2.4 UC San Diego Water Action Plan

The objective of the UC San Diego Water Action Plan is to reduce potable water usage on campus by expanding the use of reclaimed water to offset potable water use and implementing building standards for new construction to improve water efficiency. The Project would include efficient building equipment to reduce water consumption at all fixtures (e.g., urinals, toilets, and faucets) to achieve a potable water reduction of 35 percent compared to the statewide average. For outdoor water use conservation, trees and groundcover would be irrigated on separate irrigation systems, with the trees watered by a bubbler system and shrub and groundcover areas watered by a high-efficiency subsurface in-line drip system. The irrigation system would also be tied to a dedicated irrigation meter and controlled by an evapotranspiration-based weather-sensing controller with central control capability. In addition, the Project would use drought-tolerant native and adapted low-medium water use plan species in the landscape plan to reduce water use. These reductions in water usage would also correspondingly reduce indirect emissions of GHG associated with the transport and treatment of water, consistent with the goals of this plan.

6.3 RESIDUAL IMPACTS AND CONCLUSIONS

As summarized in Table 20, implementation of the Project would result in GHG emissions of 2.69 MT CO_2e/SP/year in 2024, which is the Project's anticipated first full year of operations. This level would meet the 2024 efficiency metric that was developed for consistency with AB 32 and SB 32. The Project would also be consistent with the goals set forth by the UC Sustainable Practices Policy, including the 2025 climate neutrality target for Scope 1 and 2 sources, and the 2050 climate neutrality target for Scope 3 sources. Therefore, the Project GHG emission impacts would be less than significant, and no mitigation would be required.

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Appendix A

CalEEMod Output

La Jolla Innovation Center - Existing Use (Baseline)

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High Turnover (Sit Down Restaurant)	13.21	1000sqft	1.20	13,213.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Existing use on a 1.2-acre site.

Construction Phase - This model run is for existing operations only.

Vehicle Trips - Trip generation provided by the proposed project's Transportation Impact Analysis (LLG 2020).

Area Coating - Low VOC coatings per SDAPCD Rule 67.0.1.

Water Mitigation - Water use reduction per CALGreen requirements.

Waste Mitigation - Solid waste reduction per AB 341 requirements.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	200.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	4.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	2.00	0.00
tblGrading	AcresOfGrading	0.00	1.50
tblGrading	AcresOfGrading	0.00	1.00
tblLandUse	LandUseSquareFeet	13,210.00	13,213.00
tblLandUse	LotAcreage	0.30	1.20
tblVehicleTrips	ST_TR	158.37	130.00
tblVehicleTrips	SU_TR	131.84	130.00
tblVehicleTrips	WD_TR	127.15	130.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0577	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.5000e-004
Energy	0.0124	0.1130	0.0949	6.8000e-004		8.5800e-003	8.5800e-003		8.5800e-003	8.5800e-003	0.0000	290.0661	290.0661	9.0800e-003	3.6500e-003	291.3796
Mobile	0.3375	1.2256	2.9766	8.8600e-003	0.7508	7.3500e-003	0.7582	0.2011	6.8400e-003	0.2079	0.0000	819.5424	819.5424	0.0479	0.0000	820.7387
Waste						0.0000	0.0000		0.0000	0.0000	31.9102	0.0000	31.9102	1.8858	0.0000	79.0561
Water						0.0000	0.0000		0.0000	0.0000	1.2721	17.9920	19.2641	0.1314	3.2300e-003	23.5125
Total	**0.4076**	**1.3386**	**3.0716**	**9.5400e-003**	**0.7508**	**0.0159**	**0.7668**	**0.2011**	**0.0154**	**0.2165**	**33.1823**	**1,127.6007**	**1,160.7829**	**2.0742**	**6.8800e-003**	**1,214.6872**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0577	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.5000e-004
Energy	0.0124	0.1130	0.0949	6.8000e-004		8.5800e-003	8.5800e-003		8.5800e-003	8.5800e-003	0.0000	290.0661	290.0661	9.0800e-003	3.6500e-003	291.3796
Mobile	0.3375	1.2256	2.9766	8.8600e-003	0.7508	7.3500e-003	0.7582	0.2011	6.8400e-003	0.2079	0.0000	819.5424	819.5424	0.0479	0.0000	820.7387
Waste						0.0000	0.0000		0.0000	0.0000	23.9326	0.0000	23.9326	1.4144	0.0000	59.2921
Water						0.0000	0.0000		0.0000	0.0000	1.0177	14.3936	15.4112	0.1051	2.5900e-003	18.8100
Total	**0.4076**	**1.3386**	**3.0716**	**9.5400e-003**	**0.7508**	**0.0159**	**0.7668**	**0.2011**	**0.0154**	**0.2165**	**24.9503**	**1,124.0023**	**1,148.9526**	**1.5764**	**6.2400e-003**	**1,190.2207**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**24.81**	**0.32**	**1.02**	**24.00**	**9.30**	**2.01**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/12/2020	11/11/2020	5	0	
2	Site Preparation	Site Preparation	12/10/2020	12/9/2020	5	0	
3	Grading	Grading	12/12/2020	12/11/2020	5	0	
4	Building Construction	Building Construction	12/18/2020	12/17/2020	5	0	
5	Paving	Paving	9/24/2021	9/23/2021	5	0	
6	Architectural Coating	Architectural Coating	10/8/2021	10/7/2021	5	0	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,820; Non-Residential Outdoor: 6,607; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

La Jolla Innovation Center - Existing Use (Baseline) - San Diego County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

<u>Trips and VMT</u>

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	6.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

<u>Unmitigated Construction On-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3375	1.2256	2.9766	8.8600e-003	0.7508	7.3500e-003	0.7582	0.2011	6.8400e-003	0.2079	0.0000	819.5424	819.5424	0.0479	0.0000	820.7387
Unmitigated	0.3375	1.2256	2.9766	8.8600e-003	0.7508	7.3500e-003	0.7582	0.2011	6.8400e-003	0.2079	0.0000	819.5424	819.5424	0.0479	0.0000	820.7387

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High Turnover (Sit Down Restaurant)	1,717.30	1,717.30	1717.30	1,992,522	1,992,522
Total	1,717.30	1,717.30	1,717.30	1,992,522	1,992,522

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High Turnover (Sit Down Restaurant)	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	167.1114	167.1114	6.7300e-003	1.3900e-003	167.6943
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	167.1114	167.1114	6.7300e-003	1.3900e-003	167.6943
NaturalGas Mitigated	0.0124	0.1130	0.0949	6.8000e-004		8.5800e-003	8.5800e-003		8.5800e-003	8.5800e-003	0.0000	122.9546	122.9546	2.3600e-003	2.2500e-003	123.6853
NaturalGas Unmitigated	0.0124	0.1130	0.0949	6.8000e-004		8.5800e-003	8.5800e-003		8.5800e-003	8.5800e-003	0.0000	122.9546	122.9546	2.3600e-003	2.2500e-003	123.6853

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High Turnover (Sit Down Restaurant)	2.30408e+006	0.0124	0.1130	0.0949	6.8000e-004		8.5800e-003	8.5800e-003		8.5800e-003	8.5800e-003	0.0000	122.9546	122.9546	2.3600e-003	2.2500e-003	123.6853
Total		**0.0124**	**0.1130**	**0.0949**	**6.8000e-004**		**8.5800e-003**	**8.5800e-003**		**8.5800e-003**	**8.5800e-003**	**0.0000**	**122.9546**	**122.9546**	**2.3600e-003**	**2.2500e-003**	**123.6853**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High Turnover (Sit Down Restaurant)	2.30408e+006	0.0124	0.1130	0.0949	6.8000e-004		8.5800e-003	8.5800e-003		8.5800e-003	8.5800e-003	0.0000	122.9546	122.9546	2.3600e-003	2.2500e-003	123.6853
Total		**0.0124**	**0.1130**	**0.0949**	**6.8000e-004**		**8.5800e-003**	**8.5800e-003**		**8.5800e-003**	**8.5800e-003**	**0.0000**	**122.9546**	**122.9546**	**2.3600e-003**	**2.2500e-003**	**123.6853**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High Turnover (Sit Down Restaurant)	511343	167.1114	6.7300e-003	1.3900e-003	167.6943
Total		**167.1114**	**6.7300e-003**	**1.3900e-003**	**167.6943**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High Turnover (Sit Down Restaurant)	511343	167.1114	6.7300e-003	1.3900e-003	167.6943
Total		**167.1114**	**6.7300e-003**	**1.3900e-003**	**167.6943**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0577	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.5000e-004
Unmitigated	0.0577	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.1200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0516					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.5000e-004
Total	**0.0577**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.0000**	**2.5000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.1200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0516					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.5000e-004
Total	**0.0577**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.0000**	**2.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.4112	0.1051	2.5900e-003	18.8100
Unmitigated	19.2641	0.1314	3.2300e-003	23.5125

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High Turnover (Sit Down Restaurant)	4.00968 / 0.255937	19.2641	0.1314	3.2300e-003	23.5125
Total		**19.2641**	**0.1314**	**3.2300e-003**	**23.5125**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High Turnover (Sit Down Restaurant)	3.20774 / 0.20475	15.4112	0.1051	2.5900e-003	18.8100
Total		**15.4112**	**0.1051**	**2.5900e-003**	**18.8100**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	23.9326	1.4144	0.0000	59.2921
Unmitigated	31.9102	1.8858	0.0000	79.0561

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High Turnover (Sit Down Restaurant)	157.2	31.9102	1.8858	0.0000	79.0561
Total		**31.9102**	**1.8858**	**0.0000**	**79.0561**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High Turnover (Sit Down Restaurant)	117.9	23.9326	1.4144	0.0000	59.2921
Total		**23.9326**	**1.4144**	**0.0000**	**59.2921**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

La Jolla Innovation Center - Existing Use (Baseline)

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High Turnover (Sit Down Restaurant)	13.21	1000sqft	1.20	13,213.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Existing use on a 1.2-acre site.

Construction Phase - This model run is for existing operations only.

Vehicle Trips - Trip generation provided by the proposed project's Transportation Impact Analysis (LLG 2020).

Area Coating - Low VOC coatings per SDAPCD Rule 67.0.1.

Water Mitigation - Water use reduction per CALGreen requirements.

Waste Mitigation - Solid waste reduction per AB 341 requirements.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	200.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	4.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	2.00	0.00
tblGrading	AcresOfGrading	0.00	1.50
tblGrading	AcresOfGrading	0.00	1.00
tblLandUse	LandUseSquareFeet	13,210.00	13,213.00
tblLandUse	LotAcreage	0.30	1.20
tblVehicleTrips	ST_TR	158.37	130.00
tblVehicleTrips	SU_TR	131.84	130.00
tblVehicleTrips	WD_TR	127.15	130.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.0000	0.0000	0.0000	0.0000	0.0000	3.4569	0.0000	0.0000	3.2328	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.5102	0.0000	0.0000	0.4778	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.4569**	**0.0000**	**0.0000**	**3.2328**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.0000	0.0000	0.0000	0.0000	0.0000	3.4569	0.0000	0.0000	3.2328	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.5102	0.0000	0.0000	0.4778	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.4569**	**0.0000**	**0.0000**	**3.2328**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3164	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8900e-003	2.8900e-003	1.0000e-005		3.0800e-003
Energy	0.0681	0.6189	0.5199	3.7100e-003		0.0470	0.0470		0.0470	0.0470		742.6537	742.6537	0.0142	0.0136	747.0669
Mobile	1.9142	6.7009	16.7739	0.0481	4.2246	0.0407	4.2653	1.1290	0.0379	1.1669		4,900.9221	4,900.9221	0.2959		4,908.3184
Total	**2.2987**	**7.3198**	**17.2951**	**0.0518**	**4.2246**	**0.0877**	**4.3123**	**1.1290**	**0.0849**	**1.2139**		**5,643.5786**	**5,643.5786**	**0.3101**	**0.0136**	**5,655.3883**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3164	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8900e-003	2.8900e-003	1.0000e-005		3.0800e-003
Energy	0.0681	0.6189	0.5199	3.7100e-003		0.0470	0.0470		0.0470	0.0470		742.6537	742.6537	0.0142	0.0136	747.0669
Mobile	1.9142	6.7009	16.7739	0.0481	4.2246	0.0407	4.2653	1.1290	0.0379	1.1669		4,900.9221	4,900.9221	0.2959		4,908.3184
Total	**2.2987**	**7.3198**	**17.2951**	**0.0518**	**4.2246**	**0.0877**	**4.3123**	**1.1290**	**0.0849**	**1.2139**		**5,643.5786**	**5,643.5786**	**0.3101**	**0.0136**	**5,655.3883**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/12/2020	11/11/2020	5	0	
2	Site Preparation	Site Preparation	12/10/2020	12/9/2020	5	0	
3	Grading	Grading	12/12/2020	12/11/2020	5	0	
4	Building Construction	Building Construction	12/18/2020	12/17/2020	5	0	
5	Paving	Paving	9/24/2021	9/23/2021	5	0	
6	Architectural Coating	Architectural Coating	10/8/2021	10/7/2021	5	0	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,820; Non-Residential Outdoor: 6,607; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	6.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	1.9142	6.7009	16.7739	0.0481	4.2246	0.0407	4.2653	1.1290	0.0379	1.1669		4,900.9221	4,900.9221	0.2959		4,908.3184
Unmitigated	1.9142	6.7009	16.7739	0.0481	4.2246	0.0407	4.2653	1.1290	0.0379	1.1669		4,900.9221	4,900.9221	0.2959		4,908.3184

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High Turnover (Sit Down Restaurant)	1,717.30	1,717.30	1717.30	1,992,522	1,992,522
Total	1,717.30	1,717.30	1,717.30	1,992,522	1,992,522

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High Turnover (Sit Down Restaurant)	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High Turnover (Sit Down Restaurant)	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0681	0.6189	0.5199	3.7100e-003		0.0470	0.0470		0.0470	0.0470		742.6537	742.6537	0.0142	0.0136	747.0669
NaturalGas Unmitigated	0.0681	0.6189	0.5199	3.7100e-003		0.0470	0.0470		0.0470	0.0470		742.6537	742.6537	0.0142	0.0136	747.0669

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
High Turnover (Sit Down Restaurant)	6312.56	0.0681	0.6189	0.5199	3.7100e-003		0.0470	0.0470		0.0470	0.0470		742.6537	742.6537	0.0142	0.0136	747.0669
Total		**0.0681**	**0.6189**	**0.5199**	**3.7100e-003**		**0.0470**	**0.0470**		**0.0470**	**0.0470**		**742.6537**	**742.6537**	**0.0142**	**0.0136**	**747.0669**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
High Turnover (Sit Down Restaurant)	6.31256	0.0681	0.6189	0.5199	3.7100e-003		0.0470	0.0470		0.0470	0.0470		742.6537	742.6537	0.0142	0.0136	747.0669
Total		**0.0681**	**0.6189**	**0.5199**	**3.7100e-003**		**0.0470**	**0.0470**		**0.0470**	**0.0470**		**742.6537**	**742.6537**	**0.0142**	**0.0136**	**747.0669**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3164	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8900e-003	2.8900e-003	1.0000e-005		3.0800e-003
Unmitigated	0.3164	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8900e-003	2.8900e-003	1.0000e-005		3.0800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0336					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2828					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2000e-004	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8900e-003	2.8900e-003	1.0000e-005		3.0800e-003
Total	**0.3164**	**1.0000e-005**	**1.3500e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.8900e-003**	**2.8900e-003**	**1.0000e-005**		**3.0800e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0336					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2828					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2000e-004	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8900e-003	2.8900e-003	1.0000e-005		3.0800e-003
Total	**0.3164**	**1.0000e-005**	**1.3500e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.8900e-003**	**2.8900e-003**	**1.0000e-005**		**3.0800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

La Jolla Innovation Center

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	76.14	1000sqft	0.90	76,138.00	0
Junior College (2Yr)	27.18	1000sqft	0.90	27,176.00	0
Enclosed Parking with Elevator	94.50	1000sqft	0.90	94,500.00	0
Fast Food Restaurant w/o Drive Thru	1.42	1000sqft	0.03	1,420.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

La Jolla Innovation Center - San Diego County, Annual

Project Characteristics -

Land Use - Multiple uses in a multi-story structure on a 0.9-acre site.

Construction Phase - Construction schedule based on information provided by Swinerton/GPI.

Off-road Equipment -

Off-road Equipment - Aerial lift used in moedel for construction elevator.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Indicated by project applicant that excavators would be used for excavtion/grading. Assumed that a grader would not be used based on site size and nature of proposed grading activities (below-grade).

Trips and VMT -

Demolition -

Grading -

Architectural Coating - Low-VOC coatings assumed per SDAPCD Rule 67.0.1

Vehicle Trips - Trip generation information provided in the project's Transportation Impact Analysis prepared by LLG (2020).

Area Coating - Low-VOC coatings assumed per SDAPCD Rule 67.0.1

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblAreaCoating	Area_EF_Parking	250	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	82.00
tblConstructionPhase	NumDays	220.00	232.00
tblConstructionPhase	NumDays	20.00	30.00

tblConstructionPhase	NumDays	6.00	40.00
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	3.00	0.00
tblDemolition	PhaseName	Demolition/Site Preparation	Demolition
tblEnergyUse	LightingElect	6.78	2.28
tblEnergyUse	LightingElect	3.81	3.69
tblEnergyUse	LightingElect	3.53	5.17
tblEnergyUse	NT24E	23.69	7.96
tblEnergyUse	NT24E	4.97	4.81
tblEnergyUse	NT24E	2.69	3.94
tblEnergyUse	NT24NG	138.46	0.00
tblEnergyUse	NT24NG	4.20	0.00
tblEnergyUse	NT24NG	5.16	0.00
tblEnergyUse	T24E	8.23	2.76
tblEnergyUse	T24E	4.66	4.51
tblEnergyUse	T24E	2.66	3.89
tblEnergyUse	T24NG	35.92	0.00
tblEnergyUse	T24NG	15.99	0.00
tblEnergyUse	T24NG	31.18	0.00
tblGrading	MaterialExported	0.00	18,460.00
tblLandUse	LandUseSquareFeet	76,140.00	76,138.00
tblLandUse	LandUseSquareFeet	27,180.00	27,176.00
tblLandUse	LotAcreage	1.75	0.90
tblLandUse	LotAcreage	0.62	0.90
tblLandUse	LotAcreage	2.17	0.90
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	PhaseName	Demolition/Site Preparation	Demolition

tblOffRoadEquipment	PhaseName	Demolition/Site Preparation	Demolition
tblOffRoadEquipment	PhaseName	Demolition/Site Preparation	Demolition
tblOnRoadDust	PhaseName	Demolition/Site Preparation	Demolition
tblTripsAndVMT	PhaseName	Demolition/Site Preparation	Demolition
tblVehicleTrips	ST_TR	696.00	40.00
tblVehicleTrips	ST_TR	2.46	18.04
tblVehicleTrips	ST_TR	11.23	18.00
tblVehicleTrips	SU_TR	500.00	40.00
tblVehicleTrips	SU_TR	1.05	18.04
tblVehicleTrips	SU_TR	1.21	18.00
tblVehicleTrips	WD_TR	716.00	40.00
tblVehicleTrips	WD_TR	11.03	18.04
tblVehicleTrips	WD_TR	27.49	18.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1662	1.7196	1.2926	3.3100e-003	0.1813	0.0668	0.2481	0.0818	0.0628	0.1446	0.0000	300.4655	300.4655	0.0510	0.0000	301.7415
2022	0.6913	1.5700	1.5610	3.5200e-003	0.0725	0.0623	0.1348	0.0197	0.0598	0.0795	0.0000	307.3495	307.3495	0.0435	0.0000	308.4378
Maximum	**0.6913**	**1.7196**	**1.5610**	**3.5200e-003**	**0.1813**	**0.0668**	**0.2481**	**0.0818**	**0.0628**	**0.1446**	**0.0000**	**307.3495**	**307.3495**	**0.0510**	**0.0000**	**308.4378**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1662	1.7196	1.2926	3.3100e-003	0.1107	0.0668	0.1775	0.0448	0.0628	0.1075	0.0000	300.4653	300.4653	0.0510	0.0000	301.7413
2022	0.6913	1.5700	1.5610	3.5200e-003	0.0725	0.0623	0.1348	0.0197	0.0598	0.0795	0.0000	307.3493	307.3493	0.0435	0.0000	308.4376
Maximum	**0.6913**	**1.7196**	**1.5610**	**3.5200e-003**	**0.1107**	**0.0668**	**0.1775**	**0.0448**	**0.0628**	**0.1075**	**0.0000**	**307.3493**	**307.3493**	**0.0510**	**0.0000**	**308.4376**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**27.81**	**0.00**	**18.44**	**36.53**	**0.00**	**16.54**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2021	8-31-2021	0.7538	0.7538
2	9-1-2021	11-30-2021	0.8623	0.8623
3	12-1-2021	2-28-2022	0.6886	0.6886
4	3-1-2022	5-31-2022	0.8548	0.8548
5	6-1-2022	8-31-2022	0.9683	0.9683
		Highest	0.9683	0.9683

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4652	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5600e-003	3.5600e-003	1.0000e-005	0.0000	3.7900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	626.1896	626.1896	0.0252	5.2100e-003	628.3737
Mobile	0.4719	1.8554	5.4230	0.0191	1.7396	0.0149	1.7546	0.4658	0.0139	0.4797	0.0000	1,767.2323	1,767.2323	0.0906	0.0000	1,769.4971
Stationary	1.2300e-003	3.4400e-003	3.1400e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.5712	0.5712	8.0000e-005	0.0000	0.5732
Waste						0.0000	0.0000		0.0000	0.0000	24.8664	0.0000	24.8664	1.4696	0.0000	61.6054
Water						0.0000	0.0000		0.0000	0.0000	4.8530	102.8796	107.7326	0.5026	0.0126	124.0599
Total	**0.9383**	**1.8588**	**5.4279**	**0.0191**	**1.7396**	**0.0151**	**1.7548**	**0.4658**	**0.0141**	**0.4799**	**29.7194**	**2,496.8762**	**2,526.5956**	**2.0880**	**0.0178**	**2,584.1131**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4652	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5600e-003	3.5600e-003	1.0000e-005	0.0000	3.7900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	626.1896	626.1896	0.0252	5.2100e-003	628.3737
Mobile	0.4719	1.8554	5.4230	0.0191	1.7396	0.0149	1.7546	0.4658	0.0139	0.4797	0.0000	1,767.2323	1,767.2323	0.0906	0.0000	1,769.4971
Stationary	1.2300e-003	3.4400e-003	3.1400e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.5712	0.5712	8.0000e-005	0.0000	0.5732
Waste						0.0000	0.0000		0.0000	0.0000	18.6498	0.0000	18.6498	1.1022	0.0000	46.2041
Water						0.0000	0.0000		0.0000	0.0000	3.1544	72.5396	75.6940	0.3269	8.2500e-003	86.3266
Total	**0.9383**	**1.8588**	**5.4279**	**0.0191**	**1.7396**	**0.0151**	**1.7548**	**0.4658**	**0.0141**	**0.4799**	**21.8042**	**2,466.5362**	**2,488.3404**	**1.5450**	**0.0135**	**2,530.9784**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**26.63**	**1.22**	**1.51**	**26.01**	**24.55**	**2.06**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2021	7/12/2021	5	30	
2	Site Preparation	Site Preparation	6/1/2021	5/31/2021	5	0	
3	Archaeological and Paleontological Trenching	Trenching	7/13/2021	8/2/2021	5	15	
4	Shoring, Excavation, and Piles	Grading	8/3/2021	9/27/2021	5	40	
5	Building Construction	Building Construction	9/28/2021	8/17/2022	5	232	
6	Finishes	Architectural Coating	4/27/2022	8/18/2022	5	82	
7	Paving	Paving	5/14/2022	5/13/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.9

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 157,101; Non-Residential Outdoor: 52,367; Striped Parking Area: 5,670 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Archaeological and Paleontological Trenching	Excavators	1	8.00	158	0.38
Archaeological and Paleontological Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Shoring, Excavation, and Piles	Excavators	2	8.00	158	0.38
Shoring, Excavation, and Piles	Graders	0	8.00	187	0.41
Shoring, Excavation, and Piles	Rubber Tired Dozers	1	8.00	247	0.40
Shoring, Excavation, and Piles	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Aerial Lifts	1	8.00	63	0.31
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Finishes	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	60.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Archaeological and Paleontological Trenc	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Shoring, Excavation, and Piles	5	13.00	0.00	2,308.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	76.00	33.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Finishes	1	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.5800e-003	0.0000	6.5800e-003	1.0000e-003	0.0000	1.0000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0299	0.2955	0.2174	3.6000e-004		0.0156	0.0156		0.0146	0.0146	0.0000	31.6070	31.6070	8.0800e-003	0.0000	31.8091
Total	**0.0299**	**0.2955**	**0.2174**	**3.6000e-004**	**6.5800e-003**	**0.0156**	**0.0222**	**1.0000e-003**	**0.0146**	**0.0156**	**0.0000**	**31.6070**	**31.6070**	**8.0800e-003**	**0.0000**	**31.8091**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3000e-004	7.8300e-003	1.9300e-003	2.0000e-005	5.1000e-004	2.0000e-005	5.4000e-004	1.4000e-004	2.0000e-005	1.6000e-004	0.0000	2.2849	2.2849	2.1000e-004	0.0000	2.2900
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	4.8000e-004	4.8700e-003	2.0000e-005	1.5600e-003	1.0000e-005	1.5700e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3660	1.3660	4.0000e-005	0.0000	1.3670
Total	**9.1000e-004**	**8.3100e-003**	**6.8000e-003**	**4.0000e-005**	**2.0700e-003**	**3.0000e-005**	**2.1100e-003**	**5.6000e-004**	**3.0000e-005**	**5.9000e-004**	**0.0000**	**3.6509**	**3.6509**	**2.5000e-004**	**0.0000**	**3.6570**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9600e-003	0.0000	2.9600e-003	4.5000e-004	0.0000	4.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0299	0.2955	0.2174	3.6000e-004		0.0156	0.0156		0.0146	0.0146	0.0000	31.6070	31.6070	8.0800e-003	0.0000	31.8090
Total	**0.0299**	**0.2955**	**0.2174**	**3.6000e-004**	**2.9600e-003**	**0.0156**	**0.0186**	**4.5000e-004**	**0.0146**	**0.0150**	**0.0000**	**31.6070**	**31.6070**	**8.0800e-003**	**0.0000**	**31.8090**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3000e-004	7.8300e-003	1.9300e-003	2.0000e-005	5.1000e-004	2.0000e-005	5.4000e-004	1.4000e-004	2.0000e-005	1.6000e-004	0.0000	2.2849	2.2849	2.1000e-004	0.0000	2.2900
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	4.8000e-004	4.8700e-003	2.0000e-005	1.5600e-003	1.0000e-005	1.5700e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3660	1.3660	4.0000e-005	0.0000	1.3670
Total	**9.1000e-004**	**8.3100e-003**	**6.8000e-003**	**4.0000e-005**	**2.0700e-003**	**3.0000e-005**	**2.1100e-003**	**5.6000e-004**	**3.0000e-005**	**5.9000e-004**	**0.0000**	**3.6509**	**3.6509**	**2.5000e-004**	**0.0000**	**3.6570**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Archaeological and Paleontological Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5300e-003	0.0446	0.0584	9.0000e-005		2.4600e-003	2.4600e-003		2.2600e-003	2.2600e-003	0.0000	7.4978	7.4978	2.4200e-003	0.0000	7.5585
Total	**4.5300e-003**	**0.0446**	**0.0584**	**9.0000e-005**		**2.4600e-003**	**2.4600e-003**		**2.2600e-003**	**2.2600e-003**	**0.0000**	**7.4978**	**7.4978**	**2.4200e-003**	**0.0000**	**7.5585**

3.4 Archaeological and Paleontological Trenching - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.5000e-004	1.5000e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4203	0.4203	1.0000e-005	0.0000	0.4206
Total	**2.1000e-004**	**1.5000e-004**	**1.5000e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4203**	**0.4203**	**1.0000e-005**	**0.0000**	**0.4206**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5300e-003	0.0446	0.0584	9.0000e-005		2.4600e-003	2.4600e-003		2.2600e-003	2.2600e-003	0.0000	7.4978	7.4978	2.4200e-003	0.0000	7.5584
Total	**4.5300e-003**	**0.0446**	**0.0584**	**9.0000e-005**		**2.4600e-003**	**2.4600e-003**		**2.2600e-003**	**2.2600e-003**	**0.0000**	**7.4978**	**7.4978**	**2.4200e-003**	**0.0000**	**7.5584**

3.4 Archaeological and Paleontological Trenching - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.5000e-004	1.5000e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4203	0.4203	1.0000e-005	0.0000	0.4206
Total	**2.1000e-004**	**1.5000e-004**	**1.5000e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4203**	**0.4203**	**1.0000e-005**	**0.0000**	**0.4206**

3.5 Shoring, Excavation, and Piles - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1217	0.0000	0.1217	0.0664	0.0000	0.0664	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0367	0.3719	0.2907	4.9000e-004		0.0187	0.0187		0.0172	0.0172	0.0000	42.7159	42.7159	0.0138	0.0000	43.0613
Total	**0.0367**	**0.3719**	**0.2907**	**4.9000e-004**	**0.1217**	**0.0187**	**0.1405**	**0.0664**	**0.0172**	**0.0836**	**0.0000**	**42.7159**	**42.7159**	**0.0138**	**0.0000**	**43.0613**

3.5 Shoring, Excavation, and Piles - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.6700e-003	0.3014	0.0743	8.8000e-004	0.0198	9.1000e-004	0.0207	5.4200e-003	8.7000e-004	6.2900e-003	0.0000	87.8911	87.8911	7.9300e-003	0.0000	88.0894
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-004	6.4000e-004	6.5000e-003	2.0000e-005	2.0800e-003	1.0000e-005	2.1000e-003	5.5000e-004	1.0000e-005	5.7000e-004	0.0000	1.8214	1.8214	5.0000e-005	0.0000	1.8227
Total	**9.5700e-003**	**0.3020**	**0.0808**	**9.0000e-004**	**0.0218**	**9.2000e-004**	**0.0228**	**5.9700e-003**	**8.8000e-004**	**6.8600e-003**	**0.0000**	**89.7124**	**89.7124**	**7.9800e-003**	**0.0000**	**89.9121**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0548	0.0000	0.0548	0.0299	0.0000	0.0299	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0367	0.3719	0.2907	4.9000e-004		0.0187	0.0187		0.0172	0.0172	0.0000	42.7159	42.7159	0.0138	0.0000	43.0612
Total	**0.0367**	**0.3719**	**0.2907**	**4.9000e-004**	**0.0548**	**0.0187**	**0.0735**	**0.0299**	**0.0172**	**0.0471**	**0.0000**	**42.7159**	**42.7159**	**0.0138**	**0.0000**	**43.0612**

3.5 Shoring, Excavation, and Piles - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.6700e-003	0.3014	0.0743	8.8000e-004	0.0198	9.1000e-004	0.0207	5.4200e-003	8.7000e-004	6.2900e-003	0.0000	87.8911	87.8911	7.9300e-003	0.0000	88.0894
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-004	6.4000e-004	6.5000e-003	2.0000e-005	2.0800e-003	1.0000e-005	2.1000e-003	5.5000e-004	1.0000e-005	5.7000e-004	0.0000	1.8214	1.8214	5.0000e-005	0.0000	1.8227
Total	**9.5700e-003**	**0.3020**	**0.0808**	**9.0000e-004**	**0.0218**	**9.2000e-004**	**0.0228**	**5.9700e-003**	**8.8000e-004**	**6.8600e-003**	**0.0000**	**89.7124**	**89.7124**	**7.9800e-003**	**0.0000**	**89.9121**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0719	0.5737	0.5402	9.2000e-004		0.0286	0.0286		0.0274	0.0274	0.0000	76.7285	76.7285	0.0157	0.0000	77.1220
Total	**0.0719**	**0.5737**	**0.5402**	**9.2000e-004**		**0.0286**	**0.0286**		**0.0274**	**0.0274**	**0.0000**	**76.7285**	**76.7285**	**0.0157**	**0.0000**	**77.1220**

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5200e-003	0.1170	0.0312	3.1000e-004	7.5600e-003	2.5000e-004	7.8000e-003	2.1800e-003	2.4000e-004	2.4200e-003	0.0000	29.7650	29.7650	2.2100e-003	0.0000	29.8202
Worker	9.1100e-003	6.5000e-003	0.0655	2.0000e-004	0.0210	1.5000e-004	0.0212	5.5900e-003	1.4000e-004	5.7200e-003	0.0000	18.3677	18.3677	5.3000e-004	0.0000	18.3809
Total	**0.0126**	**0.1235**	**0.0967**	**5.1000e-004**	**0.0286**	**4.0000e-004**	**0.0290**	**7.7700e-003**	**3.8000e-004**	**8.1400e-003**	**0.0000**	**48.1327**	**48.1327**	**2.7400e-003**	**0.0000**	**48.2010**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0719	0.5737	0.5402	9.2000e-004		0.0286	0.0286		0.0274	0.0274	0.0000	76.7284	76.7284	0.0157	0.0000	77.1219
Total	**0.0719**	**0.5737**	**0.5402**	**9.2000e-004**		**0.0286**	**0.0286**		**0.0274**	**0.0274**	**0.0000**	**76.7284**	**76.7284**	**0.0157**	**0.0000**	**77.1219**

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5200e-003	0.1170	0.0312	3.1000e-004	7.5600e-003	2.5000e-004	7.8000e-003	2.1800e-003	2.4000e-004	2.4200e-003	0.0000	29.7650	29.7650	2.2100e-003	0.0000	29.8202
Worker	9.1100e-003	6.5000e-003	0.0655	2.0000e-004	0.0210	1.5000e-004	0.0212	5.5900e-003	1.4000e-004	5.7200e-003	0.0000	18.3677	18.3677	5.3000e-004	0.0000	18.3809
Total	**0.0126**	**0.1235**	**0.0967**	**5.1000e-004**	**0.0286**	**4.0000e-004**	**0.0290**	**7.7700e-003**	**3.8000e-004**	**8.1400e-003**	**0.0000**	**48.1327**	**48.1327**	**2.7400e-003**	**0.0000**	**48.2010**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1542	1.2359	1.2590	2.1800e-003		0.0581	0.0581		0.0556	0.0556	0.0000	181.2827	181.2827	0.0365	0.0000	182.1963
Total	**0.1542**	**1.2359**	**1.2590**	**2.1800e-003**		**0.0581**	**0.0581**		**0.0556**	**0.0556**	**0.0000**	**181.2827**	**181.2827**	**0.0365**	**0.0000**	**182.1963**

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.7300e-003	0.2610	0.0698	7.1000e-004	0.0179	5.0000e-004	0.0184	5.1500e-003	4.8000e-004	5.6400e-003	0.0000	69.6484	69.6484	5.0600e-003	0.0000	69.7748
Worker	0.0204	0.0140	0.1437	4.6000e-004	0.0497	3.4000e-004	0.0500	0.0132	3.2000e-004	0.0135	0.0000	41.7998	41.7998	1.1400e-003	0.0000	41.8283
Total	**0.0281**	**0.2750**	**0.2134**	**1.1700e-003**	**0.0675**	**8.4000e-004**	**0.0684**	**0.0184**	**8.0000e-004**	**0.0192**	**0.0000**	**111.4482**	**111.4482**	**6.2000e-003**	**0.0000**	**111.6031**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1542	1.2359	1.2590	2.1800e-003		0.0581	0.0581		0.0556	0.0556	0.0000	181.2825	181.2825	0.0365	0.0000	182.1961
Total	**0.1542**	**1.2359**	**1.2590**	**2.1800e-003**		**0.0581**	**0.0581**		**0.0556**	**0.0556**	**0.0000**	**181.2825**	**181.2825**	**0.0365**	**0.0000**	**182.1961**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.7300e-003	0.2610	0.0698	7.1000e-004	0.0179	5.0000e-004	0.0184	5.1500e-003	4.8000e-004	5.6400e-003	0.0000	69.6484	69.6484	5.0600e-003	0.0000	69.7748
Worker	0.0204	0.0140	0.1437	4.6000e-004	0.0497	3.4000e-004	0.0500	0.0132	3.2000e-004	0.0135	0.0000	41.7998	41.7998	1.1400e-003	0.0000	41.8283
Total	**0.0281**	**0.2750**	**0.2134**	**1.1700e-003**	**0.0675**	**8.4000e-004**	**0.0684**	**0.0184**	**8.0000e-004**	**0.0192**	**0.0000**	**111.4482**	**111.4482**	**6.2000e-003**	**0.0000**	**111.6031**

3.7 Finishes - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4986					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3900e-003	0.0578	0.0744	1.2000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003	0.0000	10.4683	10.4683	6.8000e-004	0.0000	10.4854
Total	**0.5070**	**0.0578**	**0.0744**	**1.2000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**10.4683**	**10.4683**	**6.8000e-004**	**0.0000**	**10.4854**

3.7 Finishes - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0200e-003	1.3900e-003	0.0143	5.0000e-005	4.9300e-003	3.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.1503	4.1503	1.1000e-004	0.0000	4.1531
Total	**2.0200e-003**	**1.3900e-003**	**0.0143**	**5.0000e-005**	**4.9300e-003**	**3.0000e-005**	**4.9700e-003**	**1.3100e-003**	**3.0000e-005**	**1.3400e-003**	**0.0000**	**4.1503**	**4.1503**	**1.1000e-004**	**0.0000**	**4.1531**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4986					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3900e-003	0.0578	0.0744	1.2000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003	0.0000	10.4683	10.4683	6.8000e-004	0.0000	10.4854
Total	**0.5070**	**0.0578**	**0.0744**	**1.2000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**10.4683**	**10.4683**	**6.8000e-004**	**0.0000**	**10.4854**

3.7 Finishes - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0200e-003	1.3900e-003	0.0143	5.0000e-005	4.9300e-003	3.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.1503	4.1503	1.1000e-004	0.0000	4.1531
Total	**2.0200e-003**	**1.3900e-003**	**0.0143**	**5.0000e-005**	**4.9300e-003**	**3.0000e-005**	**4.9700e-003**	**1.3100e-003**	**3.0000e-005**	**1.3400e-003**	**0.0000**	**4.1503**	**4.1503**	**1.1000e-004**	**0.0000**	**4.1531**

3.8 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4719	1.8554	5.4230	0.0191	1.7396	0.0149	1.7546	0.4658	0.0139	0.4797	0.0000	1,767.2323	1,767.2323	0.0906	0.0000	1,769.4971
Unmitigated	0.4719	1.8554	5.4230	0.0191	1.7396	0.0149	1.7546	0.4658	0.0139	0.4797	0.0000	1,767.2323	1,767.2323	0.0906	0.0000	1,769.4971

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	56.80	56.80	56.80	91,594	91,594
General Office Building	1,373.57	1,373.57	1373.57	3,282,482	3,282,482
Junior College (2Yr)	489.24	489.24	489.24	1,242,443	1,242,443
Total	1,919.61	1,919.61	1,919.61	4,616,519	4,616,519

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Junior College (2Yr)	9.50	7.30	7.30	6.40	88.60	5.00	92	7	1

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Fast Food Restaurant w/o Drive Thru	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
General Office Building	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Junior College (2Yr)	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	626.1896	626.1896	0.0252	5.2100e-003	628.3737
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	626.1896	626.1896	0.0252	5.2100e-003	628.3737
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Junior College (2Yr)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Junior College (2Yr)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	553770	180.9769	7.2800e-003	1.5100e-003	181.6081
Fast Food Restaurant w/o Drive Thru	18460	6.0329	2.4000e-004	5.0000e-005	6.0539
General Office Building	990555	323.7222	0.0130	2.7000e-003	324.8513
Junior College (2Yr)	353288	115.4576	4.6500e-003	9.6000e-004	115.8603
Total		**626.1896**	**0.0252**	**5.2200e-003**	**628.3737**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	553770	180.9769	7.2800e-003	1.5100e-003	181.6081
Fast Food Restaurant w/o Drive Thru	18460	6.0329	2.4000e-004	5.0000e-005	6.0539
General Office Building	990555	323.7222	0.0130	2.7000e-003	324.8513
Junior College (2Yr)	353288	115.4576	4.6500e-003	9.6000e-004	115.8603
Total		**626.1896**	**0.0252**	**5.2200e-003**	**628.3737**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4652	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5600e-003	3.5600e-003	1.0000e-005	0.0000	3.7900e-003
Unmitigated	0.4652	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5600e-003	3.5600e-003	1.0000e-005	0.0000	3.7900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0499					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4152					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5600e-003	3.5600e-003	1.0000e-005	0.0000	3.7900e-003
Total	**0.4652**	**2.0000e-005**	**1.8300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5600e-003**	**3.5600e-003**	**1.0000e-005**	**0.0000**	**3.7900e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0499					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4152					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5600e-003	3.5600e-003	1.0000e-005	0.0000	3.7900e-003
Total	**0.4652**	**2.0000e-005**	**1.8300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5600e-003**	**3.5600e-003**	**1.0000e-005**	**0.0000**	**3.7900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	75.6940	0.3269	8.2500e-003	86.3266
Unmitigated	107.7326	0.5026	0.0126	124.0599

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0.431018 / 0.0275118	2.0708	0.0141	3.5000e-004	2.5275
General Office Building	13.5326 / 8.2942	91.9948	0.4445	0.0111	106.4275
Junior College (2Yr)	1.33315 / 2.08519	13.6670	0.0440	1.1400e-003	15.1049
Total		**107.7326**	**0.5026**	**0.0126**	**124.0599**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0.280162 / 0.0220094	1.3610	9.1800e-003	2.3000e-004	1.6579
General Office Building	8.79622 / 6.63536	64.3139	0.2891	7.2800e-003	73.7109
Junior College (2Yr)	0.866549 / 1.66815	10.0192	0.0286	7.5000e-004	10.9578
Total		**75.6940**	**0.3269**	**8.2600e-003**	**86.3266**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	18.6498	1.1022	0.0000	46.2041
Unmitigated	24.8664	1.4696	0.0000	61.6054

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	16.36	3.3209	0.1963	0.0000	8.2275
General Office Building	70.81	14.3738	0.8495	0.0000	35.6105
Junior College (2Yr)	35.33	7.1717	0.4238	0.0000	17.7675
Total		**24.8664**	**1.4696**	**0.0000**	**61.6054**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	12.27	2.4907	0.1472	0.0000	6.1706
General Office Building	53.1075	10.7803	0.6371	0.0000	26.7078
Junior College (2Yr)	26.4975	5.3788	0.3179	0.0000	13.3256
Total		**18.6498**	**1.1022**	**0.0000**	**46.2041**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0.25	3	500	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (300 - 600 HP)	1.2300e-003	3.4400e-003	3.1400e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.5712	0.5712	8.0000e-005	0.0000	0.5732
Total	**1.2300e-003**	**3.4400e-003**	**3.1400e-003**	**1.0000e-005**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.5712**	**0.5712**	**8.0000e-005**	**0.0000**	**0.5732**

11.0 Vegetation

La Jolla Innovation Center

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	76.14	1000sqft	0.90	76,138.00	0
Junior College (2Yr)	27.18	1000sqft	0.90	27,176.00	0
Enclosed Parking with Elevator	94.50	1000sqft	0.90	94,500.00	0
Fast Food Restaurant w/o Drive Thru	1.42	1000sqft	0.03	1,420.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.6 **Precipitation Freq (Days)** 40

Climate Zone 13 **Operational Year** 2023

Utility Company San Diego Gas & Electric

CO2 Intensity (lb/MWhr) 720.49 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Multiple uses in a multi-story structure on a 0.9-acre site.

Construction Phase - Construction schedule based on information provided by Swinerton/GPI.

Off-road Equipment -

Off-road Equipment - Aerial lift used in moedel for construction elevator.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Indicated by project applicant that excavators would be used for excavtion/grading. Assumed that a grader would not be used based on site size and nature of proposed grading activities (below-grade).

Trips and VMT -

Demolition -

Grading -

Architectural Coating - Low-VOC coatings assumed per SDAPCD Rule 67.0.1

Vehicle Trips - Trip generation information provided in the project's Transportation Impact Analysis prepared by LLG (2020).

Area Coating - Low-VOC coatings assumed per SDAPCD Rule 67.0.1

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblAreaCoating	Area_EF_Parking	250	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	82.00
tblConstructionPhase	NumDays	220.00	232.00
tblConstructionPhase	NumDays	20.00	30.00

tblConstructionPhase	NumDays	6.00	40.00
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	3.00	0.00
tblDemolition	PhaseName	Demolition/Site Preparation	Demolition
tblEnergyUse	LightingElect	6.78	2.28
tblEnergyUse	LightingElect	3.81	3.69
tblEnergyUse	LightingElect	3.53	5.17
tblEnergyUse	NT24E	23.69	7.96
tblEnergyUse	NT24E	4.97	4.81
tblEnergyUse	NT24E	2.69	3.94
tblEnergyUse	NT24NG	138.46	0.00
tblEnergyUse	NT24NG	4.20	0.00
tblEnergyUse	NT24NG	5.16	0.00
tblEnergyUse	T24E	8.23	2.76
tblEnergyUse	T24E	4.66	4.51
tblEnergyUse	T24E	2.66	3.89
tblEnergyUse	T24NG	35.92	0.00
tblEnergyUse	T24NG	15.99	0.00
tblEnergyUse	T24NG	31.18	0.00
tblGrading	MaterialExported	0.00	18,460.00
tblLandUse	LandUseSquareFeet	76,140.00	76,138.00
tblLandUse	LandUseSquareFeet	27,180.00	27,176.00
tblLandUse	LotAcreage	1.75	0.90
tblLandUse	LotAcreage	0.62	0.90
tblLandUse	LotAcreage	2.17	0.90
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	PhaseName	Demolition/Site Preparation	Demolition

tblOffRoadEquipment	PhaseName	Demolition/Site Preparation	Demolition
tblOffRoadEquipment	PhaseName	Demolition/Site Preparation	Demolition
tblOnRoadDust	PhaseName	Demolition/Site Preparation	Demolition
tblTripsAndVMT	PhaseName	Demolition/Site Preparation	Demolition
tblVehicleTrips	ST_TR	696.00	40.00
tblVehicleTrips	ST_TR	2.46	18.04
tblVehicleTrips	ST_TR	11.23	18.00
tblVehicleTrips	SU_TR	500.00	40.00
tblVehicleTrips	SU_TR	1.05	18.04
tblVehicleTrips	SU_TR	1.21	18.00
tblVehicleTrips	WD_TR	716.00	40.00
tblVehicleTrips	WD_TR	11.03	18.04
tblVehicleTrips	WD_TR	27.49	18.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.4858	33.5465	18.7071	0.0690	7.2020	1.0432	8.1857	3.6247	0.9737	4.5315	0.0000	7,248.9719	7,248.9719	1.2095	0.0000	7,279.2091
2022	14.6928	19.9470	20.2689	0.0450	0.9709	0.8057	1.7766	0.2626	0.7751	1.0377	0.0000	4,331.2261	4,331.2261	0.6015	0.0000	4,346.2641
Maximum	**14.6928**	**33.5465**	**20.2689**	**0.0690**	**7.2020**	**1.0432**	**8.1857**	**3.6247**	**0.9737**	**4.5315**	**0.0000**	**7,248.9719**	**7,248.9719**	**1.2095**	**0.0000**	**7,279.2091**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.4858	33.5465	18.7071	0.0690	3.8541	1.0432	4.8379	1.7987	0.9737	2.7054	0.0000	7,248.9719	7,248.9719	1.2095	0.0000	7,279.2090
2022	14.6928	19.9470	20.2689	0.0450	0.9709	0.8057	1.7766	0.2626	0.7751	1.0377	0.0000	4,331.2261	4,331.2261	0.6015	0.0000	4,346.2641
Maximum	**14.6928**	**33.5465**	**20.2689**	**0.0690**	**3.8541**	**1.0432**	**4.8379**	**1.7987**	**0.9737**	**2.7054**	**0.0000**	**7,248.9719**	**7,248.9719**	**1.2095**	**0.0000**	**7,279.2090**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**40.96**	**0.00**	**33.60**	**46.97**	**0.00**	**32.79**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5499	1.9000e-004	0.0203	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0436	0.0436	1.1000e-004		0.0465
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.6593	10.1695	30.1527	0.1041	9.7881	0.0825	9.8706	2.6158	0.0768	2.6926		10,599.2312	10,599.2312	0.5548		10,613.1018
Stationary	0.2051	0.5733	0.5231	9.9000e-004		0.0302	0.0302		0.0302	0.0302		104.9393	104.9393	0.0147		105.3071
Total	**5.4143**	**10.7430**	**30.6961**	**0.1051**	**9.7881**	**0.1127**	**9.9008**	**2.6158**	**0.1070**	**2.7229**		**10,704.2140**	**10,704.2140**	**0.5697**	**0.0000**	**10,718.4554**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5499	1.9000e-004	0.0203	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0436	0.0436	1.1000e-004		0.0465
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.6593	10.1695	30.1527	0.1041	9.7881	0.0825	9.8706	2.6158	0.0768	2.6926		10,599.2312	10,599.2312	0.5548		10,613.1018
Stationary	0.2051	0.5733	0.5231	9.9000e-004		0.0302	0.0302		0.0302	0.0302		104.9393	104.9393	0.0147		105.3071
Total	**5.4143**	**10.7430**	**30.6961**	**0.1051**	**9.7881**	**0.1127**	**9.9008**	**2.6158**	**0.1070**	**2.7229**		**10,704.2140**	**10,704.2140**	**0.5697**	**0.0000**	**10,718.4554**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2021	7/12/2021	5	30	
2	Site Preparation	Site Preparation	6/1/2021	5/31/2021	5	0	
3	Archaeological and Paleontological Trenching	Trenching	7/13/2021	8/2/2021	5	15	
4	Shoring, Excavation, and Piles	Grading	8/3/2021	9/27/2021	5	40	
5	Building Construction	Building Construction	9/28/2021	8/17/2022	5	232	
6	Finishes	Architectural Coating	4/27/2022	8/18/2022	5	82	
7	Paving	Paving	5/14/2022	5/13/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.9

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 157,101; Non-Residential Outdoor: 52,367; Striped Parking Area: 5,670 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Archaeological and Paleontological Trenching	Excavators	1	8.00	158	0.38
Archaeological and Paleontological Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Shoring, Excavation, and Piles	Excavators	2	8.00	158	0.38
Shoring, Excavation, and Piles	Graders	0	8.00	187	0.41
Shoring, Excavation, and Piles	Rubber Tired Dozers	1	8.00	247	0.40
Shoring, Excavation, and Piles	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Aerial Lifts	1	8.00	63	0.31
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Finishes	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	60.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Archaeological and Paleontological Trenc	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Shoring, Excavation, and Piles	5	13.00	0.00	2,308.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	76.00	33.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Finishes	1	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4390	0.0000	0.4390	0.0665	0.0000	0.0665			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715		2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**0.4390**	**1.0409**	**1.4799**	**0.0665**	**0.9715**	**1.0379**		**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0153	0.5171	0.1333	1.5200e-003	0.0350	1.6000e-003	0.0365	9.5800e-003	1.5300e-003	0.0111		166.2138	166.2138	0.0154		166.5996
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0328	0.3241	1.0000e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		99.3912	99.3912	2.8600e-003		99.4626
Total	**0.0663**	**0.5499**	**0.4574**	**2.5200e-003**	**0.1417**	**2.3400e-003**	**0.1441**	**0.0379**	**2.2100e-003**	**0.0401**		**265.6050**	**265.6050**	**0.0183**		**266.0622**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1975	0.0000	0.1975	0.0299	0.0000	0.0299			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715	0.0000	2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**0.1975**	**1.0409**	**1.2384**	**0.0299**	**0.9715**	**1.0014**	**0.0000**	**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0153	0.5171	0.1333	1.5200e-003	0.0350	1.6000e-003	0.0365	9.5800e-003	1.5300e-003	0.0111		166.2138	166.2138	0.0154		166.5996
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0328	0.3241	1.0000e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		99.3912	99.3912	2.8600e-003		99.4626
Total	**0.0663**	**0.5499**	**0.4574**	**2.5200e-003**	**0.1417**	**2.3400e-003**	**0.1441**	**0.0379**	**2.2100e-003**	**0.0401**		**265.6050**	**265.6050**	**0.0183**		**266.0622**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Archaeological and Paleontological Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6037	5.9450	7.7923	0.0114		0.3280	0.3280		0.3018	0.3018		1,101.992 1	1,101.992 1	0.3564		1,110.902 3
Total	**0.6037**	**5.9450**	**7.7923**	**0.0114**		**0.3280**	**0.3280**		**0.3018**	**0.3018**		**1,101.992 1**	**1,101.992 1**	**0.3564**		**1,110.902 3**

3.4 Archaeological and Paleontological Trenching - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0314	0.0202	0.1995	6.1000e-004	0.0657	4.5000e-004	0.0662	0.0174	4.2000e-004	0.0179		61.1638	61.1638	1.7600e-003		61.2077
Total	**0.0314**	**0.0202**	**0.1995**	**6.1000e-004**	**0.0657**	**4.5000e-004**	**0.0662**	**0.0174**	**4.2000e-004**	**0.0179**		**61.1638**	**61.1638**	**1.7600e-003**		**61.2077**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6037	5.9450	7.7923	0.0114		0.3280	0.3280		0.3018	0.3018	0.0000	1,101.9921	1,101.9921	0.3564		1,110.9023
Total	**0.6037**	**5.9450**	**7.7923**	**0.0114**		**0.3280**	**0.3280**		**0.3018**	**0.3018**	**0.0000**	**1,101.9921**	**1,101.9921**	**0.3564**		**1,110.9023**

3.4 Archaeological and Paleontological Trenching - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0314	0.0202	0.1995	6.1000e-004	0.0657	4.5000e-004	0.0662	0.0174	4.2000e-004	0.0179		61.1638	61.1638	1.7600e-003		61.2077
Total	**0.0314**	**0.0202**	**0.1995**	**6.1000e-004**	**0.0657**	**4.5000e-004**	**0.0662**	**0.0174**	**4.2000e-004**	**0.0179**		**61.1638**	**61.1638**	**1.7600e-003**		**61.2077**

3.5 Shoring, Excavation, and Piles - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0869	0.0000	6.0869	3.3201	0.0000	3.3201			0.0000			0.0000
Off-Road	1.8325	18.5958	14.5368	0.0243		0.9369	0.9369		0.8620	0.8620		2,354.3113	2,354.3113	0.7614		2,373.3471
Total	**1.8325**	**18.5958**	**14.5368**	**0.0243**	**6.0869**	**0.9369**	**7.0239**	**3.3201**	**0.8620**	**4.1820**		**2,354.3113**	**2,354.3113**	**0.7614**		**2,373.3471**

3.5 Shoring, Excavation, and Piles - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4401	14.9180	3.8462	0.0437	1.0082	0.0461	1.0543	0.2763	0.0441	0.3204		4,795.2694	4,795.2694	0.4452		4,806.3994
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0328	0.3241	1.0000e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		99.3912	99.3912	2.8600e-003		99.4626
Total	**0.4911**	**14.9508**	**4.1703**	**0.0447**	**1.1150**	**0.0468**	**1.1619**	**0.3046**	**0.0448**	**0.3494**		**4,894.6606**	**4,894.6606**	**0.4481**		**4,905.8620**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7391	0.0000	2.7391	1.4940	0.0000	1.4940			0.0000			0.0000
Off-Road	1.8325	18.5958	14.5368	0.0243		0.9369	0.9369		0.8620	0.8620	0.0000	2,354.3113	2,354.3113	0.7614		2,373.3471
Total	**1.8325**	**18.5958**	**14.5368**	**0.0243**	**2.7391**	**0.9369**	**3.6761**	**1.4940**	**0.8620**	**2.3560**	**0.0000**	**2,354.3113**	**2,354.3113**	**0.7614**		**2,373.3471**

3.5 Shoring, Excavation, and Piles - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4401	14.9180	3.8462	0.0437	1.0082	0.0461	1.0543	0.2763	0.0441	0.3204		4,795.269 4	4,795.269 4	0.4452		4,806.399 4
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0328	0.3241	1.0000e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		99.3912	99.3912	2.8600e-003		99.4626
Total	**0.4911**	**14.9508**	**4.1703**	**0.0447**	**1.1150**	**0.0468**	**1.1619**	**0.3046**	**0.0448**	**0.3494**		**4,894.660 6**	**4,894.660 6**	**0.4481**		**4,905.862 0**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0825	16.6281	15.6570	0.0267		0.8287	0.8287		0.7936	0.7936		2,451.555 4	2,451.555 4	0.5029		2,464.128 3
Total	**2.0825**	**16.6281**	**15.6570**	**0.0267**		**0.8287**	**0.8287**		**0.7936**	**0.7936**		**2,451.555 4**	**2,451.555 4**	**0.5029**		**2,464.128 3**

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1052	3.3514	0.9535	8.7100e-003	0.2234	7.3400e-003	0.2307	0.0643	7.0200e-003	0.0713		936.6037	936.6037	0.0730		938.4278
Worker	0.2981	0.1917	1.8949	5.8300e-003	0.6243	4.3100e-003	0.6286	0.1656	3.9700e-003	0.1696		581.0562	581.0562	0.0167		581.4735
Total	**0.4033**	**3.5431**	**2.8484**	**0.0145**	**0.8477**	**0.0117**	**0.8594**	**0.2299**	**0.0110**	**0.2409**		**1,517.6599**	**1,517.6599**	**0.0897**		**1,519.9013**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0825	16.6281	15.6570	0.0267		0.8287	0.8287		0.7936	0.7936	0.0000	2,451.5554	2,451.5554	0.5029		2,464.1283
Total	**2.0825**	**16.6281**	**15.6570**	**0.0267**		**0.8287**	**0.8287**		**0.7936**	**0.7936**	**0.0000**	**2,451.5554**	**2,451.5554**	**0.5029**		**2,464.1283**

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1052	3.3514	0.9535	8.7100e-003	0.2234	7.3400e-003	0.2307	0.0643	7.0200e-003	0.0713		936.6037	936.6037	0.0730		938.4278
Worker	0.2981	0.1917	1.8949	5.8300e-003	0.6243	4.3100e-003	0.6286	0.1656	3.9700e-003	0.1696		581.0562	581.0562	0.0167		581.4735
Total	**0.4033**	**3.5431**	**2.8484**	**0.0145**	**0.8477**	**0.0117**	**0.8594**	**0.2299**	**0.0110**	**0.2409**		**1,517.6599**	**1,517.6599**	**0.0897**		**1,519.9013**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8916	15.1643	15.4472	0.0267		0.7126	0.7126		0.6827	0.6827		2,451.9011	2,451.9011	0.4943		2,464.2577
Total	**1.8916**	**15.1643**	**15.4472**	**0.0267**		**0.7126**	**0.7126**		**0.6827**	**0.6827**		**2,451.9011**	**2,451.9011**	**0.4943**		**2,464.2577**

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0979	3.1649	0.9028	8.6100e-003	0.2234	6.3300e-003	0.2297	0.0643	6.0500e-003	0.0704		927.6386	927.6386	0.0706		929.4045
Worker	0.2825	0.1748	1.7583	5.6200e-003	0.6243	4.2200e-003	0.6285	0.1656	3.8900e-003	0.1695		559.7595	559.7595	0.0153		560.1415
Total	**0.3804**	**3.3397**	**2.6611**	**0.0142**	**0.8477**	**0.0106**	**0.8583**	**0.2299**	**9.9400e-003**	**0.2398**		**1,487.398 1**	**1,487.398 1**	**0.0859**		**1,489.546 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8916	15.1643	15.4472	0.0267		0.7126	0.7126		0.6827	0.6827	0.0000	2,451.901 1	2,451.901 1	0.4943		2,464.257 7
Total	**1.8916**	**15.1643**	**15.4472**	**0.0267**		**0.7126**	**0.7126**		**0.6827**	**0.6827**	**0.0000**	**2,451.901 1**	**2,451.901 1**	**0.4943**		**2,464.257 7**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0979	3.1649	0.9028	8.6100e-003	0.2234	6.3300e-003	0.2297	0.0643	6.0500e-003	0.0704		927.6386	927.6386	0.0706		929.4045
Worker	0.2825	0.1748	1.7583	5.6200e-003	0.6243	4.2200e-003	0.6285	0.1656	3.8900e-003	0.1695		559.7595	559.7595	0.0153		560.1415
Total	**0.3804**	**3.3397**	**2.6611**	**0.0142**	**0.8477**	**0.0106**	**0.8583**	**0.2299**	**9.9400e-003**	**0.2398**		**1,487.3981**	**1,487.3981**	**0.0859**		**1,489.5460**

3.7 Finishes - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.1605					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**12.3651**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Finishes - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0345	0.3470	1.1100e-003	0.1232	8.3000e-004	0.1241	0.0327	7.7000e-004	0.0335		110.4788	110.4788	3.0200e-003		110.5543
Total	**0.0558**	**0.0345**	**0.3470**	**1.1100e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.7000e-004**	**0.0335**		**110.4788**	**110.4788**	**3.0200e-003**		**110.5543**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.1605					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**12.3651**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Finishes - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0345	0.3470	1.1100e-003	0.1232	8.3000e-004	0.1241	0.0327	7.7000e-004	0.0335		110.4788	110.4788	3.0200e-003		110.5543
Total	**0.0558**	**0.0345**	**0.3470**	**1.1100e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.7000e-004**	**0.0335**		**110.4788**	**110.4788**	**3.0200e-003**		**110.5543**

3.8 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	2.6593	10.1695	30.1527	0.1041	9.7881	0.0825	9.8706	2.6158	0.0768	2.6926		10,599.2312	10,599.2312	0.5548		10,613.1018
Unmitigated	2.6593	10.1695	30.1527	0.1041	9.7881	0.0825	9.8706	2.6158	0.0768	2.6926		10,599.2312	10,599.2312	0.5548		10,613.1018

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	56.80	56.80	56.80	91,594	91,594
General Office Building	1,373.57	1,373.57	1373.57	3,282,482	3,282,482
Junior College (2Yr)	489.24	489.24	489.24	1,242,443	1,242,443
Total	1,919.61	1,919.61	1,919.61	4,616,519	4,616,519

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Junior College (2Yr)	9.50	7.30	7.30	6.40	88.60	5.00	92	7	1

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Fast Food Restaurant w/o Drive Thru	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
General Office Building	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Junior College (2Yr)	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Junior College (2Yr)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Junior College (2Yr)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5499	1.9000e-004	0.0203	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0436	0.0436	1.1000e-004		0.0465
Unmitigated	2.5499	1.9000e-004	0.0203	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0436	0.0436	1.1000e-004		0.0465

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2732					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2748					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8800e-003	1.9000e-004	0.0203	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0436	0.0436	1.1000e-004		0.0465
Total	**2.5499**	**1.9000e-004**	**0.0203**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0436**	**0.0436**	**1.1000e-004**		**0.0465**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2732					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2748					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8800e-003	1.9000e-004	0.0203	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0436	0.0436	1.1000e-004		0.0465
Total	**2.5499**	**1.9000e-004**	**0.0203**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0436**	**0.0436**	**1.1000e-004**		**0.0465**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0.25	3	500	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (300 - 600 HP)	0.2051	0.5733	0.5231	9.9000e-004		0.0302	0.0302		0.0302	0.0302		104.9393	104.9393	0.0147		105.3071
Total	**0.2051**	**0.5733**	**0.5231**	**9.9000e-004**		**0.0302**	**0.0302**		**0.0302**	**0.0302**		**104.9393**	**104.9393**	**0.0147**		**105.3071**

11.0 Vegetation

Appendix C

Cultural Resources Study

HELIX Environmental Planning, Inc.
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February 2, 2021

Ms. Julie Kilpatrick UCS-33.10
UC San Diego Campus Planning
9500 Gilman Drive, MC 0982
La Jolla, CA 92093-0982

Ms. Lauren Kahal Lievers
UC San Diego Campus Planning
9500 Gilman Drive, MC 0074
La Jolla, CA 92093-0074

Subject: La Jolla Innovation Center Project Cultural Resources Study

Dear Ms. Kilpatrick and Ms. Lievers,

HELIX Environmental Planning, Inc. (HELIX) was contracted by the University of California, San Diego, to prepare a focused Environmental Impact Report (EIR) in compliance with the California Environmental Quality Act (CEQA) to address the La Jolla Innovation Center Project (project). The project proposes a nine-story office building at 8980 Villa La Jolla Drive. Due to the developed nature of the project site, the cultural resources study in support of the EIR entails a records search and a Sacred Lands File search but no fieldwork. This letter report serves as a summary of the results of these searches and the potential for the project to affect cultural resources.

BACKGROUND

The approximately 0.9-acre project site is currently developed with an approximately 13,213-square-foot (SF) restaurant located within the City of San Diego, in San Diego County (Figure 1, *Regional Location*). It is located in Township 15 South, Range 3 West, in an unsectioned portion of the U.S. Geological Survey (USGS) 7.5' La Jolla quadrangle (Figure 2, *USGS Topography*). More specifically, the project is located west of Interstate 5 (I-5), at the southwestern corner of the intersection of La Jolla Village Drive and Villa La Jolla Drive (Figure 3, *Aerial Photograph*).

The property is proposed to be subdivided and the building demolished, and the parcel would be sold to UC San Diego and leased to GPI to develop the proposed project. The building would consist of seven stories above grade and two stories below grade. The two stories below grade and the first two stories above grade would primarily consist of parking (totaling 93,379 SF and 206 parking spaces); the remaining five upper stories would consist of leased office and educational space (totaling 103,314 SF). A 1,420-SF retail space (potentially a café) is proposed within the ground level of the building to serve the building occupants. The current access from Villa La Jolla Drive and Villa Norte is proposed to be maintained.

Proposed earthwork would require approximately 18,700 cubic yards (CY) of cut and 240 CY of fill for a net soil export of approximately 18,460 CY. Maximum depth of excavation is anticipated to be 23.5 feet below ground surface. Construction is anticipated to commence in mid-2021, with initial occupancy by the University anticipated to be in 2023.

METHODS AND RESULTS

A cultural resources records search of the California Historical Resources Information System (CHRIS) was obtained from the South Coastal Information Center (SCIC) in May 2020; this included locations and citations for reports, as well as locations and site records for resources within a half-mile radius of the project site. In addition, a Sacred Lands File search was obtained from the Native American Heritage Commission (NAHC).

No cultural resources have been recorded within the project site; however, seven cultural resource sites have been recorded within the one-half-mile search radius. Three of these sites are prehistoric: P-37-008469 (CA-SDI-8469) consists of a prehistoric shell scatter; P-37-005456 (CA-SDI-5456) consists of a sandstone milling feature and a mano, a scraper, and a possibly utilized flake that were collected by RECON in 1978; and P-37-034754 is an isolate consisting of a whole, shaped, unifacial sandstone metate in a highly disturbed area near an SDG&E utility pole. CA-SDI-8469 is located west of the project site, and CA-SDI-5456 and P-37-034754 are located south of the project area.

The remaining four sites are historic in nature: P-37-032491 consists of a rectangular concrete foundation possibly associated with the Camp Calvin B. Matthews Marine Corps rifle range; P-37-032492 (CA-SDI-20616) is the remains of a concrete culvert possibly associated with the Camp Calvin B. Matthews Marine Corps rifle range; P-37-034430 is a continuous concrete bridge, built in 1966 and widened in 1990, that spans over I-5; and P-37-034431 is a continuous concrete bridge over I-5 that was built in 1966 and widened in 1992. P-37-032491 and P-37-032492 are located north of the project area, while P-37-034430 and P-034431 are located to the east.

The NAHC indicated in a response dated May 11, 2020 that the results of the Sacred Lands File search were negative for Native American cultural resources; a list of 19 Native American tribes who may have knowledge of cultural resources in the project area was provided. Further Native American outreach was not performed, as the University of California, San Diego will initiate AB 52 outreach.

Historic aerial photographs indicate that the project site was graded by 1966, although no buildings are present at that time (NETR Online 2020). Buildings do not appear on the project site on the 1975 USGS 7.5' La Jolla map, but buildings are present on a 1980 aerial photo (NETR Online 2020). Based on this, the buildings on-site are not of sufficient age to warrant evaluation as historic properties, but past grading appears to have removed the potential for subsurface cultural resources.

CONCLUSIONS

Based on the records search, the results of the Sacred Lands File search, and the developed nature of the project site, no impacts to cultural resources are anticipated. There is the possibility that subsurface cultural material may be present; however, this is considered unlikely. Based on this, no further measures related to cultural resources are recommended.

If you have any questions, please contact Mary Robbins-Wade at (619) 462-1515 extension 276 or MaryRW@helixepi.com.

Sincerely,

James Turner, RPA
Staff Archaeologist

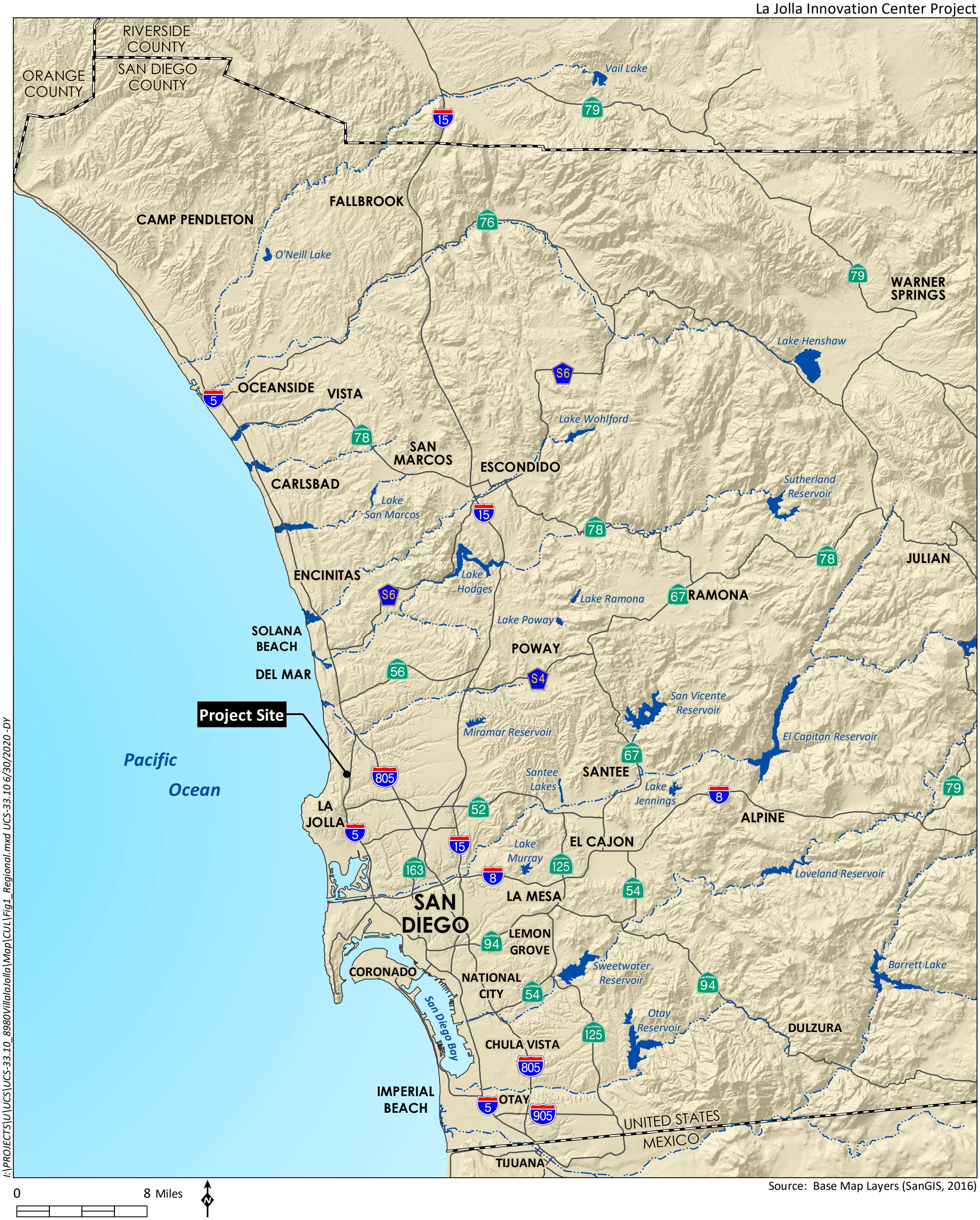
Mary Robbins-Wade, RPA
Cultural Resources Group Manager

Attachments:

Figure 1 Regional Location
Figure 2 USGS Topography
Figure 3 Aerial Photograph

REFERENCES

NETR Online
2020 Historic Aerials. Nationwide Environmental Title Research, LLC. Electronic document available at: http://www.historicaerials.com, accessed June 26, 2020.



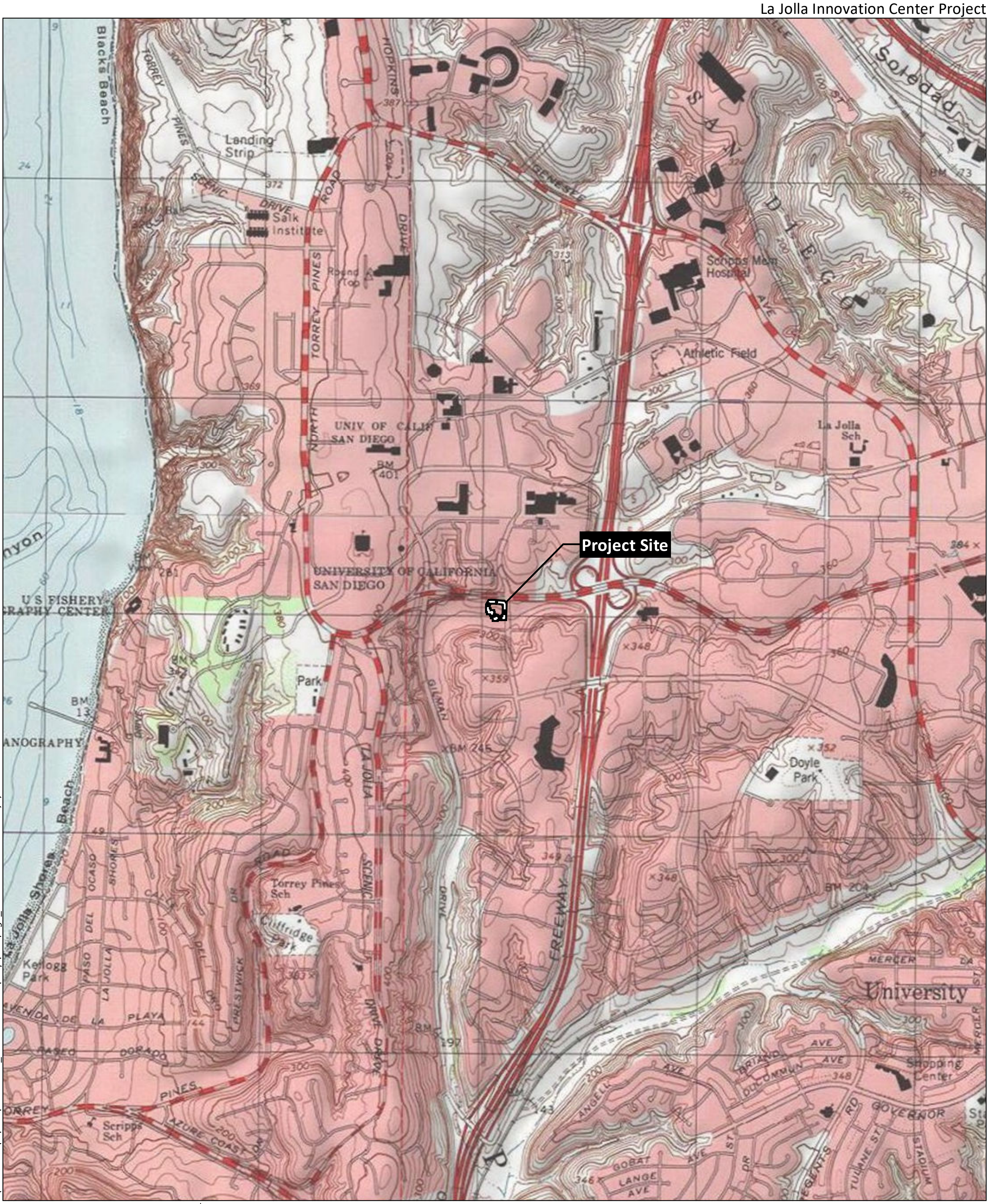
Source: Base Map Layers (SanGIS, 2016)

I:\PROJECTS\U\UCS\UCS-33.10_8980VillaLaJolla\Map\CUL\Fig1_Regional.mxd UCS-33.10 6/30/2020-DY

HELIX
Environmental Planning

Regional Location

Figure 1



I:\PROJECTS\U\UCS\UCS-33.10_8980VillaJolla\Map\CUL\Fig2_USGS.mxd UCS-33.10 2/4/2021 -DY

Source: La Jolla 7.5' Quad (USGS)

0 2,000 Feet

HELIX Environmental Planning

USGS Topography

Figure 2

Source: Aerial (SanGIS, 2017)

0 200 Feet

N

HELIX
Environmental Planning

Aerial Photograph

Figure 3

Appendix D

Geotechnical Investigation

REPORT OF GEOTECHNICAL INVESTIGATION
THE CAMPUS ON VILLA LA JOLLA
8980 LA JOLLA VILLAGE DRIVE
LA JOLLA, CALIFORNIA 92037

Prepared for

THE GPI COMPANIES
11777 San Vicente Blvd., Suite 550
Los Angeles, California 90049

Prepared by

GROUP DELTA CONSULTANTS, INC.
9245 Activity Road, Suite 103
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Project No. SD644
January 29, 2020
(First Revision June 19, 2020)

GROUP DELTA

The GPI Companies
11777 San Vicente Blvd., Suite 550
Los Angeles, California 90049

January 29, 2020
(First Revision June 19, 2020)

Attention: Mr. David Woodbury

SUBJECT: REPORT OF GEOTECHNICAL INVESTIGATION
The Campus on Villa La Jolla
8980 La Jolla Village Drive
La Jolla, California 92037

Mr. Woodbury:

Group Delta Consultants, Inc. (Group Delta) is submitting this revised Report of Geotechnical Investigation for the proposed redevelopment at the Campus on Villa La Jolla. The approximate 1-acre redevelopment will consist of a nine-story commercial building in the northeast portion of the existing 7-acre property that will be acquired by or leased to the University of California San Diego.

Group Delta prepared this revised report per our Additional Service Request No. 2 dated May 8, 2020 as part of the Professional Services Agreement between Ocotillo SD Villa La Jolla LLC and Group Delta that is dated November 22, 2019.

The first draft of this report was issued on January 29, 2020 based on the initial subsurface investigation (Borings B-1 and B-2). This issue of the report is the first revision to include additional subsurface explorations (Borings B-3 and B-4) completed in May 2020. The purpose of this report is to provide the additional subsurface information to support the preliminary design of the project. Revisions will be needed for design development and to obtain construction permits.

We appreciate this opportunity to be of continued professional service. Please contact us with questions or comments, or if you need anything else.

GROUP DELTA CONSULTANTS

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Project Engineer

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APPENDICES

Appendix A – Previous Boring Records
Appendix B – Current Boring Records
Appendix C – Geotechnical Laboratory Testing
Appendix D – Geophysical Report
Appendix E – Site-Specific Seismic Hazard Analyses
Appendix F – Deep Sewer and Storm Drain As-Builts

1.0 INTRODUCTION

This report presents the results of the geotechnical investigation by Group Delta Consultants, Inc. (Group Delta) for the proposed redevelopment at the Campus on Villa La Jolla, an approximate 7-acre Professional Center located at the southwest corner of Villa La Jolla Drive and La Jolla Village Drive in La Jolla, California. About 1-acre of the northeast portion of the property will be redeveloped with a nine-story commercial building that will be acquired by or leased to the University of California San Diego (UCSD). We understand that the planning and design of the redevelopment will be reviewed by UCSD Facilities Design and Construction, and is not subject to review by the City of San Diego. The site location is shown in Figure 1A. The site vicinity is shown in more detail in Figure 1B. The approximate locations of the geotechnical explorations conducted for this investigation are shown in Figures 2A through 2C.

The purpose of this report is to provide geotechnical information to support the preliminary design of the project. This report provides interpretations of the geologic and geotechnical conditions observed, and recommendations for design and construction. Group Delta developed the recommendations from reviewing the previous studies referenced in this report, recent subsurface exploration and laboratory testing, geologic and geotechnical engineering interpretation and analyses, and our previous experience with similar geologic conditions.

1.1 Scope of Services

Group Delta prepared this report in accordance with our referenced proposal and additional service request (Group Delta, 2019 and 2020). We provided the following scope of services.

- Desk study review of available previous geologic and geotechnical studies near the site provided by the GPI Companies and obtained by Group Delta. Appendix A contains relevant Previous Boring Records.
- Subsurface exploration consisting of four exploratory borings. Figures 2A through 2C show the approximate locations of these explorations. Appendix B provides Current Boring Records.
- Geotechnical laboratory testing of soil samples collected from the borings. Appendix C provides the geotechnical laboratory test results.
- A geophysical exploration (P-S suspension logging) to evaluate the shear wave velocity profile in the upper 100 feet (or 30 meters) for seismic site classification. Appendix D provides the geophysical exploration report.
- Engineering analysis of the field and laboratory data to develop geotechnical parameters and preliminary recommendations for design and construction.
- Preparation of this report with our findings, conclusions and recommendations.

1.2 Site Description

The approximate 7-acre property is currently developed with several multi-story structures comprising about 200,000 square feet of medical, commercial office, and restaurant space. The northeast portion of the property proposed for redevelopment is currently occupied by the Rock Bottom Restaurant and Brewery, an existing 13,000 square foot, two-story building. The site is bordered by La Jolla Village Drive to the north, Villa La Jolla Drive to the east, and asphalt parking areas and driveways to the west and south. An approximate 10-foot wide concrete pedestrian bridge located immediately northwest of the site connects the property north to UCSD over La Jolla Village Drive. The site is relatively flat with existing elevations around 270 to 272 feet above mean sea level (MSL). A gradual two- to five-foot-high slope descends to Villa La Jolla Drive along the east side of the existing building. Figure 2A shows the existing site conditions with an aerial photograph and Figure 2B shows the existing site topography.

City of San Diego utilities are present near the site including a 21-inch diameter vitrified clay pipe (VCP) sewer and 132-inch diameter multiplate storm drain that run east-west along the south side of the existing Rock Bottom Restaurant and Brewery. The sewer and storm drain inverts are about 20 and 40 feet below existing ground surface near the proposed redevelopment, respectively. Figure 2C shows the existing City of San Diego sewer and storm drain alignments and easements near the site. Figure 2D provides a schematic of the existing City of San Diego utilities relative to the proposed redevelopment for illustrative purposes. Appendix F includes City of San Diego sewer and storm drain as-builts (Rick Engineering, 1979) near the development which provide previously existing topography at the site.

1.3 Proposed Redevelopment

We understand the northeast portion of the property that is currently occupied by the Rock Bottom Restaurant and Brewery will be redeveloped with a seven -story, approximate 100-foot tall structure to be acquired by or leased to UCSD. The proposed structure will have a footprint of about 23,700 square feet and will have 5 levels of commercial office space over 4 levels of structured parking. The proposed two lowest parking levels will be subterranean. We understand a five foot thick mat foundation is currently proposed with top and bottom of mat elevations of 251 feet and 246 feet MSL, with an elevator core at elevation 242 feet MSL. The surrounding finished grades around the completed structure will be about 269 to 273 feet MSL. We have based our current understanding of the project on our conversations with Gensler, Miyamoto, and you.

1.4 Prior Studies

Geocon completed a geotechnical investigation in the southeast corner of the property for the medical offices at 8910 Villa La Jolla Drive about 250 feet south of the site (Geocon, 2013). In 2008, ETIC Engineering (ETIC) installed a monitoring well (MW-8) on the west sidewalk of Villa La Jolla Drive about 8 feet east of the property near the existing Rock Bottom Restaurant and Brewery as part of ongoing environmental studies for the ExxonMobil Service Station at 3233 La Jolla Village Drive (ETIC, 2008). The monitoring well was later destroyed in 2014 (URS, 2014).

Geocon indicated formational materials were encountered at depths of about 68 to 74 feet below ground surface or elevations of about 208 to 214 feet MSL at 8910 Villa La Jolla Drive. The ETIC monitoring well (MW-8) indicated siltstone was encountered at a depth of about 33 feet or an elevation of about 235 feet MSL, which may potentially be formational materials.

In 2013, Geocon encountered groundwater at elevations of around 225 feet MSL, or about 50+ feet below ground surface, at the medical office building to the south of the site. From 2008 through 2012, ETIC reported groundwater levels between 235 and 242 feet MSL, or about 29 to 36 feet below ground surface at the site (assuming a site ground surface elevation of 271 feet MSL). The approximate location of the ETIC monitoring well (MW-8) is shown on Figures 2A through 2C.

2.0 FIELD AND LABORATORY INVESTIGATION

2.1 Current Field Investigation

The field investigation included a geologic reconnaissance, subsurface exploration consisting of four borings (B-1 through B-4), and a geophysical exploration consisting of P-S suspension logging. Boring B-1 was drilled using the hollow stem auger method to a depth of about 35 feet followed by the HQ wire-line rock coring method to a maximum depth of 75 feet on December 20th, 2019. Boring B-2 was drilled using the hollow stem auger method to a depth of about 21½ feet followed by the rotary wash method to a maximum depth of 115 feet on December 5th, 2019. Note boring B-2 was drilled out (no samples collected) from depths of about 85 to 115 feet below ground surface to accommodate P-S suspension logging that was performed on December 6th, 2019. Borings B-3 and B-4 were drilled using the hollow stem auger method to maximum depths of 37½ and 36 feet on May 26th, 2020.

The approximate locations of the borings are shown on Figures 2A through 2C. Appendix B provides the Current Boring Records and discusses the methods used to complete the explorations and obtain soil samples. Appendix D provides the geophysical report (GEOVision, 2019).

2.2 Laboratory Testing

Soil samples were collected from the borings for laboratory testing. The geotechnical testing program included moisture content and dry density, sieve analyses, and Plasticity Index testing to aid in soil classification using the ASTM Unified Soil Classification System (USCS). Index tests were also conducted to help evaluate the soil expansion potential and corrosivity. The laboratory test results are shown on the Current Boring Records in Appendix B and in Appendix C.

3.0 GEOLOGY AND SUBSURFACE CONDITIONS

The site is located within the Peninsular Ranges geomorphic province of southern California. This province stretches from the Los Angeles basin to the tip of Baja California. It is characterized as a series of northwest trending mountain ranges separated by subparallel fault zones. The coastal plain consists typically of subdued landforms underlain by sedimentary formations overlying igneous rocks.

The site is located within the coastal plain. Geologically young surficial deposits consisting of undocumented fill and alluvium were encountered in our exploratory borings. Based on available historical topographic maps (USGS, 1953), the referenced City of San Diego sewer and storm drain as-builts at the property (Rick Engineering, 1979), and the referenced geologic map (Kennedy and Tan, 2008), it appears that a previously existing drainage trending southwest across the site was filled in to create a level pad for the existing structure during the late 1970's. Tertiary age sedimentary rocks of the Scripps Formation and Ardath Shale underlie the surficial soils at depth.

Figure 3A shows the mapped local geology at the site. Figure 3B, Geotechnical Cross Section A-A' and Figure 3C, Geotechnical Cross Section B-B' summarize our interpretation of the subsurface geology based on our exploratory borings. The approximate locations of Geotechnical Cross Sections A-A' and B-B' are shown on Figures 2A through 2C. The sections below describe the geologic units encountered ranging from the youngest to oldest.

3.1 Undocumented Fill (af)

Undocumented fill (map symbol af) was encountered from the existing ground surface to depths of about 5 to 8 feet below existing ground surface in borings B-1 and B-3 on the north side of the site, and approximately 17 to 18 feet below existing ground surface in borings B-2 and B-4 on the south side of the site. This material was placed to fill in the previously existing drainage at the site to create the pad for the existing structure (see Figures 3B and 3C). Note the fill thickness could be greater in areas not explored. The fill is considered "undocumented" because presently there are no available records of observation and in-place density testing of the fill placement and compaction by a Geotechnical Engineer.

The fill was observed to consist of Lean Clay (Unified Soil Classification Symbol - CL), Lean Clay with Sand (CL), Sandy Lean Clay (CL), Clayey Sand (SC), and Silty Sand (SM). The fill was generally light yellowish brown to mottled light brownish gray, moist, and stiff to hard in consistency based on pocket penetrometer readings and resistances to drive samples. Pocket penetrometer readings in this material varied from 1.25 to greater than 4.0 tons per square foot (tsf). The N_{60} values for drive samples collected in this material ranged from 8 to 35 blows per foot.

3.2 Alluvium (Qya)

Alluvium (map symbol Qya) was encountered in boring B-2 from a depth of about 17 to 24 feet below ground surface (elevation of about 254 to 247 feet MSL) on the south side of the site. This material is a remnant of the previously existing drainage that was filled in at the site (see Figure 3B). The alluvium was observed to consist of light olive brown, moist, Lean Clay with Sand (CL) exhibiting a hard consistency based on the pocket penetrometer reading (greater than 4.0 tsf). The single N_{60} value for the drive sample collected in this material was 23.

3.3 Scripps Formation (T_{sc})

The Eocene-age Scripps Formation (map symbol T_{sc}) underlies the entire site at depth. Locally, the Scripps Formation materials encountered in our explorations included claystone, sandstone, and gravel conglomerate with sandstone matrix at depths of about 5 to 24 feet below existing ground in our explorations (See Figure 3B and 3C). Descriptions of each of these materials are provided below.

The grayish brown to brownish gray claystone was observed to be predominantly poorly indurated, massive, fine to medium grained, soft, moderately weathered, and unfractured to moderately fractured. Disturbed samples of the claystone collected from the borings were classified as Lean Clay (CL) and Fat and Lean Clay with Sand (CH and CL). The corrected SPT blow counts (N_{60}) within the claystone were generally 70 and higher, with refusal encountered at several drive samples.

The grayish brown sandstone was observed to be predominantly poorly indurated, massive, medium grained, very soft to soft, slightly to moderately weathered, and slightly fractured. Disturbed samples of the sandstone collected from the borings were classified as Poorly-Graded Sand with Silt (SP-SM) with trace amounts of gravel, Clayey Sand (SC) and Silty Sand (SM).

The brown gravel conglomerate with sandstone matrix was observed to be predominantly poorly indurated, massive, coarse grained gravel with medium grained matrix, soft, slightly weathered, and unfractured. Disturbed samples of the gravel conglomerate with sandstone matrix collected from the borings were classified as Poorly-Graded Gravel with Silt and Sand (GP-GM) with gravel up to 3 inches in diameter. Refusal was encountered in a single drive sample in this material.

3.4 Ardath Shale (T_a)

The Eocene-age Ardath Shale (map symbol T_a) underlies the Scripps Formation at depth. Clay shale associated with the formation was encountered below depths of about 64 feet and 71 feet (below elevations of about 207 and 200 feet MSL) in our explorations.

Locally, the Ardath Shale consists of dark gray to very dark gray clay shale that is predominantly poorly indurated, thinly bedded, fine grained, very soft to moderately hard, intensely to moderately weathered, and unfractured to moderately fractured. Disturbed samples of the clay shale collected from the borings were classified as Lean Clay with Sand (CL). Refusal was encountered in several drive samples in this material.

3.5 Groundwater

Groundwater was observed at elevations of about 234 to 235 feet MSL in borings B-3 and B-4 during drilling in May 2020. Groundwater was not encountered during hollow stem auger drilling in borings B-1 and B-2. However, after completion of the P-S suspension logging, the drilling fluid in boring B-2 was bailed out until it stabilized at a depth of about 34 feet below ground surface or an elevation of about 237 feet MSL. Saturation was reported for the P-S suspension log conducted in boring B-2 at a depth of about 47 feet or an elevation of about 224 feet MSL. From 2008 through 2012, groundwater was reported between elevations of about 235 and 242 feet MSL (with average elevation of about 237 feet MSL) in nearby monitoring well MW-8 (ETIC, 2013). A summary of groundwater observations at the site are provided in Table 1 below.

Table 1. Summary of Groundwater Observations

Exploration / Monitoring Well	Date	Groundwater Elevation (feet, MSL)
B-3 (1)	05-26-20	235.1
B-4 (1)	05-26-20	234.2
MW-8 (2)	11-15-12	237.0
	05-29-12	237.0
	03-12-12	237.4
	11-22-11	241.2
	08-08-11	237.1
	03-24-11	237.1
	09-13-10	235.9
	06-08-09	236.4
	03-02-09	236.5
	12-18-08	236.3
	09-25-08	236.4
	06-19-08	236.5
	03-21-08	237.1

Notes: 1. Groundwater elevation observed during drilling.
2. Groundwater monitoring data from ETIC (2013).

Groundwater levels may change due to the actions of humans (e.g., irrigation) and changes in climate (e.g., precipitation). Groundwater may be found to be perched at fill or alluvium (or colluvium) contacts with denser, less permeable formational materials, or within more permeable zones of deeper formational materials.

4.0 GEOLOGIC HAZARDS

The primary geologic hazard at the site is the potential for strong ground shaking due to nearby or distant seismic events. The site is located within the City of San Diego's Geologic Hazard Category 32 – Low Liquefaction Potential, fluctuating groundwater minor drainages. In addition, an unnamed concealed fault trending southwest to northeast passes through the southeast corner of the site (City of San Diego Geologic Hazard Category 12 – Potentially Active, Inactive, Presumed Inactive, or Activity Unknown Fault Zone). The site is not located within an Alquist-Priolo Earthquake Fault Zone. Geologic hazards are further described below.

4.1 Strong Ground Motion

The site could be subject to moderate to strong ground shaking from nearby or more distant, large magnitude earthquakes occurring during the expected life span of the project. This hazard is managed by structural design of the building per the latest edition of the California Building Code (CBC). Seismic design parameters are provided in the *Recommendations* section of this report.

4.2 Earthquake Surface Fault-Rupture Hazard

The potential for surface fault rupture is low. Surface rupture is the result of movement on an active fault reaching the ground surface. The site is not crossed by a Holocene-active fault and structures intended for human occupancy as defined by the California Geological Survey (CGS, 2018) are located outside of Earthquake Fault Zones. However, an unnamed concealed fault trending southwest to northeast passes through the southeast corner of the site. This fault is considered "potentially active" by the City of San Diego as it has not been shown to offset Holocene geologic formations. Evidence of fault displacement was not identified based on the laterally consistent geologic materials encountered in the four small-diameter borings we advanced at the site (see Figures 3B and 3C).

Figure 4 shows the location of the site on the City of San Diego's Seismic Safety Study map for geologic hazards and faults. Figure 5 provides a fault location map for the region. As shown on Figure E-1, Seismic Source Fault Map, the closest known Holocene-active fault is the San Diego section of the Newport-Inglewood-Rose Canyon fault zone, which is approximately 1 mile (3.2 kilometers) to the southwest of the site. Rose Canyon is a strike-slip fault zone that extends from off the coast of Carlsbad down through La Jolla, and then through downtown San Diego to near the California and Mexico border.

4.3 Liquefaction and Secondary Effects

The potential for liquefaction and secondary effects should be very low. Liquefaction is the sudden loss of soil shear strength within saturated, loose to medium dense, sands and non-plastic silts. Liquefaction is caused by the build-up of pore water pressure during strong ground shaking from an earthquake. The secondary effects of liquefaction are sand boils, settlement, and instabilities within sloping ground.

Groundwater and/or saturation were not observed in the undocumented fill or alluvial soils within our borings at the site. In addition, the undocumented fill and alluvial soils were observed to consist predominantly of fine-grained material (greater than 50 percent clay and silt) exhibiting clay-like behavior, which are generally considered to be non-liquefiable based on commonly accepted criteria (Bray and Sancio, 2006). Eocene-age (i.e. pre-Holocene) formational materials at the site should not be prone to liquefaction and secondary effects.

4.4 Seismic Compaction

An additional effect of strong ground shaking is the potential densification of loose to medium dense granular soils that are above groundwater (seismic compaction) that could result in settlement. This hazard is considered to be low since the observed unsaturated undocumented fill and alluvial soils below the proposed basement excavation at the site generally consist of fine-grained material (greater than 50 percent clay and silt) that should not be prone to seismic compaction. Eocene-age formational materials at the site should not be prone to seismic compaction if undisturbed during construction. However, if relatively widespread, unsaturated loose to medium dense granular soils are encountered below the proposed basement elevation during excavation, these soils should be mitigated as part of the building subgrade preparation.

4.5 Landslides and Slope Stability

Based on the relatively flat topography of the site and the planned site redevelopment, landslides and slope instability are not design considerations.

4.6 Tsunamis and Seiches

The site has a relatively high ground surface elevation (about 270 feet MSL) and lies outside of the mapped tsunami inundation area to the west (California Emergency Management Agency, 2009). The site is not located near any large bodies of water, such as lakes or bays, therefore the risk of tsunamis and seiches at the site should be nonexistent.

5.0 GEOTECHNICAL CONDITIONS

The primary geotechnical condition at the site requiring engineering mitigation is the compressibility of the surficial soils (undocumented fill and alluvium). Geotechnical conditions are described further below.

5.1 Compressible Soils

The surficial soils (undocumented fill and alluvium) are compressible. These soils have a high potential for adverse settlements and/or shear strength failure if loaded by shallow foundations in their current state due to their variable physical characteristics and apparent densities. Compressible soils should be mitigated according to the *Recommendations* section of this report.

5.2 Expansive Soils

Eight Expansion Index (EI) tests were conducted on disturbed soil samples obtained at various depths throughout potential cut areas at the site. The tests indicate the soils should have a "Very Low" to "Medium" expansion potential. The Expansion Index ranged from 15 to 70. Expansive soils can increase lateral pressures well beyond normal active or at-rest pressures on retaining walls and also have the potential to heave slabs-on-grade. Expansive soils should be mitigated according the *Recommendations* section of this report. Figure C-3 in Appendix C provides these data.

5.3 Reactive Soils

Five corrosion suites were conducted on soil samples obtained at various depths throughout potential cut areas and deep foundation zones. Selected samples were tested for water-soluble sulfate content to assess the sulfate exposure of concrete in contact with the site soils. The test results suggest the on-site soils have a negligible to severe potential for sulfate attack on concrete based on commonly accepted criteria. The sulfate content of the finish grade soils should be evaluated at the completion of earthwork. Selected samples were also tested for pH, resistivity and chloride content to assess the reactivity of the site soils with buried metals. The test results suggest some of the on-site soils are very corrosive to buried metals. A corrosion consultant may provide specific recommendations. Figure C-4 of Appendix C provides these data.

5.4 Storm Water Infiltration

We do not recommend shallow infiltration of storm water at the site. Based on the observed geotechnical conditions (without site infiltration testing), the underlying surficial soils are unlikely to allow for full or partial infiltration considering shallow storm water Best Management Practices (BMPs) such as basins or swales. The observed undocumented fill at the site is predominantly fine-grained soil that is effectively impermeable and prone to adverse settlement due to the intrusion of water. In addition, infiltrating storm water into soils behind basement retaining walls may lead to potential increases in lateral pressures and reductions of soil strength.

The underlying formational materials are also unlikely to allow for full or partial infiltration considering shallow storm water BMPs. These materials are also effectively impermeable under the relatively low water pressures associated with shallow storm water BMPs, due to combinations of the material type (claystone), their massive geologic structure (limited fracturing or other geologic defects), and apparent density or consistency (very dense or hard). However, at some level with depth, there may be suitable infiltration conditions for deep storm water BMPs, such as dry wells.

Note Group Delta did not perform field infiltration testing as part of our geotechnical investigation.

6.0 CONCLUSIONS

In our opinion, the site is geotechnically suitable for the proposed redevelopment. However, design and construction of the project will need to consider the following geotechnical conditions.

- The primary geologic hazard is strong ground motion from an earthquake, which may be mitigated by structural design of the building per the applicable code assuming Site Class C. The probability of other geologic hazards should be low.
- The site was formed by filling a natural drainage to create a level pad for the existing structure during the late 1970's. Surficial soils consisting of undocumented fill and alluvium, and sedimentary rocks of the Scripps Formation and Ardath Shale (formational materials) will occur at the level of the foundations for the proposed structure (see Figures 3B and 3C).
- The surficial soils are compressible and are not suitable for structural support in their current condition. A shallow mat foundation may be used to support the structure if these soils are removed entirely and recompacted as engineered fill or replaced with slurry, or are stiffened in-place with ground improvement. However, the mat foundation would need to be designed to transition the contrast in stiffness provided by the engineered fill or ground improved area and the formational materials. The building may also be supported on piled foundations embedded in formational materials, which would require a structural slab, rather than a slab-on-grade, to avoid cracking of the slab near the transition in soil stiffness.
- Groundwater will influence design and construction since it occurs about 10 feet below the planned bottom of mat foundation at 245 feet MSL.
- Deep excavations to construct subterranean levels may utilize typical soldier pile retention with or without temporary ground anchors depending on the depth of the excavation. However, the anchors may extend into the City of San Diego (City) Right-Of-Way (ROW), which would require their removal and/or de-tensioning. Temporary retention that supports the City ROW will require a shoring permit from the City.
- Foundations for the proposed structure may impose additional stress on the City sewer and storm drain that run east-west along the south side of the existing Rock Bottom Restaurant and Brewery (as shown on Figures 2C and 2D). The City may require measures to protect these utilities from additional structure-imposed stress, as well as protection of the building should these utilities fail to the extent that a sinkhole develops.
- In general, on-site soils are considered to have a "Medium" expansion potential. They will require some selective grading below interior and exterior slabs immediately above the soil subgrade. On-site soils may be very corrosive to buried metals and have a moderate to severe potential for sulfate attack of concrete.
- The site does not support full or partial infiltration shallow storm water BMPs.
- Drilling for piled foundations and temporary ground anchors may encounter cemented zones and cobbles within the formational materials.

7.0 RECOMMENDATIONS

The remainder of this report presents recommendations for earthwork and design and construction of the proposed redevelopment. These recommendations are based on empirical and analytical methods typical of the standards of practice in southern California and common San Diego area construction methods and practice. They are provided for preliminary design of the project. These recommendations may need to be updated for design development, final design, or based on the results of field testing (e.g., ground improvement pilot studies) or actual subsurface conditions encountered during construction. If these recommendations do not address a specific feature of the project, please contact Group Delta for additions or revisions.

7.1 General

7.1.1 Site Preparation and Foundation Option Assessment

This report provides preliminary recommendations for a *Reinforced Concrete Mat* and *Piled Foundations*. A mat foundation may be used to support the structure if the undocumented fill and alluvial soils are removed entirely and recompacted as engineered fill or are stiffened in-place with ground improvement such as with Rammed Aggregate Piers. However, the mat foundation would need to be designed to transition the contrast in stiffness provided by the engineered fill or ground improved area and the formational materials. The structure may also be supported on piled foundations embedded in formational materials where it overlies the undocumented fill and alluvial soils. Conventional shallow foundations (e.g., spread column footings and continuous wall footings) bearing within formational materials could be used with this option where the existing undocumented fill is relatively shallow (5 feet or less). This option would require a structural slab, rather than a slab-on-grade, to avoid cracking of the slab near the transition in soil stiffness.

Other options include *Transition Area Over-Excavation* and *Soil-Cement Mixing*. These options would allow for conventional shallow foundations with a slab-on-grade. Details are provided below.

- *Transition Area Over-Excavation* would partially replace the formational materials exposed at the level of the foundations with engineered fill. The purpose of the removal and replacement is to attenuate the contrast in soil stiffness at the transition between the cut area in formational materials and the fill area consisting of the removed and recompacted undocumented fill and alluvium. This option is typically only practical where there is sufficient area for sloped open cut excavations around the entire perimeter of the building. Figure 6 illustrates this option and recommendations.
- *Soil-Cement Mixing* adds cement during the processing of the undocumented fill and alluvial soils for recompaction. The purpose of the soil-cement is to make the shear strength and stiffness of the recompacted soils similar to that of the formational materials. Previous similar projects nearby have used a minimum 28-day compressive strength of 300 pounds per square inch (psi) for the soil-cement fill using 3.0 percent cement by dry soil

weight as the target to treat the soils. This option may not be practical considering the relatively small volume of material to be treated.

Transition Area Over-Excavation and *Soil-Cement Mixing* options are not considered further in this report; specific recommendations can be provided if these options are further evaluated.

7.1.2 Design Groundwater Level

Based on existing monitoring well data near the site (ETIC, 2013), we recommend a design groundwater level of 245 feet MSL. Note that seepage or perched groundwater may be encountered within the project limits. Such conditions are difficult to predict and are typically mitigated if and where they occur during construction.

7.1.3 Seismic Design

Tables 2 and 3 provide both mapped and site-specific seismic design parameters in accordance with the 2019 California Building Code and ASCE 7-16. Based on the subsurface exploration, the P-S suspension logging results presented in Appendix D (GEOVision, 2019), and our understanding of the underlying geology, the site classification for seismic design is Site Class C, in accordance with Chapter 20 of ASCE 7-16.

Mapped seismic design parameters in Table 2 were developed using the online SEAOC/OSHPD Seismic Design Maps tool (SEAOC/OSHPD, 2019).

Table 2. Mapped Seismic Design Acceleration Parameters

Design Parameters	General Seismic Design Parameter (ASCE 7-16 Section 11.4)
Site Latitude	32.8712
Site Longitude	-117.2342
S_s (g)	1.297
S_1 (g)	0.455
Site Class	C
F_a	1.2
F_v	1.5
T_S (sec)	0.438
T_L (sec)	8
S_{MS} (g)	1.556
S_{M1} (g)	0.683
S_{DS} (g)	1.038
S_{D1} (g)	0.455

Site-specific ground motion hazard analyses performed for the site were used to develop the parameters in Table 3, and are documented in Appendix E.

Table 3. Site-Specific Seismic Design Acceleration Parameters

Design Parameters	Site-Specific Seismic Design Parameter (ASCE 7-16 Section 21.4)
S_{MS} (g)	1.524
S_{M1} (g)	0.602
S_{DS} (g)	1.016
S_{D1} (g)	0.402

7.1.4 Surface Drainage

Retaining wall, foundation, and slab performance depend on how well surface runoff drains from the site. The ground surface should be graded so that water flows rapidly away from the structures and tops of slopes without ponding. The surface gradient needed to achieve this may depend on the planned landscaping. Planters should be built so that water will not seep into the retaining walls, foundations, slab, pavement, or sidewalk areas. If roof drains are used, the drainage should be channeled by pipe to storm drains or discharge 10 feet or more from buildings. Irrigation should be limited to that needed to sustain landscaping. Excessive irrigation, surface water, water line breaks, or rainfall may cause perched groundwater to develop within the underlying soil.

7.1.5 Ground Improvement

The purposes of ground improvement are to increase the allowable bearing pressure and to reduce the static settlement within the surficial soils at the site. The improved ground will often support allowable bearing pressures up to 4,000 pounds per square foot (psf) and provide settlement tolerances ranging from ½ to 1 inch over a horizontal distance of 30 to 40 feet. The Geotechnical and Structural Engineers will typically specify performance objectives for ground improvement, which will then be designed by a Ground Improvement Specialty Contractor (GISC).

The ground may be improved with Rammed Aggregate Piers. Rammed Aggregate Piers are installed by drilling 18- to 36-inch diameter holes into the foundation soils and ramming lifts of well-graded aggregate within the holes to form stiff, high-density aggregate columns (FHWA, 2014). GISCs may promote alternatives based on their experience and specialist equipment.

7.1.6 Existing Utilities

There are existing City of San Diego sewer and storm drains that may be influenced by additional stresses imposed by foundation loads depending on the selected basement level and foundation systems (see Figures 2C and 2D). The impact of foundation stresses on existing utilities should be evaluated during design.

7.2 Earthwork

Earthwork should be conducted per the current applicable requirements of the California Building Code, Standard Specifications for Public Works Construction, UCSD requirements and the project specifications. This report provides the following recommendations for specific aspects of earthwork, which may need to be revised for design development, final design, or based on the conditions observed during construction.

7.2.1 Site Preparation

Site preparation should begin with the removal of deleterious materials from the site. Deleterious materials may include existing structures, foundations, slabs, trees, vegetation, trash, and demolition debris. Areas of the subgrade disturbed by demolition should be restored to the satisfaction of the Geotechnical Engineer during earthwork.

Existing subsurface utilities that will be abandoned should be removed and the excavations backfilled and compacted as described in the *Fill Compaction* section of this report. Alternatively, the abandoned pipes may be grouted with a sand-cement slurry under the observation of the Geotechnical Engineer. The minimum 28-day compressive strength of the sand-cement slurry should be approved by the Geotechnical Engineer prior to placement.

7.2.2 Remedial Earthwork

Remedial grading recommendations are provided for use with a mat foundation that is partially supported on engineered fill and formational materials. The surficial soils (undocumented fill and alluvium) should be completely removed to expose competent formational materials within the building excavation and replaced as engineered fill as recommended in the *Fill Compaction* section of this report. Removal depths may be 20 feet or more depending on the final basement elevation. The actual removal depths may vary depending on the conditions observed by the Geotechnical Engineer during earthwork.

The removal of surficial soils should extend beyond the lowest outer edge of the mat foundation a distance equal to a 1:1 line projected outward and down to an approved removal bottom, or a horizontal distance of 10 feet beyond the perimeter of the improvement, whichever is greater.

7.2.3 Fill Compaction

Fill and backfill should be placed at slightly above optimum moisture content using equipment that can produce a consistently compacted product. The loose lift thickness should be 8 inches, unless performance observed and testing during earthwork indicates a thinner loose lift is needed. The minimum recommended relative compaction is 90 percent of the maximum dry density based on ASTM D1557, except where 95 percent is specified in this report.

7.2.4 Reuse of On-Site Materials

The following existing on-site soils and materials are available for processing and reuse.

- Surficial Soils or Material Derived from Formation
- Asphalt Concrete (AC)
- Portland Cement Concrete (PCC)

The following sections provide recommendations for the processing and reuse of these materials as engineered fill.

7.2.4.1 Soil

The existing soils within the planned depth of excavation should be suitable for reuse. The soil should be processed to produce fill near optimum moisture content for compaction. Rocks or concrete fragments greater than 3 inches in dimension should not be reused.

During earthwork, soil types may be encountered by the Contractor that do not conform with those addressed by this report. The Geotechnical Engineer should evaluate the suitability of these soils for their proposed use.

7.2.4.2 Asphalt Concrete

Existing AC should be crushed to less than 1 inch in dimension and blended with approved fill soils. Existing AC can be recycled, reprocessed, and reused as a base course for new AC paving.

7.2.4.3 Portland Cement Concrete

Concrete may be crushed to less than 1 inch in dimension for use as fill. It should be added to other soils to create a well graded fill material. Reinforcing steel should be removed prior to crushing the concrete. Properly crushed concrete will often meet the gradation and quality criteria from Section 200-2.4 of the Standard Specifications for Public Works Construction for use as Crushed Miscellaneous Base (CMB).

7.2.5 Import Soil

Imported fill sources should be observed and tested by the Geotechnical Engineer prior to hauling onto the site to consider their suitability for use. Import should be granular soil that is free of organic materials, with an Expansion Index less than 20 based on ASTM D4829, and a gradation that meets the criteria shown in Table 4 below.

Table 4. Recommended Gradation for Import Soil

Sieve Size	(% Passing)
3 inches	100
3/4 inch	100 - 80
No. 4	100 - 65
No. 200	0 - 35

Import soils should also have a resistivity value greater than 1,000 ohm-centimeters, chloride content of less than 500 ppm and sulfate content of less than 1,000 ppm and pH greater than 5.5.

Prior to import of the proposed materials, samples of proposed import should be tested by the Geotechnical Engineer to evaluate the suitability of these soils for their proposed use. The following screening tests should be completed for each import site:

- Particle Size Distribution (ASTM D6913)
- Maximum Density (ASTM D1557)
- Expansion Index (ASTM D4829)
- Sulfate Content (ASTM D516)
- Chloride Content (ASTM D512)
- pH & Resistivity (CT 643)

7.3 Shallow Foundations

Shallow foundations may consist of: 1) a reinforced concrete mat that is supported partially on formational materials and partially on engineered fill or improved ground, or 2) spread column and continuous wall footings that derive support entirely from formational materials and are combined with piled foundations that are embedded into the formational materials. Piled foundations would be used where the depth to the surficial soils exceeds 5 feet. The *Deep Foundations* section of this report provides preliminary recommendations for piled foundations.

7.3.1 Reinforced Concrete Mat

Design of mat foundations often uses soil-structure interaction analyses that requires a Modulus of Vertical Subgrade Reaction (k) to model variations in subgrade stiffness. The subgrade modulus is developed from evaluations of settlement that consider actual loads, the geometry of the mat, and local variations in subsurface conditions.

For preliminary design purposes, we recommend a Modulus of Vertical Subgrade Reaction of 40 pounds per cubic inch (pci) for areas of the mat supported by formational soils, and 10 pci for areas of the mat supported by engineered fill or improved ground. These values assume a uniform bearing pressure of 2,000 pounds per square foot (psf). The areas supported by either formational soils or engineered fill/improved ground may be estimated for preliminary design purposes using the proposed basement level elevations with Figure 3B, Geotechnical Cross Section A-A', and assuming the cross-section extends east-west across the entire building footprint. The design should consider a differential settlement of 1 inch over a horizontal distance of 40 feet.

The recommended subgrade modulus may be revised through an iterative procedure with the Structural Engineer as design progresses, depending on the foundation geometry, load distribution, and basement foundation elevation.

7.3.2 Spread Column and Continuous Wall Footings

For preliminary evaluation purposes, spread column and continuous wall footings fully embedded in formational materials may be designed using parameters and recommendations below.

- Allowable vertical bearing pressure of 5,000 psf. The allowable bearing pressure may be increased by 500 psf per foot increase in width or depth to a value of up to 8,000 psf. The bearing pressure assumes level ground surrounds the footing.
- Allowable lateral bearing using a soil passive pressure of 450 pounds per cubic foot (pcf) combined with a sliding resistance estimated using a coefficient of friction of 0.35. The passive pressure assumes infinite level ground in front of the footing.
- Bearing pressure and soil passive pressure may be increased by one-third for short term seismic and wind loads.
- Minimum footing width of 18 inches and minimum footing embedment of 24 inches below lowest adjacent grade (see Figure 7, Shallow Foundation Dimension Details).
- Footings do not derive support from cut and fill without specific recommendations from a Geotechnical Engineer.
- Reinforcement should be in accordance with recommendations provided by the Structural Engineer.

Provided the shallow foundations are deepened where needed to bear directly within formational materials, the total settlement should not exceed 1 inch and the differential settlement over typical column spacing (horizontal distance of 30 to 40 feet) should not exceed ½ inch. Settlement should occur when building loads are applied.

7.4 Deep Foundations

The purpose of deep foundations is to transmit structure loads through the surficial soils (undocumented fill and alluvium) to the more competent formational materials. In our opinion, considering prior experience on projects with similar subsurface conditions, replacement types of piles such as Cast-In-Drilled-Hole (CIDH) piles should be suitable. Piling contractors may promote replacement pile alternatives, such as Auger-Cast-In-Place Piles (ACIP), based on their experience and specialist equipment. The recommendations below apply to both types of piles, although the maximum diameter of ACIPs is typically 2 feet. For preliminary design of piles, the depth to formational materials may be estimated using Figure 3B, Geotechnical Cross Section A-A' extending east-west across the entire building footprint.

7.4.1 Axial Capacity

Replacement piles typically derive axial capacity from shaft resistance and end bearing. The undocumented fill and alluvium should provide negligible shaft resistance. An allowable shaft resistance of 1,000 psf and an allowable end bearing of 20 kips per square-foot (ksf) may be used for preliminary design of piles embedded one pile diameter or more into formational materials or a vertical distance from the top of the formational materials that is equal to 3 feet, whichever embedment is greater.

7.4.2 Lateral Resistance

Resistance to lateral loads can be estimated using a passive soil pressure against the pile caps and grade beams and the bending resistance of the piles. Preliminary passive soil pressure may be estimated using the recommendations in the *Shallow Foundations* section. Sliding resistance should not be used.

Lateral capacity of the piles may be developed by the Structural Engineer using the computer program LPILE (Ensoft, 2016) using the p-y method. The recommended soil parameters and standard p-y curves to be used in the LPILE model are presented in Table 5.

Table 5. Preliminary LPILE Soil Parameters

Material Description	LPILE Soil Model	Design Parameters [2, 3]		
		Effective Unit Weight (pcf)	Friction Angle (degrees)	Undrained Cohesion (pcf)
Surficial Materials	Stiff Clay w/o Free Water (Reese)	115	-	1,000
Formational Materials Above 245' MSL [1]	Sand (Reese)	120	38	-
Formational Materials Below 245' MSL [1]	Sand (Reese)	57	38	-

1. Design ground water elevation is 245 feet MSL.
2. Default values for ε50 and k in LPILE are recommended for preliminary analyses.
3. Assumes a single pile configuration.

The above recommendations are intended for preliminary evaluation of deep foundations. Axial pile capacity curves and lateral pile resistances in the form of horizontal load versus deflection can be provided for specific pile diameters, loading, and arrangements upon request.

7.5 Interior Reinforced Concrete Slabs

7.5.1 Subgrade Support Conditions

Structural slabs are recommended where shallow and piled foundations will be used. A structural slab, rather than a slab-on-grade, is needed to avoid cracking of the slab near the transition in soil stiffness. The slab should be designed to span between the foundation elements without relying on support from the underlying surficial fill soils.

The upper 24 inches of soils below finished subgrade elevation for interior reinforced concrete slabs should consist of coarse-grained soils with a very low expansive potential (EI<20). Based on the EI testing conducted within potential cut areas at the site, we recommend removing and replacing the upper 24 inches of subgrade soils below interior concrete slabs with properly compacted very low expansive granular soils (EI<20).

7.5.2 Moisture Protection for Interior Slabs

Moisture protection should comply with requirements of the current CBC, American Concrete Institute (ACI 302.1R-15) and the desired functionality of the interior ground level spaces. The Architect typically specifies an appropriate level of moisture protection considering allowable moisture transmission rates for the flooring or other functionality considerations.

Moisture protection may be a “Vapor Retarder” or “Vapor Barrier” that use membranes with a thickness of 10 and 15 mil or more, respectively. The membrane may be placed between the concrete slab and the finished subgrade immediately below the slab, provided it is protected from puncture and repaired per the manufacturer’s recommendations if damaged.

Note the CBC specifies a Capillary Break, as defined and installed per the California Green Building Standards, with a Vapor Retarder. A Capillary Break should also be considered if the bottom on interiors slabs are with 10 feet of the design groundwater level.

7.6 Embedded Earth Retention

Permanent subterranean walls for structures are expected to be embedded cast-in-place reinforced concrete or sprayed concrete (shotcrete) walls constructed within a temporary excavation; space limitations at the site will most likely require the use of temporary shoring. Deep excavations may utilize typical soldier pile retention with or without temporary ground anchors depending on the depth of the excavation. However, the anchors may extend into the City of San Diego (City) Right-Of-Way (ROW) at some locations along the excavation, which would require their removal and/or de-tensioning. Temporary retention that supports the City ROW will require a shoring permit from the City.

7.6.1 Shoring

Cantilevered and tie-back anchored temporary retaining walls may be designed using the earth pressure diagrams and other geotechnical parameters provided in Figures 8A and 8B. Preliminary allowable bond stresses for anchors in surficial soils (undocumented fill and alluvium) and formational materials are provided in Figure 8B. However, the shoring designer should select the bond length, design bond stress, and hole diameter. Allowable soil friction and allowable passive soil resistance are provided for both surficial soils and formational materials. Level backfill conditions for shoring are anticipated at the site. For preliminary design of soldier piles, the depth to formational materials may be estimated using Figure 3B, Geotechnical Cross Section A-A' extending east-west across the entire building footprint. Note that excavations for soldier piles may extend into wet soils or below groundwater. Special construction methods may be needed for installation of soldier piles.

Typical shoring systems should be designed against geotechnical failure mechanisms, such as external stability, foundation heave, and hydraulic failure. The shoring designer should coordinate with the Geotechnical Engineer during the shoring design to address these potential failure mechanisms. The shoring designer is responsible for evaluating structural failure mechanisms, such as the lateral and axial capacity of the soldier pile (bending or penetration failure), rupture of the temporary ground anchor and yielding of the lagging. The shoring designer should verify locations of existing foundations and utilities to avoid anchor conflicts and should select appropriate tieback depths and inclinations. All tiebacks should be load tested during construction.

7.6.2 Permanent Subterranean Walls

7.6.2.1 Lateral Earth Pressures

Permanent subterranean walls that are restrained from lateral movement may be designed using the earth pressure diagram presented in Figure 8C. These lateral earth pressures were developed considering the relatively expansive undocumented fill and formational materials (see Table C-3). A generic vertical traffic surcharge of 250 psf may be used for 'q' in the diagrams for preliminary design purposes. Evaluation of the surcharge loads associated with specific vehicles, construction equipment and other loading above the walls should be considered when selecting the design surcharge value.

7.6.2.2 Subsurface Drainage and Waterproofing

The design of subterranean walls should provide an adequate drainage system behind the wall to collect water from possible transient sources, such as irrigation, surface runoff, or leaking underground utilities, to reduce the potential for hydrostatic pressure buildup behind the wall. A prefabricated drainage composite (CCW MiraDRAIN 6000 or equivalent) can be used to provide drainage. A collector system (CCW QuickDRAIN or equivalent) should be provided at the base of prefabricated drainage composite to allow the collected water from transient sources to drain to a suitable outlet.

Subterranean walls should be waterproofed for end use. Because of the potential for increased moisture from landscaping and underground utilities, it may be necessary to place the waterproofing over the entire height of the walls, depending on the functionality of the wall surface needed. A high degree of waterproofing may be needed if functionality requires the interior of the basement wall surface to be free of all leakage, seepage and damp patches. The lowest degree of waterproofing typically allows damp patches and minor leakage through construction joints.

7.7 Free Standing Gravity or Cantilever Retaining Walls

Site development may include relatively low height free standing gravity and/or cantilever retaining walls that could be constructed with masonry block or cast-in-place reinforced concrete. Some of the retaining wall designs may adopt City or County of San Diego Standards. Permanent cantilever retaining walls should be free to yield at the top at least ½ percent of the wall height and may be designed using the earth pressure diagram presented in Figure 8D. The lateral earth pressures provided assume the on-site expansive soils will be reused as backfill and require level backfill at the top of the wall. Figure 9 provides recommendations for subsurface drainage behind the wall to avoid the buildup of hydrostatic pressures from irrigation, surface runoff, or leaking underground utilities.

The toe pressures and backfill friction angles typically used for City and/or County Standard Drawings and corresponding retaining wall designs should not exceed the allowable bearing pressure where fill has been placed. However, there may be a need to selectively use the existing soil as backfill. A Geotechnical Engineer should review the requirements of the specific standard retaining wall design and where the wall will be used.

7.8 Exterior Surface Improvements

Alternatives are provided for asphalt concrete and Portland cement concrete (PCC) pavements and exteriors concrete slabs (e.g., sidewalks). Note the following items that apply to these alternatives:

- The upper 12 inches of pavement subgrade should be scarified immediately prior to constructing the pavements, brought to optimum moisture, and compacted to at least 95 percent of the maximum dry density per ASTM D1557.

- The upper 12 inches of sidewalk subgrade should be scarified immediately prior to constructing the sidewalks, brought to optimum moisture, and compacted to at least 90 percent of the maximum dry density per ASTM D1557.

- Aggregate base, where specified below, should be compacted to 95 percent of the maximum dry density per ASTM D1557. Aggregate base should conform to the Standard Specifications for Public Works Construction (SSPWC) Section 200-2.

- A subgrade R-Value of 20 may be assumed for preliminary design. This assumes the upper 3-feet of finished subgrade materials have an R-Value of 20 or greater. R-Value tests should be completed on the finished subgrade for final design and construction of asphalt pavement sections.

7.8.1 Asphalt Concrete Pavements

Asphalt concrete pavement design was conducted in general accordance with the Caltrans Highway Design Manual (Topic 633.1). A Preliminary R-Value of 20 was used for design. Traffic Indices of 5.0, 7.0, and 9.0 were assumed for preliminary design purposes based on our understanding of the project and Topic 633.1. The project Civil Engineer should confirm the appropriate Traffic Indices for design and consult with Group Delta if the assumed Traffic Indices need to be revised. Based on the assumed Traffic Indices and R-Value, the following minimum structural sections are recommended for new asphalt concrete pavements.

Table 6. Preliminary Asphalt Concrete Pavement Sections

Traffic Index	Asphalt Section	Base Section on Subgrade with R-Value ~ 20
5.0	3 inches	8 inches
7.0	4 inches	12 inches
9.0	5 inches	17 inches

Asphalt concrete should conform to Section 400-4 of the SSPWC and should be compacted to between 91 and 97 percent of the maximum theoretical density per Caltrans Section 39 requirements (Caltrans Test 309 also known as Rice specific gravity or ASTM D2041).

7.8.2 Portland Cement Concrete

Concrete pavement design was conducted in general accordance with the simplified design procedure of the Portland Cement Association. This methodology is based on a 20-year design life. For design, it was assumed that aggregate interlock would be used for load transfer across control joints. Concrete paving should have a minimum flexural strength (modulus of rupture) of 600 psi. The subgrade materials were assumed to provide “low” support. Based on the assumptions described above and using a Traffic Index of 5.0, we recommend that the PCC pavement sections at the site consist of at least six inches of concrete placed over six inches of compacted aggregate base. For heavier traffic areas (Traffic Index of 7.0 and greater), seven inches of concrete over six inches of aggregate base is recommended.

Crack control joints should be constructed for all PCC pavements on a maximum spacing of 10 feet, each way. Concentrated truck traffic areas, such as truck parking areas, trash truck aprons and loading docks, should be reinforced with number 4 bars on 18-inch centers, each way.

7.8.3 Exterior Concrete Slabs

Exterior slabs and sidewalks should be at least 4 inches thick. Crack control joints should be placed on a maximum spacing of 10-foot centers, each way, for slabs, and on 5-foot centers for sidewalks. The potential for differential movements across the control joints may be reduced by using steel reinforcement. Typical steel reinforcement would consist of 6x6 W2.9/W2.9 welded wire fabric placed securely at mid-height of the slab or sidewalk. Expansion Index (EI) tests should be performed on the finished subgrade and expansive soils below exterior slabs and sidewalks should be mitigated per the Geotechnical Engineer as needed if and where they occur during construction.

8.0 CONSTRUCTION CONSIDERATIONS

8.1 General

Construction of the subterranean parking levels and foundations will need to adapt to the geotechnical conditions at the site. Summarized below are the primary geotechnical related construction considerations known at this time.

- The Contractor should implement a program to monitor potential horizontal or vertical movement of the ground surrounding a deep excavation. Existing utilities to remain in place, City of San Diego pavements, sidewalks and infrastructure, and structures, including the pedestrian bridge and nearby buildings and retaining walls, should be protected in-place during construction. The program usually incorporates deformation monitoring points installed on the wall and on the ground and structures behind the wall. A baseline dataset is established before excavation with weekly or more frequent readings during the stages of construction that have the potential to cause movement.
- Temporary anchorages in the City of San Diego ROW will need to be removed and de-tensioned per their requirements.
- The installation method(s) for replacement piles (CIDH piles or similar) need to manage shallow ground water and potentially, locally caving soils.
- For base resistance to be included in the total axial capacity, the bottom of the CIDH pile shaft requires proper cleaning and inspection and the end bearing needs to be verified by a full-scale pile load test.
- Drilling for piled foundations and temporary ground anchors may encounter cemented zones and cobbles within the formational materials. The Contractor should independently review the exploration logs in this report to assess installation conditions.
- Additional geotechnical explorations may better characterize the depth to formational materials across the site and depth to ground water, and could potentially reduce the cost of temporary retention systems and permanent foundation systems. These explorations could be performed after demolition of the existing structure.

8.2 CAL/OSHA Soil Types

Temporary slopes may be used where sufficient area allows for open cut excavation. Temporary slopes may also be needed to install shallow underground utilities. Trench boxes and shields or timber and hydraulic shoring may be needed for deeper installations.

The design and construction of these systems along with their maintenance and monitoring during construction is the responsibility of the Contractor. The Contractor should have their Competent Person evaluate the subsurface conditions exposed during excavation to consider permissible temporary slope inclinations, loads and other measures as required by California OSHA (CAL/OSHA, 2018).

Based on the data interpreted from subsurface exploration, the design of these types of temporary excavations may assume Soil Type C for planning purposes. For trench boxes and shields or timber and hydraulic shoring, CAL/OSHA recommends a lateral earth pressure equal to 80H (psf) for Soil Type C (often referred to a Soil Type C-80), subject to the proprietary aspects of the system adopted.

The Contractor should note the materials encountered in construction excavations could vary significantly across the site. This assessment of Soil Type is based on preliminary classifications of soils encountered in widely spaced explorations. The Competent Person should also observe temporary excavations at regular intervals for maintenance and evidence of potential instability.

9.0 LIMITATIONS

The recommendations in this report are preliminary and subject to revision from changes that occur during design development, final design, or from the results of field testing or actual subsurface conditions encountered during construction. Group Delta needs to continue to be part of the project design and construction for these recommendations to remain valid. If another geotechnical consultant provides these services, they should prepare a letter indicating their intent to assume the responsibilities of the project Geotechnical Engineer-of-Record. This letter should also indicate their concurrence with the recommendations in the report or revise them as needed to assume the role of the project Geotechnical Engineer-of-Record.

This report was prepared using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing in similar localities. No warranty, express or implied, is made as to the conclusions and professional opinions included in this report. The findings of this report are valid as of the present date. However, changes in the condition of a property can occur with the passage of time, whether due to natural processes or the work of humans on this or adjacent properties. In addition, changes in applicable or appropriate standards of practice may occur from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

10.0 REFERENCES

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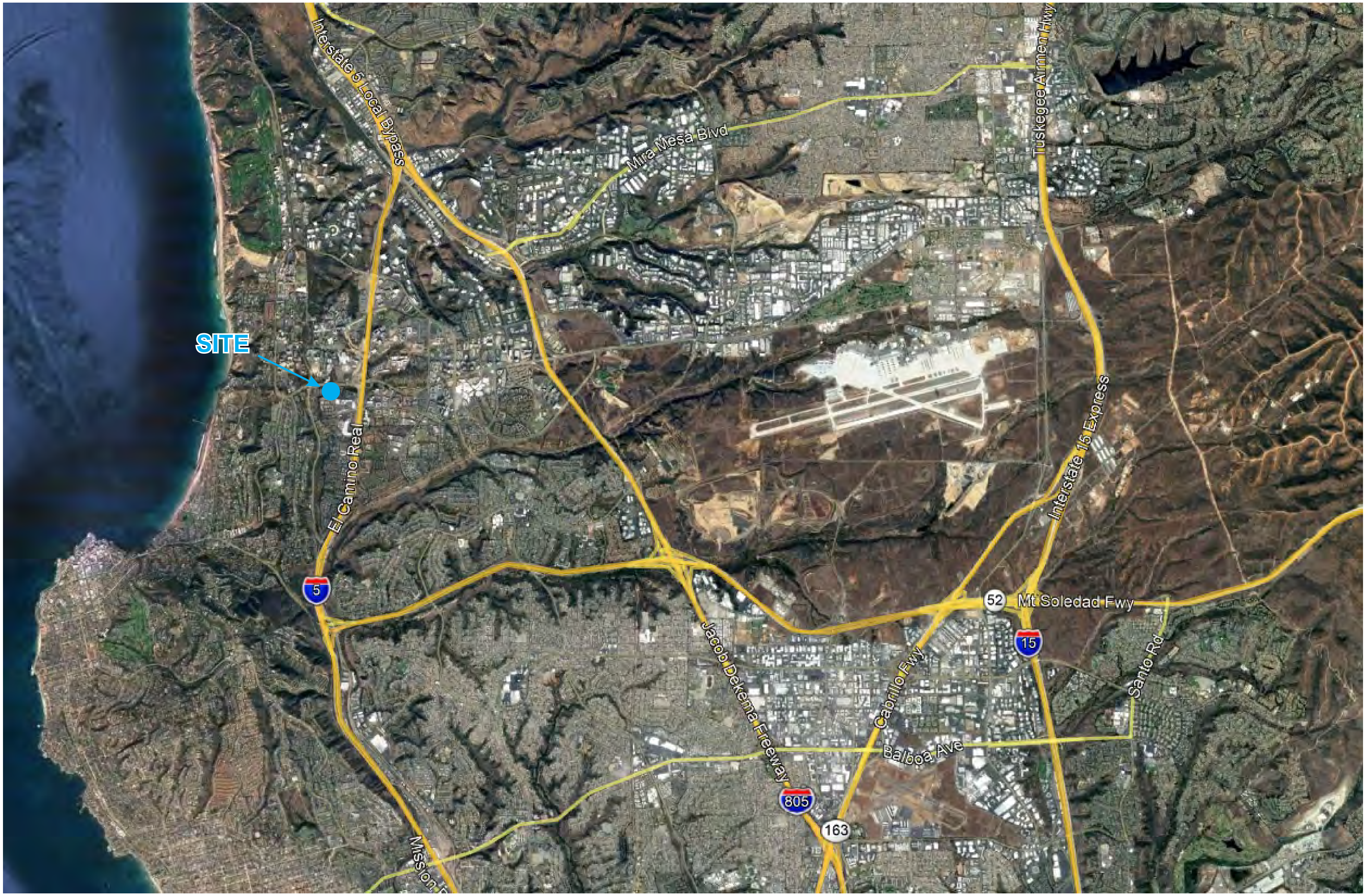
FIGURES

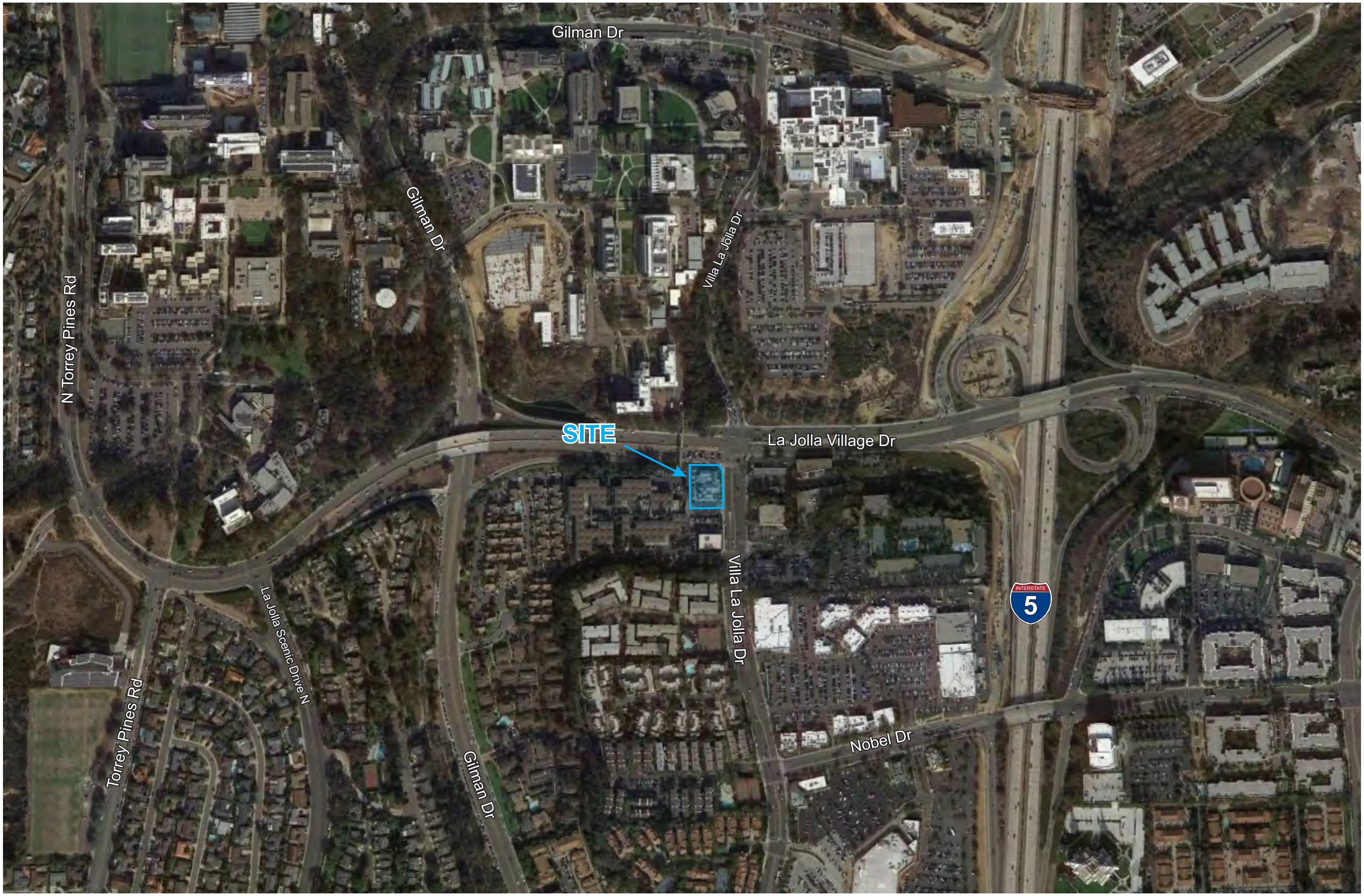


N

NO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	**SITE LOCATION MAP**	PROJECT NUMBER SD644	FIGURE NUMBER **1A**

REFERENCE: GOOGLE EARTH PRO 7.3.2.5776, IMAGERY DATE NOVEMBER 17, 2018.

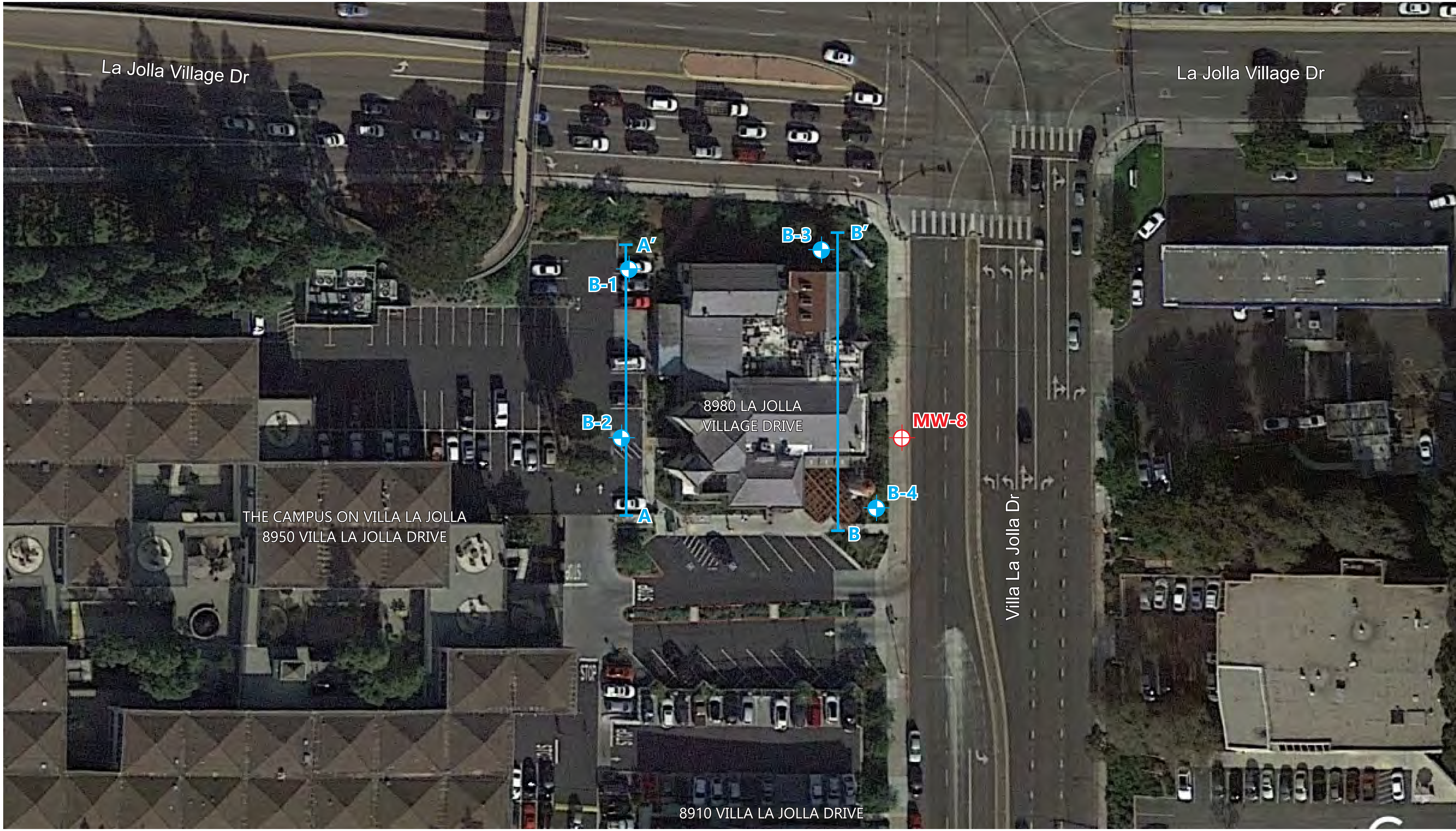


N

NO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	SITE VICINITY MAP	PROJECT NUMBER SD644	FIGURE NUMBER 1B

REFERENCE: GOOGLE EARTH PRO 7.3.2.5776, IMAGERY DATE DECEMBER 7, 2017.



EXPLANATION:

B-4 — APPROXIMATE LOCATION OF CURRENT BORING (GROUP DELTA, 2019 & 2020).

MW-8 — APPROXIMATE LOCATION OF RELEVANT PREVIOUS MONITORING WELL (ETIC, 2008).

B–B′ — APPROXIMATE LOCATION OF GEOTECHNICAL CROSS SECTION.

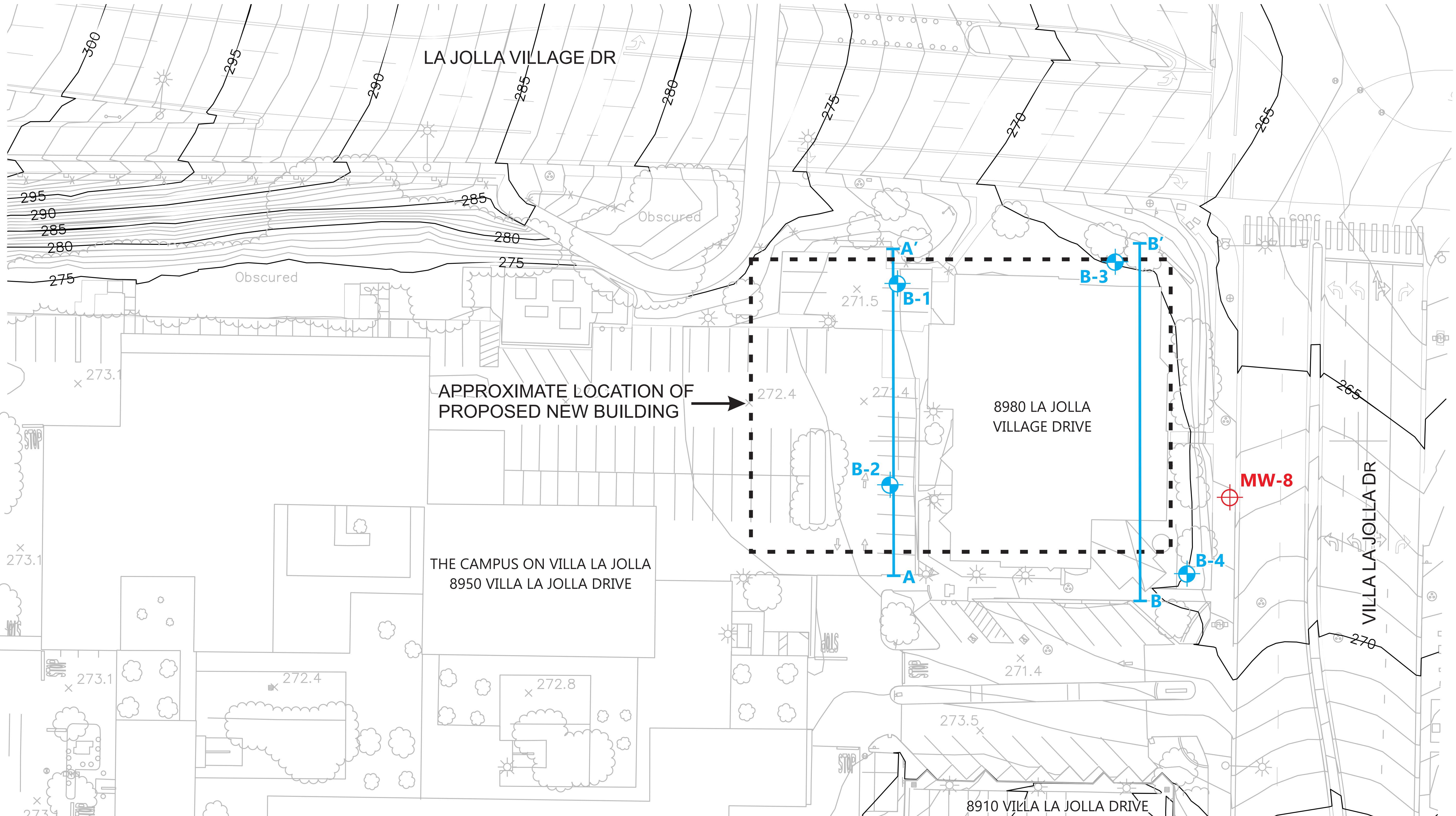
N

APPROXIMATE SCALE IN FEET

0 25 50

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	EXPLORATION LOCATIONS ON AERIAL PHOTOGRAPH	PROJECT NUMBER SD644	FIGURE NUMBER 2A

REFERENCE: GOOGLE EARTH PRO 7.3.2.5776, IMAGERY DATE DECEMBER 7, 2017.



EXPLANATION:

B-4 — APPROXIMATE LOCATION OF CURRENT BORING (GROUP DELTA, 2019 & 2020).

MW-8 — APPROXIMATE LOCATION OF RELEVANT PREVIOUS MONITORING WELL (ETIC, 2008).

B' — B — APPROXIMATE LOCATION OF GEOTECHNICAL CROSS SECTION.

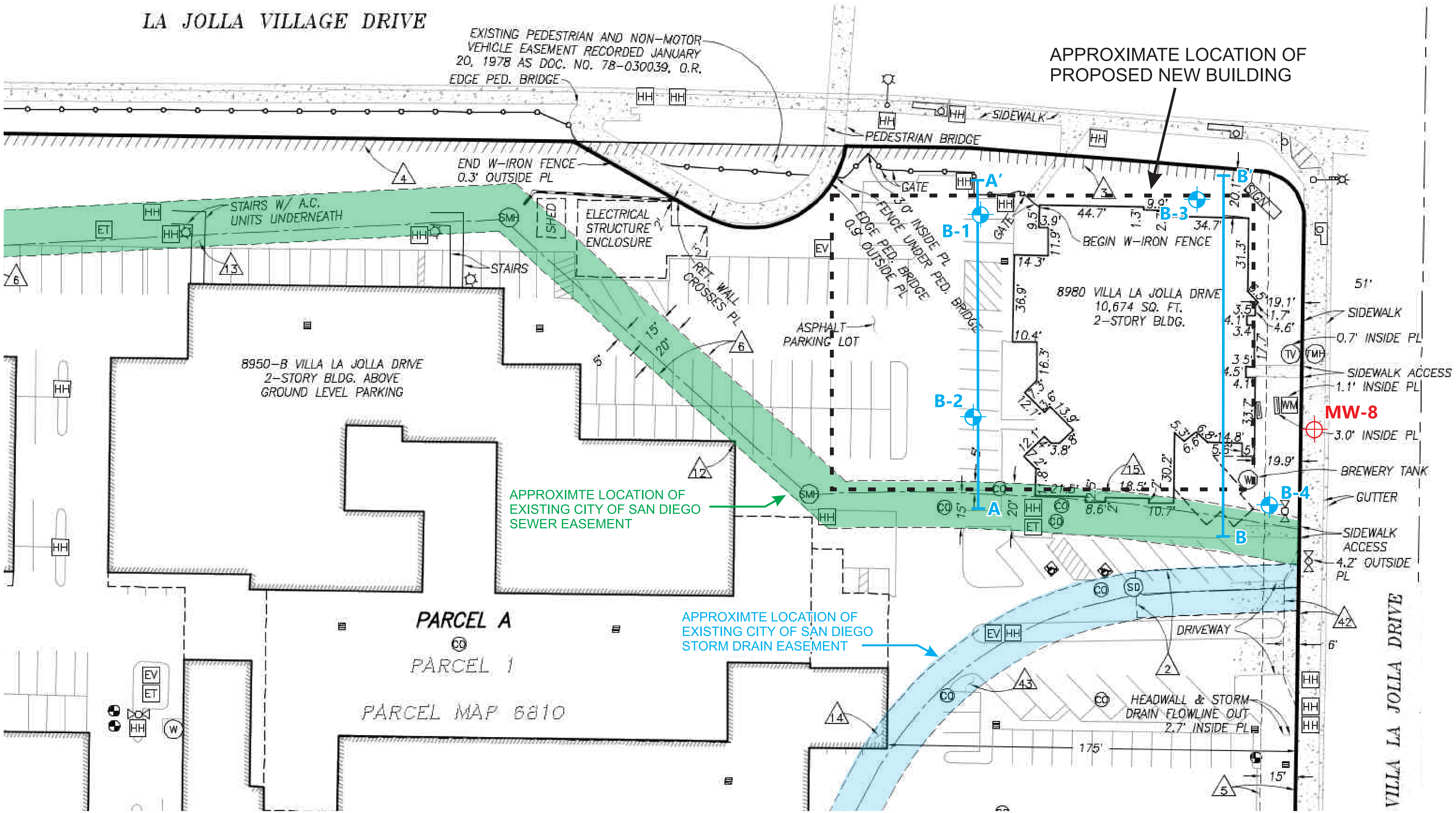
N

APPROXIMATE SCALE IN FEET

0 20 40

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	**EXPLORATION LOCATIONS ON TOPOGRAPHIC PLAN**	PROJECT NUMBER SD644	FIGURE NUMBER **2B**

REFERENCE: TERRASCRIBE INC., CAMPUS ON VILLA LA JOLLA PHOTOGRAPHIC SURVEY, DATE OF PHOTOGRAPHY NOVEMBER 26, 2019.



EXPLANATION:

B-4 — APPROXIMATE LOCATION OF CURRENT BORING (GROUP DELTA, 2019 & 2020).

MW-8 — APPROXIMATE LOCATION OF RELEVANT PREVIOUS MONITORING WELL (ETIC, 2008).

B′ — B — APPROXIMATE LOCATION OF GEOTECHNICAL CROSS SECTION.

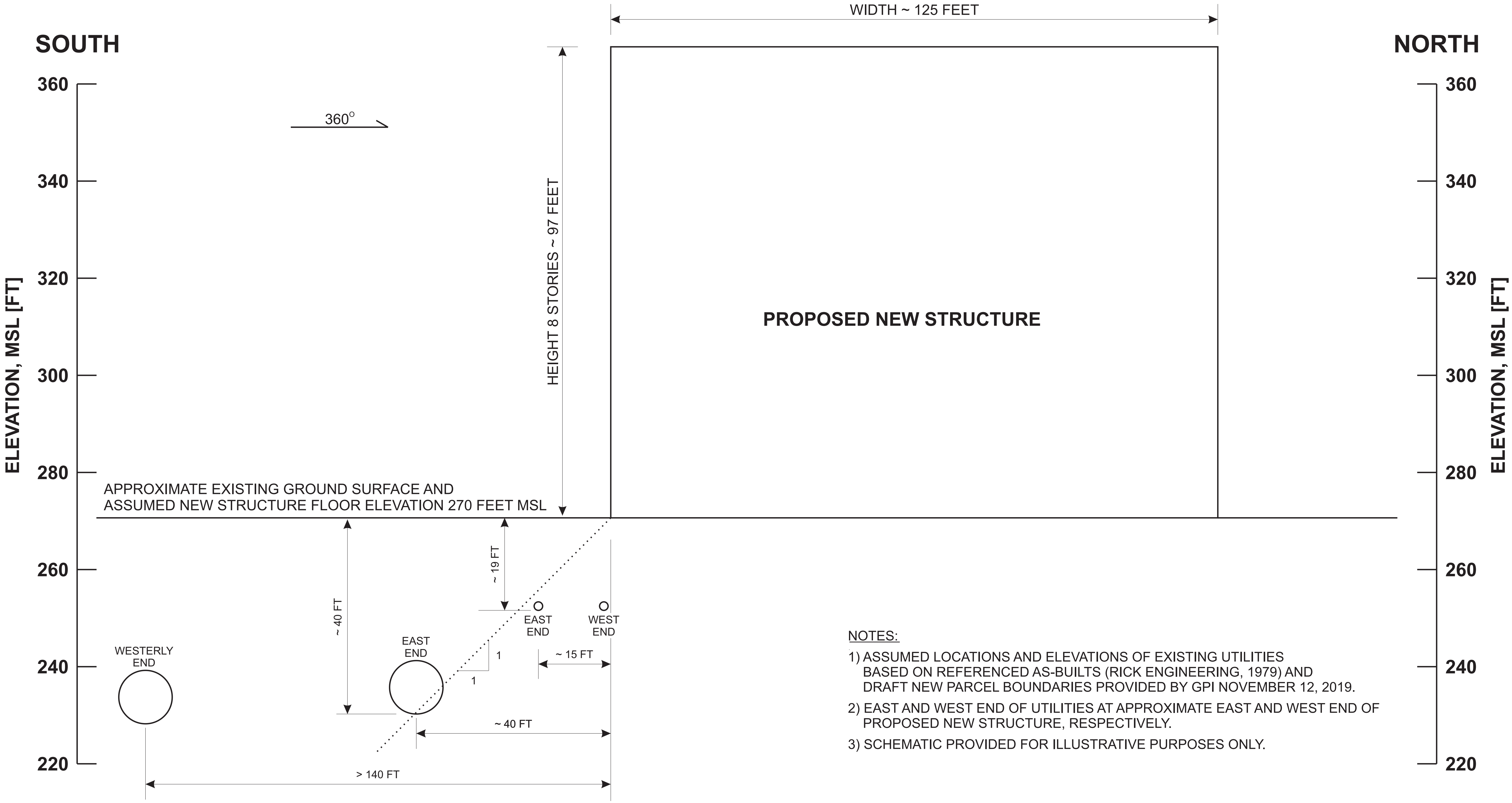
N

APPROXIMATE SCALE IN FEET

0 20 40

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	EXPLORATION LOCATIONS ON LAND TITLE SURVEY	PROJECT NUMBER SD644	FIGURE NUMBER 2C

REFERENCE: HUNSAKER & ASSOCIATES SAN DIEGO, INC., ALTA / NSPS LAND TITLE SURVEY, THE CAMPUS ON VILLA LA JOLLA, CITY OF SAN DIEGO, CALIFORNIA, SHEET 2 OF 2, ORIGINAL SURVEY DATED DPRIL 4, 2018.



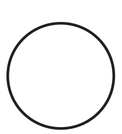
NOTES:

1) ASSUMED LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES BASED ON REFERENCED AS-BUILTS (RICK ENGINEERING, 1979) AND DRAFT NEW PARCEL BOUNDARIES PROVIDED BY GPI NOVEMBER 12, 2019.

2) EAST AND WEST END OF UTILITIES AT APPROXIMATE EAST AND WEST END OF PROPOSED NEW STRUCTURE, RESPECTIVELY.

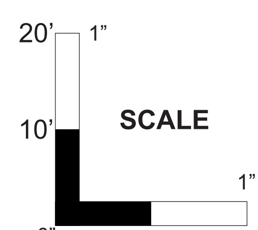
3) SCHEMATIC PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY.

EXPLANATION:

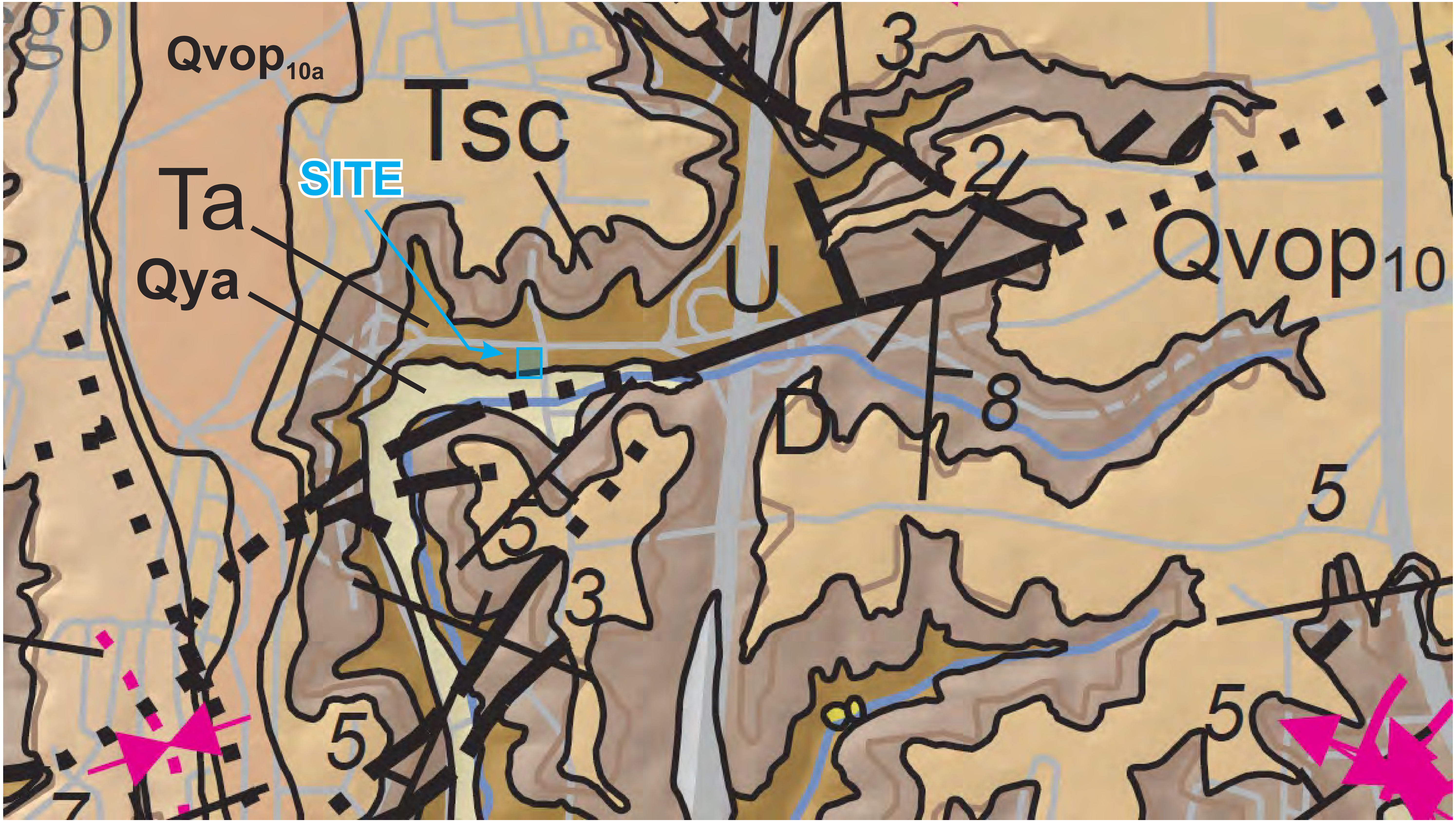


ASSUMED LOCATION OF EXISTING CITY OF SAN DIEGO 132-INCH DIAMETER MULTIPLATE STORM DRAIN

ASSUMED LOCATION OF EXISTING CITY OF SAN DIEGO 21-INCH DIAMETER VITRIFIED CLAY PIPE (VCP) SEWER



PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	SCHEMATIC OF EXISTING DEEP UTILITIES	PROJECT NUMBER SD644	FIGURE NUMBER **2D**



EXPLANATION:

Qya - Young alluvial flood-plain deposits (Holocene and late Pleistocene)

Qvop - Very old paralic deposits, undivided (middle to early Pleistocene)

Tsc - Scripps Formation (middle Eocene)

Ta - Ardath Shale (middle Eocene)

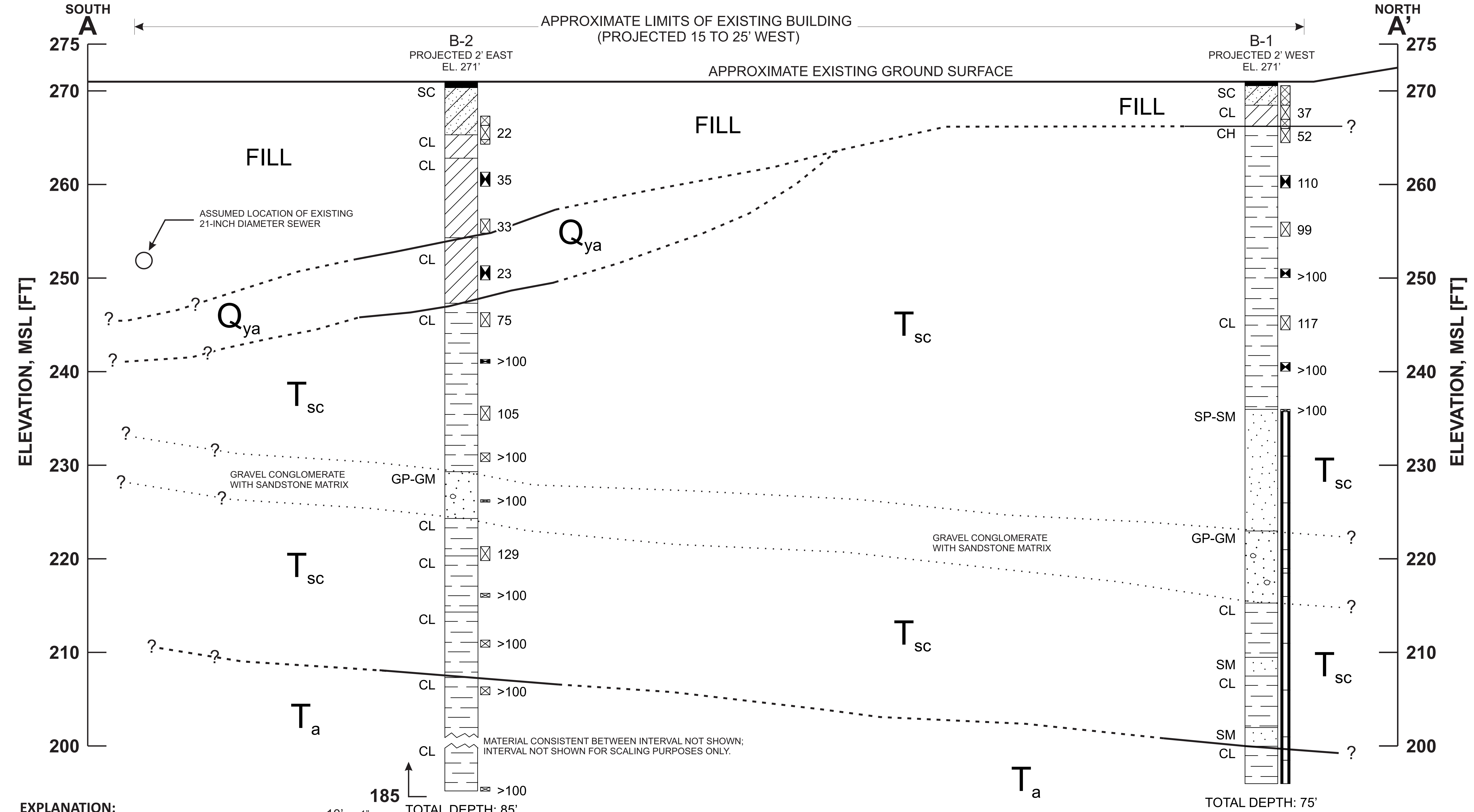
N

APPROXIMATE SCALE IN MILES

0 1/16 1/8

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	LOCAL GEOLOGY MAP	PROJECT NUMBER SD644	FIGURE NUMBER 3A

REFERENCE: KENNEDY AND TAN (2008). GEOLOGIC MAP OF THE SAN DIEGO 30' X 60' QUADRANGLE, CALIFORNIA, SCALE 1:100,000.



EXPLANATION:

-?- - - ——	APPROXIMATE LOCATION OF GEOLOGIC CONTACT, DASHED WHERE INFERRED, QUERIED WHERE UNCERTAIN
FILL	UNDOCUMENTED FILL
Q_{ya}	QUARTERNARY YOUNG ALLUVIUM
T_{sc}	TERTIARY SCRIPPS FORMATION
T_a	TERTIARY ARDATH SHALE

SCALE

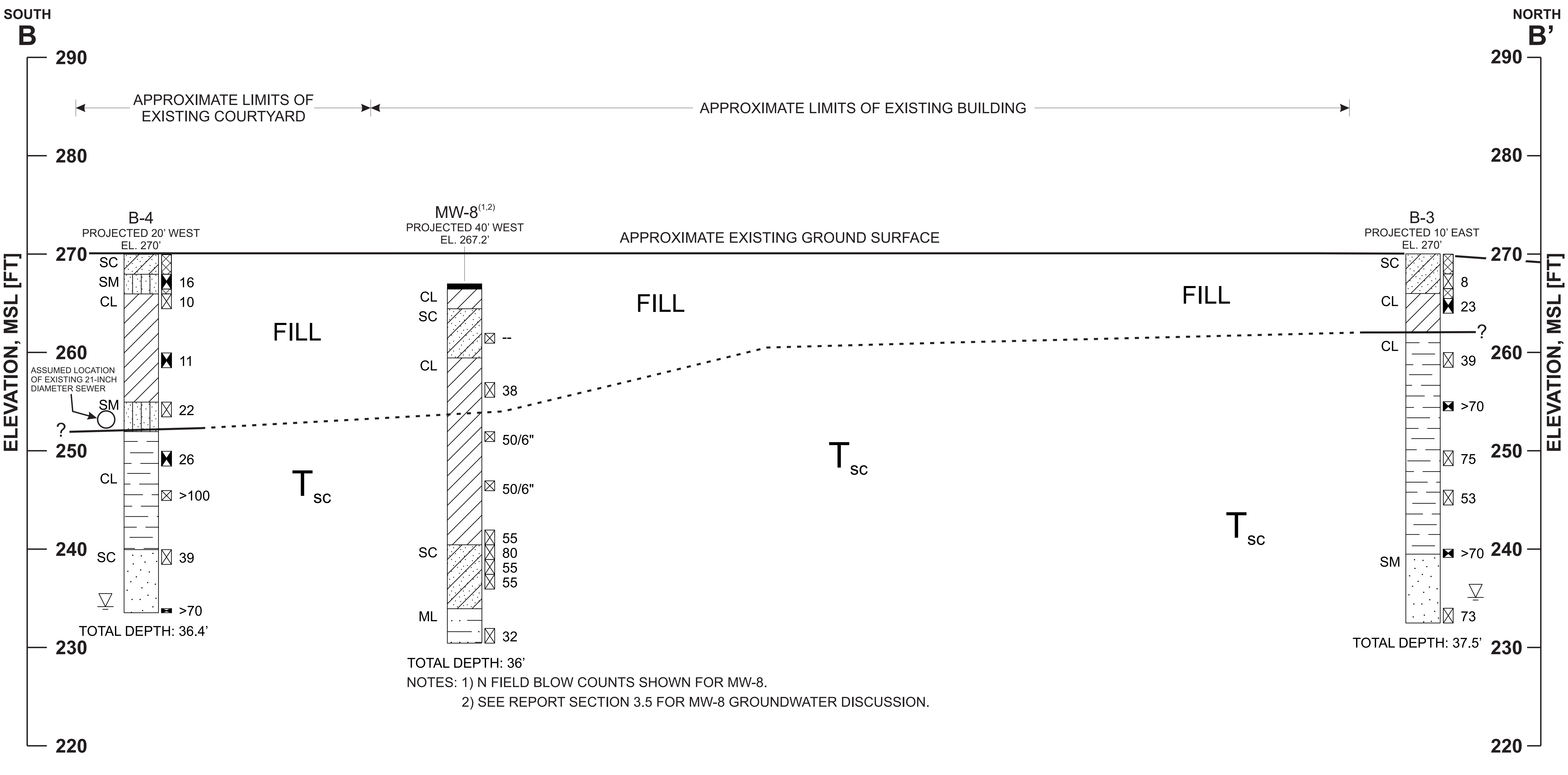
10' 1"
5'
0' 5' 10'
1"

BORING LOG

USCS SOIL TYPE — SC, CL, CL

BULK SAMPLE
SPT SAMPLER
37, 52 — N60 BLOW COUNTS
MOD CAL SAMPLER
CORE BARREL SAMPLER

PROJECT NAME	FIGURE NAME	GROUP DELTA
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	GEOTECHNICAL CROSS SECTION A-A'	PROJECT NUMBER: SD644 FIGURE NUMBER: 3B



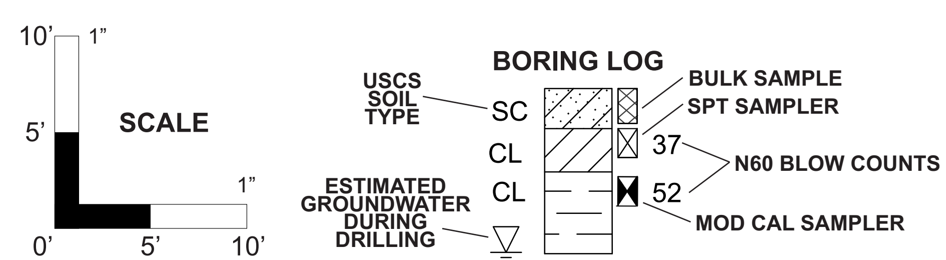
EXPLANATION:

-?- - - —— APPROXIMATE LOCATION OF GEOLOGIC CONTACT, DASHED WHERE INFERRED, QUERIED WHERE UNCERTAIN

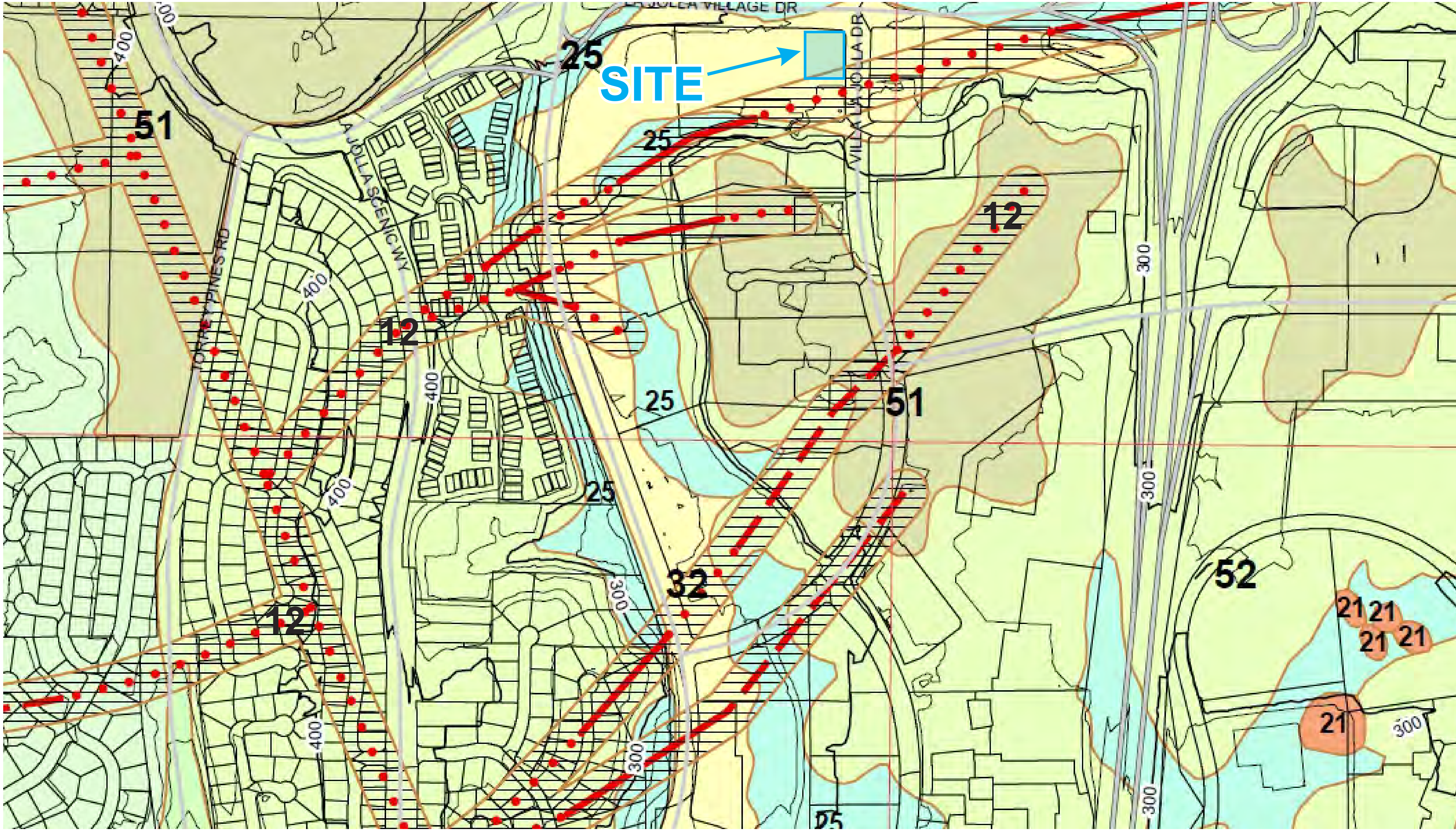
FILL UNDOCUMENTED FILL

Q_{ya} QUARTERNARY YOUNG ALLUVIUM

T_{sc} TERTIARY SCRIPPS FORMATION



PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	GEOTECHNICAL CROSS SECTION B-B'	PROJECT NUMBER SD644	FIGURE NUMBER 3C



EXPLANATION:

12 - *FAULT ZONE* - Potentially Active, Inactive, Presumed Inactive, or Activity Unknown
25 - *SLIDE-PRONE FORMATIONS* - Ardath: neutral or favorable geologic structure
32 - *LIQUEFACTION* - Low Potential -- fluctuating groundwater minor drainages
52 - *OTHER TERRAIN* - Other level areas, gently sloping to steep terrain

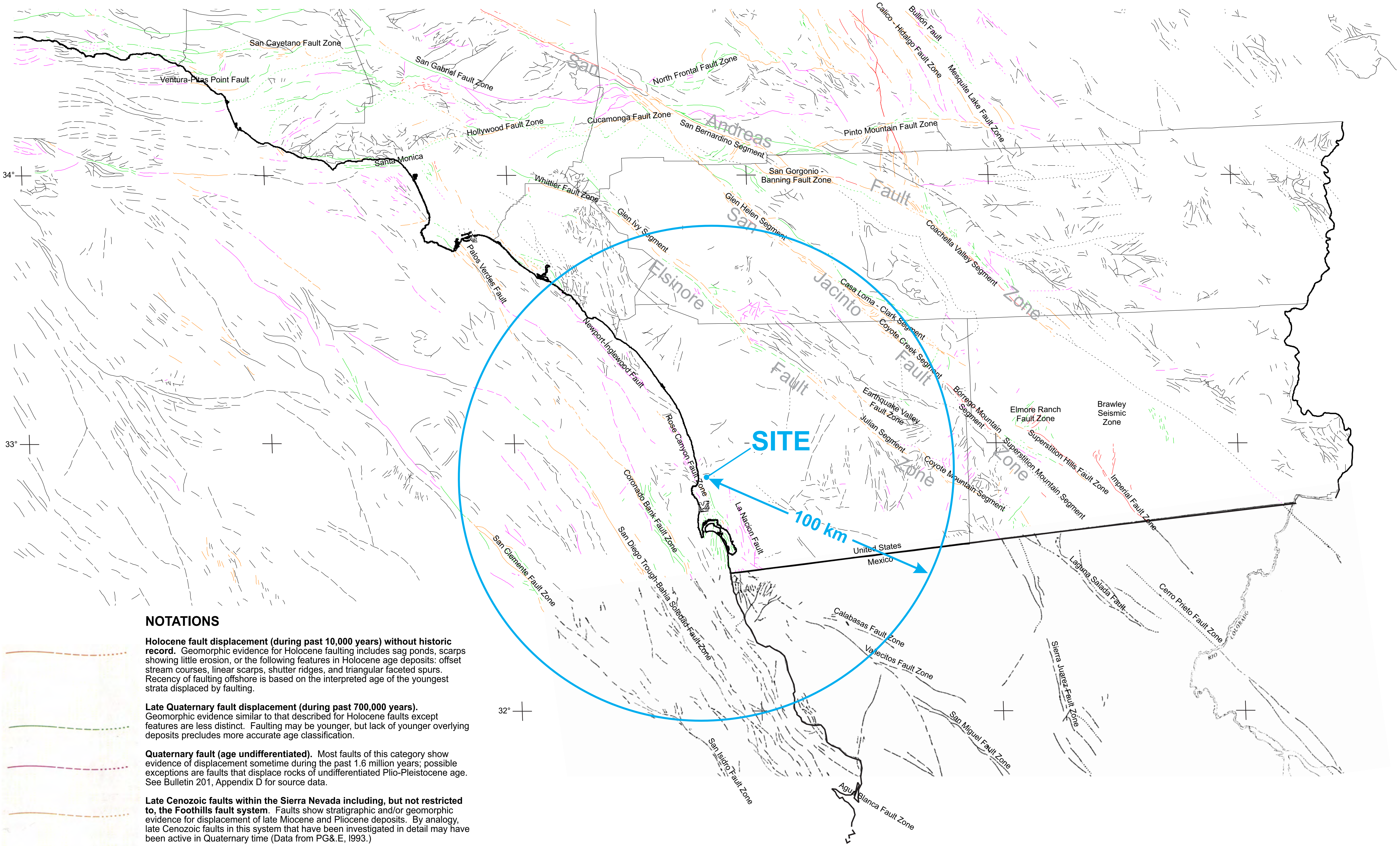
Fault
Inferred Fault
Concealed Fault

N

APPROXIMATE SCALE IN FEET
0 200 400

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	SEISMIC SAFETY MAP	PROJECT NUMBER SD644	FIGURE NUMBER 4

REFERENCE: CITY OF SAN DIEGO, SEISMIC SAFETY STUDY, GEOLOGIC HAZARDS AND FAULTS, GRID TILE 30, DATED APRIL 3, 2008.



NOTATIONS

Holocene fault displacement (during past 10,000 years) without historic record. Geomorphic evidence for Holocene faulting includes sag ponds, scarps showing little erosion, or the following features in Holocene age deposits: offset stream courses, linear scarps, shutter ridges, and triangular faceted spurs. Recency of faulting offshore is based on the interpreted age of the youngest strata displaced by faulting.

Late Quaternary fault displacement (during past 700,000 years). Geomorphic evidence similar to that described for Holocene faults except features are less distinct. Faulting may be younger, but lack of younger overlying deposits precludes more accurate age classification.

Quaternary fault (age undifferentiated). Most faults of this category show evidence of displacement sometime during the past 1.6 million years; possible exceptions are faults that displace rocks of undifferentiated Plio-Pleistocene age. See Bulletin 201, Appendix D for source data.

Late Cenozoic faults within the Sierra Nevada including, but not restricted to, the Foothills fault system. Faults show stratigraphic and/or geomorphic evidence for displacement of late Miocene and Pliocene deposits. By analogy, late Cenozoic faults in this system that have been investigated in detail may have been active in Quaternary time (Data from PG&.E, I993.)

Pre-Quaternary fault (older than 1.6 million years) or fault without recognized Quaternary displacement. Some faults are shown in this category because the source of mapping used was of reconnaissance nature, or was not done with the object of dating fault displacements. Faults in this category are not necessarily inactive.

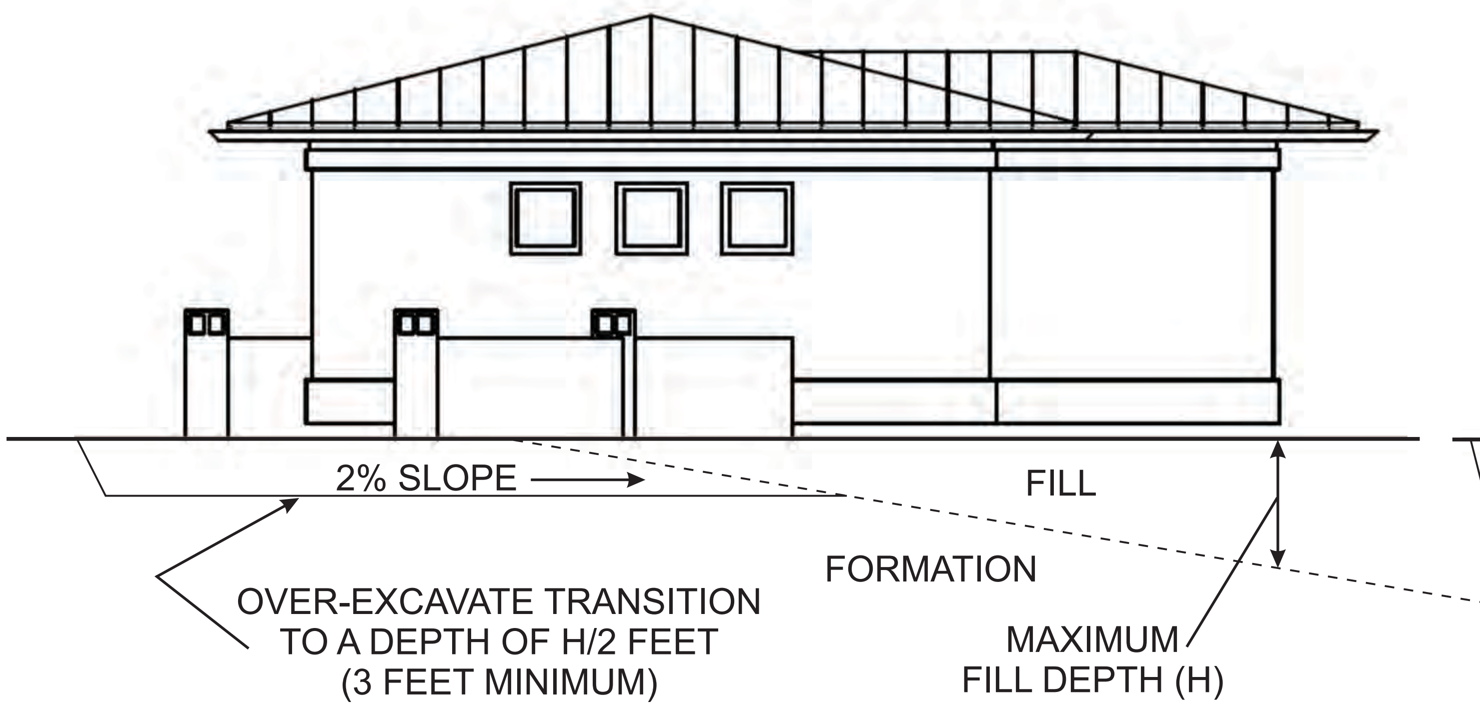
N

APPROXIMATE SCALE IN KM

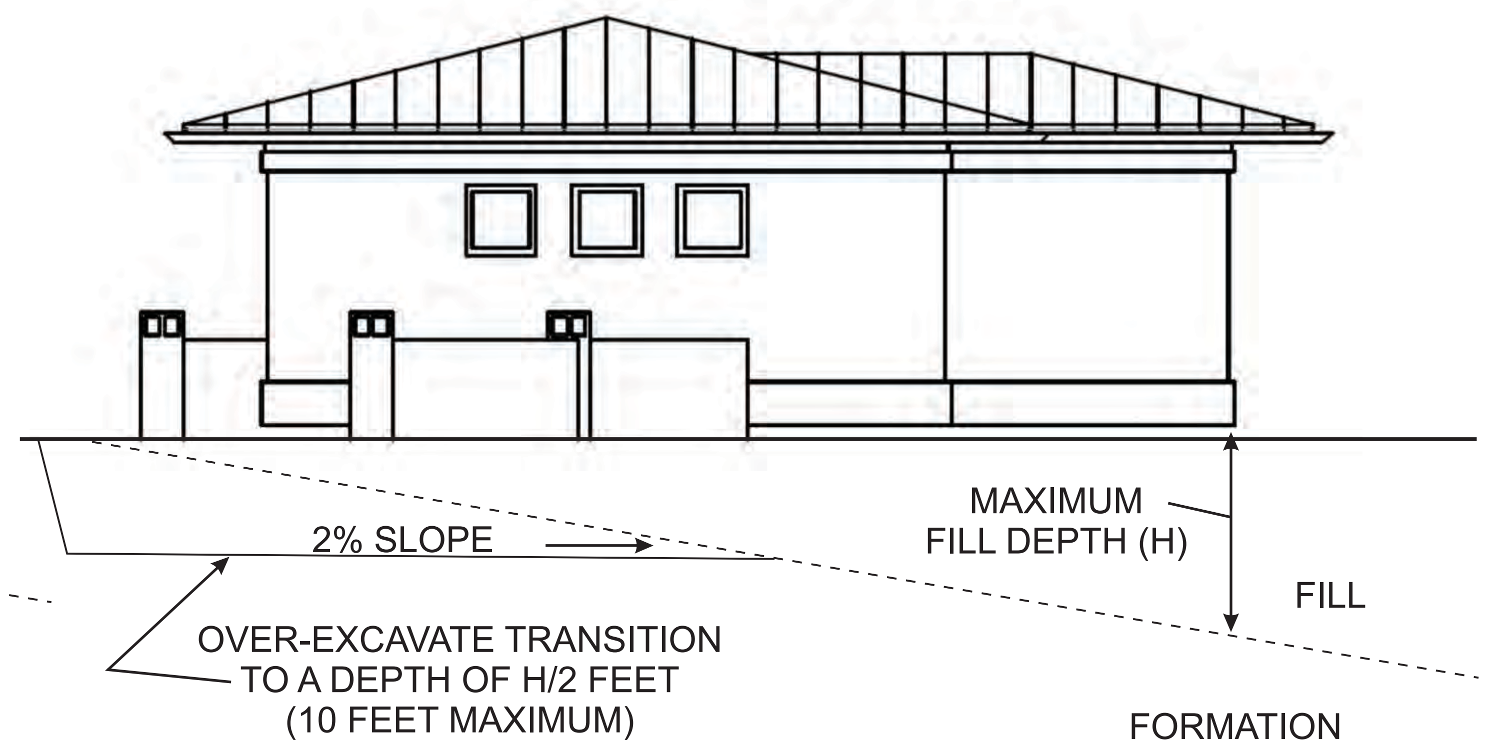
0 20 40

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	FAULT LOCATION MAP	PROJECT NUMBER SD644	FIGURE NUMBER 5

CUT/FILL TRANSITION



DEEP FILL TRANSITION



NOTES

1) Structures supported on shallow foundations should not cross cut/fill nor deep fill transitions due to the potential for adverse differential movement. Structures, including retaining walls, should not cross cut/fill transitions without specific recommendations from the Geotechnical Engineer.

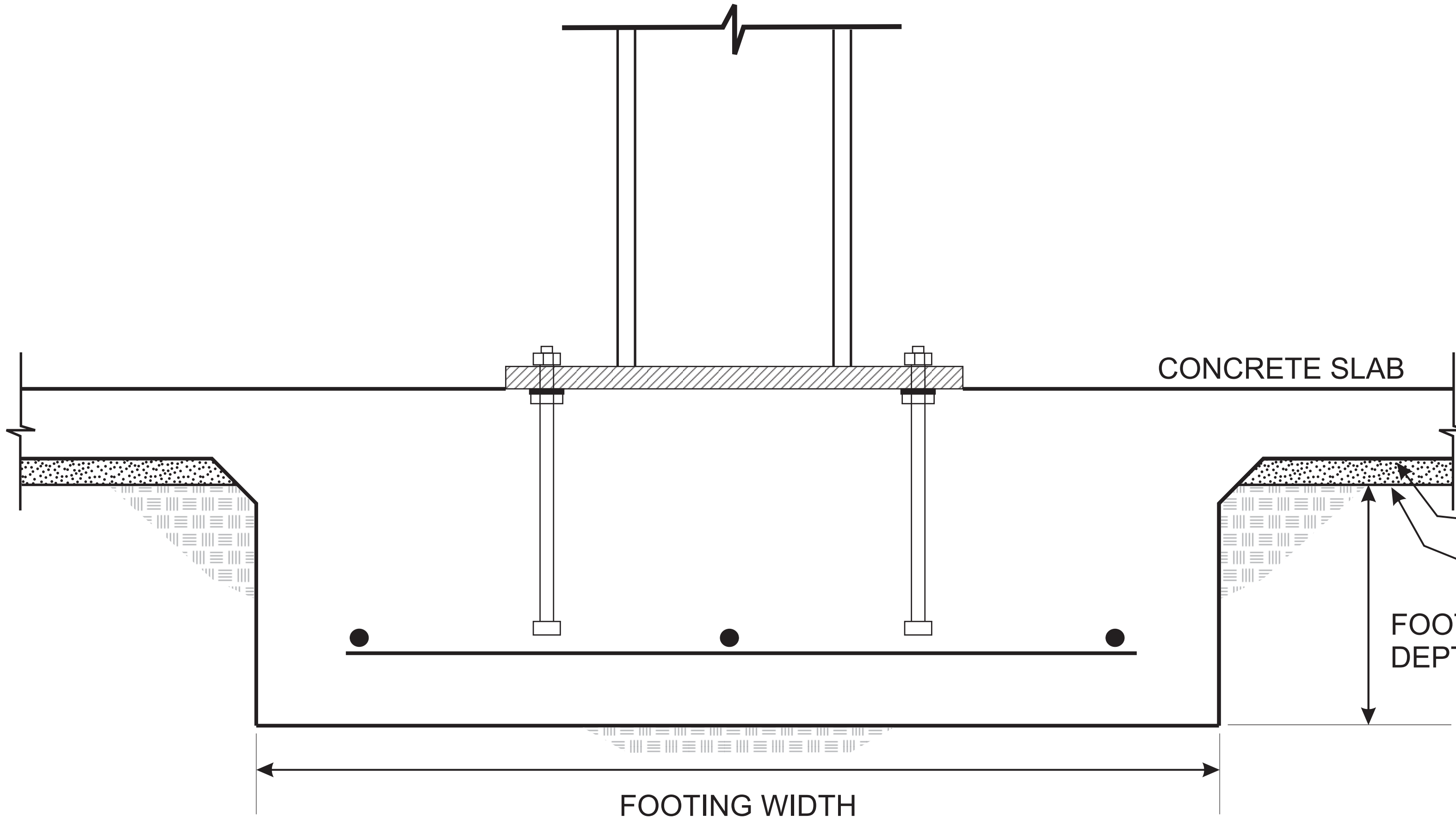
2) For building pads underlain by both cut/fill and deep fill transitions, the cut portion of the pads should be over-excavated to a depth of H/2 or 3 feet, whichever is greater, where H is equal to the greatest depth of fill beneath the building foundations.

3) Over-excavations should extend at least 3 feet below slab subgrade, and do not need to extend more than 10 feet below slab subgrade.

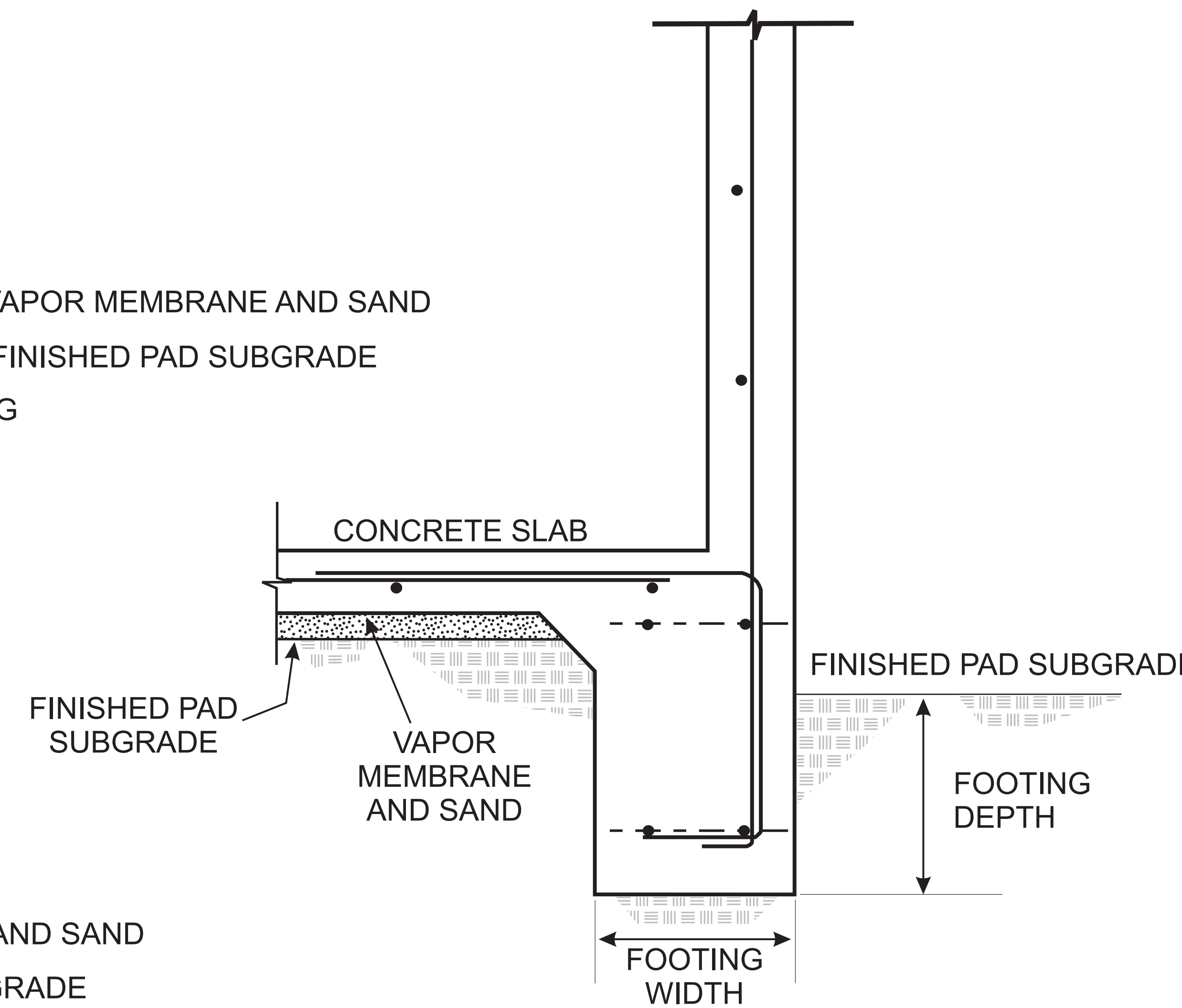
4) Over-excavations should extend at least 5 feet beyond the perimeters of the building foundations, including any isolated column footings.

NOT TO SCALE

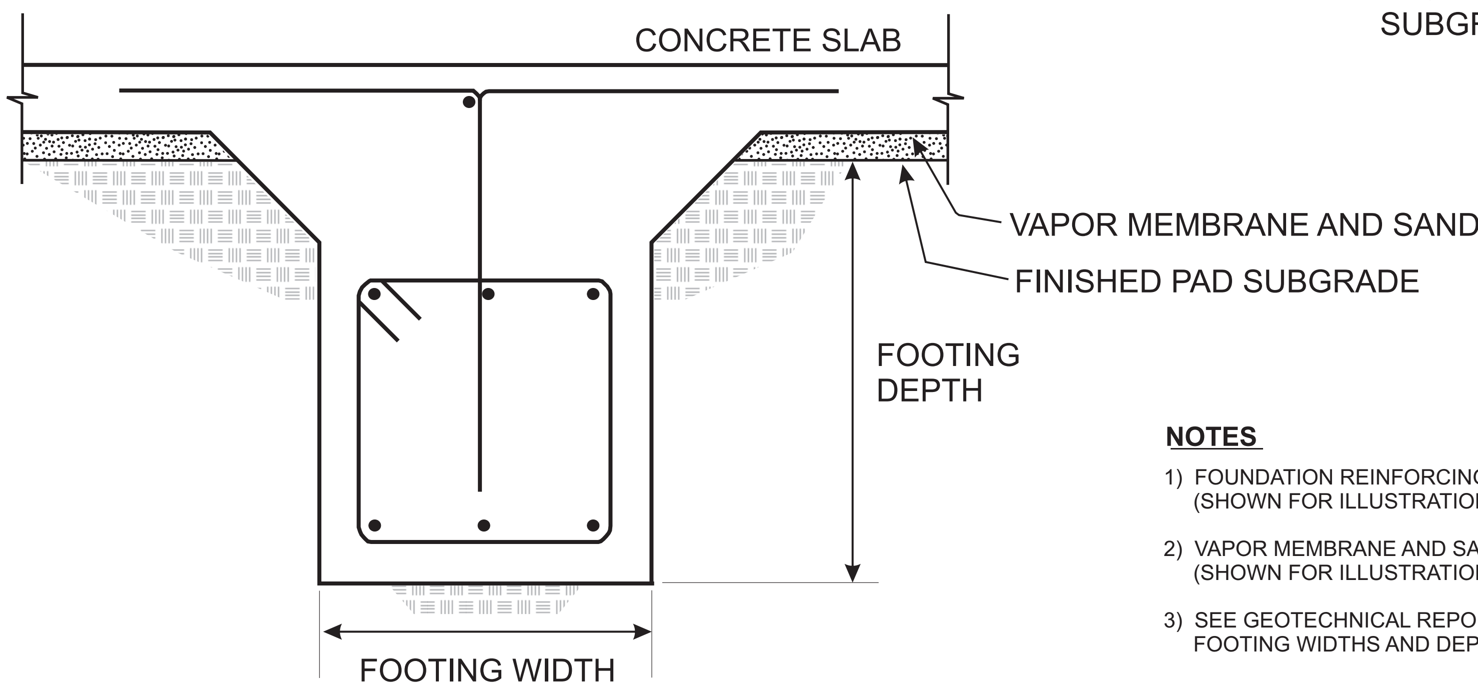
PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	TRANSITION AREA OVER-EXCAVATION DETAILS	PROJECT NUMBER SD644	FIGURE NUMBER 6



COLUMN FOOTING



EXTERIOR CONTINUOUS FOOTING



INTERIOR CONTINUOUS FOOTING

NOT TO SCALE

NOTES

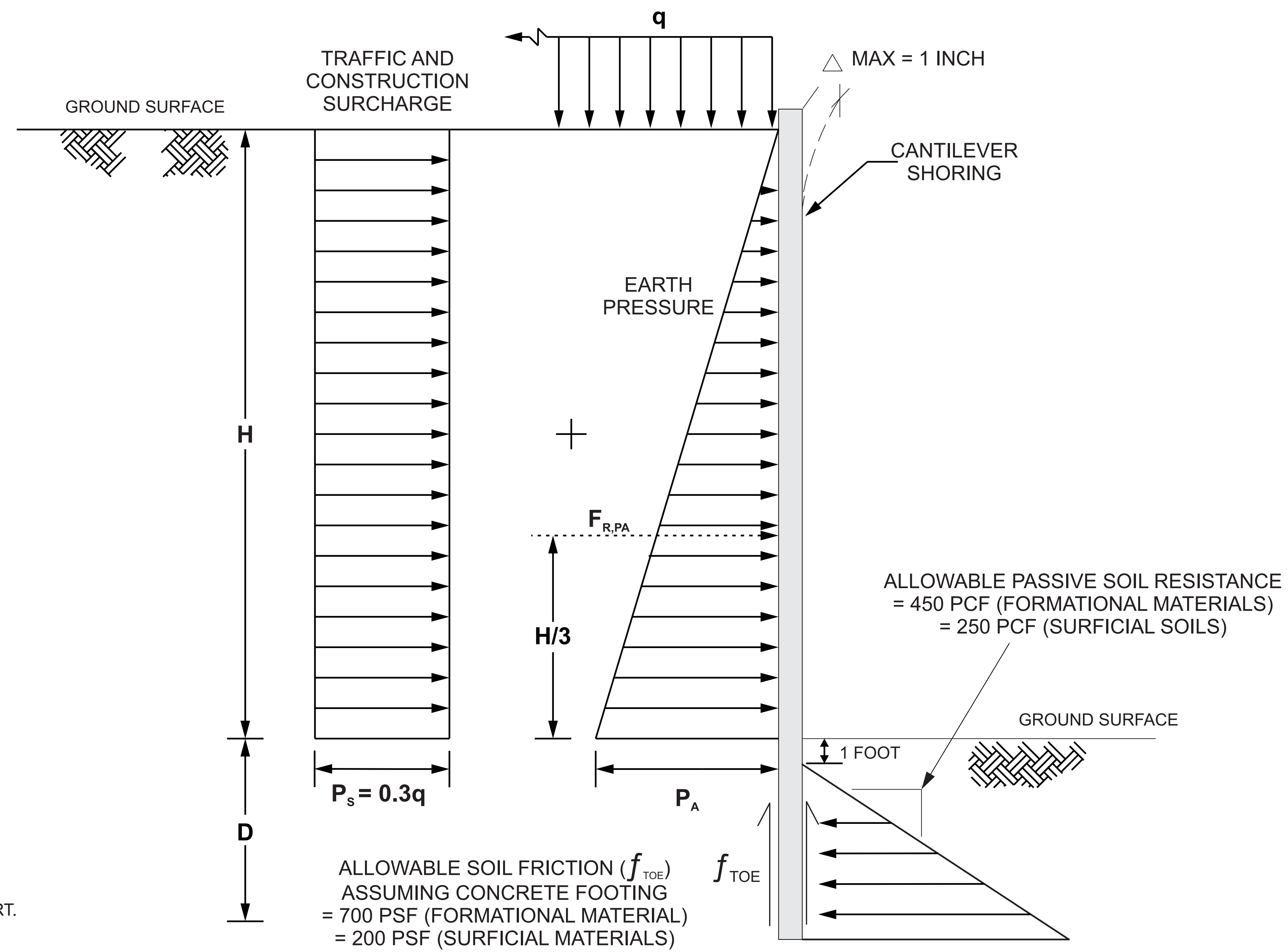
1) FOUNDATION REINFORCING AND SIZING PER STRUCTURAL ENGINEER (SHOWN FOR ILLUSTRATION PURPOSES ONLY).

2) VAPOR MEMBRANE AND SAND PER ARCHITECT (SHOWN FOR ILLUSTRATION PURPOSES ONLY).

3) SEE GEOTECHNICAL REPORT FOR MINIMUM FOOTING WIDTHS AND DEPTHS.

NOT TO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	**SHALLOW FOUNDATION DIMENSION DETAILS**	PROJECT NUMBER	FIGURE NUMBER
		SD644	**7**



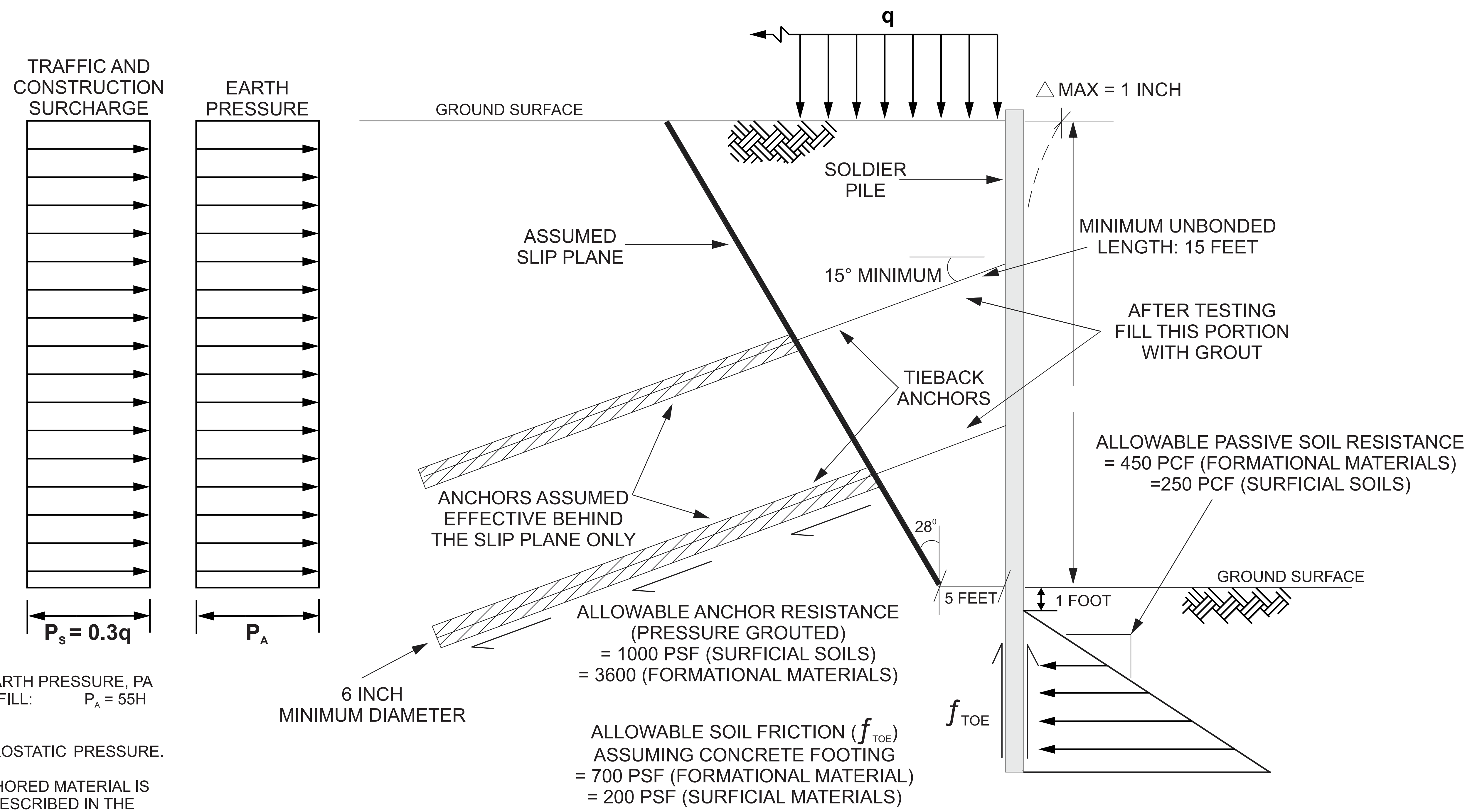
TOTAL ALLOWABLE PASSIVE RESISTANCE PER SOLDIER PILE = UNIT ALLOWABLE PASSIVE RESISTANCE X TWICE THE CONCRETED SOLDIER PILE WIDTH

NOTES:

1. ACTIVE LATERAL EARTH PRESSURE, PA
   - WITH LEVEL BACKFILL: $P_A = 55H$
2. ASSUMES NO HYDROSTATIC PRESSURE.
3. H IS MEASURED IN FEET.
4. FIGURE SHOULD BE USED WITH GEOTECHNICAL REPORT.
5. FOR PRELIMINARY DESIGN.
6. SURCHARGES FROM CONSTRUCTION EQUIPMENT, EXCAVATED SOIL, CONSTRUCTION MATERIALS, TRAFFIC LOADING OR OTHER UNIFORM LOADING (q) ABOVE THE WALL SHOULD BE CALCULATED USING THE SURCHARGE LATERAL EARTH PRESSURE, P_S. POINT LOADS OR OTHER SURCHARGES CAN BE EVALUATED UPON REQUEST.

NOT TO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	LATERAL EARTH PRESSURES FOR CANTILEVER SHORING	PROJECT NUMBER SD644	FIGURE NUMBER 8A



TOTAL ALLOWABLE PASSIVE RESISTANCE PER SOLDIER PILE = UNIT ALLOWABLE PASSIVE RESISTANCE X TWICE THE CONCRETED SOLDIER PILE WIDTH

NOTES:

1. ACTIVE LATERAL EARTH PRESSURE, PA
   - WITH LEVEL BACKFILL: $P_A = 55H$

2. ASSUMES NO HYDROSTATIC PRESSURE.

3. VALUES ASSUME SHORED MATERIAL IS FORMATIONAL AS DESCRIBED IN THE REPORT OF GEOTECHNICAL INVESTIGATION.

4. H IS MEASURED IN FEET.

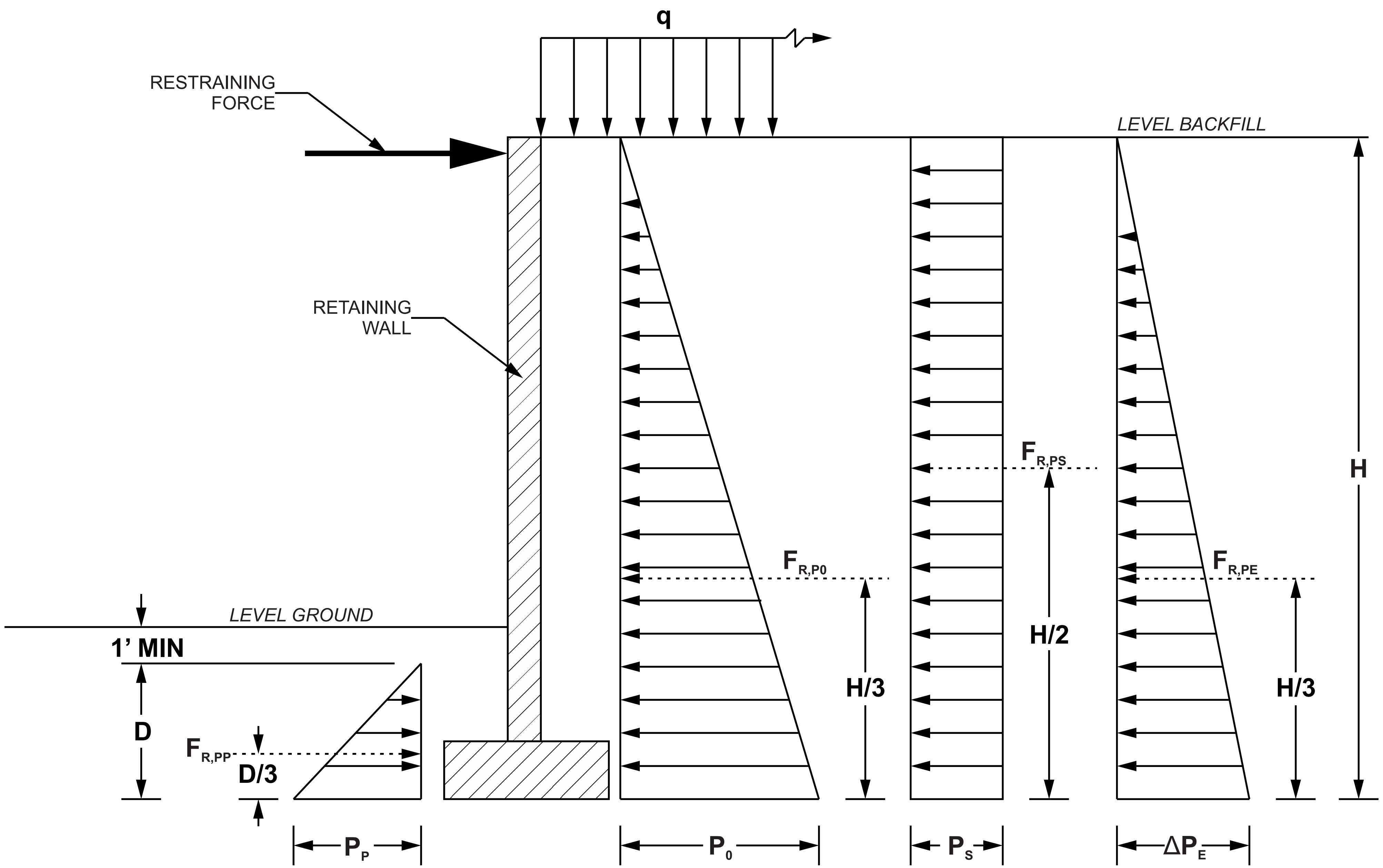
5. FIGURE SHOULD BE USED WITH GEOTECHNICAL REPORT.

6. FOR PRELIMINARY DESIGN.

7. SURCHARGES FROM CONSTRUCTION EQUIPMENT, EXCAVATED SOIL, CONSTRUCTION MATERIALS, TRAFFIC LOADING OR OTHER UNIFORM LOADING (q) ABOVE THE WALL SHOULD BE CALCULATED USING THE SURCHARGE LATERAL EARTH PRESSURE, P_S. POINT LOADS OR OTHER SURCHARGES CAN BE EVALUATED UPON REQUEST.

NOT TO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	**LATERAL EARTH PRESSURES FOR ANCHORED SHORING**	PROJECT NUMBER SD644	FIGURE NUMBER **8B**



NOTES:

1. PASSIVE PRESSURES MAY BE INCREASED BY ⅓ DURING SEISMIC LOADING. THE UPPER 12 INCHES OF MATERIAL NOT PROTECTED BY CONCRETE SLABS OR PAVEMENTS SHOULD NOT BE INCLUDED IN THE ESTIMATION OF PASSIVE RESISTANCE.

2. ASSUMES NO HYDROSTATIC PRESSURE. ADEQUATE WALL DRAINAGE SHOULD BE INSTALLED AS RECOMMENDED IN THE REPORT OF GEOTECHNICAL INVESTIGATION.

3. SURCHARGES FROM CONSTRUCTION EQUIPMENT, EXCAVATED SOIL, TRAFFIC LOADING OR OTHER UNIFORM LOADING ABOVE THE WALL SHOULD BE CALCULATED USING THE SURCHARGE LATERAL EARTH PRESSURE, P_S. POINT LOADS OR OTHER SURCHARGES CAN BE EVALUATED UPON REQUEST.

4. SEISMIC INCREMENT LATERAL EARTH PRESSURE (ΔP_E) IS BASED ON AN MCE-LEVEL PEAK GROUND ACCELERATION OF 0.708g. SEISMIC INCREMENT SHOULD BE APPLIED TO WALLS SIX FEET OR GREATER IN HEIGHT.

5. 'H' AND 'D' ARE MEASURED IN FEET.

6. PRESSURES ASSUME ON-SITE SOILS TO BE RETAINED ARE EXPANSIVE AS DESCRIBED IN THE REPORT OF GEOTECHNICAL INVESTIGATION.

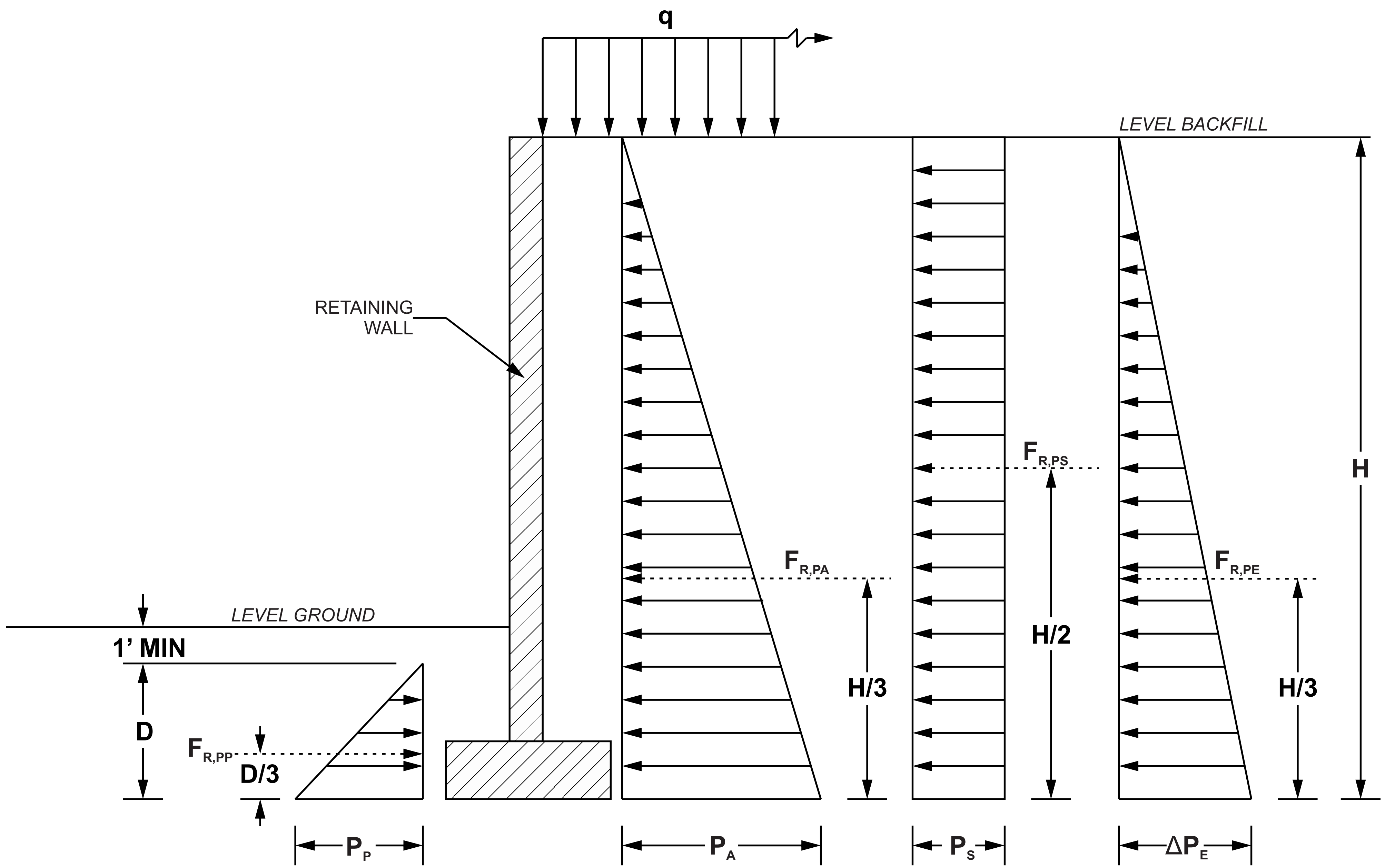
LATERAL EARTH PRESSURES

LATERAL EARTH PRESSURE TYPE	EQUIVALENT FLUID PRESSURE (PSF)	
	LEVEL BACKFILL	2:1 SLOPING BACKFILL
AT-REST, P_0	90H	NA
SEISMIC INCREMENT, ΔP_E*	5H	
PASSIVE, P_P**	450D (FORMATIONAL MATERIALS) 250D (SURFICIAL SOILS OR NEW FILL)	
SURCHARGE, P_S	0.3q	

*SEISMIC PRESSURE, $P_{AE} = P_0 + \Delta P_E$
**PASSIVE RESISTANCE VERSUS DISPLACEMENT CURVES CAN BE PROVIDED UPON REQUEST.

NOT TO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	**LATERAL EARTH PRESSURES FOR RESTRAINED RETAINING WALLS**	PROJECT NUMBER SD644	FIGURE NUMBER **8C**



NOTES:

1. PASSIVE PRESSURES MAY BE INCREASED BY ⅓ DURING SEISMIC LOADING. THE UPPER 12 INCHES OF MATERIAL NOT PROTECTED BY CONCRETE SLABS OR PAVEMENTS SHOULD NOT BE INCLUDED IN THE ESTIMATION OF PASSIVE RESISTANCE.

2. ASSUMES NO HYDROSTATIC PRESSURE. A WALL BACK DRAIN SHOULD BE INSTALLED AS RECOMMENDED IN THE *WALL DRAINAGE DETAIL* FIGURE.

3. SURCHARGES FROM CONSTRUCTION EQUIPMENT, EXCAVATED SOIL, TRAFFIC LOADING OR OTHER UNIFORM LOADING ABOVE THE WALL SHOULD BE CALCULATED USING THE SURCHARGE LATERAL EARTH PRESSURE, P_S. POINT LOADS OR OTHER SURCHARGES CAN BE EVALUATED UPON REQUEST.

4. SEISMIC INCREMENT LATERAL EARTH PRESSURE (ΔP_E) IS BASED ON AN MCE-LEVEL PEAK GROUND ACCELERATION OF 0.708g. SEISMIC INCREMENT SHOULD BE APPLIED TO WALLS SIX FEET OR GREATER IN HEIGHT.

5. 'H' AND 'D' ARE MEASURED IN FEET.

6. PRESSURES ASSUME EXPANSIVE ON-SITE SOILS WILL BE REUSED AS BACKFILL MATERIALS AND COMPACTED AS RECOMMENDED IN THE REPORT OF GEOTECHNICAL INVESTIGATION.

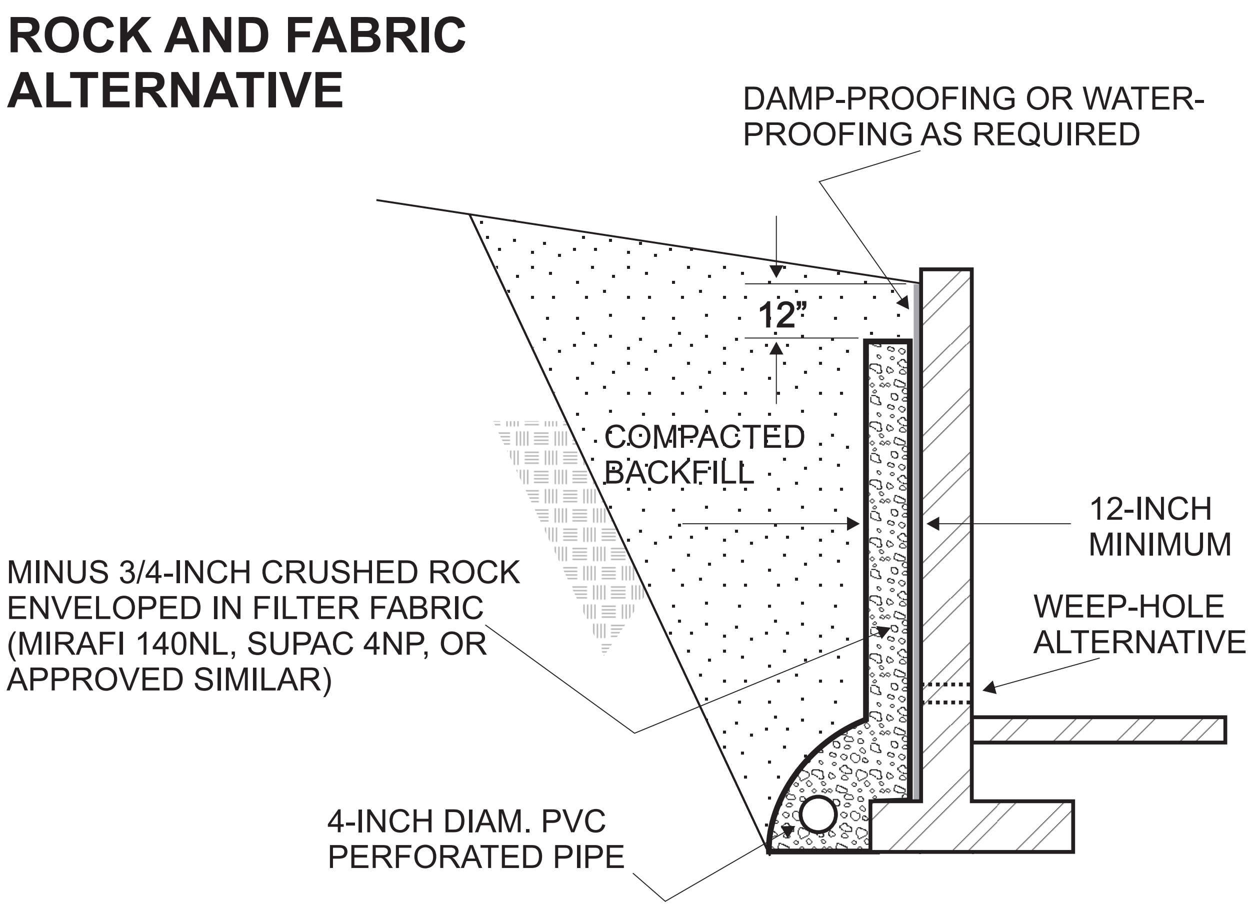
LATERAL EARTH PRESSURES

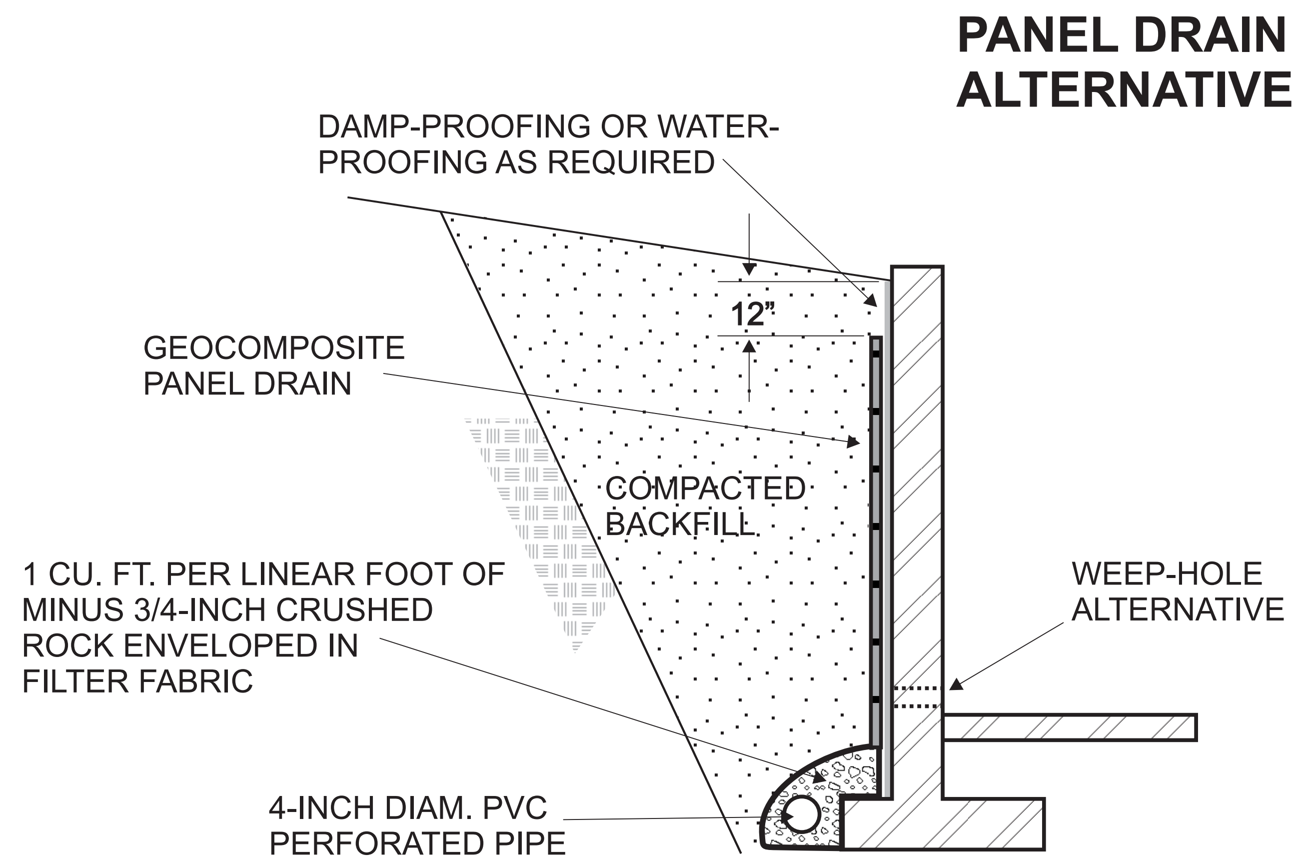
LATERAL EARTH PRESSURE TYPE	EQUIVALENT FLUID PRESSURE (PSF)	
	LEVEL BACKFILL	2:1 SLOPING BACKFILL
ACTIVE, P_A	55H	NA
SEISMIC INCREMENT, ΔP_E*	30H	
PASSIVE, P_P**	450D (FORMATIONAL MATERIALS) 250D (SURFICIAL SOILS OR NEW FILL)	
SURCHARGE, P_S	0.3q	

*SEISMIC PRESSURE, $P_{AE} = P_0 + \Delta P_E$
**PASSIVE RESISTANCE VERSUS DISPLACEMENT CURVES CAN BE PROVIDED UPON REQUEST.

NOT TO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	LATERAL EARTH PRESSURES FOR YIELDING RETAINING WALLS	PROJECT NUMBER SD644	FIGURE NUMBER 8D





NOTES

1) PERFORATED PIPE SHOULD OUTLET THROUGH A SOLID PIPE TO A FREE GRAVITY OUTFALL. PERFORATED PIPE AND OUTLET PIPE SHOULD HAVE A FALL OF AT LEAST 1%.

2) AS AN ALTERNATIVE TO THE PERFORATED PIPE AND OUTLET, WEEP-HOLES MAY BE CONSTRUCTED. WEEP-HOLES SHOULD BE AT LEAST 2 INCHES IN DIAMETER, SPACED NO GREATER THAN 8 FEET, AND BE LOCATED JUST ABOVE GRADE AT THE BOTTOM OF WALL.

3) FILTER FABRIC SHOULD CONSIST OF MIRAFI 140N, SUPAC 5NP, AMOCO 4599, OR SIMILAR APPROVED FABRIC. FILTER FABRIC SHOULD BE OVERLAPPED AT LEAST 6-INCHES.

4) GEOCOMPOSITE PANEL DRAIN SHOULD CONSIST OF MIRADRAIN 6000, J-DRAIN 400, SUPAC DS-15, OR APPROVED SIMILAR PRODUCT.

NOT TO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
THE CAMPUS ON VILLA LA JOLLA 8980 LA JOLLA VILLAGE DRIVE LA JOLLA, CALIFORNIA	WALL DRAINAGE DETAILS	PROJECT NUMBER SD644	FIGURE NUMBER 9

APPENDIX A
PREVIOUS BORING RECORDS (ETIC, 2008)

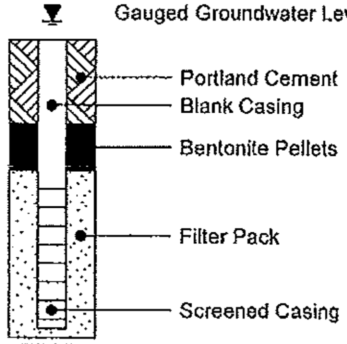
GrlcText\SOIL CLASSIFICATION 10/16/2002 12:25:06 PM

MAJOR DIVISIONS			TYPICAL NAMES	
COARSE-GRAINED SOILS More than half is coarser than No. 200 sieve	**GRAVELS** more than half coarse fraction is larger than No. 4 sieve size	Clean gravels with little or no fines	GW	Well graded gravels with or without sand, little or no fines.
			GP	Poorly graded gravels with or without sand, little or no fines.
		Gravels with over 12% fines	GM	Silty gravels, silty gravels with sand.
			GC	Clayey gravels, clayey gravels with sand.
	SANDS more than half coarse fraction is smaller than No. 4 sieve size	Clean sands with little or no fines	SW	Well graded sands with or without gravel, little or no fines.
			SP	Poorly graded sands with or without gravels, little or no fines.
		Sands with over 12% fines	SM	Silty sands with or without gravel.
			SC	Clayey sands with or without gravel.
FINE-GRAINED SOILS More than half is finer than No. 200 sieve	**SILTS AND CLAYS** liquid limit 50% or less		ML	Inorganic silts and very fine sands, rock flour, silts with sands and gravels.
			CL	Inorganic clays of low to medium plasticity, clays with sands and gravels, lean clays.
			OL	Organic silts or clays of low plasticity.
	SILTS AND CLAYS liquid limit greater than 50%		MH	Inorganic silts, micaceous or diatomaceous, fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays or clays of medium to high plasticity.
HIGHLY ORGANIC SOILS			PT	Peat and other highly organic soils.

SYMBOLS

First Encountered Groundwater

Gauged Groundwater Level



Samples

- Air
- Soil
- Water
- Open Hole

DRILL LOG ROCK TYPES

- Limestone
- Dolomite
- Mudstone
- Siltstone
- Sandstone
- Igneous

ETIC ENGINEERING

UNIFIED SOIL CLASSIFICATION SYSTEM DESCRIPTIONS AND SYMBOLS USED ON ETIC DRILL LOGS

ETIC ENGINEERING

LOG OF SOIL BORING: MW-8

COORDINATES: N1898179.83 :E6259543.21

ELEVATION TOP OF CASING: 267.17

CASING BELOW SURFACE: 0.30

DRILLING COMPANY: Cascade Drilling, Inc.

LICENSE NUMBER: C57-717510

CLIENT	SITE NUMBER	LOCATION
ExxonMobil	18GB5	3233 La Jolla Village Drive San Diego, California

DRILLING AND SAMPLING METHODS: Borehole cleared to 8 ft bgs by air knife and vacuum methods. Drilled with CME-85 hollow-stem auger rig with 10" augers. Sampled with 18-inch California Modified Split Spoon Sampler and hand auger.

WATER LEVEL	▽ Dry	▼ 32.8	
TIME		0400	
DATE		3/14/08	
REFERENCE		TOC	

	START	FINISH
TIME	2300	0330
DATE	3/12/08	3/13/08

SURFACE CONDITIONS: 4" Concrete

DESCRIPTION BY: B. Richards

INCHES DRIVEN	INCHES RECOVER	BLOWS / 6" SAMPLER	OVA READING	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION
				0		CONCRETE. PEA GRAVEL.
				1–2	CL	SILTY SANDY CLAY with organics (roots); brownish yellow (10YR 6/6), easily excavated, slightly moist.
				3–4		CLAYEY SAND; brownish yellow (10YR 6/2), with siltstone clasts up to boulder size.
6	6	- / -	43.7	5	SC	CLAYEY SAND; as above.
				8		SANDY CLAY; very dark bluish gray (GLEY2 3/5B), with clay-siltstone clasts, up to boulder size.
18	18	15 / 17 / 21	2.8	10–11		SILTY SANDY CLAY with muscovite; brownish yellow (10YR 6/6), moist.
				14	CL	
18	12	27 / 50	0.5	15–16		SILTY CLAY; dark brown (10YR 4/3), slightly moist.
				17–20		

DETAILS

LOG OF SOIL BORING 18GB5 3-08.GPJ ETIC.GDT 8/15/08

ETIC ENGINEERING

CLIENT	SITE NUMBER	LOCATION
ExxonMobil	18GB5	3233 La Jolla Village Drive San Diego, California

LOG OF SOIL BORING: MW-8

DRIVEN (INCHES)	RECOVER (INCHES)	BLOWS / 6" SAMPLER	OVA READING
18	12	29 50	1.2
18	12	19 25 30	2.3
18	18	29 30 50	2.5
18	18	20 20 35	3.6
18	12	20 25 30	2.2
18	12	12 15 17	2.2

DEPTH (feet)	GRAPHIC LOG	DESCRIPTION
20–26	CL	CLAY; very dark brown (10YR 2/2), saturated.
25	CL	SANDY SILTY CLAY with muscovite; dark yellowish brown (10YR 5/6), dry
26.5	SC	CLAYEY SAND; yellowish brown (10YR 6/6), slightly moist.
28.5	SC	CLAYEY SAND with weathered sandstone; yellowish brown (10YR 6/6), slightly moist.
29.5	SC	CLAYEY SAND with increasing sandstone content; yellowish brown (10YR 6/6), slightly moist.
33	ML	
35	ML	SILTSTONE (excavates as clayey silt); yellowish brown (10YR 6/6), dry.

Boring sampled to 36 ft bgs.
Boring terminated at 36 ft bgs.

1.37 cubic feet of concrete, 6.6 cubic feet of bentonite grout, 1.65 cubic feet of bentonite chips, 8.25 cubic feet of sand.

#3 Sand from 18 to 35 ft bgs.

4 in. I.D. 0.020-inch Slot, Schedule 40 PVC Screen from 20 to 35 ft bgs.

Depth scale: 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45

LOG OF SOIL BORING 18GB5 3-08.GPJ ETIC.GDT 8/15/08

APPENDIX B
CURRENT BORING RECORDS (GROUP DELTA, 2019 & 2020)

APPENDIX B

CURRENT BORING RECORDS (GROUP DELTA, 2019 & 2020)

Field exploration included the drilling of four borings (B-1 through B-4) at the site. Borings B-1 and B-2 were drilled in December 2019, while Borings B-3 and B-4 were drilled in May 2020. Boring B-1 was drilled using the hollow stem auger method to a depth of about 35 feet followed by the HQ wire-line rock coring method to a maximum depth of 75 feet on December 20th, 2019. Boring B-2 was drilled using the hollow stem auger method to a depth of about 21½ feet followed by the rotary wash method to a maximum depth of 115 feet on December 5th, 2019. Note Boring B-2 was drilled out from a depth of about 85 to 115 feet for P-S Suspension Logging that was performed on December 6th, 2019 (see Appendix D). Borings B-3 and B-4 were drilled using the hollow stem auger method to depths of about 37½ and 36 feet, respectively, on May 26th, 2020. The approximate locations of the borings are shown on Figures 2A through 2C. Logs of the borings are shown in Figures B-1 through B-4.

Borings B-1 and B-2 were advanced by Tri-County Drilling using a Diedrich D120 drill rig and Borings B-3 and B-4 were advanced by Pacific Drilling Co. using a limited access Mole drill rig. Drive samples were collected from Borings B-1 and B-2 using an automatic hammer release mechanism with an average Energy Transfer Ratio (ETR) of about 89 percent. Drive samples were collected from Borings B-3 and B-4 using a manually operated cathead hammer with an assumed ETR of about 60 percent. Disturbed samples were collected from the borings using a 2-inch outside diameter Standard Penetration Test (SPT) sampler. Less disturbed samples were collected using a 3-inch outside diameter ring lined sampler (a modified California sampler). These samples were sealed in plastic bags, labeled, and returned to the laboratory for testing. For each sample, the number of blows needed to drive the sampler 12 inches was recorded on the logs. The field blow counts (N) were normalized to approximate the standard 60 percent ETR, as shown on the logs (N_{60}). For Boring B-1, continuous HQ cores (2⅜ inch diameter) were obtained from about 35 to 75 feet below ground surface. The cores were logged and boxed. Boring excavations were backfilled with bentonite or cement grout.

The boring locations were determined by visually estimating, pacing and taping distances from landmarks shown on Figure 2A. The locations shown should not be considered more accurate than is implied by the method of measurement used and the scale of the map. Approximate elevations were estimated using the photographic survey by Terrascribe, Inc. from November 26, 2019. The lines designating the interface between differing soil materials on the logs may be abrupt or gradational. Further, soil conditions at locations between the excavations may be substantially different from those at the specific locations we explored.

SOIL IDENTIFICATION AND DESCRIPTION SEQUENCE

Sequence	Identification Components	Refer to Section: Field	Refer to Section: Lab	Required	Optional
1	Group Name	2.5.2	3.2.2	●	
2	Group Symbol	2.5.2	3.2.2	●	
	Description Components				
3	Consistency of Cohesive Soil	2.5.3	3.2.3	●	
4	Apparent Density of Cohesionless Soil	2.5.4		●	
5	Color	2.5.5		●	
6	Moisture	2.5.6		●	
7	Percent or Proportion of Soil	2.5.7	3.2.4	●	⬬
	Particle Size	2.5.8	2.5.8	●	⬬
	Particle Angularity	2.5.9			○
	Particle Shape	2.5.10			○
8	Plasticity (for fine-grained soil)	2.5.11	3.2.5		○
9	Dry Strength (for fine-grained soil)	2.5.12			○
10	Dilatency (for fine-grained soil)	2.5.13			○
11	Toughness (for fine-grained soil)	2.5.14			○
12	Structure	2.5.15			○
13	Cementation	2.5.16		●	
14	Percent of Cobbles and Boulders	2.5.17		●	
	Description of Cobbles and Boulders	2.5.18		●	
15	Consistency Field Test Result	2.5.3		●	
16	Additional Comments	2.5.19			○

Describe the soil using descriptive terms in the order shown

Minimum Required Sequence:

USCS Group Name (Group Symbol); Consistency or Density; Color; Moisture; Percent or Proportion of Soil; Particle Size; Plasticity (optional).

⬬ = optional for non-Caltrans projects

Where applicable:

Cementation; % cobbles & boulders; Description of cobbles & boulders; Consistency field test result

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).

HOLE IDENTIFICATION

Holes are identified using the following convention:

H – YY – NNN

Where:

H: Hole Type Code

YY: 2-digit year

NNN: 3-digit number (001-999)

Hole Type Code and Description

Hole Type Code	Description
A	Auger boring (hollow or solid stem, bucket)
R	Rotary drilled boring (conventional)
RC	Rotary core (self-cased wire-line, continuously-sampled)
RW	Rotary core (self-cased wire-line, not continuously sampled)
P	Rotary percussion boring (Air)
HD	Hand driven (1-inch soil tube)
HA	Hand auger
D	Driven (dynamic cone penetrometer)
CPT	Cone Penetration Test
O	Other (note on LOTB)

Description Sequence Examples:

SANDY lean CLAY (CL); very stiff; yellowish brown; moist; mostly fines; some SAND, from fine to medium; few gravels; medium plasticity; PP=2.75.

Well-graded SAND with SILT and GRAVEL and COBBLES (SW-SM); dense; brown; moist; mostly SAND, from fine to coarse; some fine GRAVEL; few fines; weak cementation; 10% GRANITE COBBLES; 3 to 6 inches; hard; subrounded.

Clayey SAND (SC); medium dense, light brown; wet; mostly fine sand,; little fines; low plasticity.

GROUP DELTA

PROJECT NO. SD644

THE CAMPUS ON VILLA LA JOLLA
8980 LA JOLLA VILLAGE DRIVE
LA JOLLA, CALIFORNIA

BORING RECORD LEGEND #1

GROUP SYMBOLS AND NAMES

Graphic / Symbol	Group Names	Graphic / Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly graded SAND Poorly graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL		
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY elastic ELASTIC SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

C	Consolidation (ASTM D 2435)
CL	Collapse Potential (ASTM D 5333)
CP	Compaction Curve (CTM 216)
CR	Corrosion, Sulfates, Chlorides (CTM 643; CTM 417; CTM 422)
CU	Consolidated Undrained Triaxial (ASTM D 4767)
DS	Direct Shear (ASTM D 3080)
EI	Expansion Index (ASTM D 4829)
M	Moisture Content (ASTM D 2216)
OC	Organic Content (ASTM D 2974)
P	Permeability (CTM 220)
PA	Particle Size Analysis (ASTM D 422)
PI	Liquid Limit, Plastic Limit, Plasticity Index (AASHTO T 89, AASHTO T 90)
PL	Point Load Index (ASTM D 5731)
PM	Pressure Meter
R	R-Value (CTM 301)
SE	Sand Equivalent (CTM 217)
SG	Specific Gravity (AASHTO T 100)
SL	Shrinkage Limit (ASTM D 427)
SW	Swell Potential (ASTM D 4546)
UC	Unconfined Compression - Soil (ASTM D 2166) Unconfined Compression - Rock (ASTM D 2938)
UU	Unconsolidated Undrained Triaxial (ASTM D 2850)
UW	Unit Weight (ASTM D 2937)
WA	Percent passing the No. 200 Sieve (ASTM D 1140)

SAMPLER GRAPHIC SYMBOLS

- Standard Penetration Test (SPT)
- Standard California Sampler
- Modified California Sampler (2.4" ID, 3" OD)
- Shelby Tube
- Piston Sampler
- NX Rock Core
- HQ Rock Core
- Bulk Sample
- Other (see remarks)

DRILLING METHOD SYMBOLS

- Auger Drilling
- Rotary Drilling
- Dynamic Cone or Hand Driven
- Diamond Core

WATER LEVEL SYMBOLS

- ▽ First Water Level Reading (during drilling)
- ▼ Static Water Level Reading (after drilling, date)

Definitions for Change in Material

Term	Definition	Symbol
Material Change	Change in material is observed in the sample or core and the location of change can be accurately located.	————
Estimated Material Change	Change in material cannot be accurately located either because the change is gradational or because of limitations of the drilling and sampling methods.	— — — — —
Soil / Rock Boundary	Material changes from soil characteristics to rock characteristics.	

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).

GROUP DELTA

PROJECT NO. SD644

THE CAMPUS ON VILLA LA JOLLA
8980 LA JOLLA VILLAGE DRIVE
LA JOLLA, CALIFORNIA

BORING RECORD LEGEND #2

CONSISTENCY OF COHESIVE SOILS				
Description	Shear Strength (tsf)	Pocket Penetrometer, PP, Measurement (tsf)	Torvane, TV, Measurement (tsf)	Vane Shear, VS, Measurement (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N_{60} (blows / 12 inches)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE	
Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS	
Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 - 10%
Little	15 - 25%
Some	30 - 45%
Mostly	50 - 100%

PARTICLE SIZE		
Description		Size (in)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010), with the exception of consistency of cohesive soils vs. N_{60}.

Plasticity

Description	Criteria
Nonplastic	A 1/8-in. thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

CONSISTENCY OF COHESIVE SOILS	
Description	SPT N_{60} (blows/12 inches)
Very Soft	0 - 2
Soft	2 - 4
Medium Stiff	4 - 8
Stiff	8 - 15
Very Stiff	15 - 30
Hard	Greater than 30

Ref: Peck, Hansen, and Thornburn, 1974, "Foundation Engineering," Second Edition.

Note: Only to be used (with caution) when pocket penetrometer or other data on undrained shear strength are unavailable. Not allowed by Caltrans Soil and Rock Logging and Classification Manual, 2010.

GROUP DELTA

PROJECT NO. SD644

THE CAMPUS ON VILLA LA JOLLA
8980 LA JOLLA VILLAGE DRIVE
LA JOLLA, CALIFORNIA

BORING RECORD LEGEND #3

LEGEND OF ROCK MATERIALS

- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

BEDDING SPACING

Description	Thickness/Spacing
Massive	Greater than 10 ft
Very Thickly Bedded	3 ft - 10 ft
Thickly Bedded	1 ft - 3 ft
Moderately Bedded	4 in - 1 ft
Thinly Bedded	1 in - 4 in
Very Thinly Bedded	1/4 in - 1 in
Laminated	Less than 1/4 in

WEATHERING DESCRIPTORS FOR INTACT ROCK

	Diagnostic Features					
	Chemical Weathering-Discoloration-Oxidation		Mechanical Weathering and Grain Boundary Conditions	Texture and Leaching		
Description	Body of Rock	Fracture Surfaces		Texture	Leaching	General Characteristics
Fresh	No discoloration, not oxidized	No discoloration or oxidation	No separation, intact (tight)	No change	No leaching	Hammer rings when crystalline rocks are struck.
Slightly Weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull	Minor to complete discoloration or oxidation of most surfaces	No visible separation, intact (tight)	Preserved	Minor leaching of some soluble minerals	Hammer rings when crystalline rocks are struck. Body of rock not weakened.
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty"; feldspar crystals are "cloudy"	All fracture surfaces are discolored or oxidized	Partial separation of boundaries visible	Generally preserved	Soluble minerals may be mostly leached	Hammer does not ring when rock is struck. Body of rock is slightly weakened.
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in situ disaggregation, grain boundary conditions	All fracture surfaces are discolored or oxidized; surfaces friable	Partial separation, rock is friable; in semi-arid conditions, granitics are disaggregated	Texture altered by chemical disintegration (hydration, argillation)	Leaching of soluble minerals may be complete	Dull sound when struck with hammer; usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures or veinlets. Rock is significantly weakened.
Decomposed	Discolored of oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay		Complete separation of grain boundaries (disaggregated)	Resembles a soil; partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete		Can be granulated by hand. Resistant minerals such as quartz may be present as "stringers" or "dikes".

PERCENT CORE RECOVERY (REC)

$$\frac{\Sigma \text{ Length of the recovered core pieces (in.)}}{\text{Total length of core run (in.)}} \times 100$$

ROCK QUALITY DESIGNATION (RQD)

$$\frac{\Sigma \text{ Length of intact core pieces } \geq 4 \text{ in.}}{\text{Total length of core run (in.)}} \times 100$$

RQD* indicates soundness criteria not met.

ROCK HARDNESS

Description	Criteria
Extremely Hard	Cannot be scratched with a pocketknife or sharp pick. Can only be chipped with repeated heavy hammer blows
Very Hard	Cannot be scratched with a pocketknife or sharp pick. Breaks with repeated heavy hammer blows.
Hard	Can be scratched with a pocketknife or sharp pick with difficulty (heavy pressure). Breaks with heavy hammer blows.
Moderately Hard	Can be scratched with a pocketknife or sharp pick with light or moderate pressure. Breaks with moderate hammer blows
Moderately Soft	Can be grooved 1/16 in. deep with a pocketknife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Can be grooved or gouged easily with a pocketknife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
Very Soft	Can be readily indented, grooved or gouged with fingernail, or carved with a pocketknife. Breaks with light manual pressure.

FRACTURE DENSITY

Description	Observed Fracture Density
Unfractured	No fractures
Very Slightly Fractured	Core lengths greater than 3 ft.
Slightly Fractured	Core lengths mostly from 1 to 3 ft.
Moderately Fractured	Core lengths mostly 4 in. to 1 ft.
Intensely Fractured	Core lengths mostly from 1 to 4 in.
Very Intensely Fractured	Mostly chips and fragments.

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).

GROUP DELTA

PROJECT NO. SD644

THE CAMPUS ON VILLA LA JOLLA
8980 LA JOLLA VILLAGE DRIVE
LA JOLLA, CALIFORNIA

BORING RECORD LEGEND #4

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
The Campus on Villa La Jolla Redevelopment	SD644	**B-1**

SITE LOCATION	START	FINISH	SHEET NO.
8980 La Jolla Village Drive, La Jolla, California, 92037	12/20/2019	12/20/2019	1 of 4

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling	Hollow Stem Auger / Rock Coring	S. Narveson	J. Faker

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D120	8/HQ	75	271	▼ NM / *na*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	Latitude: 32.87129, Longitude: -117.23453; ETR ~ 89%, N_{60} ~ 1.48*N_{SPT} ~ 0.99*N_{MC}

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
												ASPHALT: (~5 inches)
	270		B-1									**FILL:** CLAYEY SAND (SC); light yellowish brown; moist; mostly fine sand; some fines; trace gravel; low plasticity; micaceous. PID=0.0 ppm
			S-2	4 9 16	25	37	24		WA			LEAN CLAY (CL); hard; mottled light brownish gray; moist; mostly fines; trace fine sand; medium plasticity. PID=0.0 ppm 96% FINES
5	265		S-3	4 13 22	35	52	22			5		**SCRIPPS FORMATION*:** POORLY INDURATED CLAYSTONE; massive; fine to medium grained; brownish gray with iron oxide staining; soft; moderately weathered; (FAT CLAY WITH SAND (CH); moist; mostly fines; little fine sand; high plasticity). PID=0.2 ppm
10	260		R-4-1 R-4-2	9 35 50/4"	85/10"	110	20	106	WA PI EI	10		Slightly weathered. PID=0.0 ppm 85% FINES LL=69; PI=44 EI=65
15	255		S-5	6 28 39	67	99	20			15		Thinly bedded. PID=6.3 ppm
20	250		R-6-1 R-6-2	24 50/5"	50/5"	>100	20	100	EI	20		Medium grained. PID=27.0 ppm EI=65

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BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
The Campus on Villa La Jolla Redevelopment	SD644	B-1

SITE LOCATION	START	FINISH	SHEET NO.
8980 La Jolla Village Drive, La Jolla, California, 92037	12/20/2019	12/20/2019	2 of 4

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling	Hollow Stem Auger / Rock Coring	S. Narveson	J. Faker

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D120	8/HQ	75	271	▼ NM / *na*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	Latitude: 32.87129, Longitude: -117.23453; ETR ~ 89%, N_{60} ~ 1.48*N_{SPT} ~ 0.99*N_{MC}

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DESCRIPTION AND CLASSIFICATION
	245		S-7	14 30 49	79	117	21		PA	**SCRIPPS FORMATION* (continued):** POORLY INDURATED CLAYSTONE; massive; medium grained; brownish gray with iron oxide staining; soft; slightly weathered; (LEAN CLAY WITH SAND (CL); moist; mostly fines; little fine to medium sand; medium plasticity). PID=67.2 ppm 85% FINES; 15% SAND; 0% GRAVEL
30	240		R-8	26 50/5"	50/5"	>100	20	106		PID=10.2 ppm
35	235		S-9	50/3"	50/3"	>100	8			PID=1.2 ppm Switch to rock coring at 35.25 feet.
			C-1						PA	POORLY INDURATED SANDSTONE; massive; medium grained; grayish brown; very soft; slightly weathered; slightly fractured; (POORLY-GRADED SAND WITH SILT (SP-SM); moist; mostly fine to medium sand; few fines; nonplastic). 93% SAND; 7% FINES; 0% GRAVEL
40	230		C-2							Soft; (trace gravel).
45	225									(No gravel).
			C-3						PA	Very soft; (wet). 91% SAND; 9% FINES; 0% GRAVEL Soft.
										POORLY INDURATED GRAVEL CONGLOMERATE with SANDSTONE matrix (see description next page).

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THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

FIGURE B-1 b

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
The Campus on Villa La Jolla Redevelopment	SD644	B-1

SITE LOCATION	START	FINISH	SHEET NO.
8980 La Jolla Village Drive, La Jolla, California, 92037	12/20/2019	12/20/2019	3 of 4

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling	Hollow Stem Auger / Rock Coring	S. Narveson	J. Faker

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D120	8/HQ	75	271	▼ NM / *na*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	Latitude: 32.87129, Longitude: -117.23453; ETR ~ 89%, N_{60} ~ 1.48*N_{SPT} ~ 0.99*N_{MC}

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
	220		C-4									**SCRIPPS FORMATION* (continued):** POORLY INDURATED GRAVEL CONGLOMERATE with SANDSTONE matrix; massive; coarse grained with medium grained matrix; brown; soft; slightly weathered; unfractured; (POORLY-GRADED GRAVEL WITH SILT AND SAND (GP-GM); moist; mostly fine to coarse gravel; little fine to medium sand; few fines; nonplastic).
			C-5									
			C-6									
55										55		
	215		C-7						WA			MODERATELY INDURATED CLAY SHALE; thinly bedded; fine grained; dark gray with iron oxide staining; moderately hard; slightly weathered; slightly fractured; (LEAN CLAY (CL); moist; mostly fines; few fine sand; medium plasticity). 93% FINES
60										60		
	210		C-8									POORLY INDURATED SANDSTONE; massive; medium grained; grayish brown with gray claystone clasts; very soft; moderately weathered; unfractured; (SILTY SAND (SM); moist; mostly fine to medium sand; some fines; nonplastic).
65										65		MODERATELY INDURATED CLAY SHALE; thinly bedded; fine grained; dark gray with iron oxide staining; moderately soft; moderately weathered; unfractured; (LEAN CLAY (CL); moist; mostly fines; few fine sand; medium plasticity). 91% FINES
	205		C-9						WA			
70										70		POORLY INDURATED SANDSTONE; massive; medium grained; grayish brown; soft; moderately weathered; unfractured; (SILTY SAND (SM); moist; mostly fine to medium sand; some fines; nonplastic).
	200		C-10						WA			**ARDATH SHALE*:** MODERATELY INDURATED CLAY SHALE; thinly bedded; fine grained; thinly bedded dark gray and very dark gray; moderately hard; slightly weathered; slightly fractured; (LEAN CLAY (CL); moist; mostly fines; trace fine sand; medium plasticity). 97% FINES
			C-11									

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
The Campus on Villa La Jolla Redevelopment	SD644	**B-1**

SITE LOCATION	START	FINISH	SHEET NO.
8980 La Jolla Village Drive, La Jolla, California, 92037	12/20/2019	12/20/2019	4 of 4

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling	Hollow Stem Auger / Rock Coring	S. Narveson	J. Faker

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D120	8/HQ	75	271	▼ NM / *na*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	Latitude: 32.87129, Longitude: -117.23453; ETR ~ 89%, N_{60} ~ 1.48*N_{SPT} ~ 0.99*N_{MC}

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
	195											**NOTES**: 1. Bottom of excavation at 75 feet below ground surface. 2. Excavation terminated at target depth. 3. Groundwater not encountered during hollow stem auger drilling. 4. *Sedimentary rock description; (USCS soil description).
80	190									80		
85	185									85		
90	180									90		
95	175									95		

BORING RECORD

PROJECT NAME The Campus on Villa La Jolla Redevelopment	**PROJECT NUMBER** SD644	**BORING** B-2	
SITE LOCATION 8980 La Jolla Village Drive, La Jolla, California, 92037	**START** 12/5/2019	**FINISH** 12/6/2019	**SHEET NO.** 1 of 5
DRILLING COMPANY Tri-County Drilling	**DRILLING METHOD** Hollow Stem Auger / Rotary Wash	**LOGGED BY** A. Bieda	**CHECKED BY** J. Faker
DRILLING EQUIPMENT Diedrich D120	**BORING DIA. (in)** 8/4	**TOTAL DEPTH (ft)** 115	**GROUND ELEV (ft)** 271
DEPTH/*ELEV.* GROUNDWATER (ft) ▼ NM / *na*			
SAMPLING METHOD Hammer: 140 lbs., Drop: 30 in. (Automatic)	**NOTES** Latitude: 32.87105, Longitude: -117.23453; ETR ~ 89%, N_{60} ~ 1.48*N_{SPT} ~ 0.99*N_{MC}		

DEPTH (feet)	ELEVATION (feet)	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DESCRIPTION AND CLASSIFICATION
0	270								**ASPHALT:** (~8 inches)
									FILL: CLAYEY SAND (SC); light yellowish brown; moist; mostly fine to medium sand; little fines; trace fine gravel; low plasticity.
5	265	B-1 S-2	7 7 8	15	22			CR EI	Medium dense. PID=0.8 EI=70
									LEAN CLAY WITH SAND (CL); stiff; mottled light brownish gray; moist; mostly fines; little fine sand; few fine gravel; medium plasticity. PP=1.25 tsf
10	260	R-3-1 R-3-2	6 12 23	35	35	21	100	PA EI	SANDY LEAN CLAY (CL); hard; mottled light brownish gray; moist; mostly fines; some fine to medium sand; low plasticity. 54% FINES; 46% SAND; 0% GRAVEL PID=0.0 ppm PP=>4.0 tsf EI=43
15	255	S-4	8 12 10	22	33	15		PI WA	Very stiff. PP=2.5 tsf PID=0.0 ppm 60% FINES LL=31; PI=16
20	250	R-5-1 R-5-2	6 10 13	23	23	18	98	PI WA EI	**ALLUVIUM:** LEAN CLAY WITH SAND (CL); hard; light olive brown; moist; mostly fines; little fine sand; medium plasticity. PP=>4.0 tsf PID=0.0 ppm 75% FINES LL=38; PI=19 EI=15 Switch to rotary wash at 21.5 feet.
									SCRIPPS FORMATION*: (see description next page).

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
The Campus on Villa La Jolla Redevelopment	SD644	**B-2**

SITE LOCATION	START	FINISH	SHEET NO.
8980 La Jolla Village Drive, La Jolla, California, 92037	12/5/2019	12/6/2019	2 of 5

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling	Hollow Stem Auger / Rotary Wash	A. Bieda	J. Faker

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D120	8/4	115	271	▼ NM / *na*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	Latitude: 32.87105, Longitude: -117.23453; ETR ~ 89%, N_{60} ~ 1.48*N_{SPT} ~ 0.99*N_{MC}

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
	245		S-6	13 22 29	51	75	26		PA			**SCRIPPS FORMATION*** **(continued):** POORLY INDURATED CLAYSTONE; massive; fine to medium grained; grayish brown; soft; moderately weathered; (LEAN CLAY (CL); moist; mostly fines; few to little fine sand; medium plasticity). PID= 1.7 ppm 88% FINES; 12% SAND; 0% GRAVEL
30			R-7	50/5"	50/5"	>100				30		
	240											
35										35		
	235		S-8	16 32 39	71	105	24		PA PI CR			(LEAN CLAY WITH SAND (CL); moist; mostly fines; little fine sand; medium plasticity). 76% FINES; 24% SAND; 0% GRAVEL LL=45; PI=18
40										40		
	230		S-9	23 50/5"	50/5"	>100	25					
												POORLY INDURATED GRAVEL CONGLOMERATE with SANDSTONE matrix; massive; coarse grained with medium grained matrix; brown; soft; slightly weathered; (POORLY-GRADED GRAVEL WITH SILT AND SAND (GP-GM); moist; mostly fine to coarse gravel; little fine to medium sand; few fines; nonplastic).
45			S-10	50/3"	50/3"	>100				45		
	225											
												POORLY INDURATED CLAYSTONE; massive; fine to medium grained; grayish brown; soft; moderately weathered; (LEAN CLAY (CL); moist; mostly fines; few fine sand; medium plasticity).

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
The Campus on Villa La Jolla Redevelopment	SD644	B-2

SITE LOCATION	START	FINISH	SHEET NO.
8980 La Jolla Village Drive, La Jolla, California, 92037	12/5/2019	12/6/2019	3 of 5

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling	Hollow Stem Auger / Rotary Wash	A. Bieda	J. Faker

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D120	8/4	115	271	▼ NM / *na*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	Latitude: 32.87105, Longitude: -117.23453; ETR ~ 89%, N_{60} ~ 1.48*N_{SPT} ~ 0.99*N_{MC}

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
	220		S-11	27 40 47	87	129						**SCRIPPS FORMATION* (continued):** (see description previous page).
												SCRIPPS FORMATION*: POORLY INDURATED CLAY SHALE; thinly bedded; fine grained; dark gray; very soft; intensely weathered; (LEAN CLAY WITH SAND (CL); moist; mostly fines; little fine sand; medium plasticity). PP=>4.0 tsf
55	215		S-12	50/5"	50/5"	>100	23		WA CR	55		Very dark gray. PP=4.0 tsf 82% FINES
												POORLY INDURATED CLAYSTONE; massive; fine to medium grained; grayish brown; soft; moderately weathered; (LEAN CLAY WITH SAND (CL); moist; mostly fines; little fine sand; medium plasticity). PP>4.0 tsf
60	210		S-13	36 50/3"	50/3"	>100				60		
65	205		S-14	47 50/4"	50/4"	>100	25		PI WA	65		**ARDATH SHALE*:** MODERATELY INDURATED CLAY SHALE; thinly bedded; fine grained; dark gray; moderately soft; intensely weathered; (LEAN CLAY WITH SAND (CL); moist; mostly fines; little fine sand; medium plasticity). PP=4.0 tsf 82% FINES LL=41; PI=17
70	200									70		

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BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
The Campus on Villa La Jolla Redevelopment	SD644	B-2

SITE LOCATION	START	FINISH	SHEET NO.
8980 La Jolla Village Drive, La Jolla, California, 92037	12/5/2019	12/6/2019	4 of 5

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling	Hollow Stem Auger / Rotary Wash	A. Bieda	J. Faker

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D120	8/4	115	271	▼ NM / *na*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	Latitude: 32.87105, Longitude: -117.23453; ETR ~ 89%, N_{60} ~ 1.48*N_{SPT} ~ 0.99*N_{MC}

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
		X	S-15	50/5"	50/5"	>100						**ARDATH SHALE* (continued):** MODERATELY INDURATED CLAY SHALE; thinly bedded; fine grained; dark gray; moderately soft; intensely weathered; (LEAN CLAY WITH SAND (CL); moist; mostly fines; little fine sand; medium plasticity). PP=>4.0 tsf
	195											
80	190									80		
												PP=4.0 tsf
85		X	S-16	50/5"	50/5"	>100	21			85		
	185											Sampling ceased at 85 feet; boring drilled out to 115 feet for P-S Suspension Logging.
90	180									90		
95	175									95		

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FIGURE B-2 d

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
The Campus on Villa La Jolla Redevelopment	SD644	B-2

SITE LOCATION	START	FINISH	SHEET NO.
8980 La Jolla Village Drive, La Jolla, California, 92037	12/5/2019	12/6/2019	5 of 5

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling	Hollow Stem Auger / Rotary Wash	A. Bieda	J. Faker

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D120	8/4	115	271	▼ NM / *na*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	Latitude: 32.87105, Longitude: -117.23453; ETR ~ 89%, N_{60} ~ 1.48*N_{SPT} ~ 0.99*N_{MC}

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
	170											Boring drilled out from 85 to 115 feet for P-S Suspension Logging.
105	165									105		
110	160									110		
115	155									115		**NOTES**: 1. Bottom of excavation at 115 feet below ground surface. 2. Boring drilled out from 85 to 115 feet for P-S Suspension Logging. 3. Excavation terminated at target depth. 4. Groundwater not encountered during hollow stem auger drilling. 5. *Sedimentary rock description; (USCS soil description).
120	150									120		

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BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
The Campus on Villa La Jolla Redevelopment	SD644	B-3

SITE LOCATION	START	FINISH	SHEET NO.
8980 La Jolla Village Drive, La Jolla, California, 92037	5/26/2020	5/26/2020	1 of 2

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Pacific Drilling Co.	Hollow Stem Auger	S. Narveson	J. Faker

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Mole	6	37.5	270	▼ 34.9 / *235.1*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Cathead)	Latitude: 32.87146, Longitude: -117.23417; ETR = 60%, $N_{60} \sim 1.00N_{SPT} \sim 0.67^*N_{MC}$

DEPTH (feet)	ELEVATION (feet)	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DESCRIPTION AND CLASSIFICATION
		B-1						EI	**<u>FILL</u>:** CLAYEY SAND (SC); loose; grayish brown with iron oxide staining; moist; mostly fine sand; some fines; trace gravel; low plasticity. PID=0.0 ppm EI=26
		S-2	3 3 5	8	8				
5	265	R-3-1 R-3-2	9 17 17	34	23			PA PI	SANDY LEAN CLAY (CL); very stiff; mottled gray and brown; moist; mostly fines; some fine to medium sand; trace gravel; low to medium plasticity. PID=0.1 ppm 56% FINES; 39% SAND; 5% GRAVEL LL=37, PI=18
10	260	S-4	11 16 23	39	39	21	--	PA	**<u>SCRIPPS FORMATION</u>*:** POORLY INDURATED CLAYSTONE; massive; fine grained; gray with iron oxide staining; soft; highly weathered; (LEAN CLAY WITH SAND (CL); moist; mostly fines; little fine sand; medium plasticity). PID= 0.2 ppm 81% FINES; 19% SAND; 0% GRAVEL
									Difficult drilling from 12-14 feet.
15	255	R-5	18 50/5"	50/5"	>70			WA CR	Gray; moderately weathered. PID=0.0 ppm PP>>4.5 tsf 88% FINES
20	250	S-6	18 29 46	75	75			PA	Grayish brown with iron oxide staining. PID=0.1 ppm 80% FINES; 20% SAND; 0% GRAVEL

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BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
The Campus on Villa La Jolla Redevelopment	SD644	B-3

SITE LOCATION	START	FINISH	SHEET NO.
8980 La Jolla Village Drive, La Jolla, California, 92037	5/26/2020	5/26/2020	2 of 2

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Pacific Drilling Co.	Hollow Stem Auger	S. Narveson	J. Faker

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Mole	6	37.5	270	▼ 34.9 / *235.1*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Cathead)	Latitude: 32.87146, Longitude: -117.23417; ETR = 60%, N_{60} ~ 1.00N_{SPT} ~ 0.67*N_{MC}

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
			S-7	18 20 33	53	53						**SCRIPPS FORMATION*:** Moderately bedded CLAYSTONE with thin interbeds of SANDSTONE. CLAYSTONE; fine grained; gray; soft; moderately weathered; (LEAN CLAY WITH SAND (CL); moist; mostly fines; little fine sand; medium plasticity). PID=0.2 ppm
30	240		R-8	41 50/4"	50/4"	>70	20	106		30		
												POORLY INDURATED SANDSTONE; massive; medium grained; grayish brown with iron and manganese oxide staining; soft; moderately weathered; (SILTY SAND (SM); moist; mostly fine sand; little fines; nonplastic). PID=0.0 ppm
35	235									35		▼
			S-9	40 33 40	73	73	27	--				(Wet; few to little fines). PID=0.1 ppm
40	230									40		
45	225									45		

NOTES:
1. Bottom of excavation at 37.5 feet below ground surface.
2. Excavation terminated at target depth.
3. Groundwater measured at 34.9 feet below ground surface during drilling.
4. *Sedimentary rock description; (USCS soil description).

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BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
The Campus on Villa La Jolla Redevelopment	SD644	B-4

SITE LOCATION	START	FINISH	SHEET NO.
8980 La Jolla Village Drive, La Jolla, California, 92037	5/26/2020	5/26/2020	1 of 2

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Pacific Drilling Co.	Hollow Stem Auger	S. Narveson	J. Faker

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Mole	6	36.4	270	▼ 35.8 / *234.2*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Cathead)	Latitude: 32.87110, Longitude: -117.23407; ETR = 60%, $N_{60} \sim 1.00N_{SPT} \sim 0.67^*N_{MC}$

DEPTH (feet)	ELEVATION (feet)	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DESCRIPTION AND CLASSIFICATION
		B-1						EI	**FILL:** CLAYEY SAND (SC); light olive brown; moist; mostly fine to medium sand; some fines; medium plasticity; plant roots. EI=51
		R-2	4 12 12	24	16				SILTY SAND (SM); medium dense; brown; moist; mostly fine to medium sand; some fines; nonplastic; plant roots. PID=0.3 ppm
5	265	S-3	4 5 5	10	10			WA	SANDY LEAN CLAY (CL); stiff; grayish brown; moist; mostly fines; some fine sand; low plasticity. PID=0.1 ppm 55% FINES
10	260	R-4-1 R-4-2	5 7 9	16	11			PA EI	Mottled dark gray and pale brown. PID=0.3 ppm 68% FINES; 32% SAND; 0% GRAVEL EI=33
15	255	S-5	4 10 12	22	22	17	--		SILTY SAND (SM); medium dense; grayish brown to dark gray; moist; mostly fine to medium sand; some fines; nonplastic. PID=0.1
									SCRIPPS FORMATION*: POORLY INDURATED CLAYSTONE; massive; fine to medium grained; grayish brown; very soft; highly weathered; (SANDY LEAN CLAY (CL); moist; mostly fines; some fine sand; low plasticity).
20	250	R-6-1 R-6-2	11 18 21	39	26	21	103	PA CR	PID= 0.8 ppm 62% FINES; 38% SAND; 0% GRAVEL
		S-7	25 50/5"	50/5"	>100	20	--	WA PI	Fine grained; grayish brown with iron oxide staining; moderately weathered. 60% FINES LL=38, PI=21

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BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
The Campus on Villa La Jolla Redevelopment	SD644	B-4

SITE LOCATION	START	FINISH	SHEET NO.
8980 La Jolla Village Drive, La Jolla, California, 92037	5/26/2020	5/26/2020	2 of 2

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Pacific Drilling Co.	Hollow Stem Auger	S. Narveson	J. Faker

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Mole	6	36.4	270	▼ 35.8 / *234.2*

SAMPLING METHOD
Hammer: 140 lbs., Drop: 30 in. (Cathead)

NOTES
Latitude: 32.87110, Longitude: -117.23407; ETR = 60%, N_{60} ~ $1.00N_{SPT}$ ~ $0.67{*}N_{MC}$

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
												<u>SCRIPPS FORMATION (continued)</u>*: POORLY INDURATED CLAYSTONE; massive; fine grained; grayish brown with iron oxide staining; very soft; moderately weathered; (SANDY LEAN CLAY (CL); moist; mostly fines; some fine sand; low plasticity). Difficult drilling from 26 to 29 feet.
30	240									30		
			S-8	8 18 21	39	39	15	--	PA			POORLY INDURATED SANDSTONE; massive; medium grained; grayish brown; very soft; moderately weathered; (CLAYEY SAND (SC); moist; mostly fine to medium sand; some fines; medium plasticity). PID=0.1 ppm 63% SAND; 37% FINES; 0% GRAVEL
35	235									35		
			R-9	50/5"	50/5"	>70	18	107				
40	230									40		
45	225									45		

<u>NOTES</u>:
1. Bottom of excavation at 36.4 feet below ground surface.
2. Excavation terminated at target depth.
3. Groundwater measured at 35.8 feet below ground surface during drilling.
4. *Sedimentary rock description; (USCS soil description).

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APPENDIX C
GEOTECHNICAL LABORATORY TESTING (GROUP DELTA, 2019 & 2020)

APPENDIX C

GEOTECHNICAL LABORATORY TESTING (GROUP DELTA, 2019 & 2020)

Laboratory testing was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions and in the same locality. No warranty, express or implied, is made as to the correctness or serviceability of the test results, or the conclusions derived from these tests. Where a specific laboratory test method has been referenced, such as ASTM or Caltrans, the reference only applies to the specified laboratory test method, which has been used only as a guidance document for the general performance of the test and not as a "Test Standard". A brief description of the various tests performed for this project follows.

Classification: Soils were visually classified according to the Unified Soil Classification System as established by the American Society of Civil Engineers per ASTM D2487. The soil classifications are shown on the current boring logs in Appendix B.

Particle Size Analysis: Particle size analyses were performed in general accordance with ASTM D6913 and ASTM D1140, and were used to supplement visual soil classifications. The test results are shown on the current boring logs in Appendix B and in Figures C-1.1 through C-1.13.

Atterberg Limits: ASTM D4318 was used to determine the liquid limit and plasticity index of selected samples. The test results are shown on the current boring logs in Appendix B and in Figure C-2.

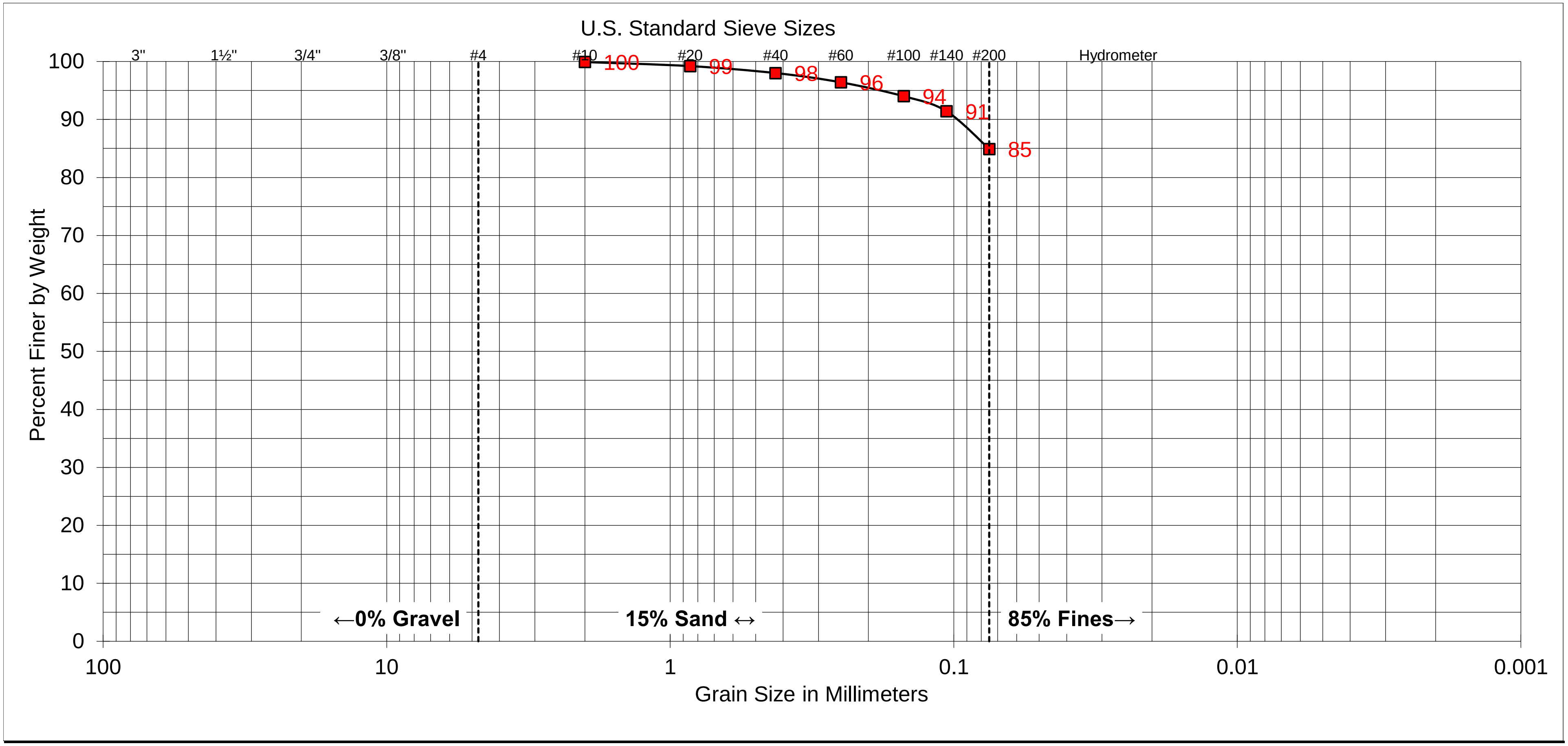
Expansion Index: The expansion potential of selected soil samples was estimated in general accordance with the laboratory procedures outlined in ASTM D4829. The test results are shown on the current boring logs in Appendix B and in Figure C-3. Figure C-3 also presents common criteria for evaluating the expansion potential based on the expansion index.

pH and Resistivity: To assess the potential for reactivity with buried metals, selected soil samples were tested for pH and minimum resistivity using Caltrans Test Method 643. The pH and minimum resistivity results are summarized in Figure C-4.

Sulfate Content: To assess the potential for reactivity with concrete, selected soil samples were tested for water soluble sulfate. The sulfate was extracted from the soil under vacuum using a 10:1 (water to dry soil) dilution ratio. The extracted solution was tested for water soluble sulfate in general accordance with ASTM D516. The test results are presented in Figure C-4, along with common criteria for evaluating soluble sulfate content.

Chloride Content: Soil samples were also tested for water soluble chloride. The chloride was extracted from the soil under vacuum using a 10:1 (water to dry soil) dilution ratio. The extracted solution was then tested for water soluble chloride using a calibrated ion specific electronic probe in general accordance with ASTM D512. The test results are also presented in Figure C-4, along with common criteria for evaluating the general degree of corrosivity of chloride content.

Moisture Content & Dry Density: The in-situ moisture contents and dry densities of collected soil samples were estimated in general accordance with ASTM D2216 and D2937. The test results are shown on the current boring logs in Appendix B.



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

BORING B-1
SAMPLE NUMBER: S-7
SAMPLE DEPTH: 25'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: LEAN CLAY WITH SAND

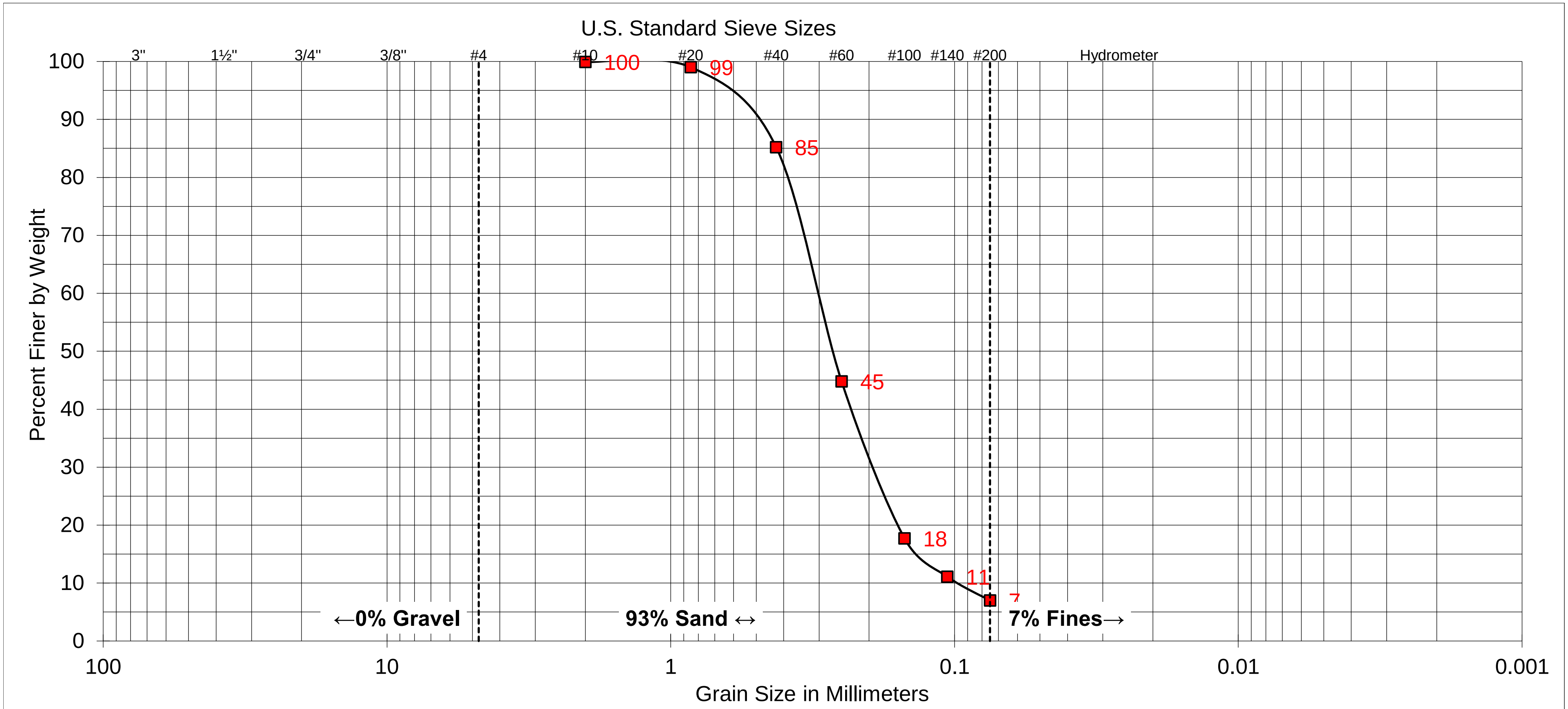
ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD644

FIGURE C-1.1



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY
GRAVEL		SAND			

BORING B-1
SAMPLE NUMBER: C-1
SAMPLE DEPTH: 37.5'

UNIFIED SOIL CLASSIFICATION: SP-SM

DESCRIPTION: POORLY GRADED SAND WITH SILT

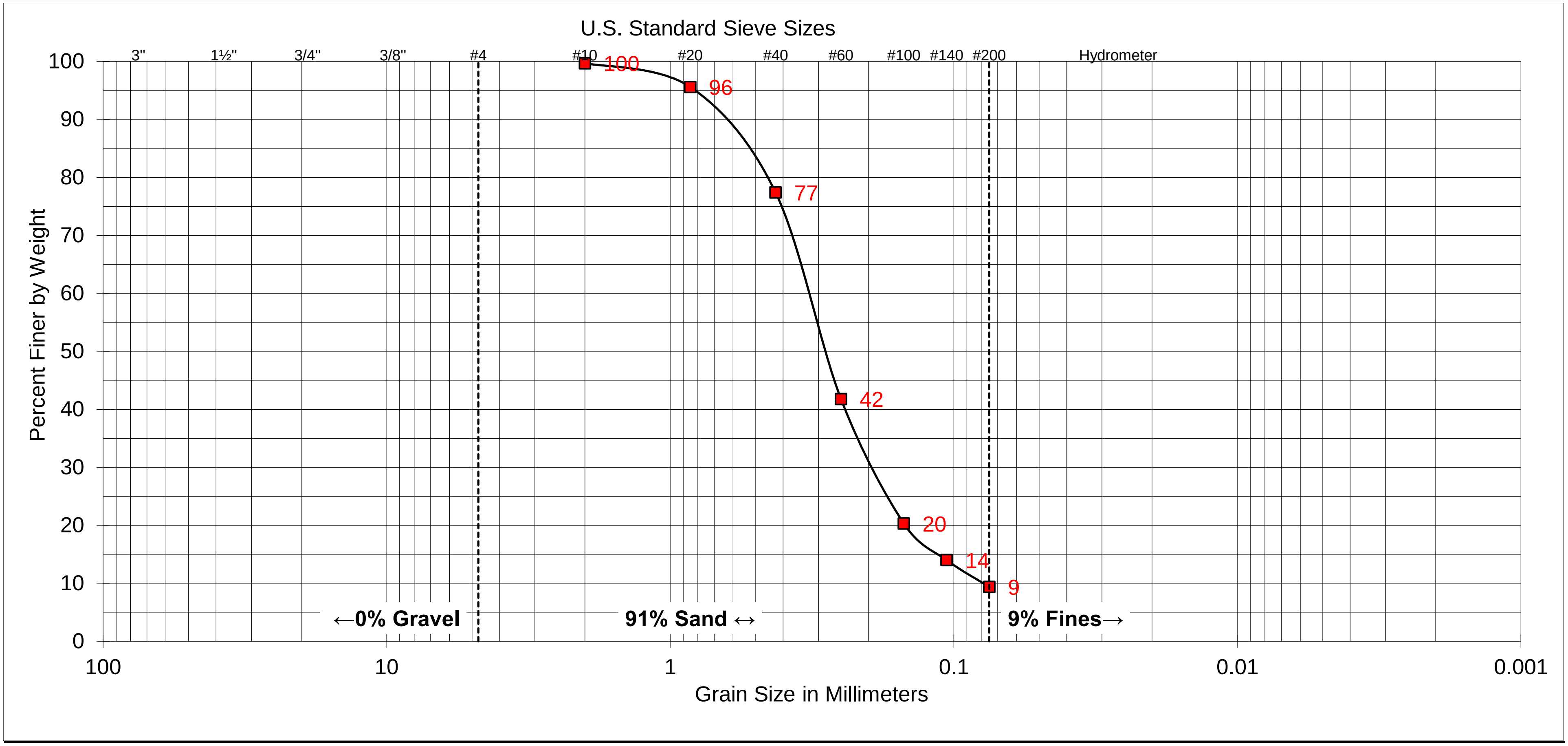
ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD644

FIGURE C-1.2



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

BORING B-1
SAMPLE NUMBER: C-3
SAMPLE DEPTH: 46.5'

UNIFIED SOIL CLASSIFICATION: SP-SM

DESCRIPTION: POORLY GRADED SAND WITH SILT

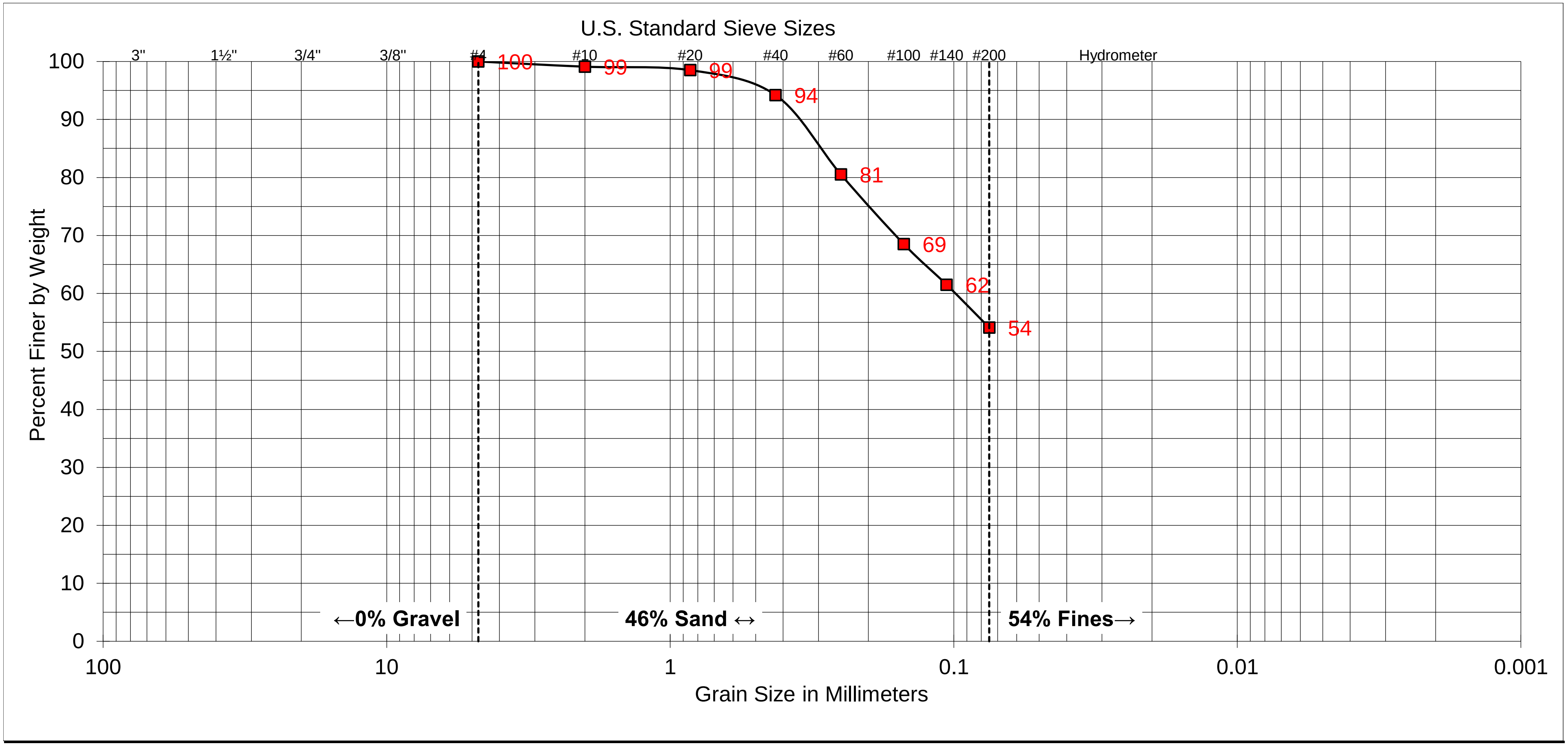
ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD644

FIGURE C-1.3



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY
GRAVEL		SAND			

BORING B-2
SAMPLE NUMBER: R-3
SAMPLE DEPTH: 10'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: SANDY LEAN CLAY

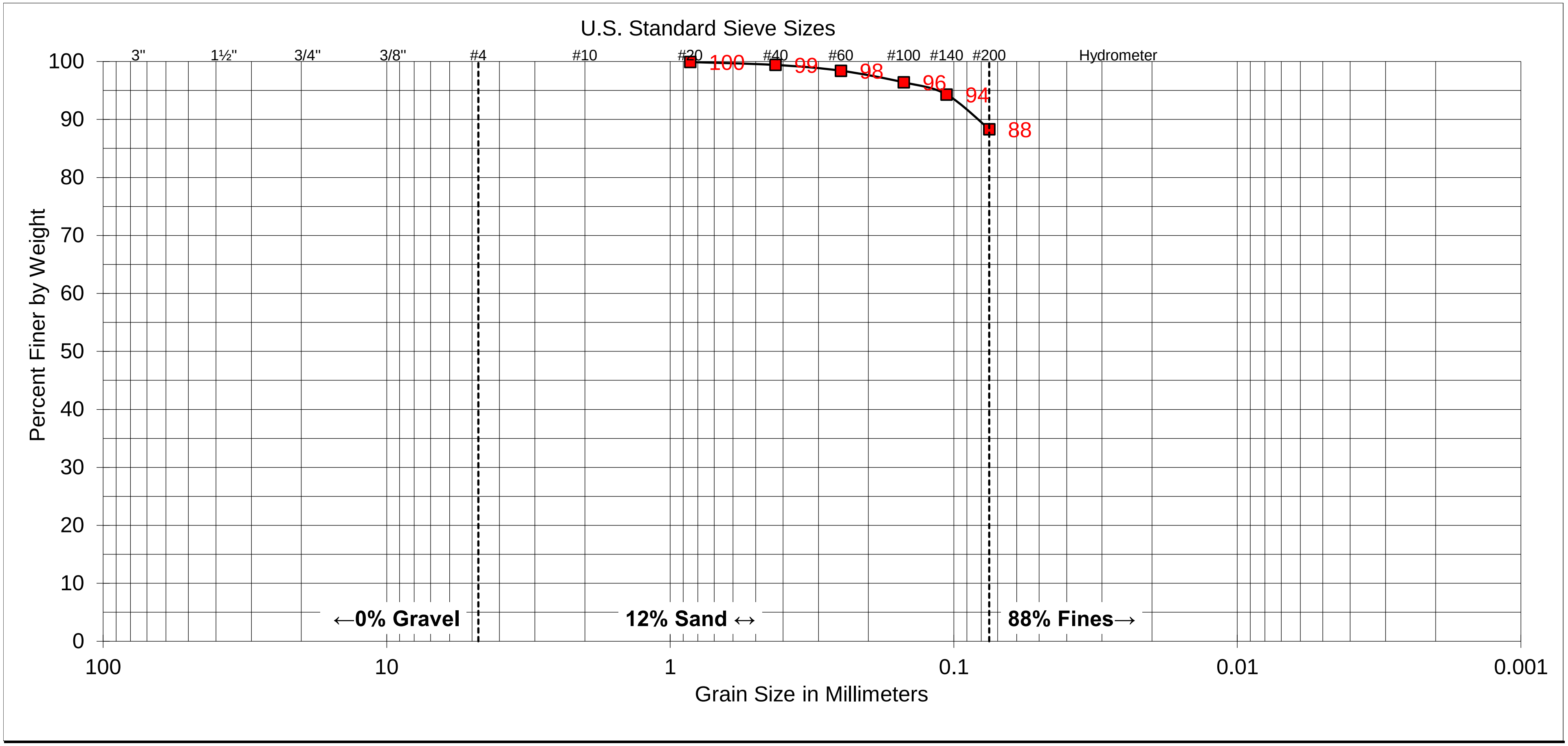
ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD644

FIGURE C-1.4



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY
GRAVEL		SAND			

BORING B-2
SAMPLE NUMBER: S-6
SAMPLE DEPTH: 25'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: LEAN CLAY

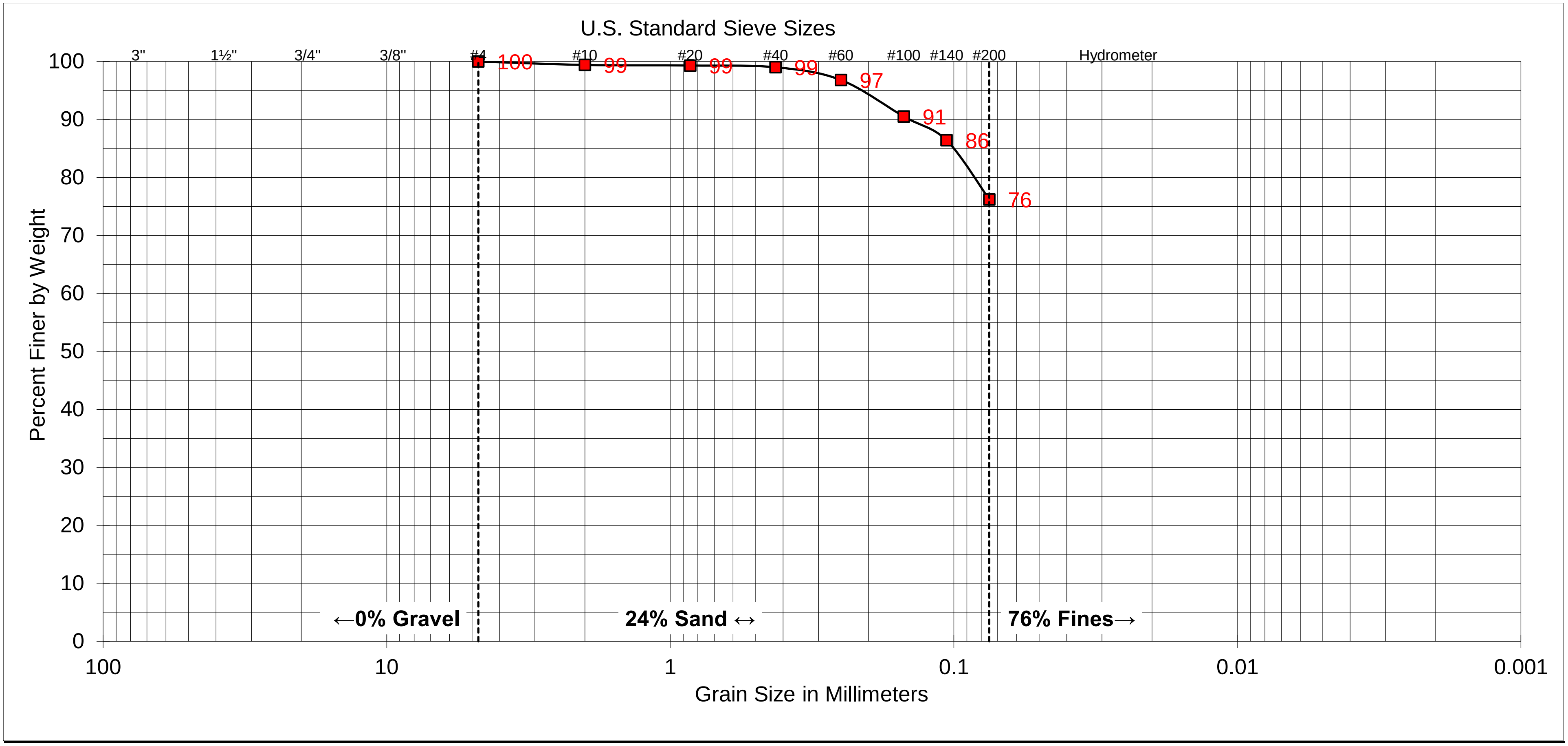
ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD644

FIGURE C-1.5



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

BORING B-2
SAMPLE NUMBER: S-8
SAMPLE DEPTH: 35'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: LEAN CLAY WITH SAND

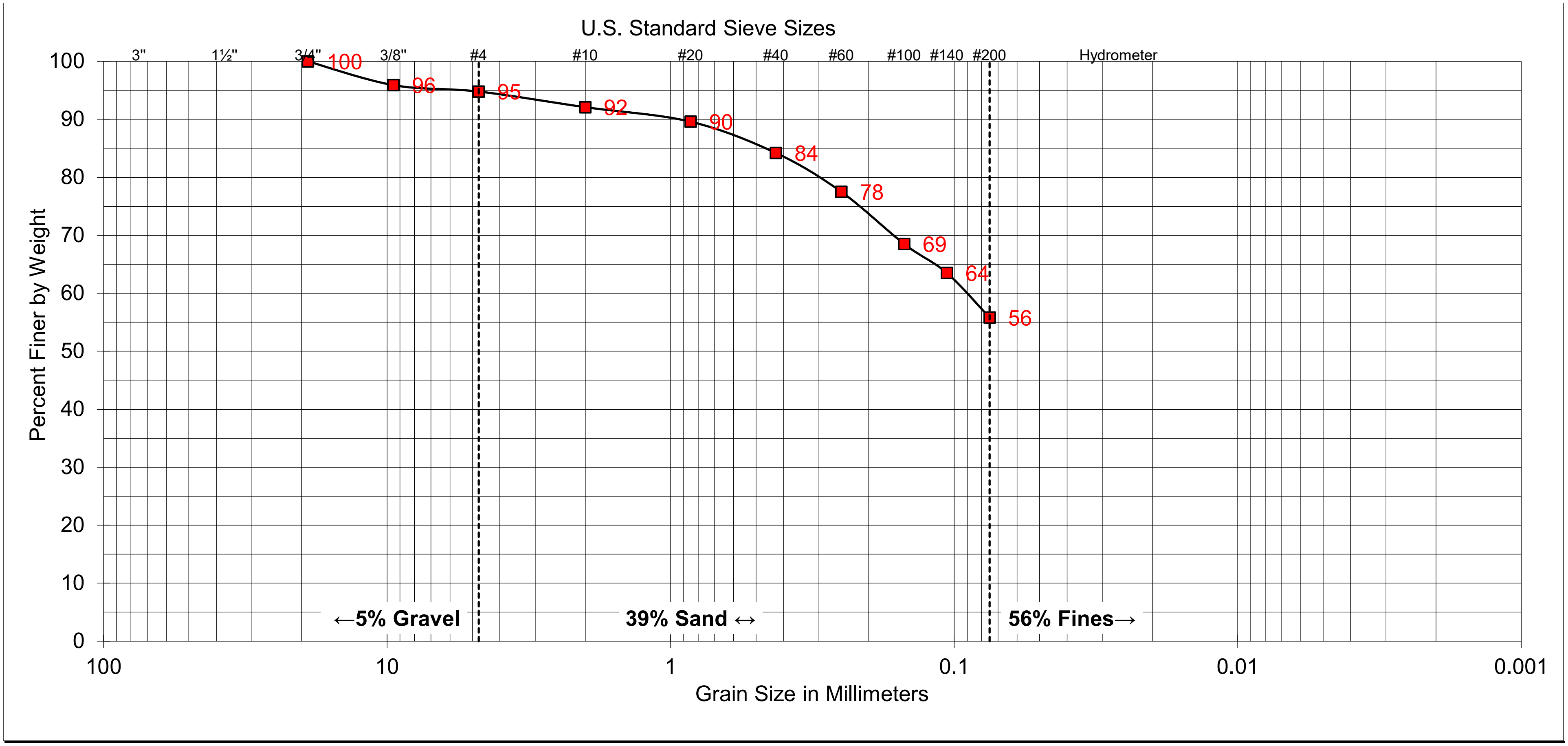
ATTERBERG LIMITS	
LIQUID LIMIT:	45
PLASTIC LIMIT:	27
PLASTICITY INDEX:	18

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD644

FIGURE C-1.6



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

BORING B-3
SAMPLE NUMBER: R-3
SAMPLE DEPTH: 4.5'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: SANDY LEAN CLAY

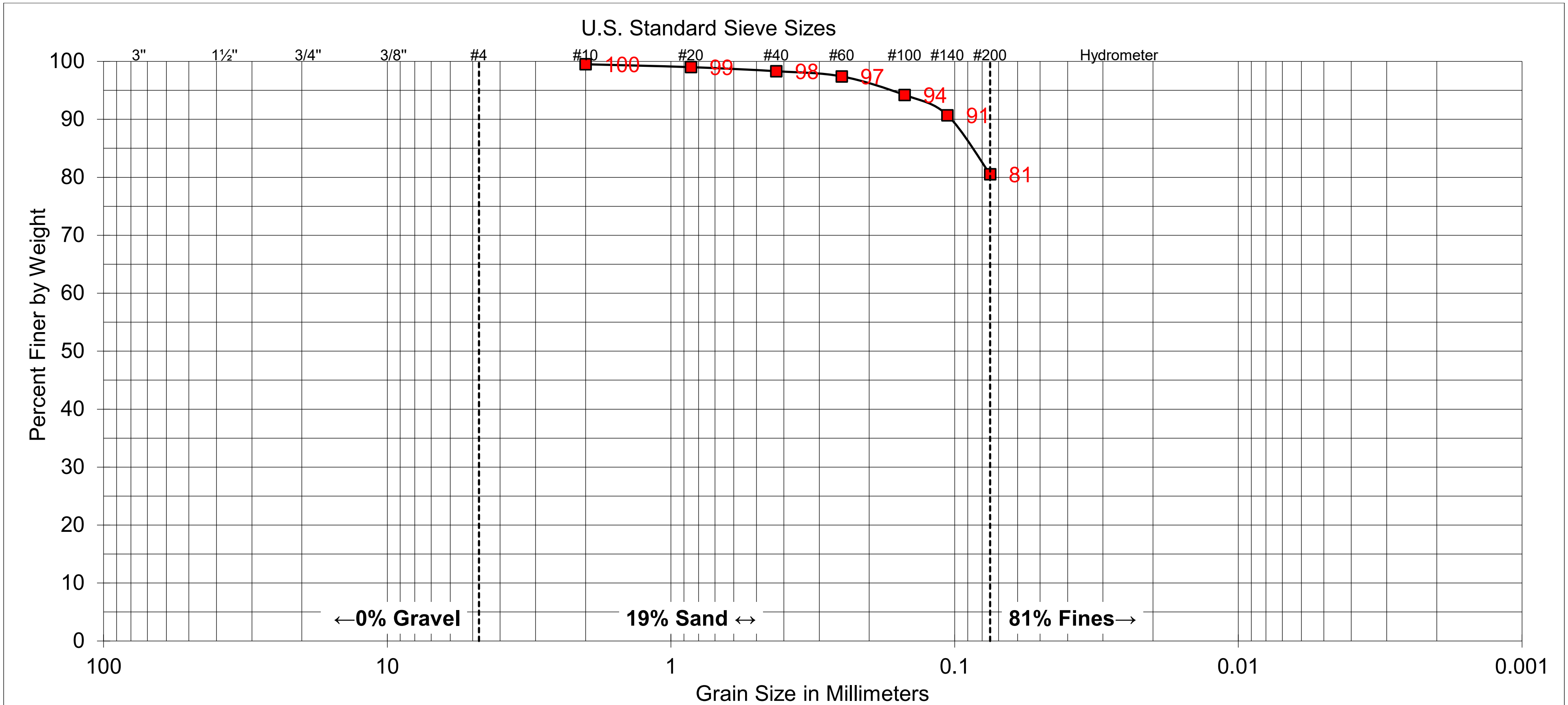
ATTERBERG LIMITS	
LIQUID LIMIT:	37
PLASTIC LIMIT:	19
PLASTICITY INDEX:	18

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD644

FIGURE C-1.7



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

BORING B-3
SAMPLE NUMBER: S-4
SAMPLE DEPTH: 10'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: LEAN CLAY WITH SAND

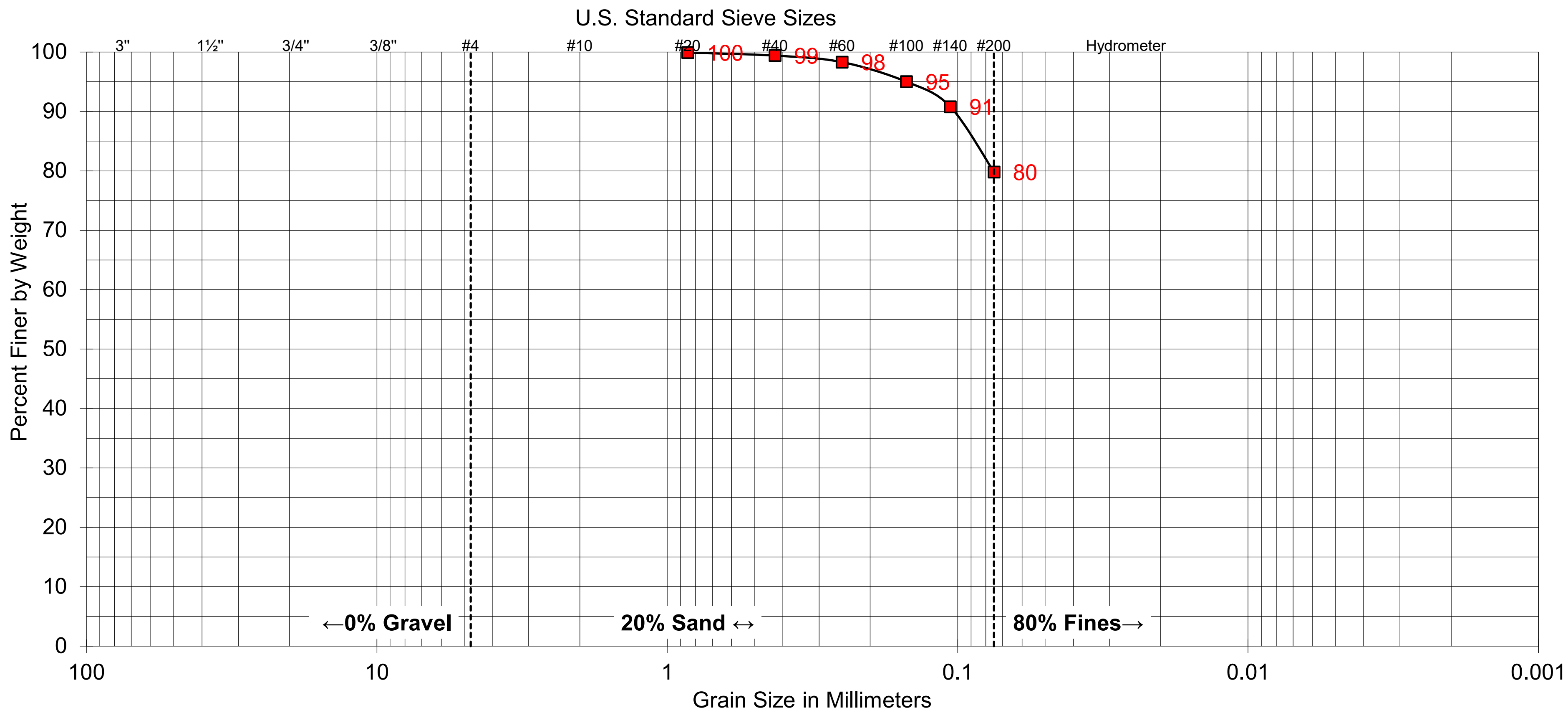
ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD644

FIGURE C-1.8



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

BORING B-3
SAMPLE NUMBER: S-6
SAMPLE DEPTH: 20'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: LEAN CLAY WITH SAND

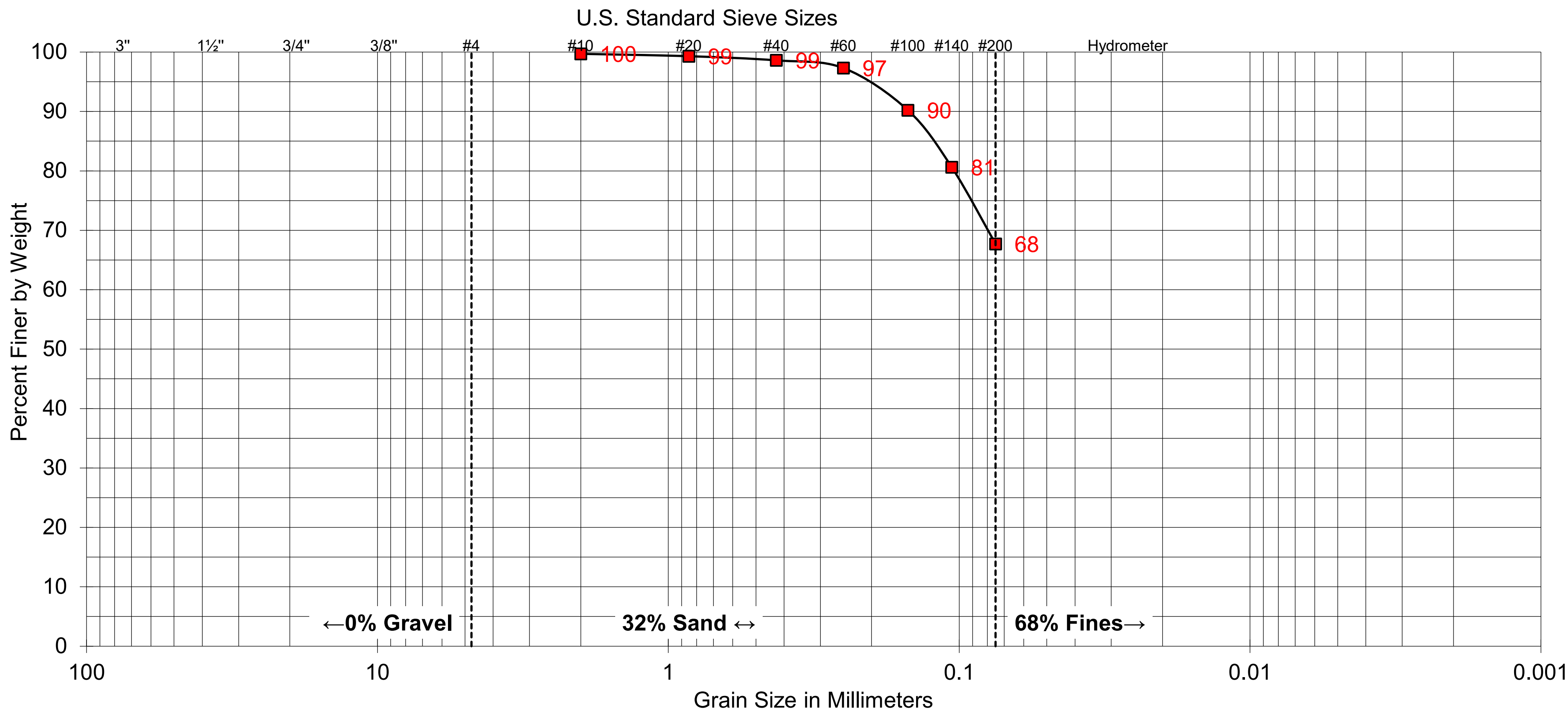
ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD644

FIGURE C-1.9



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

BORING B-4
SAMPLE NUMBER: R-4
SAMPLE DEPTH: 10'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: SANDY LEAN CLAY

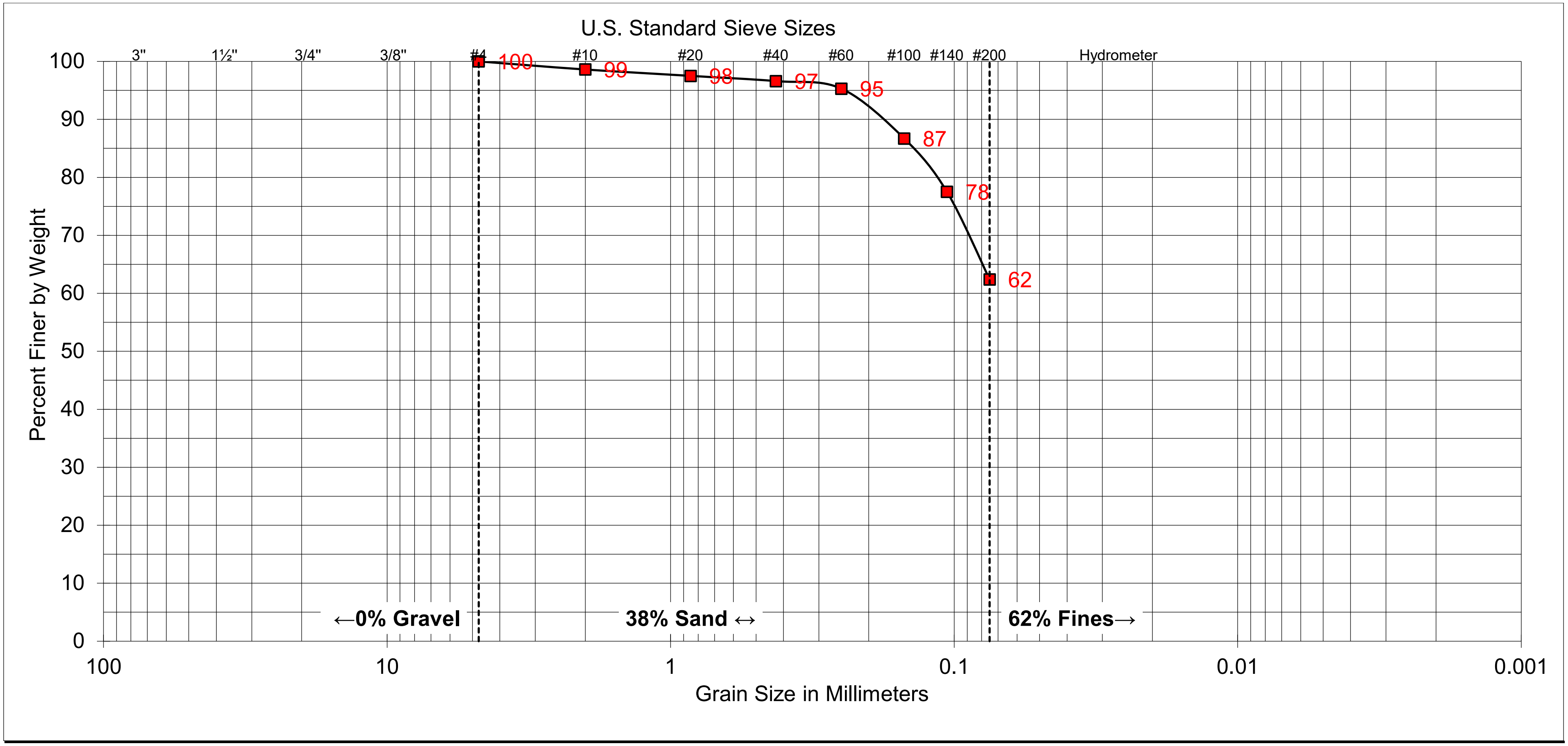
ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD644

FIGURE C-1.10



GRAVEL		SAND			SILT AND CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	

BORING B-4
SAMPLE NUMBER: R-6
SAMPLE DEPTH: 20'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: SANDY LEAN CLAY

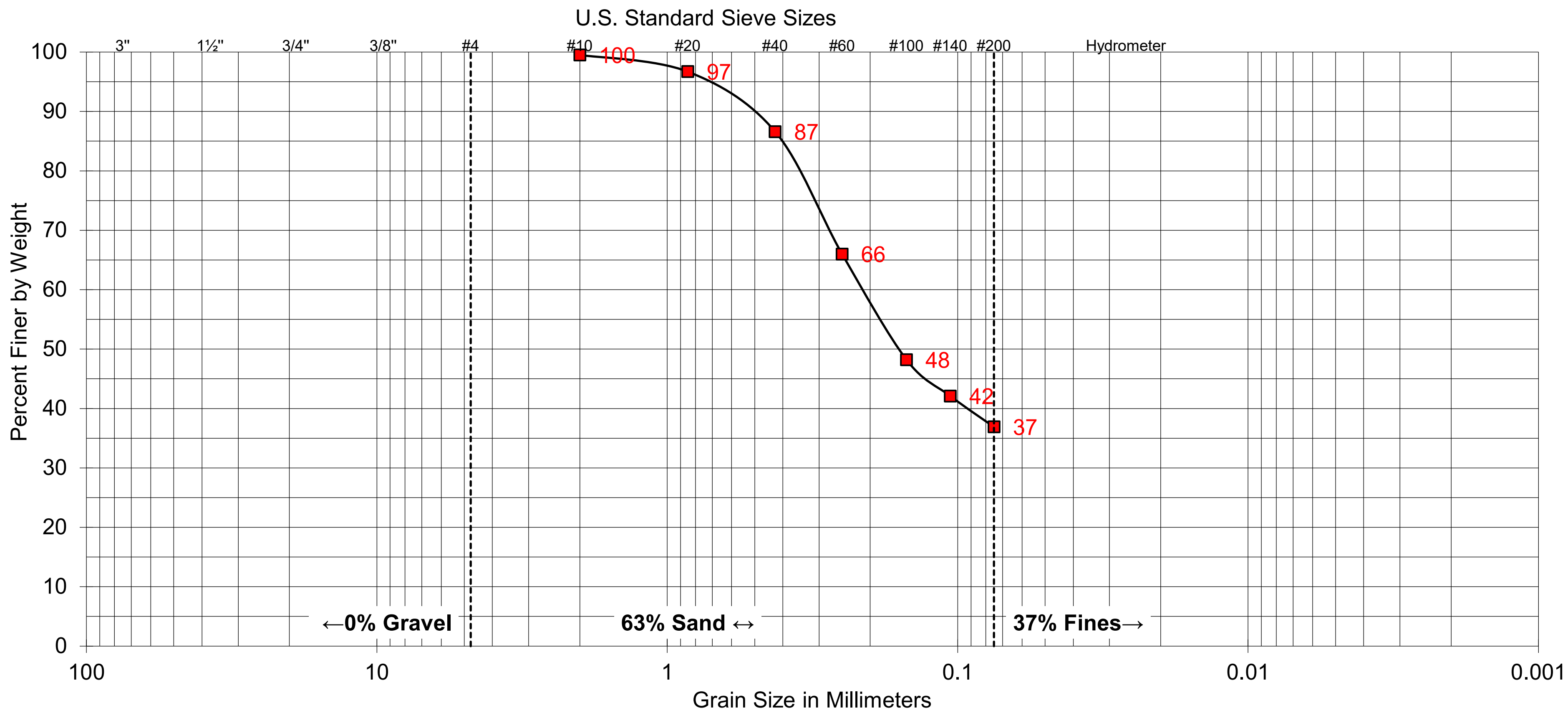
ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD644

FIGURE C-1.11



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

BORING B-4
SAMPLE NUMBER: S-8
SAMPLE DEPTH: 30'

UNIFIED SOIL CLASSIFICATION: SC

DESCRIPTION: CLAYEY SAND

ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD644

FIGURE C-1.12

PERCENT PASSING THE NO. 200 SIEVE
(ASTM D1140)

BORING NO.	SAMPLE NO. AND DEPTH	PERCENT PASSING NO. 200 SIEVE
B-1	S-2 @ 2.5’	96
B-1	R-4 @ 10’	85
B-1	C-7 @ 58’	93
B-1	C-9 @ 66’	91
B-1	C-10 @ 71.5’	97
B-2	S-4 @ 15’	60
B-2	R-5 @ 20’	75
B-2	S-12 @ 55’	82
B-2	S-14 @ 65’	82
B-3	R-5 @ 15’	88
B-4	S-3 @ 4’	55
B-4	S-7 @ 24	60

ATTERBERG LIMITS
(ASTM D4318)

BORING NO.	SAMPLE NO. AND DEPTH	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	USCS SYMBOL[1]	MATERIAL DESCRIPTION
B-1	R-4 @ 10’	69	25	44	CH	Scripps Formation
B-2	S-4 @ 15’	31	15	16	CL	Fill
B-2	R-5 @ 20’	38	19	19	CL	Alluvium
B-2	S-8 @ 35’	45	27	18	CL	Scripps Formation
B-2	S-14 @ 65’	41	24	17	CL	Ardath Shale
B-3	R-3 @ 4.5’	37	19	18	CL	Fill
B-4	S-7 @ 24’	38	17	21	CL	Scripps Formation

Notes:
1) Unified Soil Classification System (UCSC) symbol of fine-grained fraction of soil.

EXPANSION TEST RESULTS
(ASTM D4829)

BORING NO.	SAMPLE NO. AND DEPTH	MATERIAL DESCRIPTION	EXPANSION INDEX
B-1	R-4 @ 10’	Scripps Formation	65
B-1	R-6 @ 20’	Scripps Formation	65
B-2	B-1 @ 4-7’	Fill	70
B-2	R-3 @ 10’	Fill	43
B-2	R-5 @ 20	Alluvium	15
B-3	B-1 @ 0-5’	Fill	26
B-4	B-1 @ 0-5’	Fill	51
B-4	R-4 @ 10’	Fill	33

EXPANSION INDEX	POTENTIAL EXPANSION
0 to 20	Very low
21 to 50	Low
51 to 90	Medium
91 to 130	High
Above 130	Very High

CORROSIVITY TEST RESULTS

(ASTM CTM 643, D516, D512)

BORING NO.	SAMPLE NO. AND DEPTH	pH	RESISTIVITY [OHM-CM]	SULFATE CONTENT [%]	CHLORIDE CONTENT [%]
B-2	B-1 @ 4-7’	8.2	1,340	0.01	< 0.01
B-2	S-8 @ 35’	6.7	275	0.03	0.17
B-2	S-12 @ 55’	7.3	440	0.14	0.04
B-3	R-5 @ 15’	7.2	745	0.54	< 0.01
B-4	R-6 @ 20’	8.0`	1,350	0.02	0.01

SULFATE CONTENT [%]	SULFATE EXPOSURE	CEMENT TYPE
0.00 to 0.10	Negligible	-
0.10 to 0.20	Moderate	II, IP(MS), IS(MS)
0.20 to 2.00	Severe	V
Above 2.00	Very Severe	V plus pozzolan

SOIL RESISTIVITY	GENERAL DEGREE OF CORROSIVITY TO FERROUS
0 to 1,000	Very Corrosive
1,000 to 2,000	Corrosive
2,000 to 5,000	Moderately Corrosive
5,000 to 10,000	Mildly Corrosive
Above 10,000	Slightly Corrosive

CHLORIDE (Cl) CONTENT	GENERAL DEGREE OF
0.00 to 0.03	Negligible
0.03 to 0.15	Corrosive
Above 0.15	Severely Corrosive

APPENDIX D
GEOPHYSICAL REPORT (GEOVISION, 2019)

PS SUSPENSION VELOCITIES
BOREHOLE BH-2
THE CAMPUS LA JOLLA
SAN DIEGO, CALIFORNIA

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December 20, 2019

Report 19526-01 rev 0

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APPENDICES

APPENDIX A SUSPENSION VELOCITY MEASUREMENT QUALITY ASSURANCE SUSPENSION SOURCE TO RECEIVER ANALYSIS RESULTS

APPENDIX B GEOPHYSICAL LOGGING SYSTEMS - NIST TRACEABLE CALIBRATION RECORDS

INTRODUCTION

GEO*Vision* acquired PS Suspension velocity data with within a parking lot at 8980 La Jolla Village Dr, San Diego, California. Fieldwork, data analysis, and report preparation were reviewed by a **GEO***Vision* Professional Geophysicist or Engineer.

SCOPE OF WORK

This report presents results of PS Suspension velocity data acquired in one borehole on December 06, 2019, as detailed in Table 1. The purpose of these measurements was to supplement stratigraphic information by acquiring shear wave and compressional wave velocities as a function of depth.

The OYO PS Suspension Logging System was used to obtain in-situ horizontal shear (S_H) and compressional (P) wave velocity measurements in an uncased borehole at 1.6 foot intervals. Measurements followed **GEO***Vision* Procedure for PS Suspension Seismic Velocity Logging, revision 1.5. Acquired data were analyzed and a profile of velocity versus depth was produced for both S_H and P waves.

A detailed reference for the PS Suspension velocity measurement techniques used in this study is:

> Guidelines for Determining Design Basis Ground Motions, Report TR-102293, Electric Power Research Institute, Palo Alto, California, November 1993, Sections 7 and 8.

INSTRUMENTATION

Suspension Velocity Instrumentation

Suspension velocity measurements were performed using the PS Suspension logging system, manufactured by OYO Corporation, and their subsidiary, Robertson Geologging. This system directly determines the average velocity of a 3.3-foot high segment of the soil column surrounding the borehole of interest by measuring the elapsed time between arrivals of a wave propagating upward through the soil column. The receivers that detect the wave, and the source that generates the wave, are moved as a unit in the borehole producing relatively constant amplitude signals at all depths.

The suspension system probe consists of a combined reversible polarity solenoid horizontal shear-wave source and compressional-wave source, joined to two biaxial receivers by a flexible isolation cylinder, as shown in Figure 1. The separation of the two receivers is 3.3 feet, allowing average wave velocity in the region between the receivers to be determined by inversion of the wave travel time between the two receivers. The total length of the probe as used in these surveys is approximately 25 feet, with the center point of the receiver pair 12.5 feet above the bottom end of the probe.

The probe receives control signals from, and sends the digitized receiver signals to, instrumentation on the surface via an armored multi-conductor cable. The cable is wound onto the drum of a winch and is used to support the probe. Cable travel is measured to provide probe depth data using a sheave of known circumference fitted with a digital rotary encoder.

The entire probe is suspended in the borehole by the cable; therefore, source motion is not coupled directly to the borehole walls; rather, the source motion creates a horizontally propagating impulsive pressure wave in the fluid filling the borehole and surrounding the source. This pressure wave is converted to P and S_H-waves in the surrounding soil and rock as it impinges upon the wall of the borehole. These waves propagate through the soil and rock surrounding the borehole, in turn causing a pressure wave to be generated in the fluid surrounding the receivers as the soil waves pass their location. Separation of the P and S_H-waves at the receivers is performed using the following steps:

1. Orientation of the horizontal receivers is maintained parallel to the axis of the source, maximizing the amplitude of the recorded S_H -wave signals.
2. At each depth, S_H-wave signals are recorded with the source actuated in opposite directions, producing S_H-wave signals of opposite polarity, providing a characteristic S_H-wave signature distinct from the P-wave signal.
3. The 6.3 foot separation of source and receiver 1 permits the P-wave signal to pass and damp significantly before the slower S_H-wave signal arrives at the receiver. In faster soils or rock, the isolation cylinder is extended to allow greater separation of the P- and S_H-wave signals.
4. In saturated soils, the received P-wave signal is typically of much higher frequency than the received S_H-wave signal, permitting additional separation of the two signals by low pass filtering.
5. Direct arrival of the original pressure pulse in the fluid is not detected at the receivers because the wavelength of the pressure pulse in fluid is significantly greater than the dimension of the fluid annulus surrounding the probe (feet versus inches scale), preventing significant energy transmission through the fluid medium.

In operation, a distinct, repeatable pattern of impulses is generated at each depth as follows:

1. The source is fired in one direction producing dominantly horizontal shear with some vertical compression, and the signals from the horizontal receivers situated parallel to the axis of motion of the source are recorded.
2. The source is fired again in the opposite direction and the horizontal receiver signals are recorded.
3. The source is fired again and the vertical receiver signals are recorded. The repeated source pattern facilitates the picking of the P and S_H-wave arrivals; reversal of the source changes the polarity of the S_H-wave pattern but not the P-wave pattern.

The data from each receiver during each source activation is recorded as a different channel on the recording system. The PS Suspension system has six channels (two simultaneous recording channels), each with a 1024 sample record. The recorded data are displayed as six channels with a common time scale. Data are stored on disk for further processing.

Review of the displayed data on the recorder or computer screen allows the operator to set the gains, filters, delay time, pulse length (energy), and sample rate to optimize the quality of the data before recording. Verification of the calibration of the PS Suspension digital recorder is performed at least every twelve months using a NIST traceable frequency source and counter, as presented in Appendix B.

MEASUREMENT PROCEDURES

Suspension Velocity Measurement Procedures

The borehole was logged uncased and filled with drilling fluid. Measurements followed the **GEO***Vision* Procedure for PS Suspension Seismic Velocity Logging, revision 1.5. Prior to the logging run, the probe was positioned with the top of the probe even with a stationary reference point. The electronic depth counter was set to the distance between the mid-point of the receiver and the top of the probe, minus the height of the stationary reference point, if any. Measurements were verified with a tape measure, and calculations recorded on a field log.

The probe was lowered to the bottom of the borehole, stopping at 1.6 foot intervals to collect data, as summarized in Table 2. At each measurement depth the measurement sequence of two opposite horizontal records and one vertical record was performed. Gains were adjusted as required. The data from each depth were viewed on the computer display, checked, and saved to disk before moving to the next depth.

Upon completion of the measurements, the probe was returned to the surface and the zero depth indication at the depth reference point was verified prior to removal from the borehole.

DATA ANALYSIS

Suspension Velocity Analysis

The recorded digital waveforms were analyzed to locate the most prominent first minima, first maxima, or first break on the vertical axis records, indicating the arrival of P-wave energy. The difference in travel time between receiver 1 and receiver 2 (R1-R2) arrivals was used to calculate the P-wave velocity for that 1.0 meter segment of the soil column. When observable, P-wave arrivals on the horizontal axis records were used to verify the velocities determined from the vertical axis data. The time picks were then transferred into a template to complete the velocity calculations based on the arrival time picks made in PSLOG. The Microsoft Excel® analysis file accompanies this report.

The P-wave velocity over the 6.3-foot interval from source to receiver 1 (S-R1) was also picked, calculated, and plotted for quality assurance of the velocity derived from the travel time between receivers. In this analysis, the depth values as recorded were increased by 4.8 feet to correspond to the mid-point of the 6.33-foot S-R1 interval. Travel times were obtained by picking the first break of the P-wave signal at receiver 1 and subtracting the calculated and experimentally verified delay, in milliseconds, from source trigger pulse (beginning of record) to source impact. This delay corresponds to the duration of acceleration of the solenoid before impact.

As with the P-wave records, the recorded digital waveforms were analyzed to locate clear S_H-wave pulses, as indicated by the presence of opposite polarity pulses on each pair of horizontal records. Ideally, the S_H-wave signals from the 'normal' and 'reverse' source pulses are very nearly inverted images of each other. Digital Fast Fourier Transform – Inverse Fast Fourier Transform (FFT – IFFT) lowpass filtering was used to remove the higher frequency P-wave signal from the S_H-wave signal. Different filter cutoffs were used to separate P- and S_H-waves at different depths, ranging from 600 Hz in the slowest zones to 4000 Hz in the regions of highest velocity. At each depth, the filter frequency was selected to be at least twice the fundamental frequency of the S_H-wave signal being filtered.

Generally, the first maxima were picked for the 'normal' signals and the first minima for the 'reverse' signals, although other points on the waveform were used if the first pulse was distorted. The absolute arrival time of the 'normal' and 'reverse' signals may vary by +/- 0.2 milliseconds, due to differences in the actuation time of the solenoid source caused by constant mechanical bias in the source, or by borehole inclination. This variation does not affect the R1-R2 velocity determinations, as the differential time is measured between arrivals of waves created by the same source actuation. The final velocity value is the average of the values obtained from the 'normal' and 'reverse' source actuations.

As with the P-wave data, S_H-wave velocity calculated from the travel time over the 6.33-foot interval from source to receiver 1 was calculated and plotted for verification of the velocity derived from the travel time between receivers. In this analysis, the depth values were increased by 4.8 feet to correspond to the mid-point of the 6.33-foot S-R1 interval. Travel times were obtained by picking the first break of the S_H-wave signal at the near receiver and subtracting the calculated and experimentally verified delay, in milliseconds, from the beginning of the record at the source trigger pulse to source impact.

Poisson's Ratio, **v**, was calculated using the following formula:

$$\mathbf{v} = \frac{\left(\frac{V_s}{V_p}\right)^2 - 0.5}{\left(\frac{V_s}{V_p}\right)^2 - 1.0}$$

Figure 2 shows an example of R1 - R2 measurements on a sample filtered suspension record. In Figure 2, the time difference over the 3.3 foot interval of 1.88 milliseconds for the horizontal signals is equivalent to an S_H-wave velocity of 1745 feet/second. Whenever possible, time differences were determined from several phase points on the S_H-waveform records to verify the data obtained from the first arrival of the S_H-wave pulse. Figure 3 displays the same record before filtering of the S_H-waveform record with a 1400 Hz FFT - IFFT digital lowpass filter, illustrating the presence of higher frequency P-wave energy at the beginning of the record, and distortion of the lower frequency S_H-wave by residual P-wave signal.

Data and analyses were reviewed by a **GEO***Vision* Professional Geophysicist or Engineer as a component of the in-house data validation program.

Vs30 Analysis

The average shear wave velocity in the upper 30 meters (Vs30) was calculated using the NEHRP method. The PS Suspension logger measures directly the travel time over a 1 meter interval. However, data are logged at ½ meter intervals. The overlapped measurements (at nominal 0.5 m intervals) are overlapping travel times. It is not explicitly correct to use these as representing individual 0.5 m interval velocities. As a result, it is necessary to interpolate to obtain a distance-weighted average Vs value at each 1 m interval. These are then used to calculate the interval times, which are then accumulated to obtain the total travel time over 30 m. Vs30 is 30 m divided by this total travel time.

RESULTS

Suspension Velocity Results

Suspension R1-R2 P- and S_H-wave velocities for borehole BH-2 are plotted in Figures 4 and data are compiled in Table 3. The associated Microsoft Excel® analysis file accompanies this report.

P- and S_H-wave velocity data from R1-R2 analysis and quality assurance analysis of S-R1 data are plotted together in Figure A-1 in Appendix A to aid in visual comparison. Note that R1-R2 data are an average velocity over a 3.3-foot segment of the soil column; S-R1 data are an average over 6.3 feet, creating a significant smoothing relative to the R1-R2 plots. The S-R1 velocity data displayed in this figure is also compiled in Tables A-1. Included in the Microsoft Excel® analysis files are Poisson's Ratio calculations, tabulated data and plots.

Vs30 Results

The Vs30 value for borehole BH-2 is 502 meters/second, characterizing it as NEHRP site class C.*

* Site Classifications taken from Table 1615 1.1 Site Class Definitions published in 2000 International Building code, International Code Council, Inc. on page 350

SUMMARY

Discussion of Suspension Velocity Results

PS Suspension velocity data are ideally collected in uncased, fluid filled boreholes drilled with rotary wash methods, as was the borehole for this project.

Criteria	The Campus La Jolla – BORING BH-2
Consistent data between receiver to receiver (R1 – R2) and source to receiver (S – R1) data.	Yes.
Consistency between data from adjacent depth intervals.	Yes
Consistent relationship between P-wave and S_H -wave (excluding transition to saturated soils)	Yes Saturation occurs at about 47 ft BGS
Clarity of P-wave and S_H-wave onset, as well as damping of later oscillations.	S-wave is good data. P-wave above water table is difficult to interpret.
Consistency of profile between adjacent borings, if available.	Not applicable

Quality Assurance

These borehole geophysical measurements were performed using industry-standard or better methods for measurements and analysis. All work was performed under **GEO***Vision* quality assurance procedures, which include:

- Use of NIST-traceable calibrations, where applicable, for field and laboratory instrumentation
- Use of standard field data logs
- Use of independent verification of velocity data by comparison of receiver-to-receiver and source-to-receiver velocities
- Independent review of calculations and results by a registered professional engineer, geologist, or geophysicist.

Suspension Velocity Data Reliability

P- and S_H-wave velocity measurement using the Suspension Method gives average velocities over a 3.3-foot interval of depth. This high resolution results in the scatter of values shown in the graphs. Individual measurements are very reliable with estimated precision of +/- 5%. Depth indications are very reliable with estimated precision of +/- 0.2 feet. Standardized field procedures and quality assurance checks contribute to the reliability of these data.

CERTIFICATION

All geophysical data, analysis, interpretations, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by a **GEO***Vision* California Professional Geophysicist or Engineer.

Prepared by:

12/20/2019

Jonathan J Jordan — Date
GEO*Vision* Geophysical Services

Reviewed and approved by

12/20/2019

John Diehl — Date
California Professional Engineer, P.E. 30362
GEO*Vision* Geophysical Services

* This geophysical investigation was conducted under the supervision of a California Professional Geophysicist using industry standard methods and equipment. A high degree of professionalism was maintained during all aspects of the project from the field investigation and data acquisition, through data processing, interpretation and reporting. All original field data files, field notes and observations, and other pertinent information are maintained in the project files and are available for the client to review for a period of at least one year.

A professional geophysicist's certification of interpreted geophysical conditions comprises a declaration of his/her professional judgment. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations or ordinances.

Table 1. Borehole locations and logging dates

BOREHOLE DESIGNATION	DATES LOGGED	COORDINATES [1] (Degrees)	
		Latitude	Longitude
BH-2	12/06/2019	32.871199	-117.234559

[1] Coordinates from phone GPS at time of data collection

Table 2. Logging dates and depth ranges

BOREHOLE NUMBER	TOOL AND RUN NUMBER	DEPTH RANGE (FEET)	OPEN HOLE (FEET)	SAMPLE INTERVAL (FEET)	DATE LOGGED
BH-2	SUSPENSION DOWN01	9.84 -101.7	115	1.6	12/06/2019

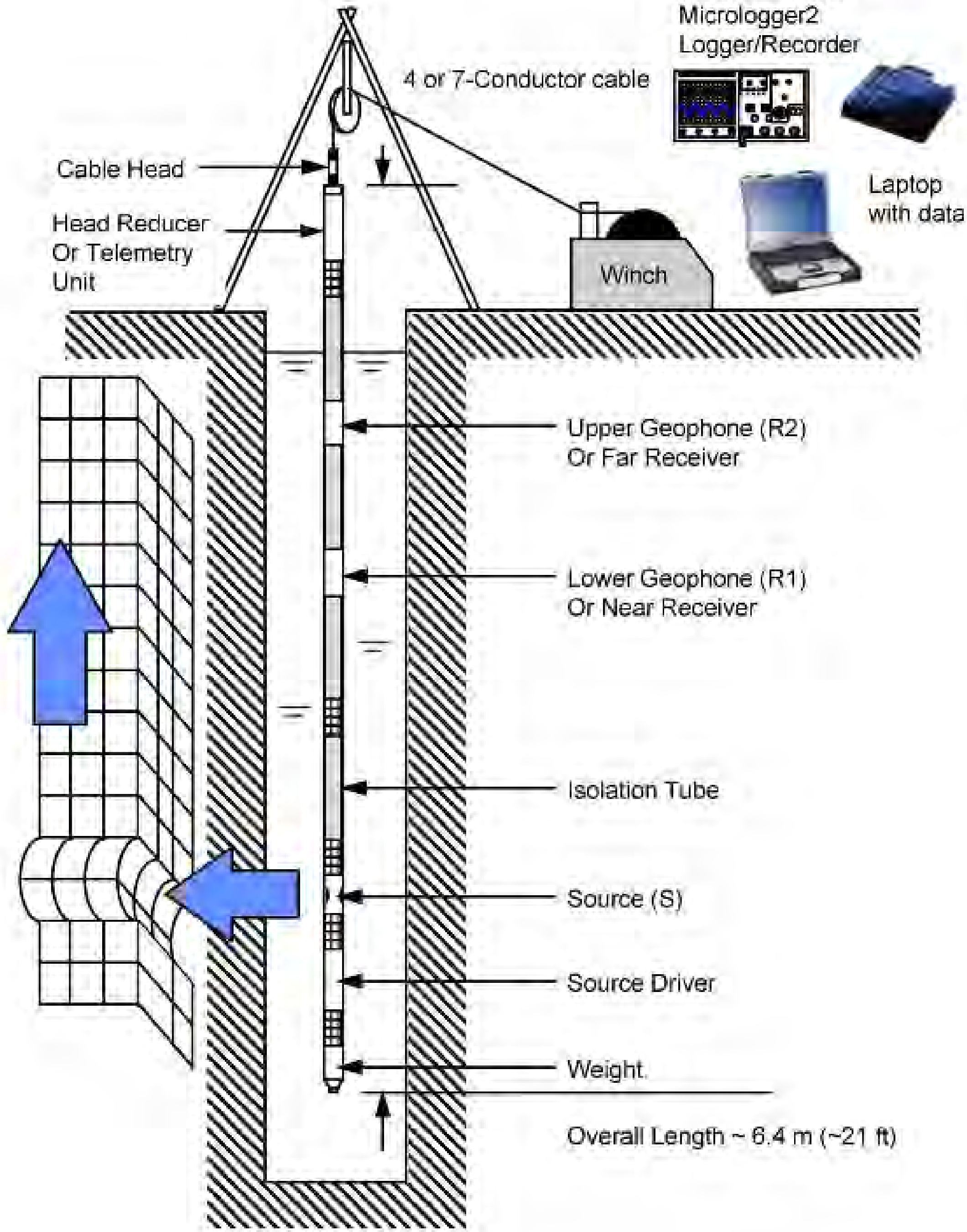

Figure 1: Concept illustration of PS logging system

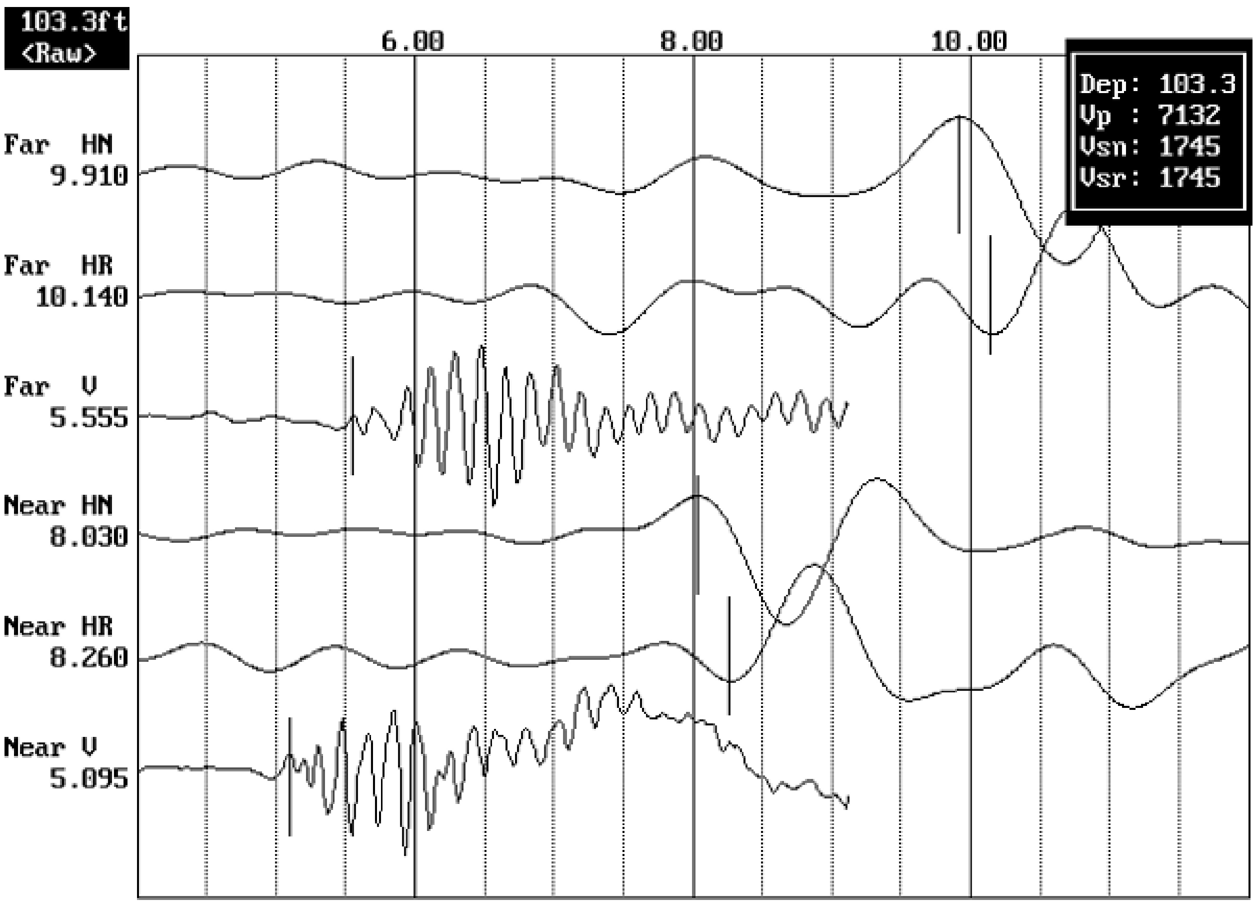

Figure 2: Example of filtered (1400 Hz lowpass) suspension record

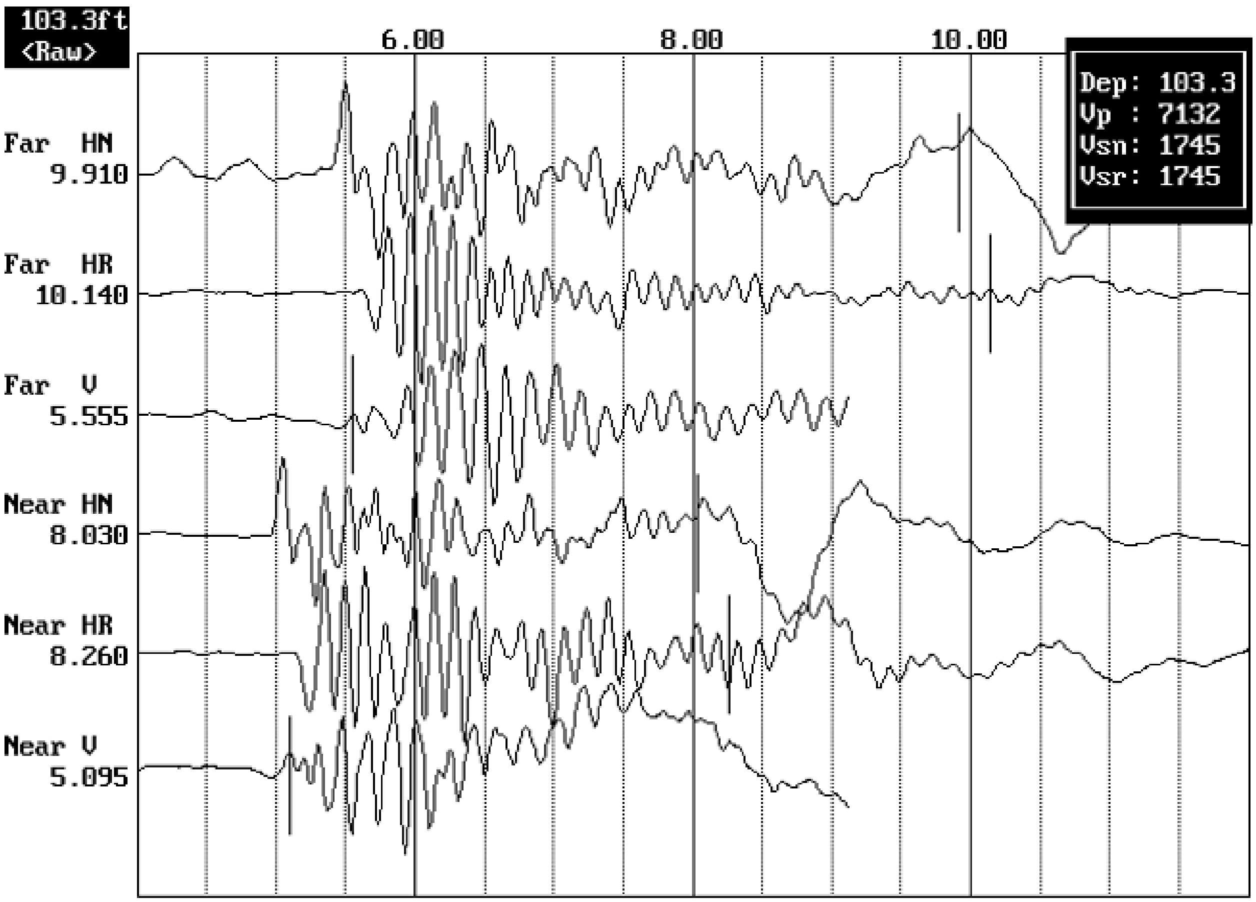

Figure 3. Example of unfiltered suspension record

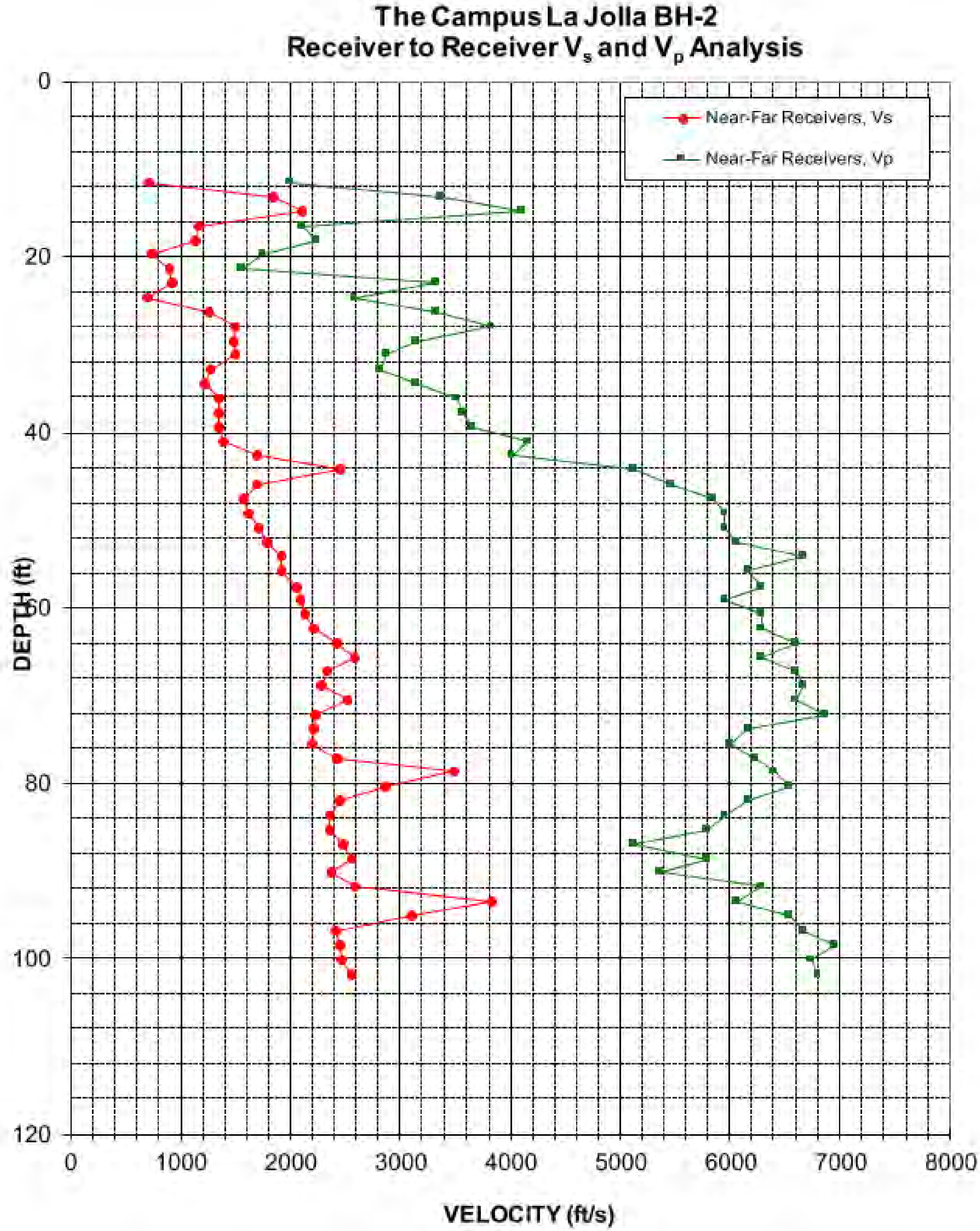

Figure 4: Borehole BH-2, Suspension R1-R2 P- and S_H-wave velocities

Table 3. Borehole BH-2 Suspension R1-R2 depths and P- and S_H-wave velocities

Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio Based on Receiver-to-Receiver Travel Time Data - Borehole BH-2

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V_s	V_p			V_s	V_p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
11.5	720	2010	0.43	3.5	220	610	0.43
13.1	1840	3370	0.29	4.0	560	1030	0.29
14.8	2110	4120	0.32	4.5	640	1250	0.32
16.4	1160	2110	0.28	5.0	350	640	0.28
18.0	1140	2240	0.32	5.5	350	680	0.32
19.7	750	1750	0.39	6.0	230	530	0.39
21.3	900	1560	0.25	6.5	280	480	0.25
23.0	920	3330	0.46	7.0	280	1020	0.46
24.6	710	2580	0.46	7.5	220	790	0.46
26.3	1260	3330	0.42	8.0	380	1020	0.42
27.9	1500	3830	0.41	8.5	460	1170	0.41
29.5	1480	3140	0.36	9.0	450	960	0.36
31.2	1490	2870	0.31	9.5	460	880	0.31
32.8	1280	2820	0.37	10.0	390	860	0.37
34.5	1220	3140	0.41	10.5	370	960	0.41
36.1	1360	3510	0.41	11.0	410	1070	0.41
37.7	1350	3570	0.42	11.5	410	1090	0.42
39.4	1360	3660	0.42	12.0	410	1120	0.42
41.0	1390	4170	0.44	12.5	430	1270	0.44
42.7	1690	4020	0.39	13.0	520	1220	0.39
44.3	2450	5130	0.35	13.5	750	1560	0.35
45.9	1690	5460	0.45	14.0	520	1670	0.45
47.6	1570	5850	0.46	14.5	480	1780	0.46
49.2	1610	5950	0.46	15.0	490	1810	0.46
50.9	1710	5950	0.46	15.5	520	1810	0.46
52.5	1790	6060	0.45	16.0	550	1850	0.45
54.1	1920	6670	0.45	16.5	580	2030	0.45
55.8	1930	6170	0.45	17.0	590	1880	0.45
57.7	2050	6290	0.44	17.6	630	1920	0.44
59.1	2090	5950	0.43	18.0	640	1810	0.43
60.7	2130	6290	0.44	18.5	650	1920	0.44
62.3	2210	6290	0.43	19.0	680	1920	0.43
64.0	2420	6600	0.42	19.5	740	2010	0.42
65.6	2580	6290	0.40	20.0	790	1920	0.40
67.3	2340	6600	0.43	20.5	710	2010	0.43
68.9	2280	6670	0.43	21.0	700	2030	0.43
70.5	2520	6600	0.42	21.5	770	2010	0.42
72.2	2230	6870	0.44	22.0	680	2090	0.44

Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio Based on Receiver-to-Receiver Travel Time Data - Borehole BH-2

American Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V_s	V_p	
(ft)	(ft/s)	(ft/s)	
73.8	2210	6170	0.43
75.5	2200	6010	0.42
77.1	2420	6230	0.41
78.7	3490	6410	0.29
80.4	2860	6540	0.38
82.0	2450	6170	0.41
83.7	2360	5950	0.41
85.3	2360	5800	0.40
86.9	2480	5130	0.35
88.6	2550	5800	0.38
90.2	2370	5380	0.38
91.9	2580	6290	0.40
93.5	3830	6060	0.17
95.1	3100	6540	0.35
96.8	2420	6670	0.42
98.4	2450	6940	0.43
100.1	2460	6730	0.42
101.7	2550	6800	

Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V_s	V_p	
(m)	(m/s)	(m/s)	
22.5	670	1880	0.43
23.0	670	1830	0.42
23.5	740	1900	0.41
24.0	1060	1950	0.29
24.5	870	1990	0.38
25.0	750	1880	0.41
25.5	720	1810	0.41
26.0	720	1770	0.40
26.5	760	1560	0.35
27.0	780	1770	0.38
27.5	720	1640	0.38
28.0	790	1920	0.40
28.5	1170	1850	0.17
29.0	950	1990	0.35
29.5	740	2030	0.42
30.0	750	2120	0.43
30.5	750	2050	0.42
31.0	780	2070	0.42

APPENDIX A

SUSPENSION VELOCITY MEASUREMENT QUALITY ASSURANCE SUSPENSION SOURCE TO RECEIVER ANALYSIS RESULTS

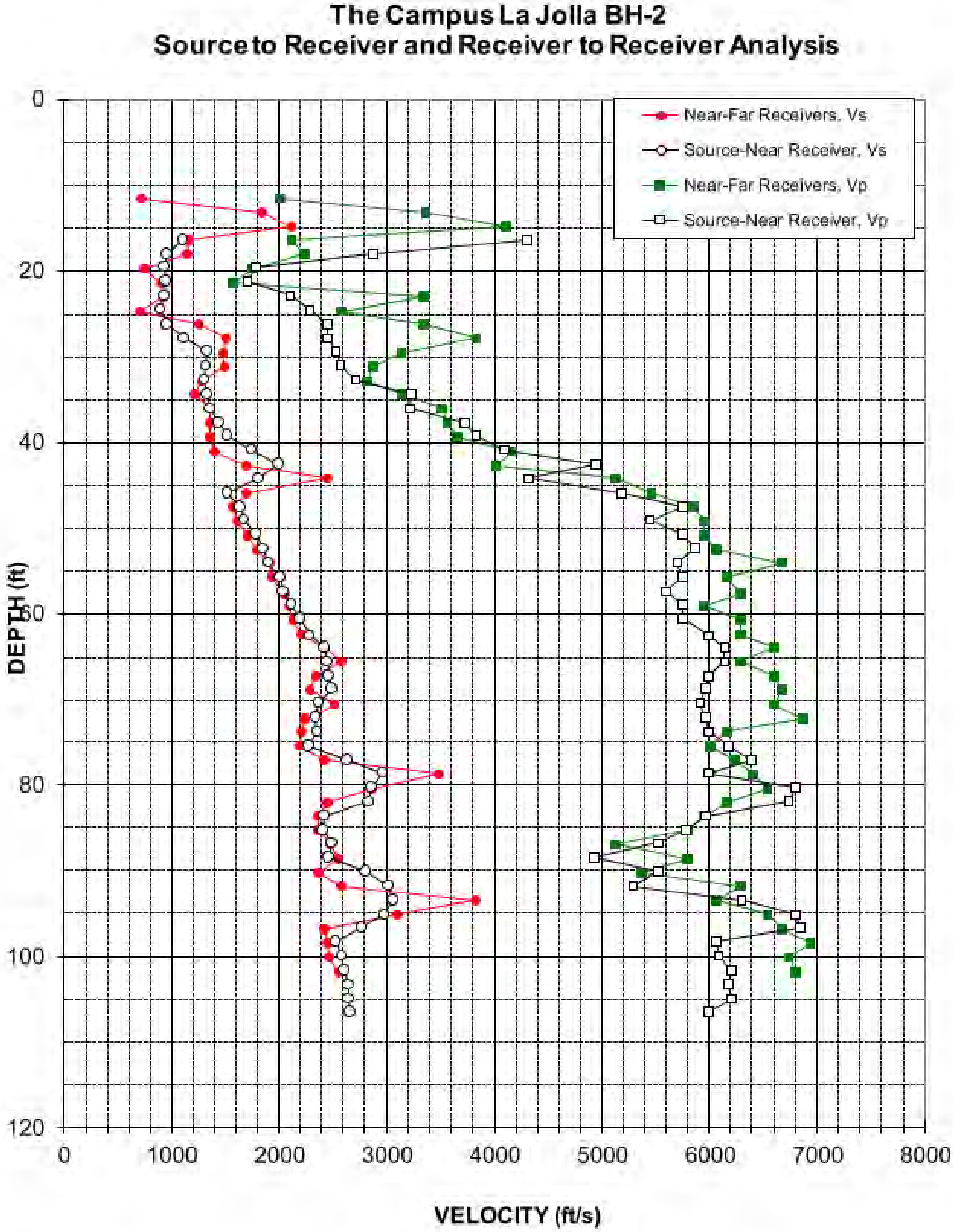

Figure A-1: Borehole BH-2, Suspension S-R1 P- and S_H-wave velocities

Table A-1. Borehole BH-2 S - R1 quality assurance analysis P- and S_H-wave data

Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio Based on Source-to-Receiver Travel Time Data - Borehole BH-2

American Units				Metric Units			
Depth at Midpoint Between Source and Near Receiver	Velocity		Poisson's Ratio	Depth at Midpoint Between Source and Near Receiver	Velocity		Poisson's Ratio
	V_s	V_p			V_s	V_p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
16.3	1110	4310	0.46	5.0	340	1310	0.46
18.0	960	2880	0.44	5.5	290	880	0.44
19.6	940	1780	0.31	6.0	290	540	0.31
21.2	950	1710	0.28	6.5	290	520	0.28
22.9	940	2100	0.37	7.0	290	640	0.37
24.5	890	2290	0.41	7.5	270	700	0.41
26.2	960	2450	0.41	8.0	290	750	0.41
27.8	1120	2450	0.37	8.5	340	750	0.37
29.4	1330	2530	0.31	9.0	410	770	0.31
31.1	1320	2570	0.32	9.5	400	780	0.32
32.7	1310	2720	0.35	10.0	400	830	0.35
34.4	1330	3230	0.40	10.5	410	980	0.40
36.0	1350	3210	0.39	11.0	410	980	0.39
37.6	1440	3720	0.41	11.5	440	1130	0.41
39.3	1510	3820	0.41	12.0	460	1170	0.41
40.9	1750	4100	0.39	12.5	530	1250	0.39
42.6	2000	4950	0.40	13.0	610	1510	0.40
44.2	1810	4320	0.39	13.5	550	1320	0.39
45.8	1510	5190	0.45	14.0	460	1580	0.45
47.5	1630	5750	0.46	14.5	500	1750	0.46
49.1	1680	5460	0.45	15.0	510	1660	0.45
50.8	1780	5750	0.45	15.5	540	1750	0.45
52.4	1850	5860	0.44	16.0	560	1790	0.44
54.0	1910	5700	0.44	16.5	580	1740	0.44
55.7	2020	5750	0.43	17.0	610	1750	0.43
57.3	2040	5600	0.42	17.5	620	1710	0.42
59.0	2110	5750	0.42	18.0	640	1750	0.42
60.6	2200	5750	0.41	18.5	670	1750	0.41
62.6	2290	6000	0.42	19.1	700	1830	0.42
63.9	2430	6150	0.41	19.5	740	1870	0.41
65.5	2450	6150	0.41	20.0	750	1870	0.41
67.2	2460	6000	0.40	20.5	750	1830	0.40
68.8	2480	5970	0.40	21.0	760	1820	0.40
70.5	2360	5920	0.41	21.5	720	1800	0.41
72.1	2340	5970	0.41	22.0	710	1820	0.41
73.7	2350	6000	0.41	22.5	720	1830	0.41
75.4	2280	6180	0.42	23.0	690	1880	0.42

Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio Based on Source-to-Receiver Travel Time Data - Borehole BH-2

American Units			
Depth at Midpoint Between Source and Near Receiver	Velocity		Poisson's Ratio
	V_s	V_p	
(ft)	(ft/s)	(ft/s)	
77.0	2640	6390	0.40
78.7	2970	6000	0.34
80.3	2860	6810	0.39
81.9	2840	6730	0.39
83.6	2420	5970	0.40
85.2	2410	5780	0.40
86.9	2480	5530	0.37
88.5	2460	4930	0.33
90.1	2800	5530	0.33
91.8	3010	5300	0.26
93.4	3060	6300	0.35
95.1	2990	6810	0.38
96.7	2760	6840	0.40
98.3	2530	6060	0.39
100.0	2580	6090	0.39
101.6	2600	6210	0.39
103.3	2650	6180	0.39
104.9	2650	6210	0.39
106.5	2660	6000	

Metric Units			
Depth at Midpoint Between Source and Near Receiver	Velocity		Poisson's Ratio
	V_s	V_p	
(m)	(m/s)	(m/s)	
23.5	800	1950	0.40
24.0	910	1830	0.34
24.5	870	2070	0.39
25.0	870	2050	0.39
25.5	740	1820	0.40
26.0	730	1760	0.40
26.5	760	1690	0.37
27.0	750	1500	0.33
27.5	850	1690	0.33
28.0	920	1610	0.26
28.5	930	1920	0.35
29.0	910	2070	0.38
29.5	840	2090	0.40
30.0	770	1850	0.39
30.5	790	1860	0.39
31.0	790	1890	0.39
31.5	810	1880	0.39
32.0	810	1890	0.39
32.5	810	1830	0.38

APPENDIX B

BOREHOLE GEOPHYSICAL LOGGING SYSTEMS - NIST TRACEABLE CALIBRATION RECORDS

MICRO PRECISION

MICRO PRECISION CALIBRATION, INC
2165 N. Glassell St.,
Orange, CA 92865
714-901-5659

ilac-MRA ANAB ACCREDITED CALIBRATION LABORATORY AC-1363.03

Certificate of Calibration

Date: May 28, 2019 **Cert No. 551220083036926**

Customer:
GEOVISION
1124 OLYMPIC DRIVE
CORONA CA 92881

		Work Order #:	LA-90043197
		Purchase Order #:	19160-190520-01
MPC Control #:	AM6768	Serial Number:	160024
Asset ID:	160024	Department:	N/A
Gage Type:	LOGGER	Performed By:	TYLER MCKEEN
Manufacturer:	OYO	Received Condition:	IN TOLERANCE
Model Number:	3403	Returned Condition:	IN TOLERANCE
Size:	N/A	Cal. Date:	May 24, 2019
Temp/RH:	22.5°C / 42.9%	Cal. Interval:	12 MONTHS
Location:	Calibration performed at MPC facility	Cal. Due Date:	May 24, 2020

Calibration Notes:

See attached data sheet for calculations. (1 Page)

Calibrated IAW customer supplied data form Rev 2.1
Frequency measurement uncertainty = 0.0005 Hz
Unit calibrated with Laptop Panasonic Model CF-29,s/n: 6AKSB99869 and RG Micrologger II Serial No. 5772
Calibrated To 4:1 Accuracy Ratio

Calibration performed in accordance with approved GEOVision calibration procedures included in work Instruction No. 06
Software: ML PS 4.00 Suspension Logger, GVLog.jar (2004) and pslog.exe ver 1.00 software.

Standards Used to Calibrate Equipment

I.D.	Description.	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
DB8748	GPS TIME AND FREQUENCY RECEIVER	58503A	3625A01225	HEWLETT PACKARD	Apr 30, 2021	551220083021224
LAS0018	ARB / FUNC GENERATOR	33250A	US40001522	AGILENT	Apr 30, 2020	551220083009506
BD7715	UNIVERSAL COUNTER	53131A	3416A05377	HEWLETT PACKARD	Apr 30, 2020	551220082934517

Calibrating Technician: TYLER MCKEEN

QC Approval: ILYA VAKS

Statements of Pass or Fail Conformance: The uncertainty of measurement has been taken into account when determining compliance with specification, as per ILAC-G8:03/2009. All measurements and test results guard banded to ensure the probability of false-accept does not exceed 2% in compliance with ANSI/NCSL Z540.3-2006.
The status of compliance with the acceptance criteria is reported as:
PASS - Compliant with specification.
FAIL - Not compliant with specification.
FAIL' - The measured value is not within the acceptance limits. However, a portion of the expanded uncertainty of measurement at 95% is within the specified tolerance.
PASS' - The measured value is within acceptance limits. However, a portion of the expanded uncertainty of measurement at 95% exceeds the specified tolerance.
The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%, unless otherwise stated. This calibration report complies with ISO/IEC 17025:2017 and ANSI/NCSL Z540.3 Method 6 Guard Bands based on Test Uncertainty Ratio. Calibration cycles and resulting due dates were submitted/approved by the customer. Any number of factors may cause an instrument to drift out of tolerance before the next scheduled calibration. Recalibration cycles should be based on frequency of use, environmental conditions and customer's established systematic accuracy. All standards are traceable to SI through the National Institute of Standards and Technology (NIST) and/or recognized national or international standards laboratories. Services rendered include proper manufacturer's service instruction and are warranted for no less than thirty (30) days. The information on this report pertains only to the instrument identified. This may not be reproduced in part or in a whole without the prior written approval of the issuing MP Calibration Laboratory.

MICRO PRECISION

MICRO PRECISION CALIBRATION, INC
2165 N. Glassell St.,
Orange, CA 92865
714-901-5659

ilac-MRA ANAB ACCREDITED CALIBRATION LABORATORY AC-1969.03

Certificate of Calibration

Date: May 28, 2019 **Cert No. 551220083036926**

Procedures Used in this Event

Procedure Name	Description
GEOVISION SEISMIC Rev. 2.1	Seismic Logger/Recorder Calibration Procedure, Rev. 2.1

Calibrating Technician: QC Approval:

TYLER MCKEEN ILYA VAKS

Statements of Pass or Fail Conformance: The uncertainty of measurement has been taken into account when determining compliance with specification, as per ILAC G8:03/2009. All measurements and test results guard banded to ensure the probability of false-accept does not exceed 2% in compliance with ANSI/NCSL Z540.3-2006.
The status of compliance with the acceptance criteria is reported as:
PASS - Compliant with specification
FAIL - Not compliant with specification
FAIL[3] - The measured value is not within the acceptance limits. However, a portion of the expanded uncertainty of measurement at 95% is within the specified tolerance.
PASS[4] - The measured value is within acceptance limits. However, a portion of the expanded uncertainty of measurement at 95% exceeds the specified tolerance.
The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%, unless otherwise stated. This calibration report complies with ISO/IEC 17025:2017 and ANSI/NCSL Z540.3 Method 6-Guard Bands based on Test Uncertainty Ratio. Calibration cycles and resulting due dates were submitted/approved by the customer. Any number of factors may cause an instrument to drift out of tolerance before the next scheduled calibration. Recalibration cycles should be based on frequency of use, environmental conditions and customer's established systematic accuracy. All standards are traceable to SI through the National Institute of Standards and Technology (NIST) and/or recognized national or international standards laboratories. Services rendered include proper manufacturer's service instruction and are warranted for no less than thirty (30) days. The information on this report pertains only to the instrument identified, this may not be reproduced in part or in a whole without the prior written approval of the issuing MP Calibration Laboratory.

GEOVision geophysical services

SUSPENSION PS SEISMIC LOGGER/RECORDER CALIBRATION DATA FORM

INSTRUMENT DATA

System mfg.: OYO Model no.: 3403
Serial no.: 160024 Calibration date: 5/24/2019
By: Micro Precision Due date: 5/24/2020

Counter mfg.: Hewlett Packard Model no.: 53131A
Serial no.: 3416A05377 Calibration date: 4/02/2019
By: Micro Precision Due date: 4/30/2020

Signal generator mfg.: Agilent Model no.: 33250A
Serial no.: US40001522 Calibration date: 4/03/2019
By: Micro Precision Due date: 4/30/2020

Laptop controller mfg.: Panasonic Model no.: CF-29
Serial no.: 6AKSB99869 Calibration date: N/A

SYSTEM SETTINGS:

Gain: 0
Filter: Low Pass 1K
Range: 5-200
Delay: 0
Stack (1 std): 1
System date = correct date and time: ✓ 11:42 AM 5/24/2019

PROCEDURE:

Set sine wave frequency to target frequency with amplitude of approximately 0.25 volt peak
Note actual frequency on data form.
Set sample period and record data file to disk. Note file name on data form. Acquired using ML PS 4.00
Pick duration of 9 cycles using PSLOG.EXE program, note duration on data form, and save as .sps file. Calculate average frequency for each channel pair and note on data form.

Average frequency must be within +/- 1% of actual frequency at all data points.

Maximum error ((AVG-ACT)/ACT*100)% As found ~~0.22 %~~ 0.2% EF 5/30/19 As left ~~0.22%~~ 0.2% EF 5/30/19

Target Frequency (Hz)	Actual Frequency (Hz)	Sample Period (microS)	File Name	Time for 9 cycles Hn (msec)	Average Frequency Hn (Hz)	Time for 9 cycles Hr (msec)	Average Frequency Hr (Hz)	Time for 9 cycles V (msec)	Average Frequency V (Hz)
50.00	50.00	200	101	179.8	50.06	179.8	50.06	180.2	49.94
100.0	100.0	100	102	90.00	100.0	90.10	99.90	90.10	99.90
200.0	200.0	50	103	45.00	200.0	44.95	200.2	44.95	200.2
500.0	500.0	20	104	18.00	500.0	17.98	500.6	18.00	500.0
1000	1000	10	105	8.980	1002	9.000	1000	8.980	1002
2000	2000	5	106	4.500	2000	4.500	2000	4.495	2002

Calibrated by: Tyler McLean (Name) 5/24/19 (Date) [signature] (Signature)

Witnessed by: Emily Feldman (Name) 5/24/19 (Date) [signature] (Signature)

Suspension PS Seismic Recorder/Logger Calibration Data Form Rev 2.1 February 7, 2012

APPENDIX E
SITE-SPECIFIC SEISMIC HAZARD ANALYSES

APPENDIX E

SITE-SPECIFIC SEISMIC HAZARD ANALYSES

1. INTRODUCTION

This section presents the results of the site-specific seismic hazard analyses performed in accordance with the 2019 California Building Code (CBC) and ASCE 7-16 (ASCE/SEI 7-16) for the proposed commercial development to be constructed at 8980 Villa La Jolla Drive, San Diego, California (Site). Both mapped seismic design acceleration parameters and site-specific seismic design acceleration parameters are provided in this report. The subsurface soil conditions used in this study were obtained from our field exploration program.

Horizontal Acceleration Response Spectra (ARS) for 5-percent damping was developed for the Risk-Targeted Maximum Considered Earthquake (MCE_R), as defined by ASCE 7-16, following Chapter 21.2, and performing both probabilistic and deterministic seismic hazard analyses. Site-specific probabilistic seismic hazard analyses were performed using the computer tool OpenSHA (Field, 2003), using the Uniform California Earthquake Rupture Forecast, Version 3 (UCERF3) seismic source model. Development of the horizontal ARS was also performed using the ground motion models developed as part of the Next Generation Attenuation (NGA) – West 2 research project.

2. PROJECT LOCATION

The site is located in the southwest corner of the intersection of La Jolla Village Drive and Villa La Jolla Drive in San Diego, California. The address and site coordinates are:

Address:	8980 Villa La Jolla Drive Los Angeles, California
Latitude:	32.8712° N
Longitude:	117.2342° W

3. SEISMIC SETTING

The project area is in a region with high seismic activity. Figure E-1 presents a Fault Map showing the nearby active faults. Table E-1 below lists the active faults closest to the site, along with their Fault Type, Maximum Magnitude (Mw) and Site-To-Source Rupture Distance (R_{rup}). These faults are obtained primarily from the Version 3 of the Uniform California Earthquake Rupture Forecast (UCERF3) (Field et al., 2013), which is the seismic source model developed by the Working Group on California Earthquake Probabilities (WGCEP) in 2013. The UCERF3 model was subsequently adopted by the 2014 U.S. National Seismic Hazard Mapping Program (NSHM) (Petersen et al., 2014) to develop probabilistic seismic hazard maps.

Table E-1: Significant Active Faults Near the Site

Fault	Fault Type	Maximum Magnitude, M_W	Site-to-Source Distance, R_{rup} (km)
Rose Canyon	Strike-Slip	7.0	3.2
Carlsbad	Reverse	6.7	15.3
Oceanside (alt1)	Reverse	7.2	20.4
Coronado Bank (alt 2)	Strike-slip	7.4	25.0
Thirty Mile Bank	Reverse	7.4	31.6
San Diego Trough north (alt1)	Strike-slip	7.3	40.0
Elsinore (Whittier + Glen Ivy + Temecula + Julian + Coyote Mountains)	Strike-slip	7.8	56.5
Earthquake Valley	Strike-slip	7.0	64.9
San Jacinto (San Bernardino + San Jacinto Valley + Anza + Stepovers Combined + Coyote Creek + Borrego + Superstition Mountain)	Strike-slip	7.8	92.4

As shown in the table above, the closest known active seismic source is the Rose Canyon fault zone, which is located about 3.2 kilometers (km) west of the Site. As shown in Figure E-1, the Rose Canyon is a strike-slip fault zone that extends from off the coast of Carlsbad down through La Jolla, and then through downtown San Diego to near the California and Mexico border.

The maximum magnitudes and scenarios adopted are consistent with the published Building Seismic Safety Council 2014 Event Set (the adopted deterministic ruptures used for the 2014 USGS NSHM (BSSC, 2015). For very active, multi-segment faults (such as Newport Inglewood or Elsinore), where different earthquake scenarios are considered, the one producing the largest magnitude was reported in the table along with its combined segments.

4. SITE CHARACTERIZATION

In developing site-specific ground motions, the characteristics of the soils underlying the site are an important input to evaluate the site response at a given site. Based on the review of the field exploration data that include P-S suspension logging shear wave velocity measurements (at boring BH-2), the average shear wave velocity in the upper 100 feet or approximately 30 meters ($V_{S,30}$) is approximately 1,647 feet/second (about 502 m/s). The Site is classified as Site Class C as presented in Table 20.3-1 of ASCE 7-16.

5. GROUND MOTION PREDICTION EQUATIONS

Site-specific ground motions are influenced by type of faulting, magnitude of characteristic earthquakes, and local soil conditions. Many ground motion models, also referred to as Ground Motion Prediction

Equations (GMPEs) have been developed to estimate the variation of spectral acceleration with earthquake magnitude and source-to-site distance, among other parameters. The Pacific Earthquake Engineering Research (PEER) coordinated a large multidisciplinary project entitled “NGA (Next Generation Attenuation)-West 2 Research Project” (Bozorgnia et al., 2014), referred to as NGA-West2. In NGA-West2, five teams have developed and presented horizontal ground motion models for shallow crustal earthquakes in active tectonic regions including Western North America. These teams are Abrahamson et al. (2014), Boore et al. (2014), Campbell and Bozorgnia (2014), Chiou and Youngs (2014), and Idriss (2014). We used all five of these models in developing the ARS at the site. The models were each assigned a weight of 0.22 except for Idriss (2014) which was assigned a weight of 0.12, consistent with the adopted weighting of the USGS (2014) in developing the NSHM.

The NGA-West2 relationships use measured values of shear wave velocity ($V_{S,30}$) as input. As previously discussed, we have adopted an average $V_{S,30}$ of 502 m/s to represent the underlying soil conditions at the Site. In addition, some of the ground motion models require input for $Z_{1.0}$ (defined as the depth in meters to a shear wave velocity of V_s = 1 km/s) and $Z_{2.5}$ (defined as the depth in km to a shear wave velocity of V_s = 2.5 km/s). These two parameters are used to capture the basin effect on site response. The site-specific shear wave velocity profile nearly reaches the $Z_{1.0}$ plane, and therefore a trend of increasing shear wave velocity with depth was used to extrapolate a site-specific $Z_{1.0}$ = 60 meters for the underlying rock. This is supported by other regional shear wave velocity measurements and our local experience at UCSD. The depth to bedrock parameter $Z_{2.5}$ was calculated to be 0.98 km using correlations from the ground motion model by and Campbell and Bozorgnia (2013).

6. PROBABILISTIC SEISMIC HAZARD ANALYSIS

Site-specific Probabilistic Seismic Hazard Analyses (PSHA) were performed using the computer tool OpenSHA (Fields, 2003), using the UCERF3 seismic source model and the updated NGA-West2 ground motion models. Uniform hazard horizontal ARS were developed up to a period of 10 seconds. The hazard spectrum, developed for 5-percent damping, is presented in Figure E-2.

Note that supplementary probabilistic seismic hazard analyses were performed using the USGS Unified Hazard Tool (https://earthquake.usgs.gov/hazards/interactive/) for comparison to the OpenSHA analyses. These analyses were performed using the dynamic version of the Conterminous U.S. 2014 (v4.2.0) at available spectral periods, using the Site Class C option ($V_{S,30}$ = 524 m/s). Results of these supplementary analyses show good agreement with our OpenSHA analyses.

The site-specific probabilistic MCE_R was developed in accordance with ASCE 7-16 Section 21.2.1, for the maximum horizontal component and adjusted for targeted risk (1-percent probability of collapse in 50 years). The median (RotD50) ground motion was adjusted to the maximum rotated component of ground motion (RotD100) using the factors proposed by Shahi and Baker (2014). The second adjustment modifies the spectra from a 2-percent probability of exceedance in 50 years to a targeted risk of 1-percent probability of collapse in 50 years, which is performed using Method 1 of ASCE 7-16 (Section 21.2.1), using the risk coefficients C_{RS} and C_{R1}. The risk coefficients (per ASCE 7-16) were obtained using the Structural Engineers Association of California (SEAOC) / Office of Statewide Health Planning and Development (OSHPD) Seismic Design Maps website application (SEAOC/OSHPD, 2019). The risk coefficients of C_{RS} = 0.872 and C_{R1} = 0.891 were used in the analyses. Figure E-2 presents the probabilistic MCE_R ARS for the Site.

7. DETERMINISTIC SEISMIC HAZARD ANALYSIS

Site-specific Deterministic Seismic Hazard Analyses (DSHA) were performed based on the characteristics of earthquake scenarios identified as predominant contributors to the regional seismic hazard. Pertinent characteristics of the earthquake scenarios include parameters such as distance from the site to the causative fault and the maximum magnitude of earthquake associated with the fault. The effects of local soil conditions ($V_{S,30}$) and the mechanism of faulting are accounted for in the ground motion models as well.

DSHAs were performed for the Rose Canyon, Carlsbad, Coronado Bank, Oceanside, and Elsinore sources identified in Table E-1. The NGA West2 GPMEs were used to develop a 5-percent damped spectral ARS for each source. A plot of the DSHA for the project site is shown in Figure E-3. The Rose Canyon fault is the controlling seismic source at all spectral periods. According to ASCE 7-16 Section 21.2.2 and Supplement 1 of ASCE 7-16, the deterministic MCE_R, which corresponds to the 84th-percentile (median plus one standard deviation), 5-percent damped spectral response accelerations in the direction of maximum horizontal response at any spectral period, must not be lower than deterministic lower limit. Therefore, the 84th-percentile spectral values obtained from the GMPEs are used to develop the deterministic spectrum. The ground motions were adjusted to the maximum rotated component of ground motion using the Shahi and Baker (2014) factors. Figure E-4 shows the results of our DSHA along with the ASCE 7-16 deterministic lower limit spectrum.

8. DETERMINATION OF SITE-SPECIFIC RESPONSE SPECTRA

Development of the site-specific MCE_R ARS as defined by ASCE 7-16, Chapter 21.2, was performed using the seismic hazard analysis procedure described in the previous sections. In accordance with ASCE 7-16 Section 21.2.3, the site-specific MCE_R acceleration response spectra are taken as the lesser of the probabilistic and deterministic MCE_R spectra, but not less than 150-percent of the site-specific design spectrum in Section 21.3. Figure E-5 presents the 5-percent damped horizontal MCE_R ARS. The site-specific Design Earthquake spectrum is equal to two-thirds of the site-specific MCER spectrum, although it is not less than 80 percent of the design spectrum developed per Section 21.3. Figure E-6 presents both the MCE_R and the Design Earthquake spectra along with the tabulated values.

9. SITE-SPECIFIC DESIGN ACCELERATION PARAMETERS

The short period design spectral acceleration (S_{DS}) and 1-second period design spectral acceleration (S_{D1}) parameters were determined in accordance with ASCE 7-16 Section 21.4. The parameter S_{DS} is taken as 90-percent of the maximum spectral acceleration from the site-specific spectrum at periods between 0.2 and 5 seconds. The parameter S_{D1} is taken as the maximum of the product between period and spectral acceleration for periods from 1 to 2 seconds for sites with $V_{S,30} > 1{,}200$ ft/s. The parameters S_{MS} and S_{M1} shall be taken as 1.5 times S_{DS} and S_{D1} respectively. The values obtained shall not be less than 80-percent of the values determined in accordance with ASCE 7-16, Section 11.4.3 for S_{MS} and S_{M1} and Section 11.4.5 for S_{DS} and S_{D1}. Table E-2 presents the site-specific design acceleration parameters.

Table E-2. Site-Specific Seismic Design Acceleration Parameters

Design Parameters	Site-Specific Seismic Design Parameters (ASCE 7-16 Section 21.4)
Site Class	C
S_{MS} (g)	1.524
S_{M1} (g)	0.602
S_{DS} (g)	1.016
S_{D1} (g)	0.402

10. REFERENCES

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11. FIGURES

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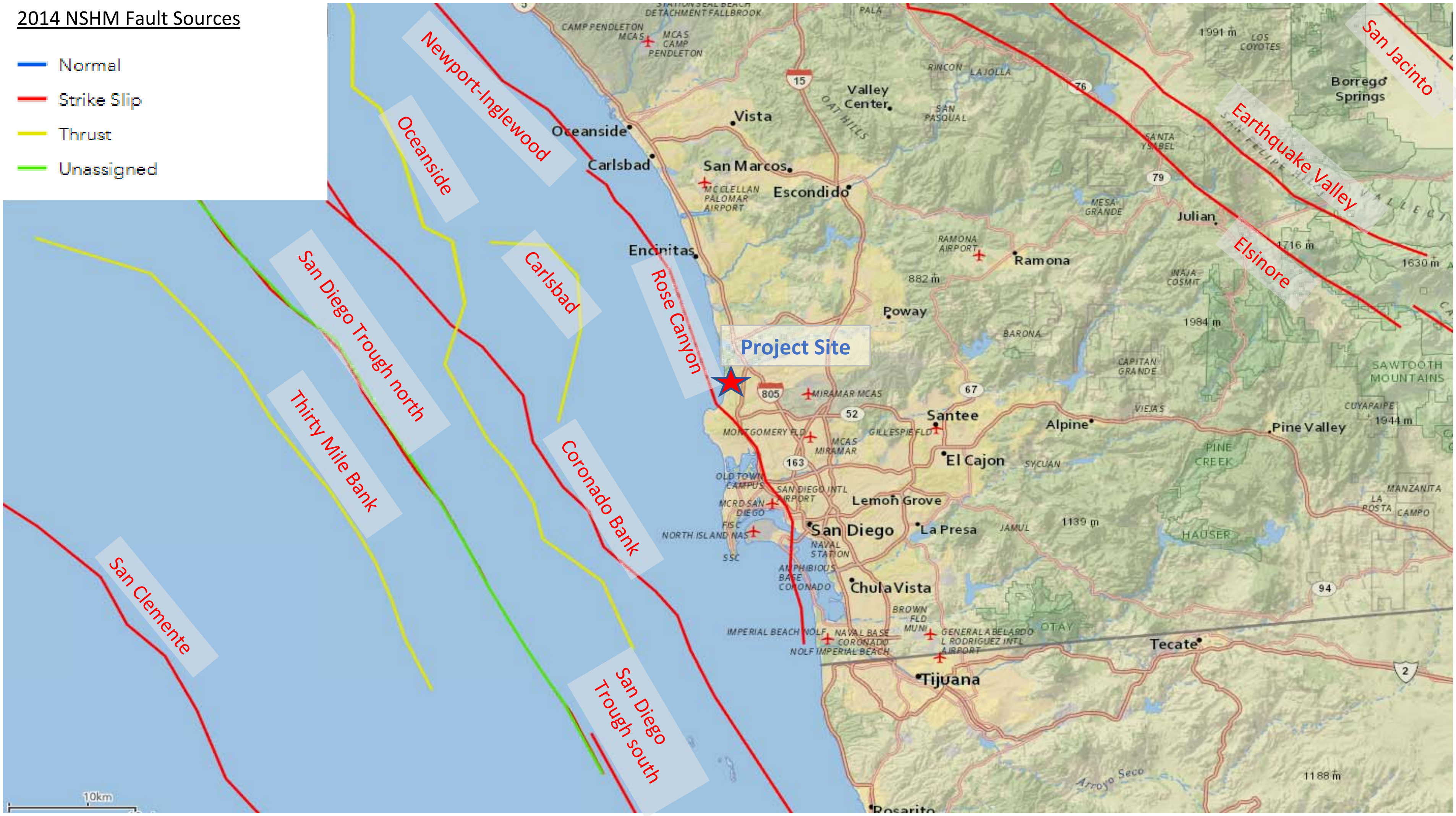
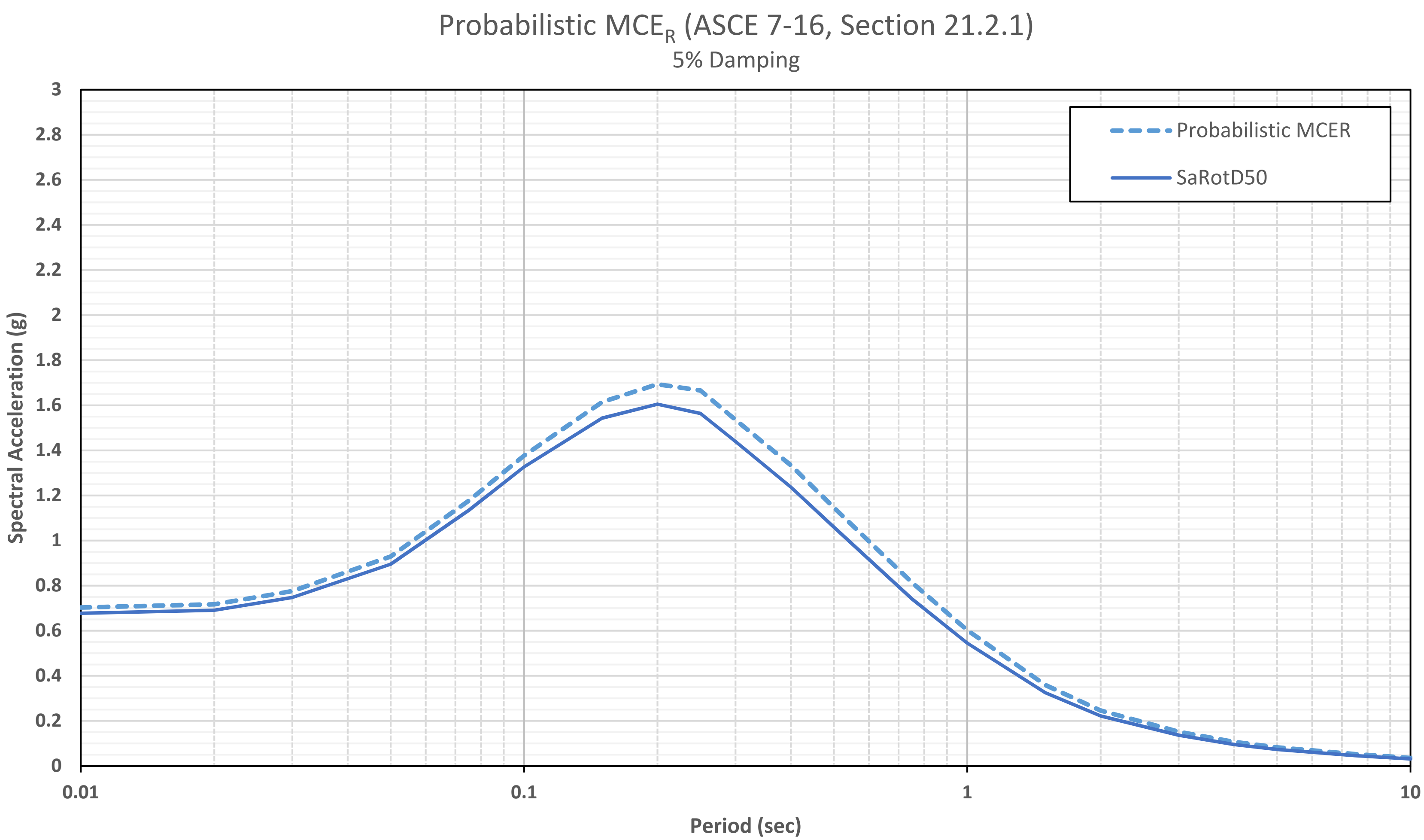
Figure E-2 Probabilistic MCE_R Acceleration Response Spectrum
Figure E-3 Deterministic Acceleration Response Spectra
Figure E-4 Deterministic MCE_R Acceleration Response Spectra
Figure E-5 ASCE 7-16 Site-Specific MCE_R Acceleration Response Spectra
Figure E-6 ASCE 7-Site-Specific Design Earthquake and Site-Specific Design Acceleration Parameters

APPENDIX E – FIGURES

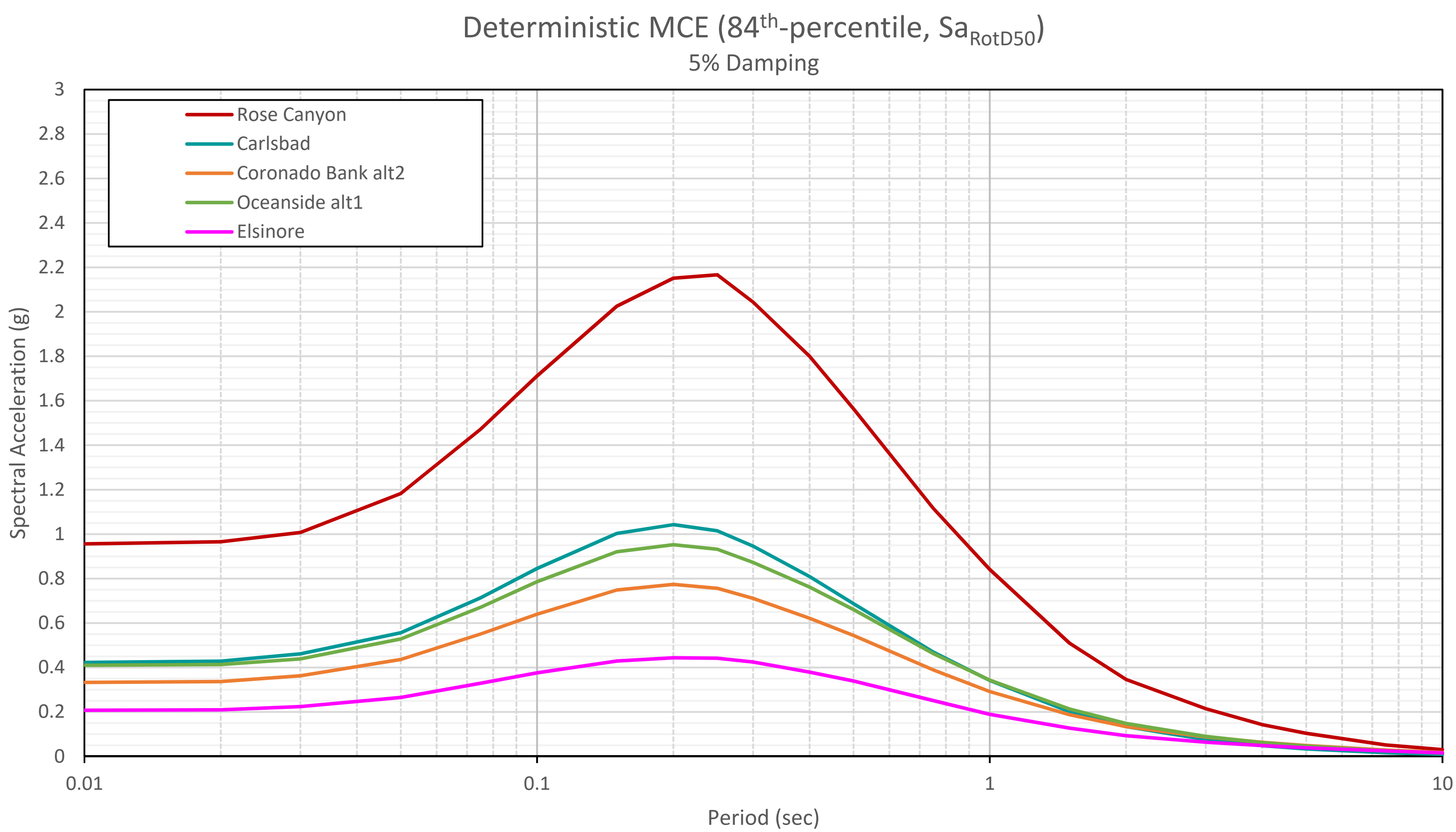


Reference: USGS Quaternary Faults, NSHM 2014 Fault Sources https://usgs.maps.arcgis.com/apps/webappviewer/index.html

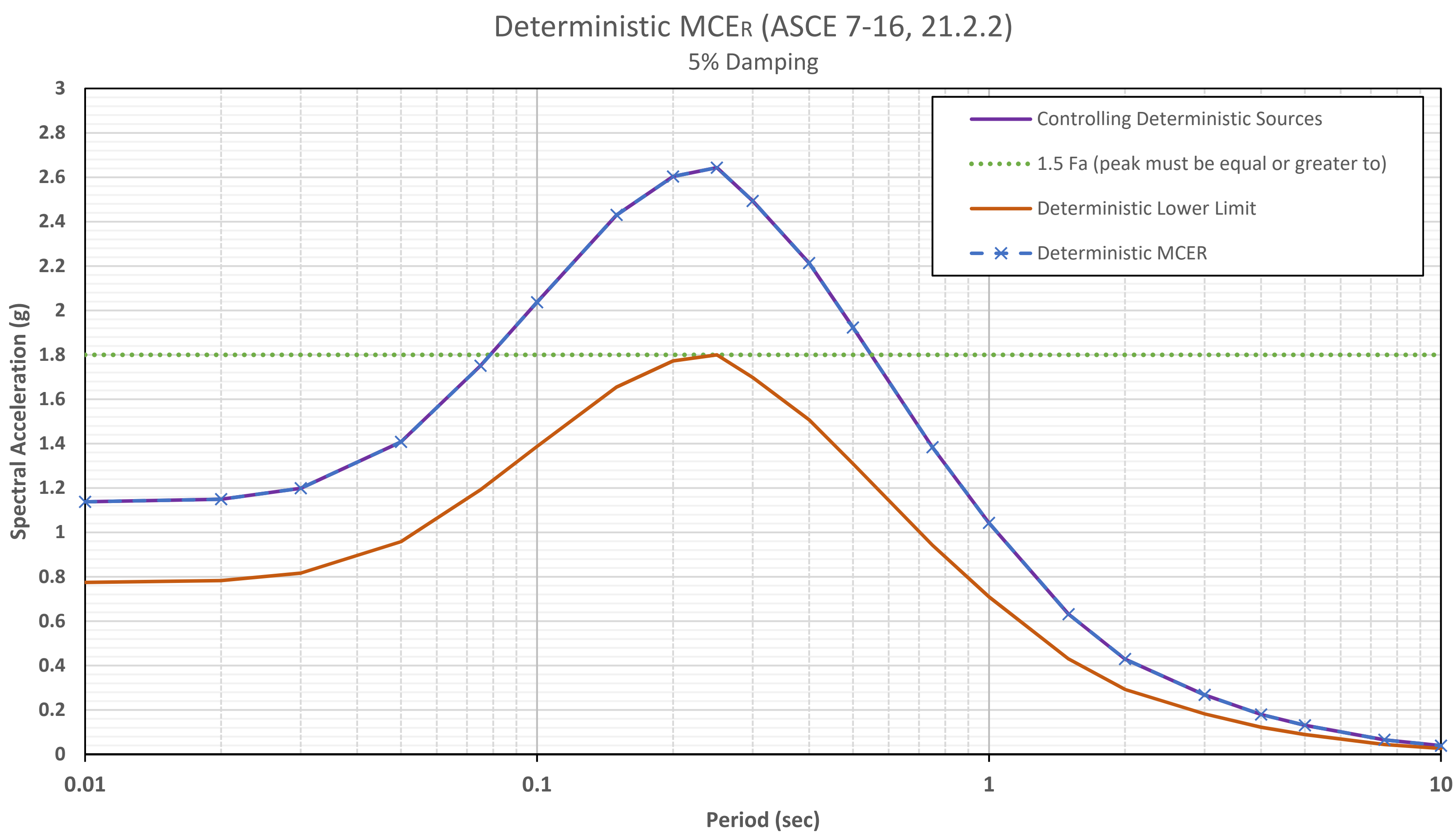
PROJECT NAME	FIGURE NAME	GROUP DELTA	
GPI Companies **The Campus La Jolla**	**Fault Map** **Seismic Source Fault Map (2014 NSHM)**	PROJECT NUMBER SD644	FIGURE NUMBER E-1



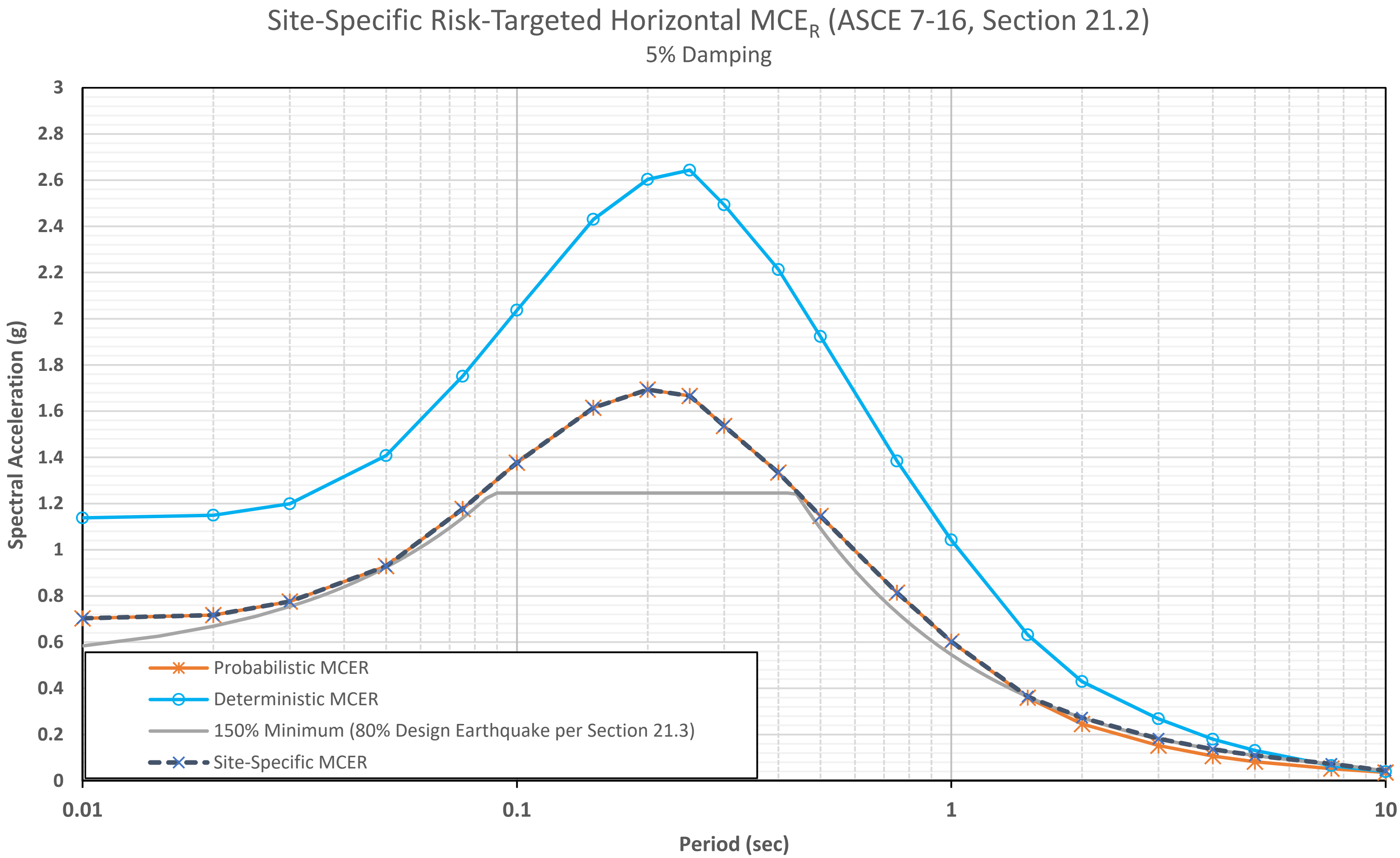
PROJECT NAME	FIGURE NAME	GROUP DELTA	
		PROJECT NUMBER	FIGURE NUMBER
GPI Companies **The Campus La Jolla**	**Probabilistic MCE_R** **Acceleration Response Spectrum**	SD644	E-2



PROJECT NAME	FIGURE NAME	GROUP DELTA	
GPI Companies The Campus La Jolla	**Deterministic Acceleration Response Spectra**	PROJECT NUMBER SD644	FIGURE NUMBER E-3

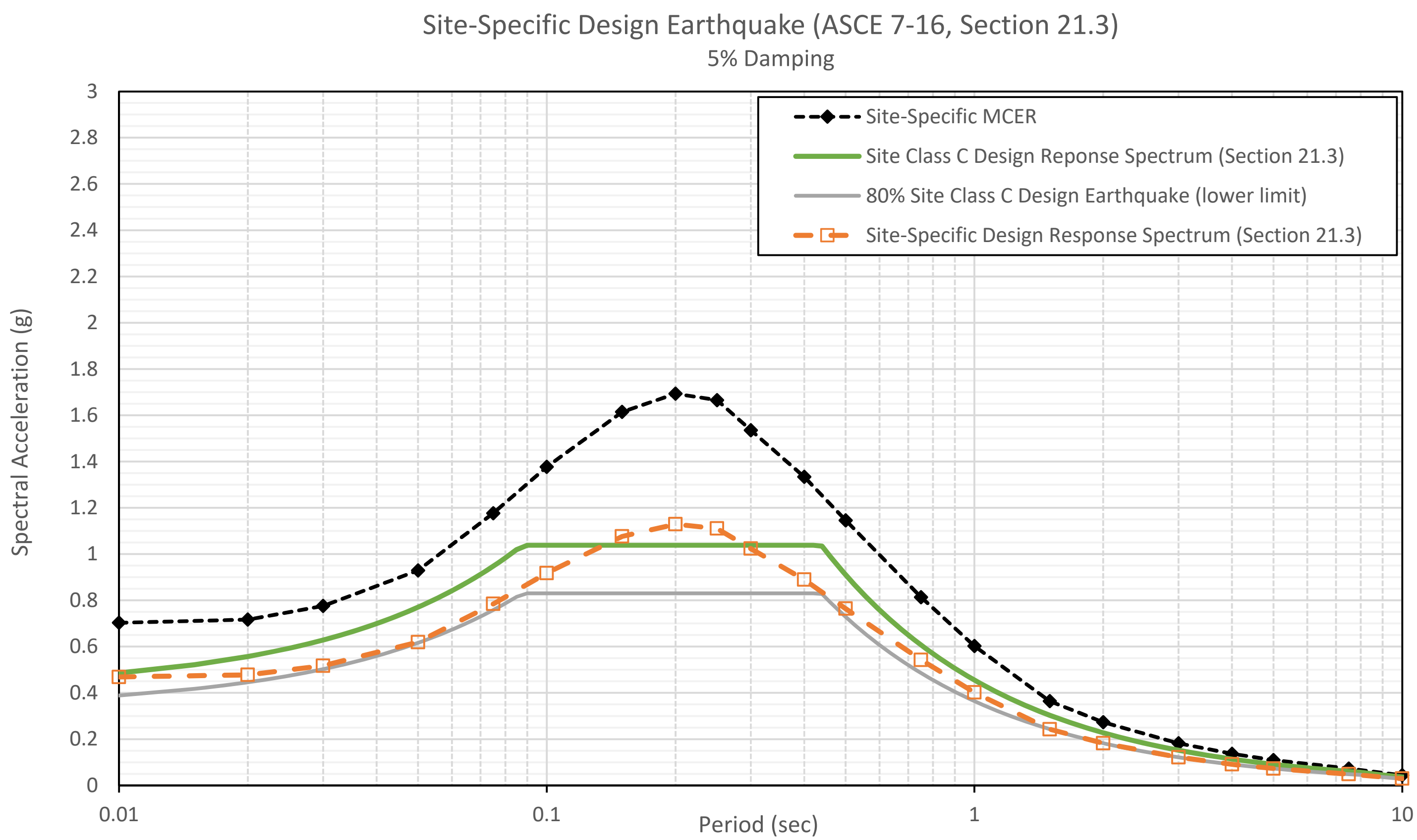


PROJECT NAME	FIGURE NAME	GROUP DELTA	
GPI Companies **The Campus La Jolla**	**Deterministic MCE_R** **Acceleration Response Spectra**	PROJECT NUMBER SD644	FIGURE NUMBER E-4



PROJECT NAME	FIGURE NAME	GROUP DELTA	
GPI Companies **The Campus La Jolla**	**ASCE 7-16 Site-Specific MCE_R** **Acceleration Response Spectra**	PROJECT NUMBER SD644	FIGURE NUMBER E-5

ASCE 7-16 MCE_R and Design Earthquake		
Period (sec)	Design Sa (g)	MCE_R Sa (g)
0.01	0.469	0.703
0.02	0.478	0.717
0.03	0.517	0.776
0.05	0.619	0.929
0.075	0.784	1.177
0.1	0.918	1.377
0.15	1.076	1.615
0.2	1.129	1.693
0.25	1.110	1.666
0.3	1.024	1.536
0.4	0.889	1.334
0.5	0.764	1.146
0.75	0.543	0.814
1	0.402	0.602
1.5	0.243	0.364
2	0.182	0.273
3	0.121	0.182
4	0.091	0.137
5	0.073	0.109
7.5	0.049	0.073
10	0.029	0.044



Site-Specific Design Acceleration Parameters (ASCE 7-16 Section 21.4)

S_{DS} = 90% of the peak S_a from T =0.2 to 5 s (not less than 80% of mapped S_{DS})

S_{D1} = Peak T*S_a between periods of 1 second and 5 seconds (not less than 80% of mapped S_{D1})

S_{DS} = 1.016 **S_{D1} =** 0.402

PROJECT NAME	FIGURE NAME	GROUP DELTA	
GPI Companies The Campus La Jolla	ASCE 7-16 Site-Specific Design Earthquake and Site-Specific Design Acceleration Parameters	PROJECT NUMBER SD644	FIGURE NUMBER E-6

APPENDIX F
DEEP SEWER AND STORM DRAIN AS-BUILTS

CITY PERMIT APPL. NO. 62313

PRIVATE CONTRACT

RICK ENGINEERING COMPANY

PLANNERS · ARCHITECTS · CIVIL ENGINEERS · LAND SURVEYORS

PROJECT NO. 5443

PLANS FOR THE IMPROVEMENT OF:

21" V.C.P. SEWER IN

VILLA LA JOLLA UNITS 2 & 5

CITY OF SAN DIEGO, CALIFORNIA

SHEET 26 OF 33 SHEETS

W.O. NO. 62313

CITY ENGINEER 11-15-76

ENGINEER OF WORK

RICHARD M. SLAYTER R.C.E. 12329

"AS BUILT" RICK 6-79

CONTRACTOR ARBEN CONST. CO. DATE STARTED 11-19-76

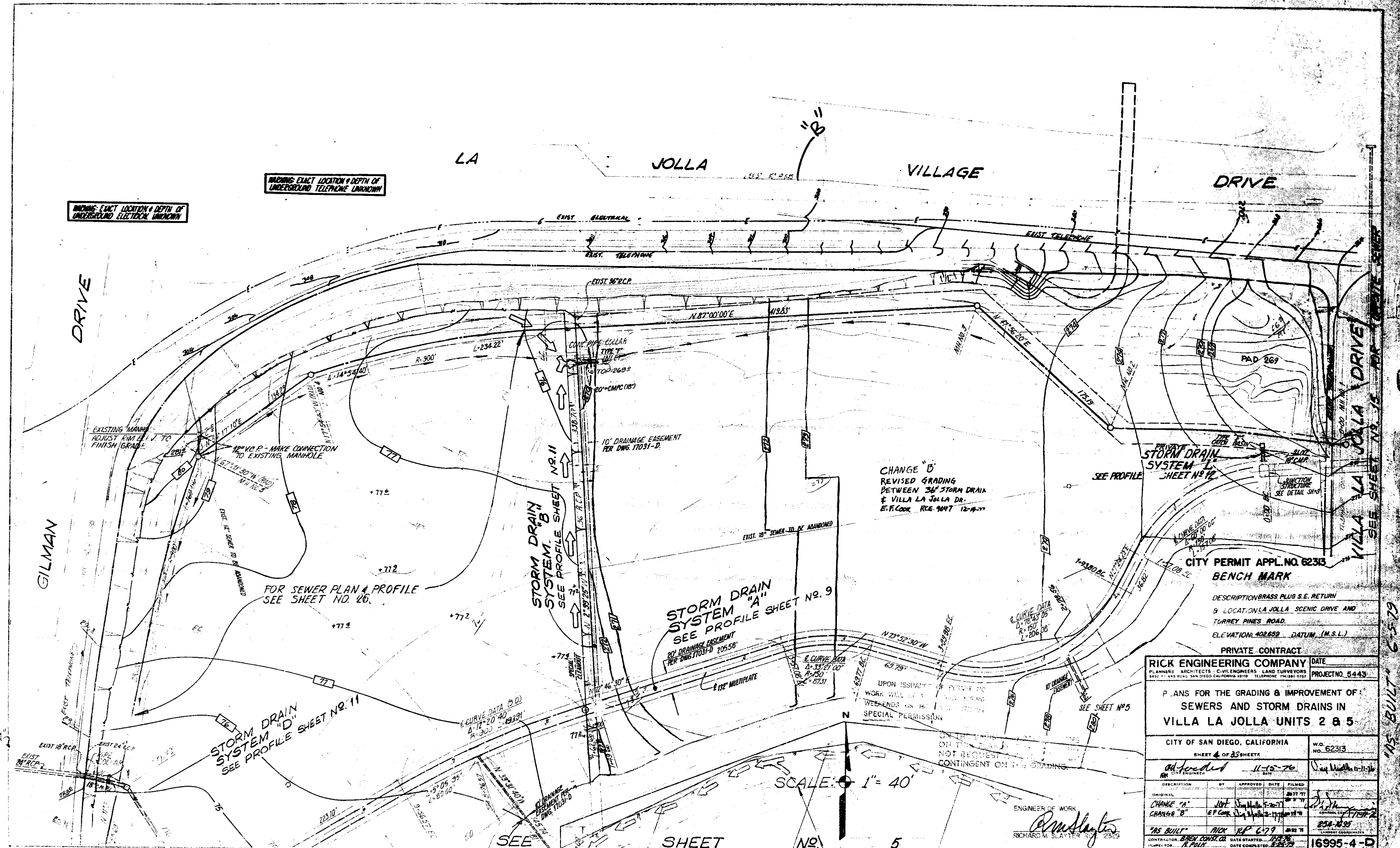
INSPECTOR R. POLK DATE COMPLETED 5-25-79

254-1695

LAMBERT COORDINATES

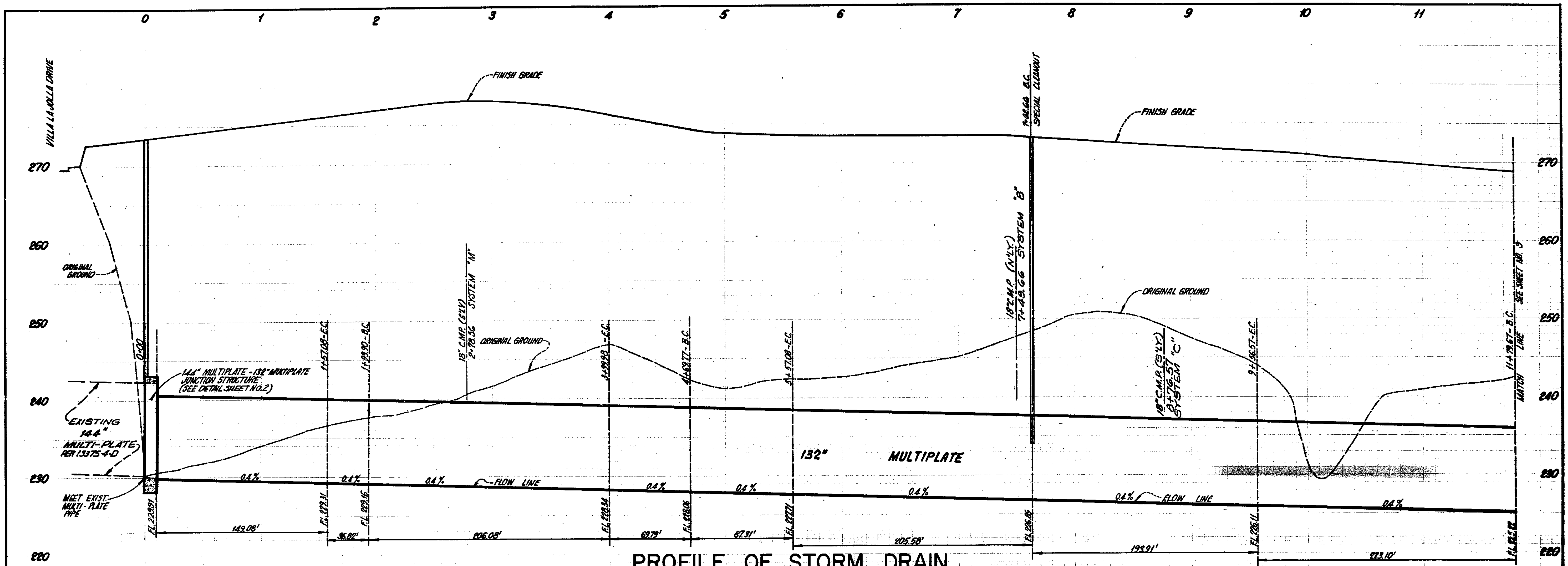
16995-26-D

"AS BUILT" 6-5-79



CHANGE "A" : REVISE STORM DRAIN SYSTEM "D"
CHANGE "B" : Modify all grading

AS BUILT



PROFILE OF STORM DRAIN

SCALE: HORIZ. 1" = 40'; VERT. 1" = 6'

SYSTEM A

B.M.
BRASS PLUG S.E. RETURN LA JOLLA SCENIC DRIVE AND TORREY PINES ROAD
ELEVATION: 402.659 (M.S.L. DATUM)

CITY PERMIT APPL. NO. 62313

PRIVATE CONTRACT

RICK ENGINEERING COMPANY
PLANNERS · ARCHITECTS · CIVIL ENGINEERS · LAND SURVEYORS
DATE ____
PROJECT NO. 5443

PLANS FOR THE IMPROVEMENT OF:
STORM DRAIN (PROFILE) IN
VILLA LA JOLLA UNITS 2 & 5

CITY OF SAN DIEGO, CALIFORNIA
SHEET 9 OF 33 SHEETS
W.O. NO. 62313

FOR CITY ENGINEER 11-15-76 DATE

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL				
"AS BUILT"	RICK	RF	6-79	

CONTROL COORDINATES
254-1635
LAMBERT COORDINATES

CONTRACTOR ____ INSPECTOR R. POLK
DATE STARTED 11-18-77 DATE COMPLETED ____

16995-9-D

ENGINEER OF WORK
RICHARD M. SLAYTER R.C.E. 12329

"AS BUILT" 6-5-79

Appendix E1

Drainage Report

UC JOB. #: XXXX

UC SAN DIEGO
La Jolla Innovation Center
DRAINAGE REPORT

PREPARED BY:

latitude 33
PLANNING & ENGINEERING

9968 Hibert Street 2nd Floor
San Diego, CA 92131
Latitude 33 Job #: 1660.10

DATE: 2021-01-06

____

Matthew J. Semic RCE
Registration Expires: 6-30-2021

Prepared By: JRG
Checked By: MJS

UC San Diego

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Abbreviations

CFS	Cubic Feet Per Second
D	Depth
PVC	Polyvinyl Chloride
UC	University of California

SECTION 1 – INTRODUCTION

1.1 PURPOSE

The purpose of this drainage report is to analyze the existing and proposed UC San Diego facilities for the development of the La Jolla Innovation Center project based on the established campus guidelines referenced in Section 3. Recommendations on storm drain improvements, water quality treatment devices, storm water storage, and overall hydrologic conditions will be given for the existing condition and proposed condition of the site. It is the goal of this report to forecast needed utilities and ensure the project meets or exceeds the University of California San Diego hydrologic/hydraulic requirements.

1.2 SCOPE

The scope of this report includes the following elements:

- Determine estimated hydrologic flow rates for the existing and proposed conditions.
- Ensure compliance with UC San Diego flowrate requirements for projects creating/replacing 10,000 square feet of Impervious Area.
- Determine any storm drain improvements necessary to convey flow in the proposed condition.

SECTION 2 – EXECUTIVE SUMMARY

The La Jolla Innovation Center project is located within the City of San Diego, State of California, at 8980 La Jolla Village Drive, CA 92037. The proposed project is bound to the North by La Jolla Village Drive and UCSD beyond, to the South by UC San Diego Health – La Jolla medical building on the same property, to the East by Villa La Jolla Drive, and to the West by a commercial building on the same property. See **Figure 1** for the project location. The scope of this project includes the construction of an underground parking structure with 5 level of Life Science/Research and Development constructed above the parking levels. In the proposed condition, new storm drain pipe, inlets and compact bio-filters have been designed to enhance the drainage of the site and ensure that the project meets or exceeds all UC San Diego Design Guidelines. The project will comply with all guidelines and requirements through design of on-site storm drain infrastructure, utilization of a regional offsite basin for treatment and storage, and the construction of bio-filtration basins in support of the post-construction BMP requirements as set forth in the MS4 Phase II permit.

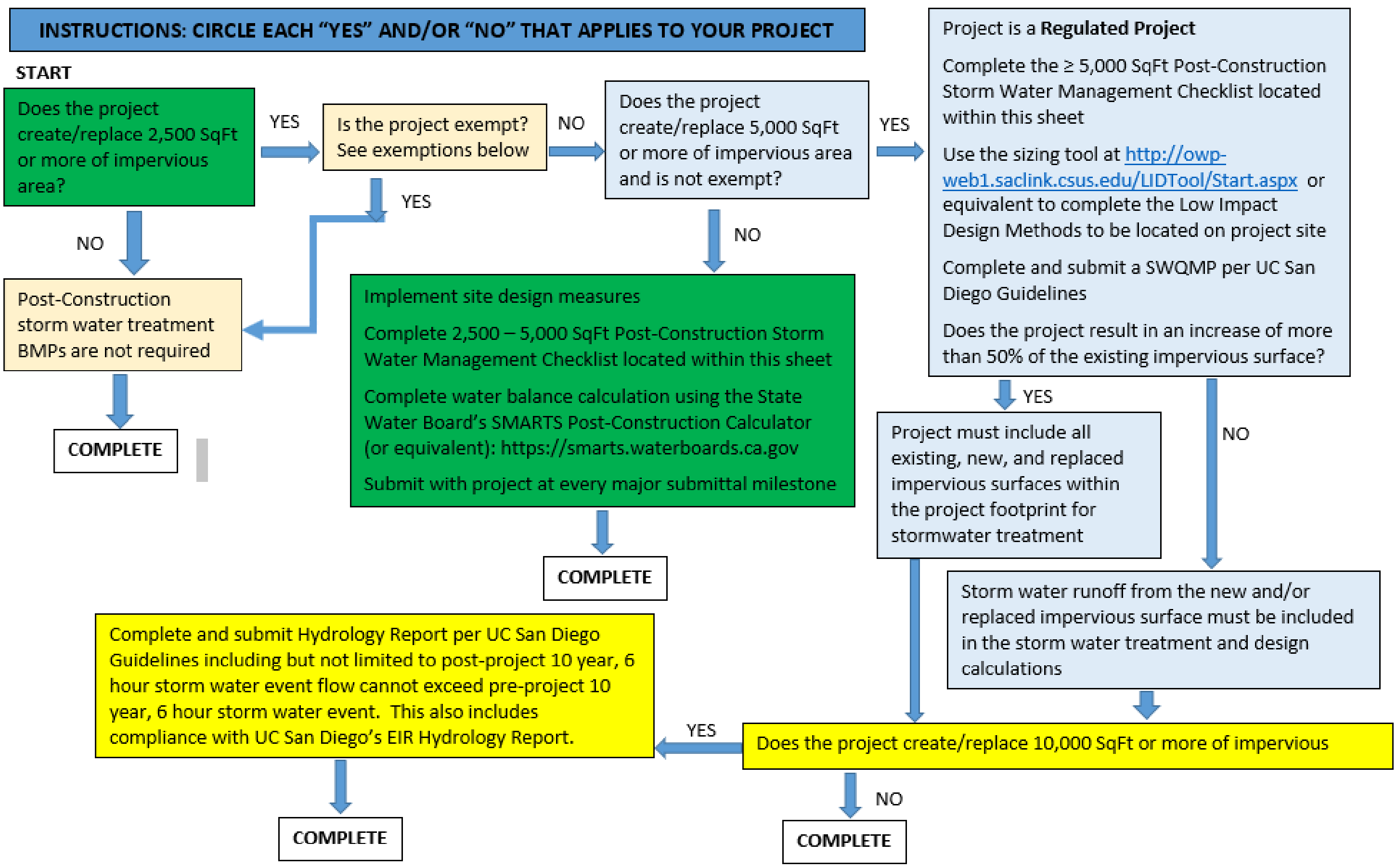
Figure 1 – Vicinity Map

SECTION 3 – REGULATORY SETTING & PERFORMANCE CRITERIA

3.1 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

UC San Diego is one of ten UC campuses governed and administrated by the Regents of the University of California. As such, UC San Diego is regulated by the Federal Environmental Protection Agency (EPA) Phase II storm water regulations, the Clean Water Act (CWA) and the Small Municipal Separate Storm Sewer System's (MS4's) Order No. 2013-0001-DEG, NPDES No. CAS00004. UC San Diego adopted the revised Phase II Small MS4 General Permit as a Non-Traditional Permittee on July 1st, 2013. In response to section F of said permit, UC San Diego is required to create and maintain a Storm Water Management Plan (SWMP) to govern Storm Water policy on the campus.

UC SAN DIEGO POST CONSTRUCTION STORM WATER MANAGEMENT FLOW CHART



UC San Diego Storm Water BMP Requirements for all Development Projects	
All projects that create or replace more than 2,500 sq. ft.	Complete and submit the "Post-Construction Stormwater Management Checklist" and receive project approval from UC San Diego Civil Engineers as well as Environmental Health and Safety Staff during the planning phase, Design Development Phase, and Construction Document Phase.
All projects that create or replace less than 2,500 sq. ft of impervious surface	Complete page 1 & 2 of the checklist for 2,500 SF -5,000 SF and submit for record.
All projects that create or replace between 2,500 sq. ft. and less than 5,000 sq. ft. of impervious area	Complete Post-Construction Stormwater Management Checklist for 2,500 SF to 5,000 SF. Quantify the runoff reduction using State's Post-Construction Water Balance Calculator, available at http://stormwater.ucsd.edu or request from EH&S Environmental Affair at ehsea@ucsd.edu and attach to the checklist.
All projects that create or replace 5,000 sq. ft. or more of impervious area	Classified as a regulated project. Complete in full the Post-Construction Stormwater Management Checklist for 5,000 sq. ft. or greater. Quantify "Site Design" BMPs using State's Post-Construction Water Balance Calculator and show that post-construction water balance is achieved. If balancing is not possible, see below. "Treatment Control" BMPs are <u>only</u> required if the Site Design BMPs above cannot fully meet Permit requirements. a) Quantify and explain in the Post-Construction Stormwater Management Checklist and include any attachments as needed. b) Design shall be based on the Flow-Based or Volume-Based criteria specified in Section F.5.g.2.b (Numeric Sizing Criteria) of the Phase II Small MS4 Permit c) Bioretention facilities are preferred, however alternative treatment BMPs can be used if proper documentation and supporting calculations prepared by a Registered Civil Engineer are provided and attached to the checklist. d) <u>An Operations and Maintenance Plan (O&M)</u> for each Post-Construction BMP <u>must</u> be included in the checklist.

3.2 UC San Diego Design Guidelines

UC San Diego design guidelines, dated April 1st, 2015, give specific guidelines for both hydrologic and hydraulic requirements per project. These are listed below in greater detail:

Hydrologic Requirements:

UC San Diego guidelines utilizes the 2003 County of San Diego Hydrology Manual for the generation of flow rate for overland flow. Based on the size of the La Jolla Innovation Center project, the rational method was utilized within this report. The rational method is a mathematical formula that calculates the peak rate of runoff (Q) at any given location in a watershed. This is computed using the drainage area (A), the runoff coefficient (C), and rainfall intensity (I) for a duration equal to the time of the concentration (Tc).

$$Q = C * I * A$$

Table 2 shows the criteria for Hydrologic modeling of the Modified Rational Method at UC San Diego:

Table 2	
UC San Diego Hydrologic Criteria:	
Hydrologic Soil Type:	Soil Type D, unless specified by Geotechnical Engineer
Runoff Coefficients (Based on Land Use)	See Table 2
Rainfall Intensity:	Based on County of San Diego Rainfall Isopluvials
Storm Event:	10 and 100 year, 6 - hour storm event

All projects on campus are required to use Soil Type D for poor infiltration unless specified otherwise by the Project Geotechnical Engineer. Runoff coefficients (C) are based on land use per table 3-1 of the 2003 County of San Diego Hydrology Manual, seen in Table 3 of this report. Rainfall intensities are provided by the County of San Diego Rainfall Isopluvial Maps and Section 3.1.3 of the County of San Diego Hydrology manual and are selected by the storm duration to be modeled.

Table 3						
C-Values						
Land Use		Runoff Coefficient "C"				
		Soil Type				
NRCS Elements	County Elements	% IMPER.	A	B	C	D
Undisturbed Natural Terrain (Natural)	Permanent Open Space	0*	0.2	0.25	0.3	0.35
Low Density Residential (LDR)	Residential, 1.0 DU/A or less	10	0.27	0.32	0.36	0.41
Low Density Residential (LDR)	Residential, 2.0 DU/A or less	20	0.34	0.38	0.42	0.46
Low Density Residential (LDR)	Residential, 2.9 DU/A or less	25	0.38	0.41	0.45	0.49
Medium Density Residential (MDR)	Residential, 4.3 DU/A or less	30	0.41	0.45	0.48	0.52
Medium Density Residential (MDR)	Residential, 7.3 DU/A or less	40	0.48	0.51	0.54	0.57
Medium Density Residential (MDR)	Residential, 10.9 DU/A or less	45	0.52	0.54	0.57	0.6
Medium Density Residential (MDR)	Residential, 14.5 DU/A or less	50	0.55	0.58	0.6	0.63
High Density Residential (HDR)	Residential, 24.0 DU/A or less	65	0.66	0.67	0.69	0.71
High Density Residential (HDR)	Residential, 43.0 DU/A or less	80	0.76	0.77	0.78	0.79
Commercial/Industrial (N. Com)	Neighborhood Commercial	80	0.76	0.77	0.78	0.79
Commercial/Industrial (G. Com)	General Commercial	85	0.8	0.8	0.81	0.82
Commercial/Industrial (O.P. Com)	Office Professional/Commercial	90	0.83	0.84	0.84	0.85
Commercial/Industrial (Limited I.)	Limited Industrial	90	0.83	0.84	0.84	0.85
Commercial/Industrial (General I.)	General Industrial	95	0.87	0.87	0.87	0.87

Furthermore, per UC San Diego Design Guidelines, all projects that generate 10,000 sq. ft of new impervious area are required to adhere to pre-project 10 year, 6-hour flow rate per overall discharge.

<u>Hydraulic Requirements:</u>
UC San Diego guidelines require the use of the County of San Diego Drainage Design Manual (2014) for hydraulic design of storm drain systems on campus. Some of these requirements, but not limited to, are shown in Table 4.

Table 4
UC San Diego Hydraulic Requirements
HGL for 100-year 6-hour storm shall maintain a minimum of 1 foot freeboard below ground surface
If 1 foot freeboard is not possible, provide calculations and an exhibit that the overflow damage will not damage any improvements.
Minimum 1% slope*
Concentrated flow in unpaved areas shall be designed with natural swales to convey surface runoff.

* If not achievable, obtain approval from FD&C Civil Engineer

Based on the year this drainage report was written, evaluation of storm drain structures was based on the latest version of the County of San Diego Drainage Design Manual (2014). Future analysis of Storm Drain hydraulics should adhere to the latest version of the County San Diego Drainage Design Manual.

3.3 Hydrologic/Hydraulic Modeling Software/Base Mapping
This report utilizes the hydrologic/hydraulic modeling software Autodesk Storm and Sanitary Analysis to run the Rational Method criteria stated earlier in this section. This program creates a dynamic model of the hydrologic conditions of the site as well as a BIM of the Storm Drain system for the existing and proposed condition of the project. This model is based on several information sources, including field survey conducted in support of the design of the project, and available as-built information.

SECTION 4 – EXISTING CONDITION ASSESSMENT

4.1 EXISTING CONDITION HYDROLOGIC SUMMARY

In the existing condition, the 6.780 acre property in which the project site is situated generally drains into two distinct drainage discharge points. The northeast portion (in which the project limits are contained) discharges directly to a large concrete structure within an existing Multi-Plate Public Storm Drain system (City DWG No. 16695-D). The remaining portions of the property drain via private storm drain system to the west where they enter a 20" corrugated metal pipe (CMP) pipe that flows south within a public storm drain line before converging further downstream at **POC-3** (connection to the same Public Storm Drain system). Because the limits of the proposed project and the impact of the project are fully contained within the northeast portion of the site, a description of the drainage in this area has been provided to match the analysis of this report, divided into 3 sub-basins, **E1** through **E3**, which are tributary to either **POC-1** (curb inlet on Villa La Jolla Drive) or **POC-2** (curb inlet in existing parking lot).

Basin E1:

The 0.698-acre basin is comprised of areas west of the existing Rock Bottom building including landscape, parking, sidewalks, and portions of the existing building. Flow from this basin generally is collected within a series of storm drain inlets that concentrates flow into the existing Curb Inlet near the main entrance of the existing building (**POC-2**). This flow then travels through an 18" CMP pipe and is connected to a junction structure within the multi-plate public storm drain that outlets to the Caltrans Right-of-Way, then drains to Mission Bay via Rose Creek.

Basin E2:

The 0.571-acre basin is comprised of landscape areas and portions of the existing building around the north and east sides of the existing building as well as landscape, parking, and sidewalk areas to the southeast of the existing building. Flow from this basin generally sheet flows towards the intersection of La Jolla Village Drive and Villa La Jolla Drive where it is captured in public curb inlets (**POC-1**)that concentrate flow into an existing 24" storm drain connects directly to the multi-plate public storm drain that outlets to the Caltrans Right-of-Way, then drains to Mission Bay via Rose Creek.

Basin E3:

The 0.317-acre basin is comprised of landscape, parking, sidewalks and portions of the existing building on the southern portion of the project site. Runoff from this basin generally sheet flows into the existing Curb Inlet near the main entrance of the existing building (**POC-2**). This flow then travels through an 18" CMP pipe and is connected to a junction structure within the public storm drain that outlets to the Caltrans Right-of-Way, then drains to Mission Bay via Rose Creek.

Appendix B shows the existing condition of the Hydrology and Storm Drain Routing for the La Jolla Innovation Center project.

4.2 EXISTING CONDITION MODELING RESULTS

Existing conditions modeling results for the three drainage basins can be seen below in table 5:

Table 5		
Existing Condition Hydrology Results		
Basin #	**10 Year 6-Hour Event (CFS)**	**100 Year 6-Hour Event (CFS)**
Basin E1	4.29	5.31
Basin E2	3.51	4.35
Basin E3	1.95	2.41
Total	**9.75**	**12.07**

CFS = Cubic Feet per Second

More detailed hydrology and hydraulic analysis for the existing condition can be seen in **Appendix B**.

SECTION 5 – PROPOSED CONDITION ASSESSMENT

5.1 PROPOSED CONDITION HYDROLOGIC SUMMARY

The La Jolla Innovation Center project consists of the construction of a three-story building on top of a two-level subterranean parking structure at the corner of La Jolla Village Drive and Villa La Jolla. Surface improvements within the project include the realignment and resurfacing of the existing parking lot south of the existing building, the construction of patio space and pedestrian walkways, and new grading and landscaping.

The site is divided into six (6) distinct drainage basins, which are each described further below:

Basin P1:

This 0.80-acre basin comprises of the entirety of the proposed building and the landscaped areas and surface improvements directly to the north and east of the building. Runoff from these areas will be captured in roof drains and area drains, then directed via a cobble swale along the perimeter of the building to a 4' x 4' BioClean Modular Wetlands System. Once the storm water is treated in the Modular Wetlands System, it will discharge to the existing curb inlet on Villa La Jolla Drive (POC-1), which connects to the existing 24" storm drain in the street.

Basin P2:

This 0.34-acre basin is comprised primarily of the surface improvements and landscape south of the proposed building. Runoff from these areas will sheet flow or be captured in area drains and directed to a 4' x 8' BioClean Modular Wetlands System in the northeast corner of the surface parking lot (POC-2). After treatment, flow will be routed through a proposed 12" PVC storm drain to a proposed 4' x 4' modified catch basin, which connects to the existing junction structure through an existing 18" CMP storm drain.

Bypass 1:

A 0.10-acre portion of Existing Basin E2 discharges runoff onto the proposed project site, but is not within the scope of the project. Therefore, all runoff from this portion (Basin BP1) will continue to sheet flow to the public right-of-way in Villa La Jolla Drive and enter the public storm drain via curb inlet (POC-1). This runoff will bypass the project's private storm drain system and will not require onsite treatment.

Bypass 2:

A 0.09-acre portion of Existing Basin E3 discharges runoff onto the proposed project site, but is not within the scope of the project. Therefore, all runoff from this portion (Basin BP2) will be intercepted by a proposed catch basin and connected to the existing public storm drain system (POC-2). This runoff will bypass the project's private storm drain system and will not require onsite treatment.

Bypass 3:
The 0.23-acre area west of the proposed building, which consists of landscape area and existing surface parking, will be graded slightly to drain to a proposed 24” x 24” catch basin to the west of the proposed building. The proposed catch basin will redirect flow to an existing 24” x 24” catch basin via a 12” PVC storm drain. This existing catch basin will run to the west side of the “overall property”, where it will connect with an existing public storm drain and discharge to POC-3. POC-3 is the conveyance for most of the “Overall Property” runoff outside of the “Project Site”, as shown in Figure 1 (page 6).

De-Minimis 1:
The east portion of the site, which is comprised of landscaped area adjacent to the Villa La Jolla Drive right-of-way, is classified as a De-Minimis area because it cannot be effectively captured and routed to a treatment facility. This minimal area (1,427 sq. ft. or 0.03 acres in total) will continue to sheet flow to the public right-of-way in Villa La Jolla Drive and enter the public storm drain via curb inlet.

Appendix C shows the Proposed Condition for Hydrology and Storm Drain Routing for the La Jolla Innovation Center project.

5.2 PROPOSED CONDITIONS MODELING RESULTS
Proposed Condition modeling results for the three drainage basins can be seen below in Table 6:

Table 6		
Proposed Condition Hydrology Results		
Basin #	**10 Year 6-Hour Event (CFS)**	**100 Year 6-Hour Event (CFS)**
Basin P1	4.92	6.09
Basin P2	2.09	2.59
Basin BP1	0.62	0.76
Basin BP2	0.55	0.69
Basin BP3	1.42	1.75
Basin DM1	0.08	0.09
Total	**9.68**	**11.97**

(*) Detention will be provided to attenuate the peak flow to match the pre-project conditions.

More detailed hydrology and hydraulic analysis for the existing condition can be seen in **Appendix C**.

SECTION 6 – CONCLUSION

This drainage report has been prepared to quantify the hydrology demands associated with all developmental phases of the UC San Diego La Jolla Innovation Center project, and to evaluate the hydraulic capacity of the proposed onsite storm drain system.

Proposed storm drain and treatment facilities for this project include: area drains for landscape and hardscape; three 24” x 24” Brooks Box grated catch basins; 4’ x 4’ modified catch basins; an underground PVC storm drain system; a 4’ x 6’ Bioclean Modular Wetlands System (MWS) and a 4’ x 4’ MWS for biofiltration. All runoff contained within the project site limits will enter an MWS unit for treatment via the underground storm drain system, ultimately being discharged to the Public Storm Drain system. These improvements to drainage will result in a decrease in the total peak flow runoff compared to existing conditions.

Currently, the flow exiting the project site during a 6-hour storm is **Q_{10} = 9.75 cfs** and **Q_{100} = 12.07 cfs**. The proposed runoff calculated within this report of **Q_{10} = 9.68 cfs** and **Q_{100} = 11.97 cfs** result in a **decrease of 0.07 cfs and 0.10 cfs**, respectively. The analysis demonstrates that the added demands from the development of the La Jolla Innovation Center do not create any negative impact to the surrounding public storm drain infrastructure that accepts flow from the project’s tributary area. The analysis also confirms that this project meets the hydraulic requirements as described on Page 11 of this report. The dispersion of flow to the POCs will be different compared to the existing condition, but there is sufficient capacity to convey runoff. Additionally, all on-site storm drain proposed is designed to meet University standards and will meet or exceed campus design guidelines.

Appendix A – References

- City of San Diego Drainage Design Manual
- County of San Diego Hydrology Manual

Appendix B – Existing Condition Exhibit & Calcs

LEGEND

WATERSHED BOUNDARY	
IMPERVIOUS AREA	
PERVIOUS AREA	
BASIN INFORMATION	BASIN NAME AC Q100 CFS
FLOW PATH	
POINT OF COMPLIANCE	POC #

N

0 10 20 40 60

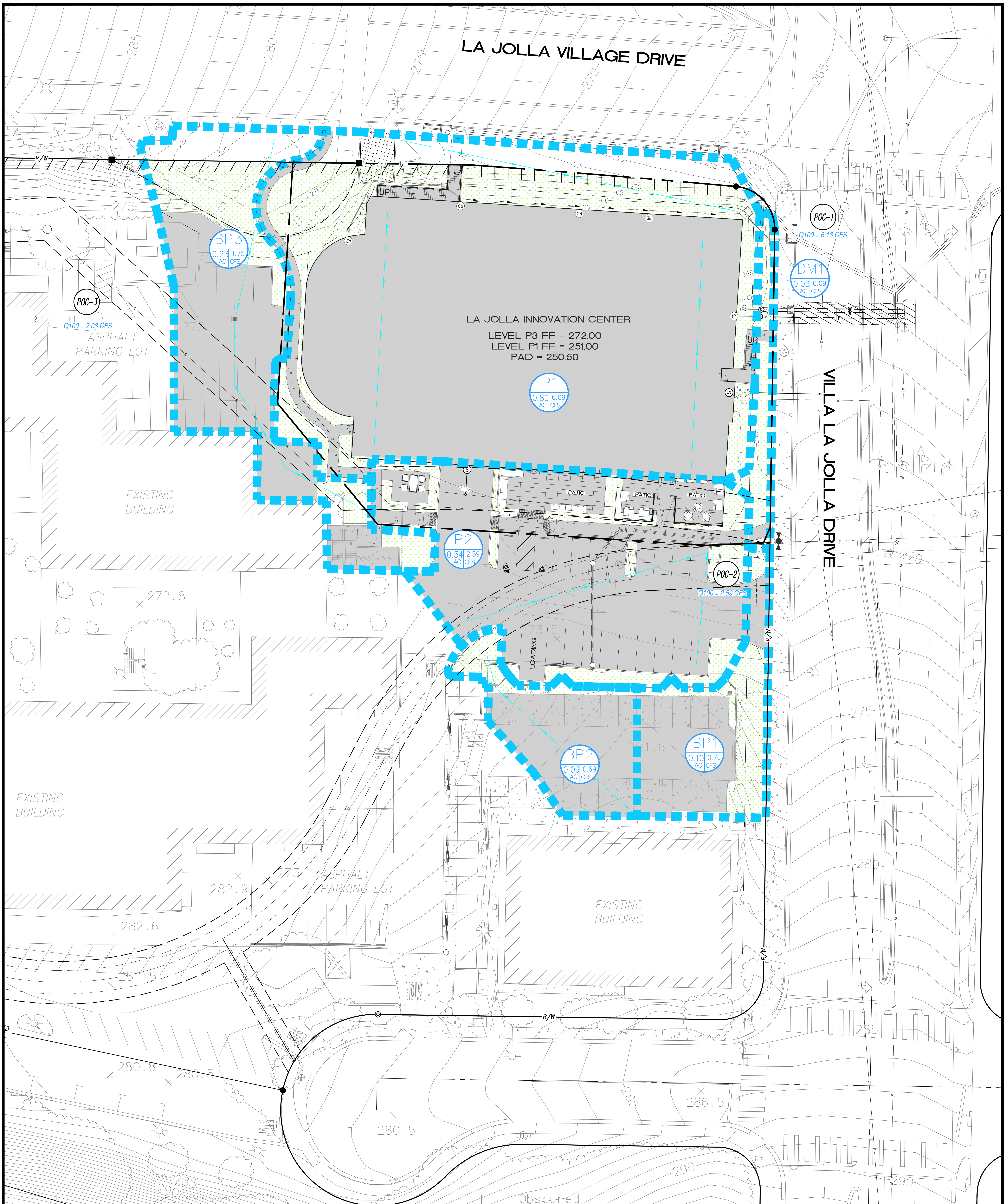
(IN FEET)
1 inch = 20 ft.

LA JOLLA INNOVATION CENTER
EXISTING DRAINAGE EXHIBIT

SCALE: 1" = 20'
DATE: 08/11/2020 DRAWN BY: MWT
JOB NO.: 1660.10 CHECKED BY: JRG

latitude 33
PLANNING & ENGINEERING
9968 Hibert Street 2nd Floor, San Diego, CA 92131
Tel 858.751.0633

<u>Appendix C – Proposed Condition Exhibit & Calcs</u>



LEGEND

WATERSHED BOUNDARY. . . . .

IMPERVIOUS AREA . . . .

PERVIOUS AREA . . . .

BASIN INFORMATION. . . . . BASIN NAME, AC, Q100 CFS

FLOW PATH. . . . .

POINT OF COMPLIANCE. . . . . POC #

N

0 10 20 40 60

(IN FEET)
1 inch = 20 ft.

LA JOLLA INNOVATION CENTER
PROPOSED DRAINAGE EXHIBIT

SCALE: 1" = 20'
DATE: 01/11/2021
JOB NO.: 1660.10
DRAWN BY: MWT
CHECKED BY: JRG

latitude 33
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Appendix E2

Storm Water Quality Management Plan

UC JOB. #: 5383

LA JOLLA INNOVATION CENTER
STORM WATER QUALITY MANAGEMENT PLAN

PREPARED BY:

latitude 33
PLANNING & ENGINEERING

9968 Hibert Street 2nd Floor
San Diego, CA 92131
Latitude 33 Job #: 1660.10

DATE: 2021-01-27

Matthew J. Semic RCE	Prepared By: MWT
Registration Expires: 6-30-2021	Checked By: JRG

UC San Diego

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Abbreviations

CFS	Cubic Feet Per Second
D	Depth
PVC	Polyvinyl Chloride
UC	University of California

SECTION 1 – INTRODUCTION

1.1 PURPOSE

The purpose of this Storm Water Quality Management Plan is to ensure compliance of the La Jolla Innovation Center project with the UC San Diego Storm Water Management Program adopted by UC San Diego as part of their compliance with the MS4 Phase II Non-Traditional Permittee (discussed in a later section). Recommendations on storm drain improvements, water quality treatment devices, and storm water storage will be given for the proposed condition of the site.

1.2 SCOPE

The scope of this report includes the following elements:

- Existing City of San Diego storm drain system investigation and description.
- Determine governing legislation/programs for the La Jolla Innovation Center project.
- Ensure compliance with legislation/programs and determine and necessary improvements to treat and convey flow in the proposed condition.

SECTION 2 – EXECUTIVE SUMMARY

The La Jolla Innovation Center project is located within the City of San Diego, State of California, at 8980 La Jolla Village Drive, CA 92037. The proposed project is bound to the North by La Jolla Village Drive and UCSD beyond, to the South by UC San Diego Health – La Jolla medical building on the same property, to the East by Villa La Jolla Drive, and to the West by a commercial building on the same property. See **Figure 1** for the project location. The scope of this project includes the construction of a two-level underground parking structure with three levels of Life Science/Research and Development constructed above the parking, for a total of five levels. In the proposed condition, new storm drain pipe, inlets and compact bio-filtration devices have been designed to enhance the drainage of the site and ensure that the project meets or exceeds all UC San Diego Design Guidelines. The project will comply with all guidelines and requirements through design of on-site storm drain infrastructure, utilization of a regional offsite basin for treatment and storage, and the construction of compact biofiltration unit in support of the post-construction BMP requirements.

UC San Diego is a Phase II Non-Traditional Small Municipal Separate Storm Sewer System (MS4) as dictated in Water Quality Order No. 2013-0001-DWQ, NPDES General Permit CAS000004. As such, UC San Diego is required to implement post-construction storm water management for each regulated project per section F.5.g.

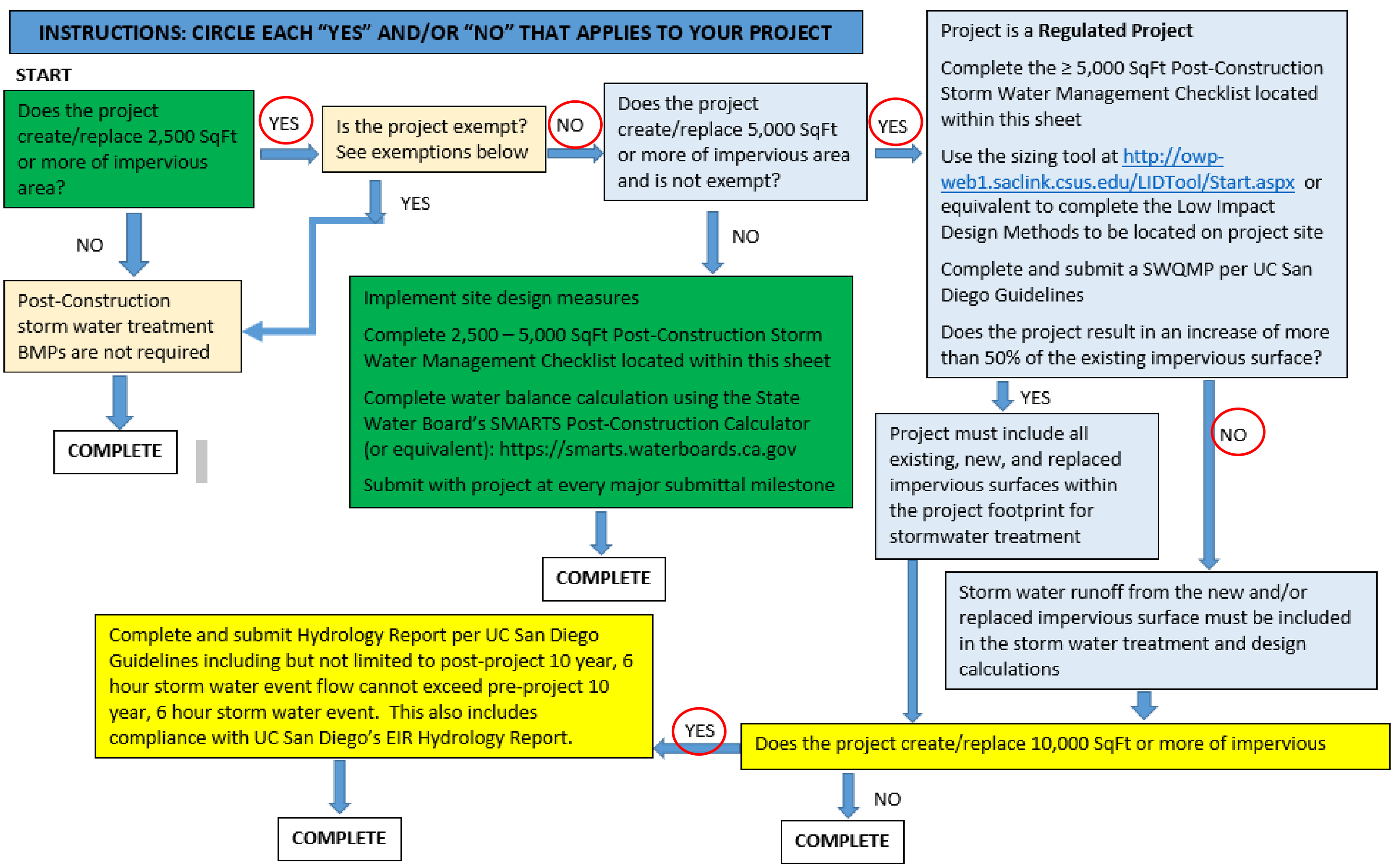
Figure 1 – Vicinity Map

SECTION 3 – REGULATORY SETTING & PERFORMANCE CRITERIA

3.1 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

UC San Diego is one of ten UC campuses governed and administrated by the Regents of the University of California. As such, UC San Diego is regulated by the Federal Environmental Protection Agency (EPA) Phase II storm water regulations, the Clean Water Act (CWA) and the Small Municipal Separate Storm Sewer System's (MS4's) Order No. 2013-0001-DEG, NPDES No. CAS00004. UC San Diego adopted the revised Phase II Small MS4 General Permit as a Non-Traditional Permittee on July 1st, 2013. In response to section F of said permit, UC San Diego is required to create and maintain a Storm Water Management Program (SWMP) to govern Storm Water policy on the campus.

UC SAN DIEGO POST CONSTRUCTION STORM WATER MANAGEMENT FLOW CHART



UC San Diego Storm Water BMP Requirements for all Development Projects	
All projects that create or replace more than 2,500 sq. ft.	Complete and submit the "Post-Construction Stormwater Management Checklist" and receive project approval from UC San Diego Civil Engineers as well as Environmental Health and Safety Staff during the planning phase, Design Development Phase, and Construction Document Phase.
All projects that create or replace less than 2,500 sq. ft of impervious surface	Complete page 1 & 2 of the checklist for 2,500 SF -5,000 SF and submit for record.
All projects that create or replace between 2,500 sq. ft. and less than 5,000 sq. ft. of impervious area	Complete Post-Construction Stormwater Management Checklist for 2,500 SF to 5,000 SF. Quantify the runoff reduction using State's Post-Construction Water Balance Calculator, available at http://stormwater.ucsd.edu or request from EH&S Environmental Affair at ehsea@ucsd.edu and attach to the checklist.
All projects that create or replace 5,000 sq. ft. or more of impervious area	Classified as a regulated project. Complete in full the Post-Construction Stormwater Management Checklist for 5,000 sq. ft. or greater. Quantify "Site Design" BMPs using State's Post-Construction Water Balance Calculator and show that post-construction water balance is achieved. If balancing is not possible, see below. "Treatment Control" BMPs are <u>only</u> required if the Site Design BMPs above cannot fully meet Permit requirements. a) Quantify and explain in the Post-Construction Stormwater Management Checklist and include any attachments as needed. b) Design shall be based on the Flow-Based or Volume-Based criteria specified in Section F.5.g.2.b (Numeric Sizing Criteria) of the Phase II Small MS4 Permit c) Bioretention facilities are preferred, however alternative treatment BMPs can be used if proper documentation and supporting calculations prepared by a Registered Civil Engineer are provided and attached to the checklist. d) <u>An Operations and Maintenance Plan (O&M)</u> for each Post-Construction BMP <u>must</u> be included in the checklist.

3.2 UC San Diego Design Guidelines

UC San Diego design guidelines, dated April 1st, 2015, give specific guidelines for the creation of a Storm Water Quality Management Plan for projects that create/replace over 5,000 square feet of impervious area. These are listed below in greater detail:

1. Description of existing site condition: Existing drainage pattern, drainage system, natural hydrologic features, site topography.
2. Description of proposed site development: Proposed drainage pattern, drainage system, site topography, etc.
3. Identify the project hydrologic area, the downstream receiving waters and its impairments in 303(d) list
4. Projects anticipated and potential pollutants
5. Pollutants of concern
6. Hydrologic soil group and depth of groundwater (if any)
7. Summary of existing and proposed pervious area and impervious area (replaced and newly added)
8. Site Design and LID BMP's
9. A site design drawing identifying each Drainage Management Areas
    a. Each area in Square Feet
    b. Flow of runoff being treated
    c. Type of BMP
10. Source Control BMP's (to be included during CD submittal)
11. Treatment Control BMP's (To be included during CD submittal)
12. O&M Manual (To be included during CD submittal)

Due to the La Jolla Innovation Center project meeting the requirements for a Regulated Project, the following report will satisfy the requirements of the UC San Diego Guidelines as stated above, in conjunction with the stated goal of meeting the legislative requirements of the Phase II Small MS4 General Permit as a Non-Traditional Permittee.

SECTION 4 – EXISTING/PROPOSED CONDITION ASSESSMENT

4.1 EXISTING CONDITION HYDROLOGIC SUMMARY

In the existing condition, the 6.780 acre property in which the project site is situated generally drains into two distinct drainage discharge points. The northeast portion (in which the project limits are contained) discharges directly to a large concrete structure within an existing Multi-Plate Public Storm Drain system (City DWG No. 16695-D). The remaining portions of the property drain via private storm drain system to the west where they enter a 20" corrugated metal pipe (CMP) pipe that flows south within a public storm drain line before converging further downstream at **POC-3** (connection to the same Public Storm Drain system). Because the limits of the proposed project and the impact of the project are fully contained within the northeast portion of the site, a description of the drainage in this area has been provided to match the analysis of this report, divided into 3 sub-basins, **E1** through **E3**, which are tributary to either **POC-1** (curb inlet on Villa La Jolla Drive) or **POC-2** (curb inlet in existing parking lot).

Basin E1:

The 0.698-acre basin is comprised of areas west of the existing Rock Bottom building including landscape, parking, sidewalks, and portions of the existing building. Flow from this basin generally is collected within a series of storm drain inlets that concentrates flow into the existing Curb Inlet near the main entrance of the existing building (**POC-2**). This flow then travels through an 18" CMP pipe and is connected to a junction structure within the multi-plate public storm drain that outlets to the Caltrans Right-of-Way, then drains to Mission Bay via Rose Creek.

Basin E2:

The 0.571-acre basin is comprised of landscape areas and portions of the existing building around the north and east sides of the existing building as well as landscape, parking, and sidewalk areas to the southeast of the existing building. Flow from this basin generally sheet flows towards the intersection of La Jolla Village Drive and Villa La Jolla Drive where it is captured in public curb inlets (**POC-1**)that concentrate flow into an existing 24" storm drain connects directly to the multi-plate public storm drain that outlets to the Caltrans Right-of-Way, then drains to Mission Bay via Rose Creek.

Basin E3:

The 0.317-acre basin is comprised of landscape, parking, sidewalks and portions of the existing building on the southern portion of the project site. Runoff from this basin generally sheet flows into the existing Curb Inlet near the main entrance of the existing building (**POC-2**). This flow then travels through an 18" CMP pipe and is connected to a junction structure within the public storm drain that outlets to the Caltrans Right-of-Way, then drains to Mission Bay via Rose Creek.

Figure 2 shows the existing condition of the Hydrology and Storm Drain Routing for the La Jolla Innovation Center project.

LEGEND

WATERSHED BOUNDARY

IMPERVIOUS AREA

PERVIOUS AREA

BASIN INFORMATION (BASIN NAME, AC, Q100 CFS)

FLOW PATH

POINT OF COMPLIANCE (POC #)

N

0 10 20 40 60

(IN FEET)
1 inch = 20 ft.

FIGURE 2

LA JOLLA INNOVATION CENTER
EXISTING DRAINAGE EXHIBIT

SCALE: 1" = 20'
DATE: 08/11/2020
DRAWN BY: MWT
JOB NO.: 1660.10
CHECKED BY: JRG

latitude 33
PLANNING & ENGINEERING
9968 Hibert Street 2nd Floor, San Diego, CA 92131
Tel 858.751.0633

4.2 PROPOSED CONDITION HYDROLOGIC SUMMARY

The La Jolla Innovation Center project consists of the construction of a three-story building on top of a two-level subterranean parking structure at the corner of La Jolla Village Drive and Villa La Jolla. Surface improvements within the project include the realignment and resurfacing of the existing parking lot south of the existing building, the construction of patio space and pedestrian walkways, and new grading and landscaping.

The site is divided into six (6) distinct drainage basins, which are each described further below:

Basin P1:

This 0.80-acre basin comprises of the entirety of the proposed building and the landscaped areas and surface improvements directly to the north and east of the building. Runoff from these areas will be captured in roof drains and area drains, then directed via a cobble swale along the perimeter of the building to a 4' x 4' BioClean Modular Wetlands System. Once the storm water is treated in the Modular Wetlands System, it will discharge to the existing curb inlet on Villa La Jolla Drive (POC-1), which connects to the existing 24" storm drain in the street.

Basin P2:

This 0.34-acre basin is comprised primarily of the surface improvements and landscape south of the proposed building. Runoff from these areas will sheet flow or be captured in area drains and directed to a 4' x 8' BioClean Modular Wetlands System in the northeast corner of the surface parking lot (POC-2). After treatment, flow will be routed through a proposed 12" PVC storm drain to a proposed 4' x 4' modified catch basin, which connects to the existing junction structure through an existing 18" CMP storm drain.

Bypass 1:

A 0.10-acre portion of Existing Basin E2 discharges runoff onto the proposed project site, but is not within the scope of the project. Therefore, all runoff from this portion (Basin BP1) will continue to sheet flow to the public right-of-way in Villa La Jolla Drive and enter the public storm drain via curb inlet (POC-1). This runoff will bypass the project's private storm drain system and will not require onsite treatment.

Bypass 2:

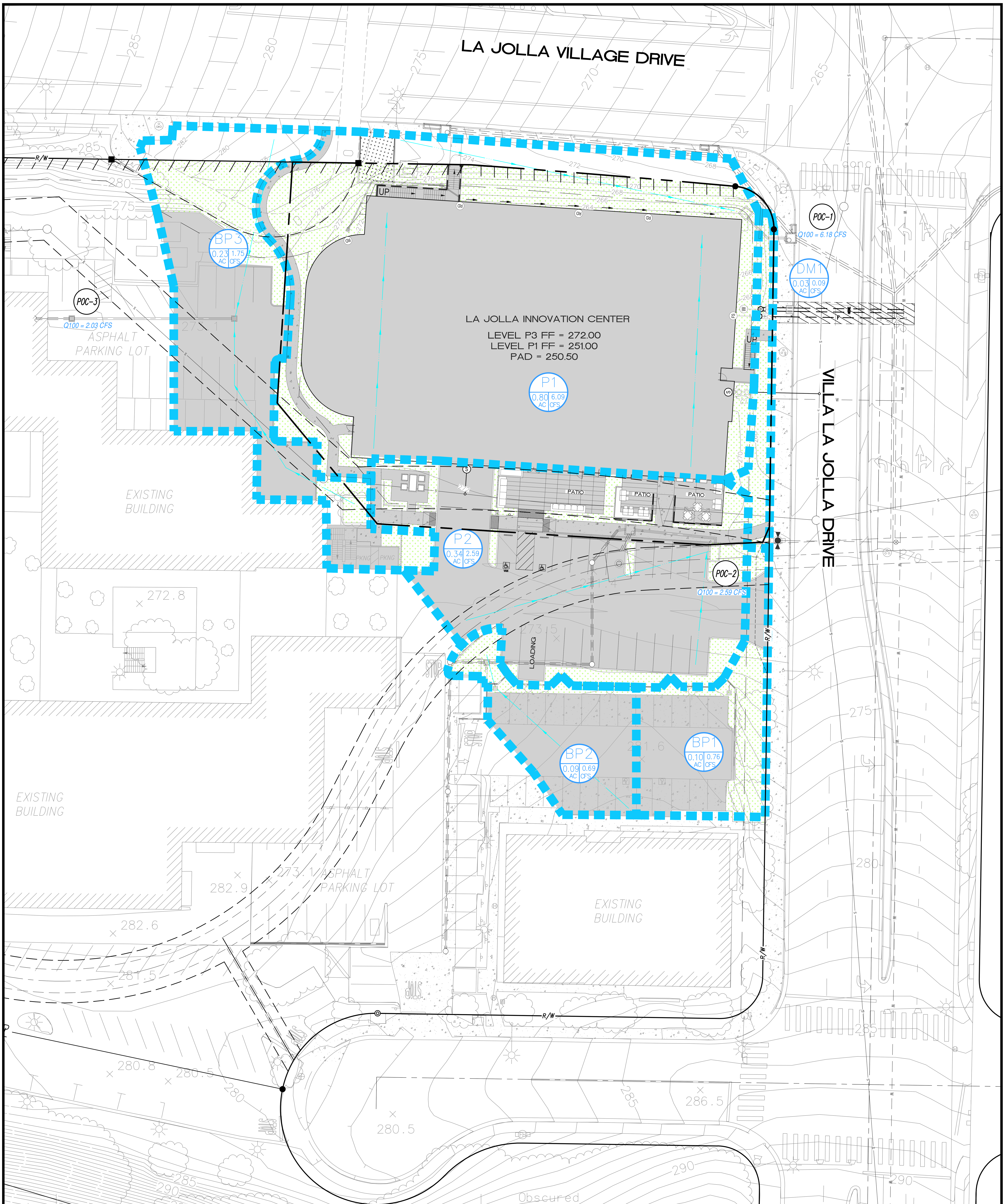
A 0.09-acre portion of Existing Basin E3 discharges runoff onto the proposed project site, but is not within the scope of the project. Therefore, all runoff from this portion (Basin BP2) will be intercepted by a proposed catch basin and connected to the existing public storm drain system (POC-2). This runoff will bypass the project's private storm drain system and will not require onsite treatment.

Bypass 3:

The 0.23-acre area west of the proposed building, which consists of landscape area and existing surface parking, will be graded slightly to drain to a proposed 2' x 2' catch basin to the west of the proposed building. The proposed catch basin will redirect flow to an existing 2' x 2' catch basin via a 12" PVC storm drain. This existing catch basin will run to the west side of the "overall property", where it will connect with an existing public storm drain and discharge to POC-3. POC-3 is the conveyance for most of the "Overall Property" runoff outside of the "Project Site", as shown in Figure 1 (page 6).

<u>De-Minimis 1:</u>
The east portion of the site, which is comprised of landscaped area adjacent to the Villa La Jolla Drive right-of-way, is classified as a De-Minimis area because it cannot be effectively captured and routed to a treatment facility. This minimal area (1,427 square feet in total) will continue to sheet flow to the public right-of-way in Villa La Jolla Drive and enter the public storm drain via curb inlet.

Figure 3 shows the Proposed Condition for Hydrology and Storm Drain Routing for the La Jolla Innovation Center.



LEGEND

WATERSHED BOUNDARY. . . . .

IMPERVIOUS AREA. . . . .

PERVIOUS AREA . . . .

BASIN INFORMATION. . . . . BASIN NAME AC Q100 CFS

FLOW PATH. . . . .

POINT OF COMPLIANCE. . . . . POC #

N

0 10 20 40 60

(IN FEET)
1 inch = 20 ft.

FIGURE 3

LA JOLLA INNOVATION CENTER
PROPOSED DRAINAGE EXHIBIT

SCALE: 1" = 20'
DATE: 01/11/2021
JOB NO.: 1660.10
DRAWN BY: MWT
CHECKED BY: JRG

latitude 33
PLANNING & ENGINEERING
9968 Hibert Street 2nd Floor, San Diego, CA 92131
Tel 858.751.0633

SECTION 5 – HYDROLOGIC AREA/DOWNSTREAM IMPAIRMENTS

5.1 Hydrologic Area/Downstream Receiving Water/303(d) Impairment

The La Jolla Innovation Center is located in the San Dieguito River Basin watershed, more specifically the Mission Bay Hydrologic Area (906.80). **Appendix A** shows the location of the La Jolla Innovation Center in relation to the Hydrologic Area. Since UC San Diego is a Phase II Small MS4 Non-Traditional Permittee, they are required to identify 303(d) impairments downstream of the project location for source control measures and storm water treatment. Based on the Imparied Water Bodies map from the California State Water Resources Control Board, the 303(d) Impairment/Highest Priority Pollutants for this watershed are included in the following table:

Table 2	
Highest Priority Water Quality Condition	
Watershed Area	303(d) Impairment/Highest Priority Water Quality Condition
Mission Bay	Mercury, PCBs

SECTION 6 – STORM WATER TREATMENT/HYDROMODIFICATION

6.1 Storm Water Treatment Requirements

Per the UC San Diego Design Guidelines, the La Jolla Innovation Center project is a regulated project and is required to implement site design measures and Light Impact Design (LID) measures on-site to show compliance with the UC San Diego Storm Water Management Plan and the Phase II Small MS4 Non-Traditional Permit.

The proposed drainage condition of the site was divided into six distinct Drainage Management Areas (DMAs) and evaluated for their proposed impervious areas. **Table 3** shows the results below:

Table 3			
Proposed Impervious Area per DMA			
DMA	**Total SF**	**IMP SF**	**PERF SF**
P1	34,551	25,788	8,763
P2	14,640	12,264	2,376
BP1	4,028	2,463	1,565
BP2	3,965	3,168	797
BP3	9,874	5,992	3,882
DM1	1,427	0	1,427

Utilizing the California Phase II LID Sizing Tool, located at https://www.owp.csus.edu/LIDTool/Start.aspx, site design measures and LID measures were implemented for each DMA to calculate a required water quality treatment area. Per the UC San Diego Design Guidelines and Storm Water Management Plan, BioClean Modular Wetlands Systems were selected as the BMP on-site. **Table 4** shows the treatment requirements per DMA:

Table 4					
Treatment Flow Required per DMA					
DMA	**Total SF**	**IMP SF**	**PERF SF**	**REQUIRED FLOW (CFS)**	**BMP TYPE**
P1	34,551	25,788	8,763	0.111	BMP 1
P2	14,640	12,264	2,376	0.049	BMP 2
BP1*	4,028	2,463	1,565	N/A	N/A
BP2*	3,965	3,168	797	N/A	N/A
BP3*	9,874	5,992	3,882	N/A	N/A
DM1**	1,427	0	1,427	N/A	N/A

*Basins contain offsite flow and will bypass treatment

** Self-Treating Area not requiring additional treatment

Appendix B shows the BMP Exhibit for the La Jolla Innovation Center project for further information.

Per the Phase II Small MS4 Non-Traditional Permit requirements, this project is required to treat the flow of runoff produced from a rain event equal to at least 0.2 in/hr intensity. Two BMPs are proposed on-site to treat the proposed project. BMP 1 is a 4' x 4' BioClean Modular Wetlands System located northeast of the proposed building, and sized to treat DMA P1. BMP 2 is a 4' x 8' BioClean Modular Wetlands System located in the northeast corner of the parking lot to the south of the proposed building, and is sized to treat DMA P2. DMA BP1, BP2, and BP3 are bypass DMAs and do not require onsite treatment – runoff from these DMAs will flow directly into the existing public storm drain system. DMA DM1 is proposed as landscaping and is therefore self-mitigating.

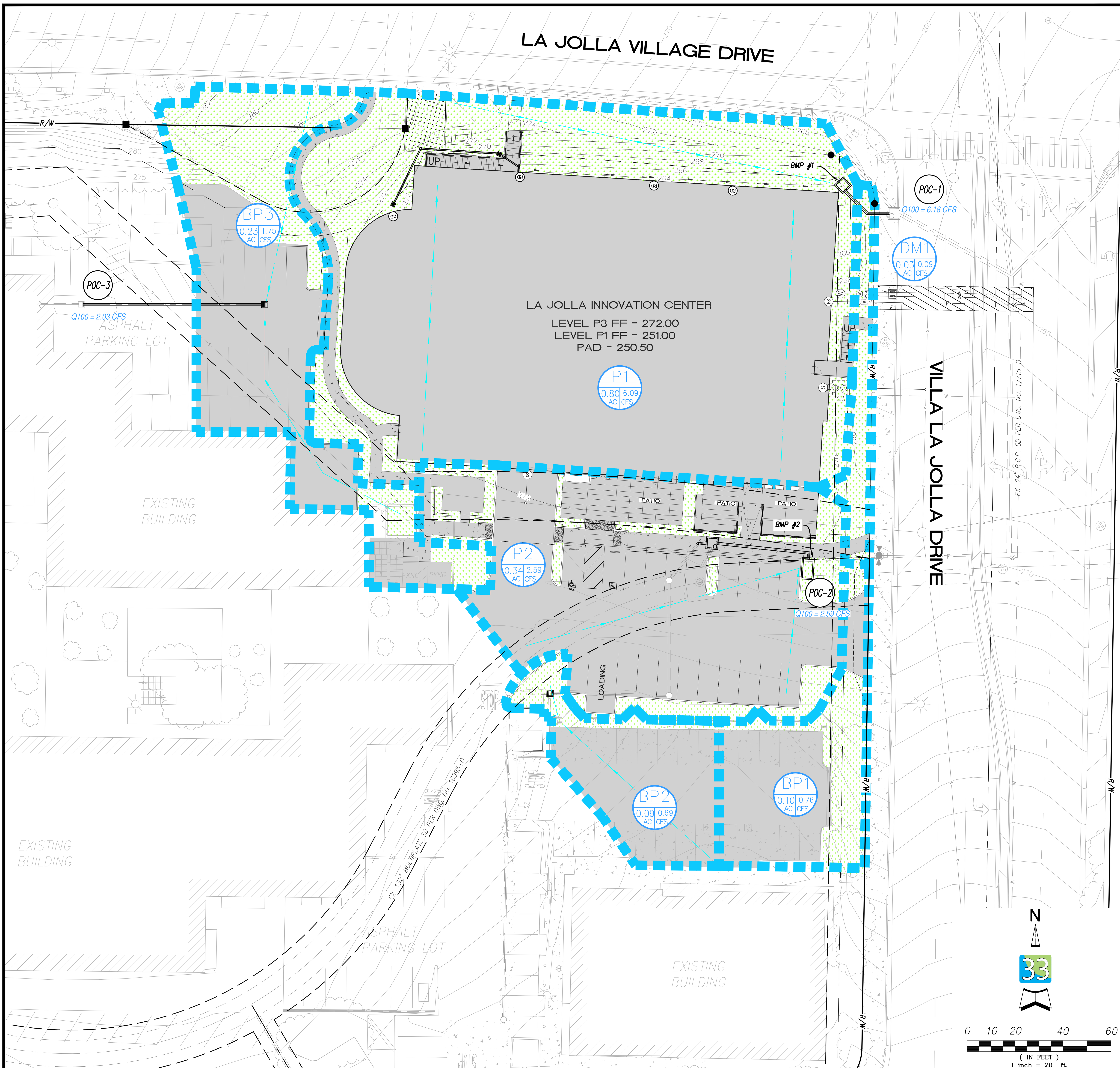
Appendix C shows the Post-Construction Checklist Sheet for reference.

SECTION 7 – CONCLUSION

This Storm Water Quality Management Plan has been prepared to show compliance of the La Jolla Innovation Center Project with the Phase II Small MS4 Non-Traditional Permit, UC San Diego Storm Water Management Program, and the UC San Diego Design Guidelines. Analysis shows that two Modular Wetlands System, sized appropriately per the Phase II Small MS4 Non-Traditional Permit requirements, are adequate to treat the proposed improvements and mitigate the increase flow for the 100-year 6-hour storm event.

Appendix A – Hydrologic Area

Appendix B – BMP Exhibit



DMA P1							
NAME	AREA (SF)	POST PROJECT SURFACE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF	WEIGHTED RUNOFF FACTOR	REQ'D TREATMENT FLOW (CFS)	PROP. TREATMENT AREA (CFS)
DMA P1–1	25,788	IMPERVIOUS	0.9	23,209	–	–	BMP #1
DMA P1–2	8,763	PERVIOUS	0.1	876	–	–	–
TOTAL AREA	34,551			24,085	0.70	0.111	0.052

DMA P2							
NAME	AREA (SF)	POST PROJECT SURFACE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF	WEIGHTED RUNOFF FACTOR	REQ'D TREATMENT AREA (CFS)	PROP. TREATMENT AREA (CFS)
DMA P2–1	12,264	IMPERVIOUS	0.9	11,038	–	–	BMP #2
DMA P2–2	2,376	PERVIOUS	0.1	238	–	–	–
TOTAL AREA	14,640			11,275	0.77	0.052	0.115

DMA BP1							
NAME	AREA (SF)	POST PROJECT SURFACE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF	WEIGHTED RUNOFF FACTOR	REQ'D TREATMENT AREA (SF)	PROP. TREATMENT AREA (SF)
DMA BP1–1	2,463	IMPERVIOUS	0.9	2,217	–	N/A	N/A
DMA BP1–2	1,565	PERVIOUS	0.1	157	–	N/A	N/A
TOTAL AREA	4,028			2,374		N/A	N/A

DMA BP2							
NAME	AREA (SF)	POST PROJECT SURFACE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF	WEIGHTED RUNOFF FACTOR	REQ'D TREATMENT AREA (SF)	PROP. TREATMENT AREA (SF)
DMA BP2–1	3,168	IMPERVIOUS	0.9	2,851	–	N/A	N/A
DMA BP2–2	797	PERVIOUS	0.1	80	–	N/A	N/A
TOTAL AREA	3,965			2,931		N/A	N/A

DMA BP3							
NAME	AREA (SF)	POST PROJECT SURFACE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF	WEIGHTED RUNOFF FACTOR	REQ'D TREATMENT AREA (SF)	PROP. TREATMENT AREA (SF)
DMA BP3–1	5,992	IMPERVIOUS	0.9	5,393	–	N/A	N/A
DMA BP3–2	3,882	PERVIOUS	0.1	388	–	N/A	N/A
TOTAL AREA	9,874			5,781		N/A	N/A

DMA DM1							
NAME	AREA (SF)	POST PROJECT SURFACE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF	WEIGHTED RUNOFF FACTOR	REQ'D TREATMENT AREA (SF)	PROP. TREATMENT AREA (SF)
DMA DM1–1	0	IMPERVIOUS	0.9	0	–	N/A	N/A
DMA DM1–2	1,427	PERVIOUS	0.1	140	–	N/A	N/A
TOTAL AREA	1,427			169		N/A	N/A

EXISTING SITE INFORMATION

HYDROLOGIC SOIL GROUP: NRCS TYPE 'D' (SCRIPPS FORMATION, ALLUVIUM & COMPACTED FILL)

GROUNDWATER: GROUNDWATER WAS OBSERVED AT ELEVATIONS OF 234 TO 235 FEET MSL, PER GEOTECHNICAL REPORT PERFORMED BY GROUP DELTA ON JANUARY 29, 2020, TITLED "REPORT OF GEOTECHNICAL INVESTIGATION –– THE CAMPUS ON VILLA LA JOLLA".

EXISTING NATURAL HYDROLOGIC FEATURES: NO NATURAL HYDROLOGIC FEATURES EXIST ONSITE.

EXISTING TOPOGRAPHY AND IMPERVIOUS AREA: EXISTING TOPOGRAPHY SHOWN HEREON. SEE AREA SUMMARY TABLE FOR EXISTING IMPERVIOUS AREA.

EXISTING DRAINAGE: PARKING LOT, BUILDING, SIDEWALK, AND PLANTER AREA WHICH DRAIN VIA SHEET FLOW AND STORM DRAIN TO EXISTING STRUCTURES. FLOW FROM ALL STRUCTURES EVENTUALLY DISCHARGES INTO AN EXISTING 132" MULTIPLATE STORM DRAIN PER DWG. NO. 16995–D THAT RUNS ALONG THE SOUTH SIDE OF THE SITE.

PROPOSED SITE INFORMATION

PROPOSED DRAINAGE: ALL RUNOFF FROM DMA–P1 AND DMA–P2 WILL BE DIVERTED VIA SHEET FLOW, AREA DRAINS, AND/OR COBBLE SWALES TO ON–SITE PRIVATE BIOCLEAN MODULAR WETLANDS SYSTEMS, THEN CONVEYED VIA PROPOSED PRIVATE STORM TO CONNECT INTO THE EXISTING ON–SITE PUBLIC STORM DRAIN SYSTEM.

ALL RUNOFF FROM DMA–BP1, BP2, AND BP3 WILL BE DIRECTLY DIVERTED VIA SHEET FLOW AND/OR AREA DRAINS TO CONNECT INTO THE EXISTING ON–SITE PUBLIC STORM DRAIN SYSTEM.

PROPOSED GRADING: SHOWN HEREON. SEE PLANS FOR MORE DETAIL.

PROPOSED IMPERVIOUS FEATURES: SHOWN HEREON. SEE PLANS FOR MORE DETAIL.

PROPOSED DRAINAGE: SHOWN HEREON. SEE PLANS FOR MORE DETAIL.

DRAINAGE MANAGEMENT AREAS: SHOWN HEREON. SEE DMA SUMMARY TABLE.

LEGEND

WATERSHED BOUNDARY. . . . .

IMPERVIOUS AREA. . . . .

PERVIOUS AREA . . . .

BASIN INFORMATION. . . . . BASIN NAME AC Q100 CFS

FLOW PATH. . . . .

POINT OF COMPLIANCE. . . . . POC #

PROPOSED CATCH BASIN. . . . .

PROPOSED STORM DRAIN. . . . .

EXISTING STORM DRAIN . . . .

AREA SUMMARY TABLE			
	EXISTING CONDITION	PROPOSED CONDITION	DIFFERENCE
IMPERVIOUS AREA	49,890 SF (1.15 AC) – 77%	49,675 SF (1.14 AC) – 76%	–215 SF
PERVIOUS AREA	19,370 SF (0.44 AC) – 23%	19,585 SF (0.45 AC) – 24%	+215 SF
TOTAL AREA	69,260 SF (1.59 AC)	64,260 SF (1.59 AC)	–––

SITE MAP NOTES

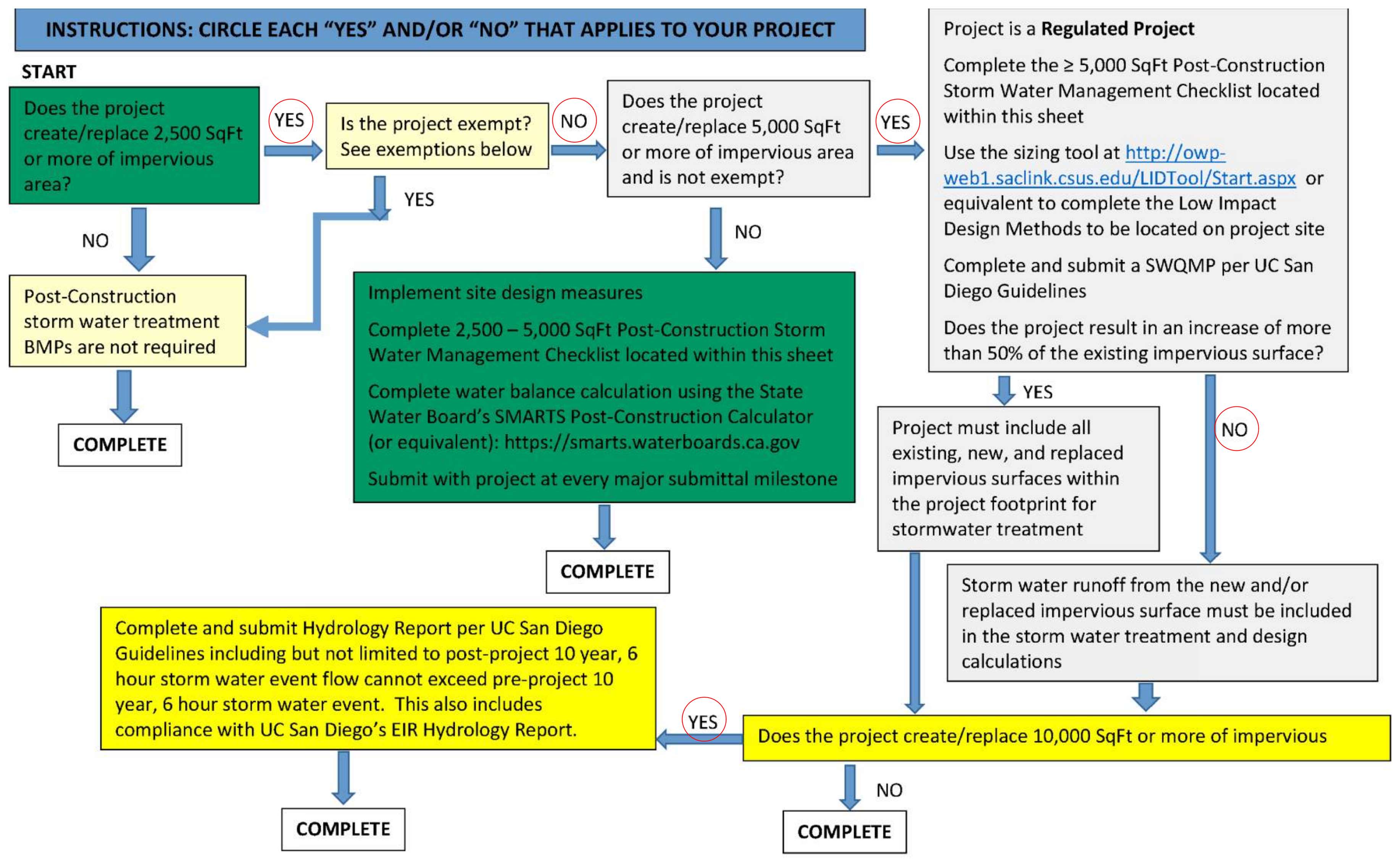
- NO MATERIALS TO BE EXPOSED TO STORMWATER RUNOFF
- NO BUILDING OR POLLUTANT GENERATING ACTIVITY AREAS ARE PROPOSED (FUELING, GARAGES, WASTE CONTAINERS, WASH RACKS, HAZARDOUS MATERIALS)
- NO ONSITE AREAS OF POTENTIAL EROSION
- NO EXISTING DRINKING WATER WELLS

LA JOLLA INNOVATION CENTER
PROPOSED DMA EXHIBIT

SCALE: 1" = 20'
DATE: 01/27/2021 DRAWN BY: MWT
JOB NO.: 1660.10 CHECKED BY: JRG

latitude 33 PLANNING & ENGINEERING
9968 Hibert Street 2nd Floor, San Diego, CA 92131
Tel 858.751.0633

Appendix C – Post-Construction Checklist Sheet



POST-CONSTRUCTION STORMWATER MANAGEMENT

PHASE II SMALL MS4 GENERAL PERMIT SECTION F REQUIRES UCSD TO COMPLY WITH ITS POST CONSTRUCTION STORM WATER MANAGEMENT PROGRAM STRUCTURED AS FOLLOWING:

1. PROJECTS THAT CREATE AND/OR REPLACE LESS THAN 2,500 SQUARE FEET OF IMPERVIOUS SURFACE – EXEMPT FROM POST CONSTRUCTION STORM WATER MANAGEMENT REQUIREMENTS.
2. PROJECTS THAT CREATE AND/OR REPLACE BETWEEN 2,500 SQUARE FEET AND 5,000 SQUARE FEET OF IMPERVIOUS SURFACE "SMALL PROJECTS"
   a. IMPLEMENT SITE DESIGN MEASURES – USE STATE WATER BOARD SMARTS POST-CONSTRUCTION CALCULATOR
   b. IF UNABLE TO MEET THE CRITERIA ON THE CALCULATOR, IMPLEMENT STORM WATER TREATMENT MEASURES USING NUMERIC SIZING CRITERIA SPECIFIED IN SECTION F.5.G.2.B. TO TREAT RUNOFF FROM REMAINING IMPERVIOUS DMAS
3. PROJECTS THAT CREATE AND/OR REPLACE 5,000 SQUARE FEET OR MORE OF IMPERVIOUS SURFACE – "REGULATED PROJECTS"
   a. IMPLEMENT LOW IMPACT DEVELOPMENT (LID) DESIGN STANDARDS, WHICH INCLUDES:
   i. SOURCE CONTROL MEASURES
   ii. SITE DESIGN MEASURES USING THE STATE'S POST-CONSTRUCTION WATER BALANCE CALCULATOR
   iii. STORM WATER TREATMENT BMPS TO TREAT RUNOFF FROM THE REMAINING IMPERVIOUS DMAS AFTER IMPLEMENTATION OF SITE DESIGN MEASURES USING DESIGN PARAMETERS SPECIFIED IN SECTION F.5.G.2.D

PROJECT INFORMATION

PROJECT TYPE: ☐NEW DEVELOPMENT ☒RE-DEVELOPMENT ☐ROAD ☐LANDSCAPING ☐RETROFIT ☐UTILITIES
☐OTHER ____________________

PROJECT AREAS :
TOTAL PROJECT AREA 52,272 SF
PRE IMPERVIOUS 49,490 SF
POST IMPERVIOUS 49,107 SF
NEW IMPERVIOUS 0 SF
REPLACED IMPERVIOUS 49,107 SF

(INSTRUCTIONS)
1. IF THE PROJECT CREATES AND/OR REPLACE BETWEEN 2,500 SQUARE FEET AND 5,000 SQUARE FEET, COMPLETE THE CHECKLIST BELOW AND REMOVE CHECKLIST FOR 5,000 SQUARE FEET OR GREATER.
2. USE THE EXCEL FILE FOR THE STATE WATER RESOURCES CONTROL BOARD'S POST-CONSTRUCTION WATER BALANCE CALCULATOR AND INCLUDE IT IN THE DESIGN SUBMITTALS.
3. IF BMPS 5, 6, 7, AND 8 BELOW ARE PROPOSED IN THE DESIGN PLANS; COMPLETE "BMP TREATMENT DATA TABLE" PROVIDED IN THE CAD TEMPLATE. LIST ALL BMPS INDIVIDUALLY AND PROVIDE THEIR TREATMENT DATA. EACH INDIVIDUAL BMP SHALL HAVE ITS OWN BMP ID THAT MATCHES IN THE DESIGN PLANS.

POST CONSTRUCTION STORMWATER MANAGEMENT BMP CHECKLIST FOR PROJECTS THAT CREATE AND/OR REPLACE BETWEEN 2,500 SQUARE FEET TO 5,000 SQUARE FEET OF IMPERVIOUS SURFACE

SITE DESIGN BMPS – USE THE EXCEL FILE FOR THE STATE WATER BOARD'S POST-CONSTRUCTION CALCULATOR AND INCLUDE IN THE DESIGN SUBMITTALS
1. STREAM SETBACKS AND BUFFERS
(A VEGETATED AREA INCLUDING TREES, SHRUBS, AND HERBACEOUS VEGETATION, THAT EXISTS OR IS ESTABLISHED TO PROTECT A STREAM SYSTEM, LAKE RESERVOIR, OR COASTAL ESTUARINE AREA) ☐ YES ☒ NO
2. SOIL QUALITY IMPROVEMENT AND MAINTENANCE
(IMPROVEMENTS AND MAINTENANCE THROUGH SOIL AMENDMENTS AND CREATION OF MICROBIAL COMMUNITY) ☐ YES ☒ NO
3. TREE PLANTING AND PRESERVATION
(PLANTING AND PRESERVATION OF HEALTHY ESTABLISHED TREES THAT INCLUDE BOTH EVERGREENS AND DECIDUOUS, AS APPLICABLE) ☒ YES ☐ NO
4. ROOFTOP AND IMPERVIOUS AREA DISCONNECTION
(REROUTING OF ROOFTOP DRAINAGE PIPES TO DRAIN RAINWATER TO RAIN BARRELS, CISTERNS, OR PERMEABLE AREAS INSTEAD OF TO THE STORM WATER SYSTEM) ☐ YES ☒ NO
5. POROUS PAVEMENT
(PAVEMENT THAT ALLOWS TO PASS THROUGH IT, THEREBY REDUCING THE RUNOFF FROM A SITE AND SURROUNDING AREAS AD FILTERING POLLUTANTS) ☐ YES ☒ NO
6. GREEN ROOFS
(A VEGETATIVE LAYER GROWN ON A ROOF – ROOFTOP GARDEN) ☐ YES ☒ NO
7. VEGETATED SWALES
(A VEGETATED, OPEN-CHANNEL MANAGEMENT PRACTICE DESIGNED SPECIFICALLY TO TREAT AND ATTENUATE STORM WATER RUNOFF)☐ YES ☒ NO
8. RAIN BARRELS AND CISTERNS
(SYSTEM THAT COLLECTS AND STORES STORM WATER RUNOFF FROM A ROOF OR OTHER IMPERVIOUS SURFACE) ☐ YES ☒ NO
9. DOES THE POST-CONSTRUCTION WATER BALANCE CALCULATOR SHOW THAT ITS MINIMUM REQUIREMENTS HAVE BEEN MET? ☒ YES ☐ NO

BMP TREATMENT TABLE (APPLIES TO BOTH 2,500 TO 5,000 SQUARE FEET AND 5,000 SQUARE FEET AND UP)

TYPE OF BMP	BMP ID	TARGET STORM EVENT	TREATMENT AREA (SF)	TREATMENT FLOW (CFS) OR VOLUME (SF)	TARGETED POLLUTANTS
4' X 4' MODULAR WETLANDS SYSTEM	1	100-YEAR, 6-HR	23,887	0.052	MERCURY, PCBs
4' X 8' MODULAR WETLANDS SYSTEM	2	100-YEAR, 6-HR	10,687	0.115	MERCURY, PCBs

PERMANENT BMP OPERATION + MAINTENANCE PROCEDURES

BMP DESCRIPTION	BMP ID	INSPECTION FREQUENCY	MAINTENANCE FREQUENCY	MAINTENANCE METHOD	INCLUDED IN O&M MANUAL		SHEET NUMBER(S)
					YES	NO	
					YES	NO	
					YES	NO	
					YES	NO	

BIOFILTRATION INSPECTION SCHEDULE NOTES

CONTRACTOR MUST CONTACT ENGINEER FOR INSPECTION(*) OF BMPS AT THE FOLLOWING STAGES OF CONSTRUCTION:
- PRIOR TO START OF CONSTRUCTION OF BIOFILTRATION AREA
- PRIOR TO CONSTRUCTION OF OUTLET STRUCTURES
- AFTER GRADING OF BASIN AREA
- AFTER PLACEMENT OF IMPERMEABLE LINER
- AFTER PLACEMENT OF SUB-DRAIN
- AFTER THE PLACEMENT OF GRAVEL DRAINAGE LAYER
- AFTER PLACEMENT OF TREATMENT SOIL
- AFTER IRRIGATION AND LANDSCAPE ACTIVITIES

(*) SURVEY STAKES SHALL BE AVAILABLE FOR EACH INSPECTION

(INSTRUCTIONS)
1. IF THE PROJECT CREATES AND/OR REPLACE 5,000 SQUARE FEET OR GREATER OF IMPERVIOUS SURFACE, COMPLETE THE CHECKLIST BELOW AND REMOVE CHECKLIST FOR 2,500 TO 5,000 SQUARE FEET.
2. USE CALIFORNIA PHASE II LID SIZING TOOL (HTTP://OWP-WEB1.SACLINK.CSUS.EDU/LIDTOOL/START.ASPX) TO SIZE ALL LID BMPS. OUTPUT OF THE SIZING SHALL BE INCLUDED IN YOUR SWQMP.
3. ALL SIZED BMPS TO BE INCLUDED IN "BMP TREATMENT DATA TABLE" PROVIDED IN THE CAD TEMPLATE. LIST ALL BMPS INDIVIDUALLY AND PROVIDE THEIR TREATMENT DATA. INDIVIDUAL BMP SHALL HAVE ITS OWN BMP ID THAT MATCHES IN THE DESIGN PLANS.

POST CONSTRUCTION STORMWATER MANAGEMENT BMP CHECKLIST FOR PROJECTS THAT CREATE AND/OR REPLACE 5,000 SQUARE FEET OR GREATER OF IMPERVIOUS SURFACE

SOURCE CONTROL BMPS – REFER TO CASQA STORMWATER BMP HANDBOOK FOR NEW DEVELOPMENT AND REDEVELOPMENT APPLIED?
1. ACCIDENTAL SPILLS OR LEAKS ☐ YES ☒ NO
2. INTERIOR FLOOR DRAINS ☒ YES ☐ NO
3. PARKING/STORAGE AREA MAINTENANCE ☒ YES ☐ NO
4. INDOOR AND STRUCTURAL PEST CONTROL ☒ YES ☐ NO
5. LANDSCAPE/OUTDOOR PESTICIDE USE ☒ YES ☐ NO
6. POOLS, SPAS, PONDS, DECORATIVE FOUNTAINS, AND OTHER WATER FEATURES ☐ YES ☒ NO
7. OUTDOOR STORAGE OF EQUIPMENT OR MATERIALS ☐ YES ☒ NO
8. VEHICLE AND EQUIPMENT REPAIR AND MAINTENANCE ☐ YES ☒ NO
9. DRAIN OR WASH FROM BOILER DRAIN LINES, CONDENSATE DRAIN LINES, ROOFTOP EQUIPMENT, DRAINAGE SUMPS, AND OTHER SOURCES ☒ YES ☐ NO
10. FIRE SPRINKLER TEST WATER ☒ YES ☐ NO
11. LOADING DOCKS ☐ YES ☒ NO
12. VEHICLE AND EQUIPMENT CLEANING ☐ YES ☒ NO
13. FUEL DISPENSING AREAS ☐ YES ☒ NO
14. STORAGE AND HANDLING OF SOLID WASTE ☐ YES ☒ NO
15. RESTAURANTS, GROCERY STORES, AND OTHER FOOD SERVICE OPERATIONS ☒ YES ☐ NO
16. UNAUTHORIZED NON-STORM WATER DISCHARGES ☐ YES ☒ NO
17. BUILDING AND GROUNDS MAINTENANCE ☒ YES ☐ NO

DESCRIPTION OF ALL SOURCE CONTROL BMPS IMPLEMENTED FOR PROJECT

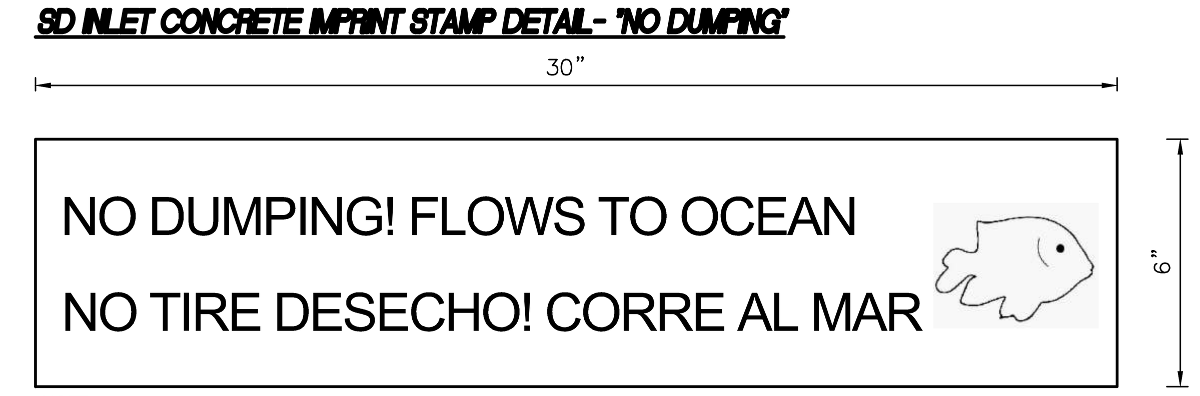
SITE DESIGN BMPS – USE CALIFORNIA PHASE II LID SIZING TOOL (HTTP://OWP-WEB1.SACLINK.CSUS.EDU/LIDTOOL/START.ASPX) APPLIED?
1. STREAM SETBACKS AND BUFFERS (A VEGETATED AREA INCLUDING TREES, SHRUBS, AND HERBACEOUS VEGETATION, THAT EXISTS OR IS ESTABLISHED TO PROTECT A STREAM SYSTEM, LAKE RESERVOIR, OR COASTAL ESTUARINE AREA) ☐ YES ☒ NO
2. SOIL QUALITY IMPROVEMENT AND MAINTENANCE (IMPROVEMENTS AND MAINTENANCE THROUGH SOIL AMENDMENTS AND CREATION OF MICROBIAL COMMUNITY) ☐ YES ☒ NO
3. TREE PLANTING AND PRESERVATION (PLANTING AND PRESERVATION OF HEALTHY ESTABLISHED TREES THAT INCLUDE BOTH EVERGREENS AND DECIDUOUS, AS APPLICABLE) ☒ YES ☐ NO
4. ROOFTOP AND IMPERVIOUS AREA DISCONNECTION (REROUTING OF ROOFTOP DRAINAGE PIPES TO DRAIN RAINWATER TO RAIN BARRELS, CISTERNS, OR PERMEABLE AREAS INSTEAD OF TO THE STORM WATER SYSTEM) ☐ YES ☒ NO
5. POROUS PAVEMENT (PAVEMENT THAT ALLOWS TO PASS THROUGH IT, THEREBY REDUCING THE RUNOFF FROM A SITE AND SURROUNDING AREAS AD FILTERING POLLUTANTS) ☐ YES ☒ NO
6. GREEN ROOFS (A VEGETATIVE LAYER GROWN ON A ROOF – ROOFTOP GARDEN) ☐ YES ☒ NO
7. VEGETATED SWALES (A VEGETATED, OPEN-CHANNEL MANAGEMENT PRACTICE DESIGNED SPECIFICALLY TO TREAT AND ATTENUATE STORM WATER RUNOFF) ☐ YES ☒ NO
8. RAIN BARRELS AND CISTERNS (SYSTEM THAT COLLECTS AND STORES STORM WATER RUNOFF FROM A ROOF OR OTHER IMPERVIOUS SURFACE) ☐ YES ☒ NO

TOTAL TREATMENT FLOW REQUIRED FOR PROJECT (THE FLOW OF RUNOFF PRODUCED FROM A RAIN EVENT EQUAL TO AT LEAST 0.2 INCHES PER HOUR INTENSITY): 0.158 CFS

TOTAL TREATMENT FLOW PROVIDED BY BIOCLEAN MODULAR WETLANDS SYSTEM: 0.167 CFS

ARE ALL DESIGN CALCULATIONS INCLUDED IN THE STORM WATER QUALITY MANAGEMENT PLAN (SWQMP)? ☐ YES ☐ NO

SD INLET CONCRETE IMPRINT STAMP DETAIL- "NO DUMPING"



NOTE:
6" X 30" CONCRETE WARNING STAMP WITH 1" LETTERING TO BE PLACED AT EACH INLET LOCATION.
STAMP IS TO BE FORMED INTO CONCRETE, AND SHOULD NOT BE A DECAL.