Final Initial Study/Proposed Mitigated Negative Declaration

San Diego State University Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

(SCH No. 2002051010)

JANUARY 2025

Prepared for:

SAN DIEGO STATE UNIVERSITY
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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
ADT	average daily trips
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AFY	acre-feet per year
BMP	best management practices
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
Calexico UWMP	City of Calexico 2020 Urban Water Management Plan
CALGem	California Geologic Energy Management Division
CALGreen	California Green Building Standards
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
the CSU	California State University
dBA	A-weighted decibel;
EIR	environmental impact report
FTE	full-time equivalent
GHG	greenhouse gas
HARP2	Hotspots Analysis and Reporting Program
HRA	health risk assessment
ICAPCD	Imperial County Air Pollution Control District
ips	inches per second
IS	Initial Study
IVCCD	Imperial Valley Community College District
kWh	kilowatt-hour
L_{eq}	energy equivalent continuous sound level
MM	Mitigation Measure
MS4	Municipal Separate Storm Sewer System
MT	metric tons
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO_x	oxides of nitrogen

Acronym/Abbreviation	Definition
Off-Campus Center - Calexico	San Diego State University Imperial Valley Off-Campus Center - Calexico
$PM_{2.5}$	fine particulate matter
PM_{10}	coarse particulate matter
PPV	peak particle velocity
PRIMP	Paleontological Resource Impact Mitigation Program
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAG	Southern California Association of Governments
SDSU	San Diego State University
SR	State Route
SSAB	Salton Sea Air Basin
SVP	Society of Vertebrate Paleontology
TAC	toxic air contaminants
VMT	vehicle miles traveled

Mitigated Negative Declaration

Project Name: San Diego State University (SDSU) Imperial Valley Off-Campus Center - Calexico, Affordable Student Housing Project (Project or proposed Project).

Lead Agency/Project Proponent: The Board of Trustees of the California State University (CSU Board of Trustees), 401 Golden Shore, Long Beach, California 90802/SDSU Planning, Design and Construction, 5500 Campanile Drive, San Diego, California 92182.

Prior California Environmental Quality Act (CEQA) Documentation: The environmental impacts associated with development of a Master Plan for the Off-Campus Center - Calexico were evaluated at a program level of review in the SDSU Imperial Valley Campus Master Plan Project Environmental Impact Report (EIR) (SCH 2002051010), which also analyzed improvements to the nearby Brawley Off-Campus Center affiliated with SDSU. The EIR, which was prepared pursuant to the requirements of the California Environmental Quality Act (CEQA), was certified and the Master Plan for the Off-Campus Center - Calexico was approved by the CSU Board of Trustees in 2003. The Off-Campus Center - Calexico Master Plan provides the framework for development of the facilities necessary to serve a projected future enrollment of 850 full-time equivalent (FTE) students. The Proposed Affordable Student Housing Project would not increase student enrollment at the Off-Campus Center - Calexico above the previously approved 850 FTE student projection.

Brief Project Description: The proposed Project would involve the construction of a single-story, four-building complex, approximately 12,840 square feet in size, that would provide affordable student housing. The complex would include three student housing buildings, including one smaller live-in unit building, and a community building. Two of the three proposed residential buildings would each be approximately 5,500 square feet in size and would include five four-bedroom, two-bathroom apartment units, totaling 40 student beds per building (2 student beds per bedroom, 80 student beds in total). The third proposed residential building would be a live-in manager unit that would consist of a single two-bedroom, one-bathroom apartment. The proposed live-in unit would also include approximately 100 square feet of office space intended to provide a space for tenant meetings, social services, or counseling. All apartment units would also be equipped with a living area and kitchen. The proposed community building would be approximately 840 square feet and include laundry, mail, restroom, electrical, and maintenance facilities.

Other on-site proposed amenities include a courtyard, bike racks, and a community waste enclosure. The courtyard would be approximately 1,600 square feet and would be centrally located in the proposed complex. Approximately 15 bike racks would be provided throughout the Project site.

The 80 student beds would be occupied by students attending both the SDSU Off-Campus Center - Calexico and the Imperial Valley College in Imperial. SDSU and the Imperial Valley Community College District (IVCCD) have executed a 30-year master lease agreement to support basic housing needs for students in the Imperial Valley. Under the agreement, 40 of the proposed student beds would be reserved for IVCCD students who attend the Imperial Valley College in Imperial, and 40 beds would be reserved for SDSU Off-Campus Center - Calexico students.

Project Location: The proposed Project would be located at SDSU's Imperial Valley Off-Campus Center - Calexico, which is located at 720 Heber Avenue in the downtown area of the City of Calexico, approximately 0.5 miles north of the United States–Mexico border in Imperial County (see Figure 1, Regional Map).

Initial Study: An Initial Study has been prepared in accordance with CEQA (Cal. Public Resources Code, section 2100 et seq.), to ascertain whether the Proposed Project may have a significant effect on the environment. A copy of the Initial Study is attached to this Mitigated Negative Declaration and is incorporated herein by this reference.

The Initial Study determined that construction and operation of the proposed Project would result in potentially significant impacts related to Air Quality, Biological Resources, Geology and Soils, Noise, Transportation, and Tribal Cultural Resources. However, the Initial Study identifies mitigation measures, listed below, which, in combination with mitigation measures previously adopted as part of the SDSU Imperial Valley Campus Master Plan EIR, would reduce all identified potentially significant impacts to a less-than-significant level. The Initial Study further determined the proposed Project would result in less-than-significant impacts to the following environmental impact categories: Aesthetics, Agriculture and Forestry Resources, Cultural Resources, Energy, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, Utilities and Service Systems, and Wildfire.

Mitigation Measures: In addition to those applicable mitigation measures previously adopted as part of the Program EIR, the following mitigation measures would be required in conjunction with Project implementation:

AQ-1: Prior to the commencement of construction activities, the California State University/San Diego State University (the CSU/SDSU), or its designee, shall direct the construction contractor to demonstrate that all 75-horsepower or greater diesel-powered equipment is powered with Tier 4 Final engines certified by the California Air Resources Board and that all such equipment shall be used during Project construction.

An exemption from this requirement may be granted if (1) the CSU/SDSU, or its designee, documents equipment with Tier 4 Final engines is not reasonably available and (2) the required corresponding reductions in criteria air pollutant emissions can be achieved for the Project from other combinations of construction equipment. Before an exemption may be granted, the CSU/SDSU, or its designee, shall (1) demonstrate that at least two construction fleet owners/operators in Imperial County were contacted and that those owners/operators confirmed Tier 4 Final equipment could not be located within Imperial County during the desired construction schedule and (2) the proposed replacement equipment has been evaluated using the California Emissions Estimator Model (CalEEMod), the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) and the Hotspots Analysis and Reporting Program (HARP2) or other industry standard emission estimation method and health risk assessment tools and documentation is provided to the CSU/SDSU to confirm that necessary Project-generated emissions and health risk reductions are achieved.

BIO-1: If ground disturbance and/or vegetation clearance activities are scheduled to occur during the avian nesting season (February 1–September–30) and bat reproduction season (April-September), the California State University/San Diego State University (the CSU/SDSU), or its designee, shall retain a biologist to conduct pre-construction nesting bird and bat surveys within the area to be disturbed and a 500-foot buffer. Surveys shall be conducted within 3 days prior to initiation of ground-disturbing activity between dawn and noon.

If construction begins outside the nesting bird season (i.e., between October 1 and January 31), work may procced without a nesting bird survey. If construction begins outside the nesting season, but crosses into the nesting season (e.g., starts in January and work continues into March), construction activities may proceed without a nesting bird survey. However, anytime construction activities pause for more than 72 hours during the nesting season, an updated nesting bird survey by a biologist shall be conducted prior to the resumption of construction activities.

If an active nest or western mastiff bat roost is detected during the pre-construction survey, avoidance buffers shall be implemented as determined by a biologist retained by the CSU/SDSU. The buffer shall be of sufficient distance to ensure avoidance of adverse effects to the nesting bird or bat by accounting for topography, ambient conditions, species, nest/roost location, and activity type. All nests shall be monitored as determined by the biologist until nestlings have fledged and dispersed, or it is confirmed that the nest has been unsuccessful or abandoned. Any trees observed supporting roosting bats during the pre-construction survey shall not be removed during the bat reproduction period of April-September. Avoidance buffers shall be implemented as determined by a biologist retained by the CSU/SDSU.

GEO-1: Prior to commencement of any grading activity on site, the California State University/San Diego State University (the CSU/SDSU), or its designee, shall retain a qualified paleontologist consistent with the Society of Vertebrate Paleontology (SVP) (2010) guidelines, to prepare a Paleontological Resource Impact Mitigation Program (PRIMP) for the Project. The PRIMP shall be consistent with the SVP (2010) guidelines and outline the following requirements: worker attendance and environmental awareness training at pre-construction meeting/s; monitoring within the Project site as necessary based on construction plans and/or geotechnical reports; procedures for discoveries and treatment; and methods (including sediment sampling for microvertebrate fossils), for reporting and collections management.

A paleontologist shall attend a pre-construction meeting and shall be on site during the preliminary phase of construction during rough grading and other significant ground-disturbing activities (including augering) to monitor the discovery, if any, of previously undisturbed, fine-grained lake deposits. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the monitor shall temporarily halt and/or divert grading activity to allow recovery of any discovered paleontological resources. Once documentation and collection of the find is completed, the monitor shall allow grading to recommence in the area of the find. Any costs associated with laboratory processing of sediments and fossils, and curation fees are the responsibility of the CSU/SDSU.

NOI-1: Prior to the commencement of construction activities, the California State University/San Diego State University, or its designee, shall direct the construction contractor to install a 6-foot-tall temporary construction noise barrier (either solid plywood or chain link fencing with sound blankets) along the southern and eastern Project boundaries to remain in place throughout the entire construction process.

TRA-1: Prior to the commencement of construction activities, the California State University/San Diego State University, or its designee, shall prepare a traffic control plan, consistent with guidance available through the California Department of Transportation, to ensure the safe passage of pedestrians, motorists, and emergency vehicles in the immediate vicinity of construction activities. The traffic control plan shall be implemented during Project construction activities and shall be discontinued upon completion of Project construction.

TCR-1: Although the potential for discovery of tribal cultural resources on the Project site is considered low, in response to requests made during AB 52 consultation meetings, the California State University/San Diego State University (the CSU/SDSU) shall authorize tribal monitoring during Project construction grading activities and shall provide appropriate remuneration for such monitoring consistent with standard practices. The CSU/SDSU retains the authority to select the monitor, which shall be provided by the Campo Band of Mission Indians. Such monitoring by a single tribal monitor shall be authorized on a daily basis during Project construction grading activities; however, in the event a monitor is not available on any given day, Project construction activities may continue uninterrupted.

In the event tribal cultural resources are inadvertently encountered during construction activities, work in the immediate area shall stop and a qualified archaeologist meeting the Secretary of the Interior's Professional Standards shall assess the discovery in consultation with the Campo Band of Mission Indians to evaluate the resource and develop a plan for treatment and disposition of the resource. If avoidance is not feasible, additional work such as data recovery may be warranted. Following evaluation by a qualified archaeologist, in consultation with the Campo Band of Mission Indians and the CSU/SDSU, construction shall be permitted to resume.

If the CSU/SDSU, or its designee, discovers, human remains during construction of the Project, the CSU/SDSU, or its designee, shall contact the County Coroner and a qualified archaeologist in compliance with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097. If the remains are determined to be Native American, CSU/SDSU shall contact the appropriate tribal representatives to oversee removal of the remains.

The CSU/SDSU shall relinquish ownership of all tribal cultural resources unearthed during the tribal monitoring conducted during ground disturbing activities to the appropriate representative of the Campo Band of Mission Indians, as determined through the appropriate process, for respectful and dignified treatment and disposition, including reburial at a protected location on-site. All cultural materials that are associated with burial and/or funerary goods shall be repatriated to the Most Likely Descendant as determined by the Native American Heritage Commission, per California Public Resources Code Section 5097.98.

Proposed Finding: On the basis of the whole record, there is no substantial evidence showing the Proposed Project will have a significant effect on the environment.

1 Introduction

The purpose of this section is to describe the proposed San Diego State University (SDSU) Imperial Valley Off-Campus Center - Calexico, Affordable Student Housing Project (Project or proposed Project) for the public, reviewing agencies, and decision-makers. The proposed Project will provide housing for approximately 80 students attending both the Off-Campus Center - Calexico and the Imperial Valley Community College District (IVCCD).

The Off-Campus Center - Calexico is located at 720 Heber Avenue in downtown Calexico, approximately 0.5 miles north of the United States–Mexico border (See Figure 1, Regional Map) Regional access to the Off-Campus Center - Calexico is provided via State Route (SR)-111 and SR-98 to the north. The Off-Campus Center - Calexico is bordered by four streets: Heber Avenue to the west, East Sherman Street to the north, Blair Avenue to the east, and East 7th Street to the south. The proposed Project site is approximately 0.58 acres in size (25,320 square feet) and is located at the southeast corner of the Off-Campus Center - Calexico, at the northwest corner of East 7th Street and Blair Avenue. (See Figure 2, Vicinity Map.)

1.1 California Environmental Quality Act Compliance

The California Environmental Quality Act (CEQA) applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. The proposed Project constitutes a "project" as defined by CEQA (California Public Resources Code, Section 21000 et seq.) and Title 14 of the California Code of Regulations, Section 15000 et seq. (CEQA Guidelines). To facilitate compliance with CEQA's requirements, an initial study (IS) has been prepared to analyze the potential environmental effects associated with the proposed Project. Based on the results of the IS analysis, a Mitigated Negative Declaration is proposed for adoption by the California State University (the CSU) Board of Trustees.

In 2003, the Board of Trustees of the CSU certified the SDSU Imperial Valley Master Plan Environmental Impact Report (2003 Campus Master Plan EIR) (State Clearinghouse No. 2002051010), which established a framework for future development of the Off-Campus Center - Calexico. Section 15168(c) of the CEQA Guidelines provides that following preparation of a program EIR such as the 2003 Campus Master Plan EIR, later activities within the program (i.e., later activities within the previously approved Campus Master Plan) are to be examined in light of the program EIR to determine whether additional environmental review is required. If the later activity would have effects not examined in the program EIR, a new IS would be required to determine if preparation of an EIR or negative declaration/mitigated negative declaration would be the appropriate CEQA document. The IS may tier from the program EIR as provided in CEQA Guidelines Section 15152.

The IS presented here analyzes the potential Project-specific environmental effects associated with development and operation of the proposed Affordable Student Housing Project, which is within the scope of the Imperial Valley Campus Master Plan covered by the 2003 Campus Master Plan EIR. The IS identifies potentially significant effects (air quality, biological, cultural/tribal, paleontological, noise, and transportation), although compliance with standard CSU and SDSU construction requirements and mitigation measures, in combination with applicable mitigation measures previously adopted as part of the 2003 Campus Master Plan EIR, would either avoid the potentially significant impacts or mitigate such impacts to a point where clearly no significant effects would occur. As such, preparation of a mitigated negative declaration, which tiers from the previously certified 2003 Campus Master Plan EIR and is based on the analysis presented in this IS, is appropriate under the circumstances (CEQA Guidelines Section 15070[b]).

1.2 Public Review Process

This IS and proposed Mitigated Negative Declaration was circulated for agency and public review for a 30-day review period. The review period is provided in the Notice of Intent circulated with this IS and proposed Mitigated Negative Declaration. No comments were received during the public review period. This document and supporting documents are available for review at the following online location:

https://bfa.sdsu.edu/campus/facilities/planning/eir

1.~~2~~3 Document Organization

This document is organized as follows:

Chapter 1: Introduction. This chapter provides an introduction to the environmental review process. It describes the purpose and organization of this document and presents a summary of findings.

Chapter 2: Project Description. This chapter provides an overview and background of the proposed Project and a detailed description of the Project.

Chapter 3: Initial Study Checklist. This chapter presents an analysis of environmental issues identified in the CEQA Environmental Checklist and determines if proposed Project actions would result in no impact, a less-than-significant impact, or a less-than-significant impact with incorporation of mitigation measures.

Chapter 4: References and Preparers. This chapter lists the references used in preparation of this IS and identifies report preparers.

Appendices A–I. Technical reports and other documents used during preparation of this IS are provided as appendices.

2 Project Description

2.1 Introduction

The purpose of this section is to describe the proposed Project for the public, reviewing agencies, and decision-makers.

Pursuant to CEQA, Public Resources Code Section 21000 et seq., CEQA Guidelines Section 15124, an adequate project description is to contain the following information:

1. The precise location and boundaries of the proposed project, shown on a detailed map, along with a regional map of the project location;
2. A statement of the objectives of the proposed project, which should include the underlying purpose of the project;
3. A general description of the project's technical, economic, and environmental characteristics; and
4. A statement briefly describing the intended uses of the environmental impact report (EIR).[1]

An adequate project description should not supply extensive detail beyond the information necessary to evaluate and review the proposed project's environmental effects (CEQA Guidelines Section 15124). This section describes the proposed Project, including its location, objectives, and characteristics, and the intended uses of this environmental document. The Board of Trustees of the CSU, which is the State of California acting in its higher education capacity, on behalf of SDSU, is the lead agency responsible for certifying the adequacy and completeness of this document and considering approval of the proposed Project.

2.2 Project Overview and Background

In September 2003, the CSU certified an environmental impact report for the SDSU Imperial Valley Master Plan Project (State Clearinghouse No. 2002051010) and approved a Campus Master Plan for the expansion and improvement of the SDSU Imperial Valley Off-Campus Center, which includes locations in the Cities of Calexico (City) and Brawley, both located in Imperial County (SDSU 2003). The Imperial Valley Off-Campus Center is an extension of SDSU's main campus in San Diego and furthers the University's regional educational mission to provide additional educational opportunities to the outlying communities of Imperial County. The previously certified and approved Campus Master Plan and EIR provided the authorization necessary for enrollment of 850 full-time equivalent (FTE)[2] students at the Imperial Valley Off-Campus Center, corresponding associated faculty and staff, and a framework for development of the facilities necessary to serve this projected enrollment and campus population.

The Off-Campus Center – Calexico is approximately 8.3 acres in size and is located in the City. Most of the Off-Campus Center - Calexico is built out, consisting of several educational and support facilities. The environmental impacts associated with development of the Off-Campus Center - Calexico were evaluated at a program level of review in the 2003 EIR. In the CSU's continuing effort to build out the Imperial Valley Off-Campus Center and provide additional educational opportunities, SDSU presently proposes construction and operation of a four-building

1 Although it has not been determined that preparation of an EIR is necessary in this case, the CEQA Guidelines relative to preparation of an EIR provide appropriate instruction as to the content of a CEQA document project description, whether a negative declaration, mitigated negative declaration, categorical exemption, or EIR ultimately is prepared.

2 A full-time equivalent student is one full-time student taking 15 course credits, or 3 part-time students each taking 5 course credits.

complex that would provide affordable student housing at the Calexico location for 80 students and a resident manager. Additional details regarding the proposed housing are provided below.

2.3 Project Location and Existing Conditions

The Off-Campus Center - Calexico is located at 720 Heber Avenue in downtown Calexico, approximately 0.5 miles north of the United States–Mexico border (see Figure 1). Regional access to the Off-Campus Center is provided via SR-111 and SR-98 to the north. The Calexico location is bordered by four streets: Heber Avenue to the west, East Sherman Street to the north, Blair Avenue to the east, and East 7th Street to the south. Residential uses bound the Off-Campus Center - Calexico complex to the north, east, south, and west. Other surrounding uses include Calexico High School, located to the northeast, and Calexico City Hall, located immediately south. The Off-Campus Center currently consists of 17 buildings and an associated surface parking lot (see Figure 2, and Figure 3A, Existing Campus Master Plan).

As a state entity, the CSU/SDSU is not subject to local government plans, regulations, and guidelines, such as those contained in the City's General Plan. The above notwithstanding, for information purposes, the Off-Campus Center Calexico is zoned as Open Space and is designated as Public Facilities in the City's General Plan (City of Calexico 2015a).

The proposed Project site is approximately 0.58 acres in size (25,320 square feet) and is located at the southeast corner of the Off-Campus Center- Calexico, at the northwest corner of East 7th Street and Blair Avenue (see Figure 2). The entirety of the Project site has previously been graded and is relatively flat in nature, with an average elevation of 3.5 feet above mean sea level. The Project site encompasses the locations identified in the Campus Master Plan as future Building 21 (see Figure 3A and Figure 3B, Proposed Campus Master Plan). The Project site consists of vacant and undeveloped land with two trees located along the northern boundary of the site. A chain-link fence separates the Project site from the recently removed temporary Campus Buildings 201, which were located immediately west of the Project site.

2.4 Project Elements

2.4.1 Affordable Student Housing Complex

The proposed Project would involve the construction of a single-story, four-building complex approximately 12,840 square feet in size that would provide for affordable student housing. The complex would include three student housing buildings, including one smaller live-in unit building, and a community building. Two of the three proposed residential buildings would each be approximately 5,500 square feet in size and would include five four-bedroom, two-bathroom apartment units, totaling 40 student beds per building (2 student beds per bedroom, 80 student beds in total). The third proposed residential building would be a live-in manager unit that would consist of a single two-bedroom, one-bathroom apartment. The proposed live-in unit would also include approximately 100 square feet of office space that is intended to provide a space for tenant meetings, social services, or counseling. All apartment units would also be equipped with a living area and kitchen. The proposed community building program would be approximately 840 square feet and include laundry, mail, restroom, electrical, and maintenance facilities. The mail room would be located outside, under the shaded amenity patio of the community building (see Table 1).

Table 1. Affordable Student Housing Complex Area Calculations

	Quantity	Area (square feet)	Beds
Residential Buildings (3)			
4-Bedroom, 8-Bed Unit	5	5,150	40
4-Bedroom, 8-Bed Unit	5	5,150	40
Live-In Unit	1	1,000	2
Office (Included in Live-In Unit)	N/A	N/A	N/A
Subtotal	*11*	*11,300*	*82*
Community Building (1)			
Laundry Room	1	300	N/A
Service Rooms	4	450	N/A
Restroom	2	100	N/A
Mail/Package (Outside)	1	270	N/A
Subtotal	*N/A*	*1,150*	*N/A*
Other			
Trash/Recycling Enclosure	1	850	N/A
Open Space	N/A	2,300	N/A
Landscaping/hardscaping	N/A	12,500	N/A
Subtotal	*N/A*	*13,650*	*N/A*
Combined Total	**N/A**	**26,100**	**82**

Note: N/A = not applicable.
All square foot amounts presented in the table are approximate amounts only and may not add to the site plan area totals described in this document due to rounding.

Other on-site proposed amenities include a courtyard, bike racks, and a community waste enclosure. The courtyard would be approximately 1,600 square feet and would be centrally located in the proposed complex (see Figure 4, Site Plan). Approximately 15 bike racks would be provided throughout the Project site. A community waste enclosure at the northeast corner of the Project site would allow residents a convenient place to dispose of waste and recyclables.

2.4.2 Operation

The Off-Campus Center - Calexico, including the Project site, is owned and operated by the CSU/SDSU. The CSU Board of Trustees, on behalf of SDSU, is the lead agency responsible for certifying the adequacy and completeness of this document and approval of the proposed Project. SDSU and the IVCCD have received joint funding under the State of California Higher Education Student Housing Grant Program to construct the proposed Project.

To support basic housing needs for students in the Imperial Valley, SDSU and IVCCD have executed a 30-year master lease agreement that details operation of the Project. This agreement dictates that 40 of the 80 proposed student beds would be reserved for IVCCD students who attend the Imperial Valley College in Imperial. Likewise, 40 of the proposed 80 beds would be reserved for SDSU Off-Campus Center - Calexico students. A two-bedroom unit would also provide living space for on-site management, for a total of 82 beds. SDSU would be responsible for operating, managing, and maintaining the proposed Project once operational.

Student beds made available under the proposed Project would be leased/rented to eligible low-income students. Eligible low-income students are defined as having 30% of 50% of the Annual Median Income for Imperial County. In the event, after a good faith outreach effort, there is not sufficient demand from students meeting the eligibility requirements within 90 days of the start of the fall semester, unassigned beds may be leased at market rates to SDSU and IVCCD students not meeting the low-income eligibility requirements. In addition to meeting the low-income criteria, eligible students would be required to be enrolled students and take a minimum average of 12 degree-applicable units per semester term, or the quarterly equivalent (with exceptions permitted), to facilitate timely degree completion.

2.4.3 Other Project Elements

Building and Site Design

The proposed buildings have been designed to reflect the character and massing of the existing Off-Campus Center - Calexico and the surrounding neighborhood (see Figure 5, Project Renderings). Building design is centered around a courtyard-style housing complex and would consist of smooth stucco walls with downspouts and rafters, punctuated by composite terra cotta–colored roof tile accents and windows. Maximum building heights would range from 14 feet to 18 feet (see Figure 6, Building Elevations).

Landscaping, Other Site Improvements, and Lighting

The Project would include approximately 16,000 square feet of on-site landscaping and hardscape improvements (i.e., pedestrian walkways). All proposed landscaping would consist of drought-tolerant, indigenous plants. The landscape scheme would include shrubs, hedges, and a variety of trees. A total of 39 trees would be added to the Project site including five fan palms, eight mesquite trees, six evergreen elms, and 20 yucca trees.

All exterior on-site lighting would be hooded or shielded, directed downward, and would be compliant with applicable standards for lighting control and light pollution reduction (i.e., Title 24, American National Standards Institute/Illuminating Engineering Society).

The proposed complex would be secured via an iron security fence that would measure 6 feet in height and run approximately 64 linear feet, connecting to the proposed buildings. Access to the complex would only be available to residents and their guests via two pedestrian gates located at the northwestern corner and southern portion of the proposed complex. The gates would be equipped with security card access for residents.

Utilities and Public Services

New points of connection for domestic water, fire supply water, sewer, storm drainage and electrical connections from existing utility lines would be required to serve the proposed Project. Potable water service and sewer collection services at the Project site would be provided by the City. The Project would connect to an existing sanitary sewer maintenance access line located in Blair Avenue via new 6-inch mains (see Figure 7, Utilities Plan). Connections for water (including domestic, fire, and irrigation) would be from an existing water main located in Blair Avenue. Distribution water pipes would be extended underground to serve each proposed building. A new water meter would be located in the proposed maintenance room in the community building. Adequate water treatment capacity and supply and sewer treatment capacity exists within the City's water and sewer system to accommodate the Project; therefore, no capacity upgrades to infrastructure would be necessary.

Stormwater drainage includes two stormwater catch basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated immediately east of the existing chain-link fence at the western boundary of the Project site. The proposed catch basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to stormwater discharge into the City's stormwater system via one new storm drain located in the southeast corner of the Project site.

Electrical services within the Project area are provided by Imperial Irrigation District, which provides electric power to over 158,000 customers in the Imperial Valley in addition to areas of Riverside and San Diego counties (IID 2024). New utility connections and infrastructure would be required to support electrical services on site. The Project would connect to on-site electrical power infrastructure via an existing 12kV, three phase, three wire, 60 Hertz overhead line routed along East 7th Street. No natural gas usage is proposed for the Project.

The Project would require a new point of connection for on-site telecommunications and would connect to the existing AT&T communications via the on-campus minimum point of entry.

Access, Circulation, and Parking

Regional access to the Project site is provided via SR-111 and SR-98 to the north. Local access is provided via Blair Avenue and East 7th Street. Parking to the Project site is available in the existing campus parking lot, immediately north of the Project site, which has sufficient capacity to serve the proposed Project. On-site circulation improvements would consist of additional paved pathway/pedestrian walkway features throughout the proposed complex and along the northern boundary of the Project site (see Figure 4). Emergency access would be provided directly adjacent to the Project site on East 7th Street and Blair Avenue.

2.4.4 Design Standards and Energy Efficiency

In May 2014, the CSU Board of Trustees broadened the application of sustainable practices to all areas of the university by adopting the first systemwide sustainability policy, which applies sustainable principles across all areas of university operations, including facility operations and utility management. In May 2024, the CSU Sustainability Policy was updated to expand on existing sustainability goals (CSU 2024a). The CSU Sustainability Policy seeks to integrate sustainability into all facets of the CSU, including academics, facility operations, the built environment, and student life (CSU 2018). Relatedly, the state has also strengthened energy-efficiency requirements in the California Green Building Standards Code (Title 24 of the California Code of Regulations).

As a result, all CSU new construction, remodeling, renovation, and repair projects, including the proposed Project, would be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable state energy codes and regulations. Progress submittals during design are monitored for individual envelope, indoor lighting, and mechanical system performances. In compliance with these goals, the proposed Project would be equipped with solar ready design features that would facilitate and optimize the future installation of a photovoltaic solar system.

2.4.5 Off-Site Improvements

Off-site improvements would include the resurfacing of a portion of Blair Avenue adjacent to the eastern boundary of the Project site that would be disturbed as a result of trenching to make necessary connections to the existing water main and sanitary sewer maintenance access. Any area disturbed as a result of this connection within Blair

Avenue would be resurfaced to existing conditions. All off-site improvements would occur within the Blair Avenue right-of-way.

2.4.6 Construction

Construction would be performed by qualified contractors. Plans and specifications would incorporate stipulations regarding standard CSU/SDSU requirements and acceptable construction practices, such as those set forth in the SDSU Stormwater Management Plan (2022), CSU Seismic Policy (2024b), the CSU Office of the Chancellor Guidelines (2024c), and the CSU Sustainability Policy (2024a), regarding grading and demolition, safety measures, vehicle operation and maintenance, excavation stability, erosion control, drainage alteration, groundwater disposal, public safety, and dust control.

Construction Timeline

Construction of the proposed Project would take approximately 17 months to complete and is estimated to begin as early as January 2025 and be completed by May 2026, with occupancy planned for fall 2026. Construction activities would generally occur Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m., with the potential for weekend construction on Saturday between 9:00 a.m. and 5:00 p.m. No construction would occur on Sundays or holidays or at night.

Construction Activities

A construction mobilization or staging area would be located immediately northeast of the proposed Project site and would occupy approximately 8,000 square feet. The area would be located east of existing Campus Building 6, west of Blair Avenue, and south of the existing parking lot (see Figure 2 and Figure 3A). To accommodate use of this area, four trees would be removed.

Construction would include site preparation, grading and excavation, utility installation/trenching, building foundation pouring, building construction, and landscaping. Excavation depths are anticipated to be 3 feet below grade. The majority of waste (i.e., excavated gravel/soil) generated during Project construction would be balanced/used within the site. Approximately 2,600 cubic yards of soil would be removed from the site and exported to Republic Services Allied Imperial Landfill, approximately 12 miles north. The entire Project site, including construction mobilization area (approximately 34,000 square feet in total) would be disturbed as a result of Project construction. Two trees would be removed from the Project site to accommodate the proposed Project.

Table 2 displays the construction equipment anticipated to be used during construction.

Table 2. Anticipated Construction Equipment

Aerial Lifts	Pressure Washers
Air Compressors	Pumps
Cement and Mortar Mixers	Rollers
Concrete/Industrial Saws	Rough Terrain Forklifts
Dumpers/Tenders	Rubber-Tired Dozers
Excavators	Rubber-Tired Loaders
Forklifts	Scrapers

Table 2. Anticipated Construction Equipment

Generator Sets	Signal Boards
Graders	Skid Steer Loaders
Off-Highway Tractors	Surfacing Equipment
Off-Highway Trucks	Sweepers/Scrubbers
Other Construction Equipment	Tractors/Loaders/Backhoes
Other General Industrial Equipment	Trenchers
Other Material Handling Equipment	Welders
Plate Compactors	

Source: Dorsey and Nielson Construction Inc., pers. comm., 2024.

Construction Waste

The Project would generate construction debris during on-site clearing activities. In accordance with Section 5.408 of the California Green Building Standards Code, the Project would implement a construction waste management plan for recycling and/or salvaging for reuse of at least 65% of nonhazardous construction/demolition debris. Additionally, the Project would be required to meet Leadership in Energy and Environmental Design v4 requirements for waste reduction during construction. Solid waste generated during construction would be hauled off site to the Republic Services Allied Imperial Landfill at 104 East Robinson Road in Imperial, California.

2.5 Intended Uses/Project Actions and Approvals

2.5.1 Intended Uses

This CEQA document analyzes the potential environmental impacts associated with construction and development of the proposed Project at a detailed, project level of review. The document examines all phases of development and operation of the proposed Project. It will be used by the CSU Board of Trustees to evaluate the potential environmental impacts associated with implementation of the proposed Project. Additionally, this document could be relied upon by responsible agencies, if any, with permitting or approval authority over any Project-specific action to be implemented in connection with the Project.

2.5.2 Requested Project Approvals

The following approvals by the CSU Board of Trustees, or their designee, are required prior to implementation of the proposed Project:

1. Certification of adequacy and completeness of the CEQA document
2. Approval of amendment to the 2003 Imperial Valley Campus Master Plan, as applicable

Development of the proposed Project may require ministerial permits and/or approvals issued by public agencies other than the CSU Board of Trustees. The following is a non-exclusive list of other Project permits or approvals that may be required by other agencies:

1. City of Calexico (Encroachment Permit for utility connection/installation)

2.5.3 Responsible Agencies

Under CEQA, responsible agencies are public agencies other than the lead agency that have discretionary, as compared to ministerial, approval authority over the proposed Project. No agencies have been identified to have discretionary approval authority over the Project.

Trustee agencies are state agencies having jurisdiction by law over natural resources affected by the proposed Project that are held in trust for the people of the State of California. Based on on-site survey results, literature review, and database searches, one special-status species, the western mastiff bat, potentially uses the site for roosting, and, therefore, could be affected by development of the proposed Project. Therefore, the California Department of Fish and Wildlife is considered a trustee agency for that purpose.

3 Initial Study Checklist

1. Project title:

San Diego State University (SDSU) Imperial Valley Off-Campus Center - Calexico,
Affordable Student Housing Project

2. Lead agency name and address:

The Board of Trustees of the California State University
401 Golden Shore
Long Beach, California 92009

3. Contact person and phone number:

Kara Peterson
Director of Planning
San Diego State University
Planning, Design and Construction
619.594.6619

4. Project location:

The Imperial Valley Off-Campus Center - Calexico is located at 720 Heber Avenue, Calexico, California 92231, in downtown Calexico. The proposed Project site is located in the southeast corner of the Calexico site, at the northwest corner of East 7th Street and Blair Avenue.

5. Project sponsor's name and address:

SDSU Facilities Management
Planning, Design and Construction
San Diego State University, Administration Building Room 130, 5500 Campanile Drive
San Diego, California 92182

6. General plan designation:

The Project site is designated as Public Facilities (City of Calexico 2015a).

7. Zoning:

The Project site is zoned as Open Space (City of Calexico 2021).

8. Description of project. (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary):

The proposed Project involves the construction and operation of an approximately 12,000-square-foot, single-story, four-building complex that would provide affordable student housing at the SDSU Imperial Valley Off-Campus Center - Calexico. The complex would include three student housing buildings, including one smaller live-in unit building, and a community building. Combined, the Project would provide a total of 80 student beds: 10 four-bedroom apartments (80 student beds). A 2-bedroom unit would also provide living space for on-site management (for a total of 82 beds). Other features of the proposed Project would include approximately 16,000 square feet of on-site landscaping and hardscape improvements (i.e., sidewalks, pedestrian walkways). The proposed Project would provide student housing for students attending both the Off-Campus Center - Calexico and IVCCD.

SDSU and the IVCCD have received joint funding under the State of California Higher Education Student Housing Grant Program to construct the proposed Project. To support basic housing needs for students in the Imperial Valley, SDSU and IVCCD have executed a 30-year master lease agreement that details operation of the Project. This agreement dictates that 40 of the 80 proposed student beds would be reserved for IVCCD students who attend the Imperial Valley College in Imperial. Likewise, 40 of the proposed 82 beds, would be reserved for SDSU students. A two-bedroom unit would also provide living space for on-site management, for a total of 82 beds. SDSU would be responsible for operating, managing, and maintaining the proposed Project once operational. Please refer to Chapter 2, Project Description, for additional information about the proposed Project uses.

9. Surrounding land uses and setting: Briefly describe the project's surroundings:

The Off-Campus Center - Calexico is located at 720 Heber Avenue in downtown Calexico, approximately 0.5 miles north of the United States–Mexico border (see Figure 1). Regional access to the campus is provided via SR-111 and SR-98 to the north. The campus is bordered by four City streets: Heber Avenue to the west; East Sherman Street to the north; Blair Avenue to the east; and East 7th Street to the south. Residential uses bound the Off-Campus Center - Calexico to the north, east, south, and west. Other surrounding uses include Calexico High School, located northeast, and Calexico City Hall, located immediately south.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

- Certification of adequacy and completeness of the CEQA document (The CSU Board of Trustees)
- Approval of minor amendment to 2003 Imperial Valley Master Plan (The CSU Board of Trustees)
- Other approvals, if any, as necessary (The CSU Board of Trustees)
- Approval of Encroachment Permit (City of Calexico)

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

SDSU mailed AB 52 notification letters to all NAHC recommended tribes on July 26, 2024. SDSU received responses from the Campo Band of Mission Indians and the Viejas Band of Kumeyaay Indians. The Viejas Band of Kumeyaay Indians responded via email on August 1, 2024 and stated that should a Kumeyaay tribe in closer proximity to the Project site request to provide Kumeyaay Cultural Monitoring Services, Viejas Band of Kumeyaay Indians would defer to them. Campo Band of Mission Indians responded to the AB 52 notification and requested consultation. Because Campo Band of Mission Indians are in closer proximity to the Project site, Viejas Band of Kumeyaay Indians deferred to Campo Band of Mission Indians.

A virtual meeting between representatives of the CSU/SDSU and the Campo Band of Mission Indians was held on August 26, 2024. During the AB 52 consultation meeting, Campo Band of Mission Indians did not identify any tribal cultural resources within the Project area. However, at the request of both tribes, the CSU/SDSU will provide for cultural resources monitoring by a representative of the Campo Band of Mission Indians during Project construction activities. (For additional information regarding tribal cultural resources and related consultations, please see Section 3.5, Cultural Resources, and Appendix D of this IS.)

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project, involving impacts that are "Less than Significant with Mitigation Incorporated," as indicated by the checklist on the following pages.

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

Determination (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	December 19, 2024 Date

3.1 Aesthetics

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

The IS prepared as part of the 2003 Campus Master Plan EIR determined that no impacts would occur from development of the Campus Master Plan with regard to potential adverse effects to scenic vistas and no impacts would occur with regard to substantial damage to scenic resources within a state scenic highway. The IS also determined that impacts regarding the creation of a new source of substantial light or glare which could adversely affect day or nighttime views in the area would be less than significant. The EIR and IS did not analyze potential impacts to the existing visual character or quality of public views of the Project site and its surroundings (SDSU 2003).

The analysis presented below is based on the Aesthetics and Visual Resources Technical Memorandum prepared by Dudek, included in its entirety as Appendix A to this IS and incorporated herein by this reference.

a) Would the project have a substantial adverse effect on a scenic vista?

Although the City's General Plan Conservation and Open Space Element does not identify scenic vistas, it does mention available vistas of "expansive, flat, contiguous, irrigated cropland set against distant mountains" from unspecified locations (City of Calexico 2015a). Although not considered scenic vistas, the City's croplands are identified as scenic visual resources by the City. Croplands surround the entirety of the City; however, the nearest croplands are located approximately 1 mile west of the Project site. Further natural features that may be considered scenic resources include the New River, which flows north into the

City and is approximately 0.7 miles from the southwestern corner of the Project site. Public access to the New River is currently prohibited due to severe contamination.

As noted, the City's General Plan does not identify any scenic vistas (City of Calexico 2015a). In addition, there are no City-identified scenic resources within the immediate area of the Project site. Furthermore, views of cropland are not available from public vantage points near the Project site or nearby segments of surrounding roads. Therefore, construction and operation of the proposed Project would have **no impact** on a scenic vista.

b) ***Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?***

The Project site is located approximately 31 miles from the nearest state scenic highway (i.e., SR-8 from the Yuha Cutoff). As a result, construction activities and operation of the Project would not be visible from any state scenic highway. In addition, although the Project site, including the construction staging area currently includes four mature eucalyptus trees, there are no rock outcrops, historic buildings, or other potentially scenic resources, including scenic visual resources located on the Project site. Therefore, the proposed Project would have **no impact** on scenic resources.

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

The 2003 EIR and IS did not analyze potential impacts to the existing visual character or quality of public views of the Project site and its surroundings (SDSU 2003). As explained below, the proposed Project would be located in a "non-urbanized area" for purposes of this criterion and, therefore, a discussion regarding the proposed Project's potential to substantially degrade the existing visual character or quality of public views of the site and its surroundings is provided below.

In accordance with Section 21071 of the California Public Resources Code, "urbanized area" means either of the following:

(1) [An incorporated City that] Has a population of at least 100,000 persons.

(2) [An incorporated City that] Has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons.

As of July 1, 2022, the estimated population of the City was 38,249 persons (U.S. Census Bureau 2022). The City is not contiguous with any other incorporated cities in the United States. Therefore, Calexico is considered to be a non-urbanized area for purposes of CEQA, and accordingly, impacts are assessed in accordance with the first portion of the criterion.

In the immediate area surrounding the Project site, the City's existing visual character reflects a primarily residential environment as evidenced by the presence of single-family and multifamily homes to the north, east, south, and west. Public views of the site are available from East 7th Street and Blair Avenue. However, the existing Calexico site contributes to the local visual environment through the existing educational facility that provides verticality and mass to the viewshed. Representative views of the Project site from surrounding areas are provided in Appendix A. The Project would be developed on a currently vacant and undeveloped lot that includes two trees located along the northern boundary of the site. Renderings of the proposed Project are presented in Figure 5, and as shown on the figure, the Project entails the introduction of a single-story, four-building complex with landscaping and other amenities that would provide affordable student housing at the Off-Campus Center - Calexico.

As proposed, the single-story buildings would not be larger than the existing multistory campus buildings and would be of a similar scale as residential structures in the immediate surrounding area. Further, proposed landscaping would be consistent with existing campus development and would enable the Project to blend into the existing setting. Therefore, the Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Impacts would be **less than significant** related to the existing visual character.

d) ***Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?***

Construction of the proposed Project would occur over approximately 17 months. Lighting sources anticipated to be installed on the Project site to support the Project would be similar to the existing lighting at the Off-Campus Center - Calexico, updated consistent with current Title 24 requirements. For example, walkway lighting consisting of low post or standard pole lighting could be installed in addition to wall-mounted ("wall pack") fixtures on the exterior of the Project buildings. Overhead or lower-level bollard lighting in common areas (i.e., pathways, near building entrance) could also be installed. Consistent with existing uses at the campus, new lighting sources would be of appropriate intensity for the intended use (e.g., safety, security, and/or general illumination for pedestrians) and would be hooded or shielded and directed downward to minimize potential for skyglow, glare, and/or light trespass to off-campus areas.

In addition, all exterior lighting sources installed on the Project site would be compliant with California Energy Code allowances for lighting power and lighting control requirements and with Title 24, Part 6, of the California Green Building Standards Code, which includes requirements related to light pollution reduction. For example, Title 24, Part 6, Section 130 outlines mandatory requirements for lighting systems and equipment for nonresidential occupancies. These include but are not limited to wattage requirements, lighting controls, and light shielding/glare requirements in accordance with American National Standards Institute/Illuminating Engineering Society standards.

Because lighting installed on the Project site would be hooded, directed downward, and compliant with applicable standards for lighting control and light pollution reduction (i.e., Title 24, American National Standards Institute/Illuminating Engineering Society), the Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. Accordingly, impacts related to light and glare would be **less than significant**, and no mitigation is required.

3.2 Agriculture and Forestry Resources

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
II.	**AGRICULTURE AND FORESTRY RESOURCES** – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Impacts related to conversion of farmland for the Off-Campus Center - Calexico were evaluated in Section 3.10, Agricultural Lands, of the 2003 Campus Master Plan EIR. The 2003 Campus Master Plan EIR determined that buildout of the campus would not result in the loss or conversion of any important farmland because the Calexico campus is not located on or near any agricultural lands. As such, the 2003 Campus Master Plan EIR determined that there would be no impact to agricultural lands at the Off-Campus Center - Calexico. Therefore, with regard to potential conflicts with agricultural zoning or a Williamson Act contract, no impact would occur.

The 2003 Campus Master Plan EIR and IS did not specifically address zoning or rezoning of forest land, timberland, or Timberland Production zones or the loss or conversion of forest land to non-forest use. An analysis of the proposed Project's potential impacts to agriculture and forestry resources is provided below.

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

As noted, the 2003 Campus Master Plan EIR determined that the Off-Campus Center - Calexico, which include the proposed Project site, is not located on or near any agricultural lands and there would be no impact to agricultural lands with development of the Campus Master Plan. Furthermore, according to the Department of Conservation Farmland Mapping and Monitoring Program, the Project site is not located on or near land designated as Farmland of Statewide Importance (DOC 2024). Therefore, the Project would not convert any additional land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. As a result, no impact would occur.

b) ***Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?***

As discussed above under Section 3.2(a) and in the 2003 Campus Master Plan EIR, the Off-Campus Center - Calexico is not located on or near any agricultural lands. The Project site is located within an existing college campus, which is located in a developed, residential area in downtown Calexico and does not contain land zoned for agricultural use or under a Williamson Act contract. Because the Project would not conflict with existing zoning for agricultural uses and the Project site is not identified under a Williamson Act contract, there would be no impact.

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

As previously noted, as a state agency, the CSU is not subject to local land use planning or regulations, such as zoning. For information purposes, the Project site is zoned by the City as Open Space (City of Calexico 2021). As prescribed in Chapter 17.09 of the Municipal Code, this zoning allows for a variety of uses, including single-family dwellings, caretaker quarters, temporary uses and home occupations, accessory structures such as detached garages, carports, cabanas, and more, as well as public and private recreational facilities and other uses. The Project site and construction staging area is vacant land and only contains four trees. Open Space zoning does not include any forest land or timberland uses, nor is there any existing vegetation within the Project site that would be considered viable forest land or timberland uses. The Project site is not considered forest land within the meaning of California Public Resources Code Section 12220(g), nor timberland within the meaning of California Public Resources Code Section 4526, nor zoned Timberland Production within the meaning of Government Code Section 51104(g). As a result, the Project would not conflict with existing forest land, timberland, or timberland production zones, and there would be no impact.

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

The 2003 Campus Master Plan EIR and IS did not specifically address the loss or conversion of forest land to non-forest use. As discussed above under Section 3.2(c), the Project site does not include any forest land, nor is there any existing vegetation within the site or surrounding area that would be considered forest land. Therefore, the proposed Project would not result in the loss or conversion of forest land to non-forest uses and **no impact** would occur.

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

As noted, the 2003 Campus Master Plan EIR determined that buildout of the Campus Master Plan at the Off-Campus Center - Calexico site would not result in the loss or conversion of any important farmland as the site is not located on or near any agricultural lands and, as such, there would be no impact to agricultural lands. Therefore, impacts relative to the conversion of Farmland to non-agricultural use were previously analyzed in the 2003 Campus Master Plan EIR and no further analysis is required. However, because conversion of forest land was not specifically addressed in the 2003 Campus Master Plan EIR or IS, the proposed Project's potential to convert forest land to non-forest uses is addressed here.

The Project site is not designated for Farmland or forest land uses and no forestry activities occur within or near the Project site. As a result, development of the proposed Project would not convert existing Farmland or forest land uses to non-forest uses. As a result, **no impact** would occur.

3.3 Air Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

The analysis prepared for the 2003 Campus Master Plan EIR determined that there would be no significant air quality impacts as a result of development of the Off-Campus Center Master Plan - Calexico. The air quality assessment concluded that there would be no construction-related impacts or Project-related exceedances for any criteria air pollutants during operation. As such, no air quality–related mitigation measures were required or identified in the 2003 Campus Master Plan EIR. The analysis presented below is based on the Air Quality, Greenhouse Gas Emissions, and Energy Technical Memorandum prepared by Dudek, included in its entirety as Appendix B to this IS and incorporated herein by this reference. A summary of the prior analysis is provided below along with the current Project-specific analysis for each criterion, as applicable.

a) *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

The proposed Project site is located within the Salton Sea Air Basin (SSAB), which includes all of Imperial County and the central portion of Riverside County (Coachella Valley). Imperial County, where the Project site is located, is within the jurisdictional boundaries of the Imperial County Air Pollution Control District (ICAPCD). The ICAPCD is responsible for developing and implementing the clean air plans for attainment and maintenance of the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) in the SSAB, including the 2018 PM_{10} State Implementation Plan and the 2017 State Implementation Plan for the 75 parts per billion 8-hour Ozone Standard.

The analysis prepared for the 2003 Campus Master Plan EIR found that the Master Plan would have less-than-significant impacts related to conflicting with implementation of the applicable air quality plan. Given that the proposed Project is within the scope of the approved Off-Campus Center - Calexico Master Plan and certified EIR, that determination remains applicable. However, because ICAPCD has adopted additional air quality plans because certification of the 2003 Campus Master Plan EIR, a discussion of the proposed Project's potential to conflict with applicable plans that post-date the certified EIR is provided below.

The most efficient approach to determining Project consistency with applicable air quality plans is assessing whether the proposed development is consistent with the growth anticipated by the land use plans that were used for preparation of the air quality plans. The relevant land use plan for the proposed Project is the 2003 Campus Master Plan. (Note: Local and regional plans, including the City's 2007 General Plan and the Imperial County General Plan, are not applicable because as a state entity, the CSU/SDSU is not subject to local government plans, regulations, and guidelines.)

Relatedly, ICAPCD's air quality attainment plans are based, in part, on regional population and employment (and thus vehicle miles traveled [VMT]) growth projections from the Southern California Association of Governments (SCAG), which is the designated Metropolitan Planning Organization for Imperial County. Thus, a project's conformance with SCAG's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2016), which was considered in the preparation of the air quality attainment plans, would demonstrate that the Project would not conflict with or obstruct implementation of the air quality plans.

As discussed in Chapter 2, student enrollment and corresponding faculty and staff resulting from the proposed Project would remain within the approved maximum FTE student enrollment analyzed in the previously certified EIR and approved Campus Master Plan for development of the Off-Campus Center - Calexico; the Campus Master Plan is included in Imperial County's General Plan Land Use Element (County of Imperial 2015), which was in turn used to create SCAG's growth forecast for the region.[3] Therefore, implementation of the proposed Project would not result in development in excess of what was anticipated in the approved Campus Master Plan and Imperial County General Plan, and would not result in population growth beyond what was assumed in SCAG's RTP/SCS.

Because the proposed Project is consistent with the growth projections used to prepare the air quality management plans for the SSAB (2018 PM_{10} and 2017 Ozone State Implementation Plans), the Project would be consistent with these plans. Impacts related to the potential to conflict with or obstruct implementation of the applicable air quality plans would be **less than significant.**

b) *Would the project 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?*

The nonattainment status of regional pollutants is a result of past and present development, and ICAPCD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively considerable contribution resulting in an impact on air quality.

The air quality analysis prepared for the 2003 EIR found that there would be no significant construction-related air quality impacts and no Project-related exceedances or excessive concentrations of any criteria air pollutants per either state or federal standards.

The construction emissions estimate in the 2003 Campus Master Plan EIR was based on "typical worst day construction activities associated with a school campus construction project similar to the proposed project" (SDSU 2003). The EIR's "typical worst day" equipment-related emissions estimation parameters included use of forklifts, off-highway trucks, tracked loaders, tracked tractor/dozers, scrapers, and rollers. The total equipment hours (i.e., total pieces of equipment × total hours of daily operation per piece) for the "typical worst day" were approximately 68 equipment hours per day. Additionally, the total earthwork quantity used in the EIR analysis was 10,000 cubic yards of material over 30 days, or 866 tons per day. As discussed in the Project-specific analysis below, the construction equipment and activity anticipated for implementation of the proposed Project is within the impact analysis envelope of the certified EIR.

Although the proposed Project fits within the impact analysis envelope of the EIR for equipment use and grading, the prior EIR assessment did not estimate emissions associated with off-site worker or vendor trips. Given that emissions from these sources have the potential to result in air quality impacts with construction of the proposed Project, an updated Project-specific estimate of air quality emissions from Project construction is provided.

Additionally, the operational emissions estimate in the EIR included emissions from motor vehicles associated with the projected FTE student enrollment of 850 ultimately expected at the Off-Campus Center-Calexico. The analysis found that trip generation associated with this increase in FTE students would result in no exceedances of ICAPCD threshold levels for all criteria air pollutants. Given that the proposed Project would not increase the previously approved maximum FTE student enrollment, the proposed Project is

[3] Note that, although the Connect SoCal 2016 RTP/SCS is not the most current RTP/SCS adopted by SCAG, it is referenced here for contextual consistency as the regional plan considered during the preparation of the relevant regional air quality treatment plans.

consistent with the 850 FTE students previously analyzed in the EIR. However, the proposed Project would also accommodate IVCCD students who use their personal vehicles to commute to the IVCCD campus from the Project site. The emissions associated with these trips were not previously analyzed and are therefore included in the analysis herein.

The Project-specific analysis for air quality impacts is discussed separately for construction and operation below.

Construction

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and reactive organic gas off-gassing) and off-site sources (i.e., on-road vendor trucks and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and, for particulate matter, the prevailing weather conditions. Therefore, such emission levels are approximately estimated.

Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of reactive organic gases, oxides of nitrogen (NOx), carbon monoxide (CO), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$). Additionally, PM_{10} and $PM_{2.5}$ emissions would be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. The proposed Project would be required to comply with ICAPCD Regulation VIII (Fugitive Dust Control Measures) to control dust emissions generated during any dust-generating activities. These standard construction measures required by the ICAPCD would be employed to reduce fugitive dust emissions include limiting visible emissions to no greater than 20% opacity through use of chemical stabilizers, dust suppressants, and/or watering. Based on the developed nature of the Project site and surrounding areas and given that on-site and off-site roads would be paved, the default percentage of paved road was adjusted to more accurately represent on-road travel during Project construction. To account for potential unpaved vehicle movement within the Project site vicinity, it was conservatively estimated that 95% of all travel (i.e., worker and vendor trips) would be on paved roads, with 5% on unpaved roads.

California Emissions Estimator Model (CalEEMod) Version 2022.1 was used to estimate emissions from construction of the proposed Project. CalEEMod default construction parameters were used when detailed Project-specific information was not available, including specific off-road equipment for each phase. The construction equipment needed to build out the proposed Project is similar to that analyzed in the EIR. Maximum daily activity would require approximately 48 equipment hours per day, which is well within the scope of the 68 hours analyzed for the “typical worst day” in the EIR.

According to preliminary Project details, the material movement estimated for construction of the proposed Project is 2,600 cubic yards of cut to be exported off site, which also is within the scope of the previously identified 10,000 cubic yards analyzed in the EIR. Additional detail on Project-specific construction parameters is included in Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files, of Appendix B.

Table 3 presents the estimated maximum daily construction emissions generated during Project construction. Details of the emission calculations are provided in Attachment B of Appendix B.

Table 3. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
2024	1.82	17.12	17.27	0.03	28.14	4.54
2025	2.32	15.25	16.27	0.03	28.03	4.45
2026	0.81	7.07	10.99	0.02	12.74	1.47
Maximum	2.64	17.12	17.27	0.03	28.14	4.54
ICAPCD Threshold	*75*	*100*	*550*	*N/A*	*150*	*N/A*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: ROG = reactive organic gas; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; ICAPCD = Imperial County Air Pollution Control District; N/A = not applicable.
Emission reductions from implementation of Mitigation Measure (MM) AQ-1, which requires Tier 4 engines for all construction equipment greater than 50 horsepower, would reduce NO_x and PM emissions. Emission reductions from MM-AQ-1 were not captured in this table.
See Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files, of Appendix B, Air Quality, Greenhouse Gas Emissions, and Energy Technical Memorandum, for complete results.

As shown in Table 3, emissions during Project construction would not exceed ICAPCD's daily thresholds. Therefore, construction impacts associated with criteria air pollutant emissions would be **less than significant.**

Operation

Criteria air pollutant emissions from daily operation of the proposed Project were estimated using a combination of CalEEMod default parameters and Project-specific information provided by SDSU. Operational year 2026 was analyzed as it is anticipated to be the first year of operation following completion of Project construction. Criteria air pollutant emissions sources and associated information are discussed in Section 4.3, Construction Health Risk Methodology, of Appendix B. Table 4 presents the estimated maximum daily emissions generated during operation of the proposed Project. Details of the emission calculations are provided in Attachment B of Appendix B.

Table 4. Estimated Maximum Daily Operations Criteria Air Pollutant Emissions

Source	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
Mobile	0.38	0.19	1.91	<0.01	137.03	13.67
Area	0.34	0.01	0.57	<0.01	<0.01	<0.01
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.72**	**0.20**	**2.48**	**<0.01**	**137.03**	**13.67**
ICAPCD Threshold	*137*	*137*	*550*	*150*	*150*	*550*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: ROG = reactive organic gas; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; ICAPCD = Imperial County Air Pollution Control District.
<0.01 indicates values smaller than 0.005.
See Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files, of Appendix B, Air Quality, Greenhouse Gas Emissions, and Energy Technical Memorandum, for complete results.

As shown in Table 4, the proposed Project would not exceed ICAPCD's significance thresholds during operations. Therefore, operational impacts associated with criteria air pollutant emissions would be **less than significant.**

In considering cumulative impacts from the proposed Project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SSAB is designated as nonattainment for the CAAQS and NAAQS. If a project's emissions would exceed ICAPCD's significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SSAB. If a project does not exceed thresholds and is determined to have less-than-significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if: (1) the project's contribution accounts for a significant proportion of the cumulative total emissions; and (2) the project is inconsistent with ICAPCD air quality plans, which address cumulative emissions in the SSAB.

The SSAB has been designated as a federal and state nonattainment area for ozone (O_3) and PM_{10}. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SSAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction of the proposed Project would generate reactive organic gas and NO_x emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. As indicated in Tables 3 and 4, Project-generated construction and operational emissions would not exceed ICAPCD's emission-based significance thresholds for any criteria air pollutant.

Cumulative localized impacts would potentially result if a development project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the proposed Project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be speculative. However, future projects would be subject to CEQA and would require an air quality analysis and, where necessary, mitigation if the project would exceed ICAPCD's significance thresholds. Criteria air pollutant emissions associated with construction activity of future proposed projects also would be reduced through implementation of control measures required by ICAPCD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to ICAPCD Regulation VIII (Fugitive Dust Control Measures), which sets forth general and specific requirements for all construction sites in the ICAPCD.

Based on the previous considerations, the Project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and cumulative impacts would be **less than significant.**

c) *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, older adults, and people with cardiovascular and chronic respiratory diseases. According to the California Air Resources Board (CARB), sensitive receptor locations may include hospitals, schools, and daycare centers (CARB 2023). The closest sensitive receptors include residences approximately 80 feet to the south of the Project site and approximately 100 feet to the east of the Project site.

The air quality analysis prepared for the 2003 EIR found that there would be no significant impact related to exposure of sensitive receptors to substantial pollutant concentrations. The analysis focused on the use of chemical toxics (i.e., pesticides) associated with adjacent/past agricultural activity and its impact on receptors near the Project site. The analysis found that there would be no significant impacts related to pesticide drift, and no mitigation measures were required. The Project-specific analysis provided below expands this discussion to include the impact of pollutants generated during construction and operation on sensitive receptors proximate to the site.

CO Hot Spots

Exposure to high concentrations of CO can result in dizziness, fatigue, chest pain, headaches, and impairment of central nervous system functions. Mobile source impacts, including those related to CO, occur essentially on two scales of motion. Regionally, Project-related construction travel would add to regional trip generation and increase the VMT within the local airshed and the SSAB. Locally, construction traffic would be added to the roadway system in the vicinity of the Project site. Although the SSAB is currently an attainment area for CO, there is a potential for the formation of microscale CO “hotspots” to occur immediately around points of congested traffic. Hotspots can form if such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles cold-started and operating at pollution-inefficient speeds, and/or is operating on roadways crowded with non-Project traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SSAB is steadily decreasing.

The proposed Project would generate trips associated with construction worker vehicles and construction vendor trucks accessing the site. Title 40 of the California Code of Regulations, Section 93.123(c)(5), states that “CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities which cause temporary increases in emissions. Each site affected by construction-related activities shall be considered separately, using established ‘Guideline’ methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site.” Accordingly, although Project construction would involve on-road vehicle trips from trucks and workers during construction, construction activities would be temporary and would not require a Project-level construction hotspot analysis. As such, potential Project-generated impacts associated with CO hotspots would be **less than significant**.

Valley Fever Exposure

Valley fever is a fungus that lives in the top 2 to 12 inches of soil; therefore, during soil disturbance, the fungal spores can be released into the air. The spores are too small to be seen by the naked eye, and there is no reliable way to test the soils for spores (CDPH 2021). The disease is caused by inhalation of dust containing *Coccidioides immitis,* the fungal spore. Most people who are exposed have no or very mild systems; however, in a small percentage of the population, it can generate more serious symptoms of meningitis, pneumonia, or chronic fatigue.

The Project site is located in Imperial County, which is a county where valley fever is considered endemic. With 20 reported incidences of valley fever in 2022 (CDPH 2022), the rate of valley fever in Imperial County is 11.2 per 100,000 people, which is lower than the California average of 19.1 per 100,000 people. Furthermore, incidence of valley fever decreased 6.8% from 2021 and 16.6% from 2019.

Construction workers have increased risk of valley fever exposure where their tasks include the disturbance of soils where fungal spores are found. Valley fever infection rates are highest in California from June to

November. Therefore, a risk of valley fever infection exists for construction personnel working on the Project in the peak summer and fall months.

Importantly, the risk of exposure to valley fever from construction-related dust during Project build-out would be minimized by Project compliance with the ICAPCD's Regulation VIII, Fugitive Dust Control Measures. Rule VIII sets forth best available control measures and standards of practice for minimizing and preventing the generation of dust; examples of such measures include the regular watering of disturbed soil and the application of chemical stabilizers to minimize dust. Due to the Project's required compliance with these applicable regulatory standards, which suppress the release of dust that may contain fungal spores, impacts to construction workers and nearby sensitive receptors would be less than significant

Toxic Air Contaminants

Toxic air contaminants (TACs) are defined as substances 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. Health effects from carcinogenic air toxics are usually described in terms of cancer risk, with a recommended incremental threshold of 10 in 1 million. "Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard Office of Environmental Health Hazard Assessment risk-assessment methodology (OEHHA 2015). In addition, some TACs have non-carcinogenic effects, which are evaluated using a Hazard Index of 1 or more for acute (short-term) and chronic (long-term) non-carcinogenic effects (OEHHA 2015). The greatest potential for TAC emissions during construction would be diesel particulate matter emissions from heavy equipment use.

An health risk assessment (HRA) was performed to evaluate potential health risk associated with construction of the Project. Concentrations of TACs would be highest during construction due to the intensity and concurrence of off-road equipment usage. Conversely, operation of the Project, which is residential in nature and would not include any on-site stationary sources (e.g., emergency generator), would not generate considerable quantities of TACs; therefore, an operational HRA is not required for the Project.

The following discussion summarizes the dispersion modeling and HRA methodology. Supporting construction HRA documentation, including detailed assumptions, is presented in Attachment C, Construction Health Risk Modeling Files, of Appendix B.

As discussed in Section 4.3 of Appendix B, a construction HRA was performed to estimate the Maximum Individual Cancer Risk and the Chronic Hazard Index for residential receptors as a result of Project construction. Results of the construction HRA are presented in Table 5.

Table 5. Construction Health Risk Assessment Results – Unmitigated

Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
Maximum Individual Cancer Risk – Residential	Per million	58.26	10	Potentially Significant
Chronic Hazard Index – Residential	Index value	0.04	1.0	Less than Significant

Source: Attachment C, Construction Health Risk Modeling Files, of Appendix B, Air Quality, Greenhouse Gas Emissions, and Energy Technical Memorandum.
Note: CEQA = California Environmental Quality Act.

As shown in Table 5, Project construction activities would result in a Residential Maximum Individual Cancer Risk of 58.26 in 1 million, which exceeds the significance threshold of 10 in 1 million. Project construction would result in a Residential Chronic Hazard Index of 0.04, which is below the 1.0 significance threshold.

To mitigate the potential impacts associated with emissions of TACs, Mitigation Measure (MM) AQ-1, which requires the use of Tier 4 Final engines on construction equipment, is proposed to reduce diesel particulate matter emissions during Project construction to a level below the applicable threshold. Table 6 summarizes the results of the HRA for Project construction after mitigation.

Table 6. Construction Health Risk Assessment Results – Mitigated

Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
Maximum Individual Cancer Risk – Residential	Per million	8.28	10.0	Less than significant with mitigation
Chronic Hazard Index – Residential	Index value	0.01	1.0	Less than significant

Source: Attachment C, Construction Health Risk Modeling Files, of Appendix B, Air Quality, Greenhouse Gas Emissions, and Energy Technical Memorandum.
Note: CEQA = California Environmental Quality Act.

As shown in Table 6, the results of the construction HRA for the Project demonstrate that following implementation of MM-AQ-1, construction emissions resulting in a potential incremental increase in cancer risk and chronic risk concentrations would each be below the respective thresholds. As such, the Project would result in a **less-than-significant impact with mitigation incorporated** in regard to potential health risk resulting from mitigated TAC emissions generated during construction.

Mitigation Measure

The following mitigation measure would reduce the potential for direct and indirect air quality impacts due to construction-related air pollutants to by ensuring that construction equipment use Tier 4 engines during construction activities to the extent possible. Implementation of the following mitigation measure would reduce potential impacts to a **less-than-significant level.**

MM-AQ-1: Construction Equipment Emissions Reductions. Prior to the commencement of construction activities, the CSU/SDSU, or its designee, shall direct the construction contractor to demonstrate that all 75-horsepower or greater diesel-powered equipment is powered with Tier 4 Final engines certified by the California Air Resources Board (CARB) and that all such equipment shall be used during Project construction.

An exemption from this requirement may be granted if (1) the CSU/SDSU, or its designee, documents equipment with Tier 4 Final engines is not reasonably available and (2) the required corresponding reductions in criteria air pollutant emissions can be achieved for the Project from other combinations of construction equipment. Before an exemption may be granted, the CSU/SDSU, or its designee, shall (1) demonstrate that at least two construction fleet owners/operators in Imperial County were contacted and that those owners/operators confirmed Tier 4 Final equipment could not be located within Imperial County during the desired construction schedule and (2) the proposed replacement equipment has been evaluated using CalEEMod, the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) and the Hotspots Analysis and Reporting Program (HARP2) or other industry standard emission estimation method and health risk assessment tools and documentation is provided to CSU/SDSU to confirm that necessary Project-generated emissions and health risk reductions are achieved.

Health Impacts of Criteria Air Pollutants

The SSAB is designated as nonattainment for O_3 for the NAAQS and CAAQS. Thus, existing O_3 levels in the SSAB are at unhealthy levels during certain periods. The health effects associated with O_3 generally relate to reduced lung function. Because the proposed Project would not involve construction activities that would result in O_3 precursor emissions (reactive organic gas or NO_x) that would exceed the ICAPCD thresholds, the Project would not substantially contribute to regional O_3 concentrations and associated health impacts. Similar to construction, Project operation would not lead to exceedance of any ICAPCD threshold.

In addition to O_3, NO_x emissions contribute to potential exceedances of the NAAQS and CAAQS for nitrogen dioxide (because nitrogen dioxide is a constituent of NO_x). Exposure to nitrogen dioxide can cause lung irritation, bronchitis, and pneumonia and can lower resistance to respiratory infections. As depicted in Tables 3 and 4, Project construction and operation would not exceed the ICAPCD localized thresholds for NO_x. Thus, construction and operation of the proposed Project are not expected to exceed the nitrogen dioxide standards or contribute to associated health effects.

CO tends to be a localized impact associated with congested intersections. CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. CO hotspots were discussed previously as a less-than-significant impact. Thus, the proposed Project's CO emissions would not contribute to the health effects associated with this pollutant.

The SSAB is also designated as nonattainment for PM_{10} under the NAAQS and CAAQS. Particulate matter contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing (EPA 2023). As with O_3 and NO_x, the proposed Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed ICAPCD thresholds. Accordingly, the proposed Project's PM_{10} and $PM_{2.5}$ emissions would not cause any increase in related regional health effects for these pollutants.

In summary, the proposed Project would not result in any potentially significant contribution to local or regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Impacts would be **less than significant.**

d) ***Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

The IS prepared for the 2003 EIR found there would be no impact related to objectionable odors affecting a substantial number of people. Given that the proposed Project's construction and operational activities are within the scope of the EIR, the proposed Project remains consistent with that determination. A discussion of odors specific to the proposed Project is provided below for additional context.

Construction

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the proposed Project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and architectural coatings. Such odors would be temporary, disperse rapidly from the proposed Project site, and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, there would be **no impact** from construction odors that would affect a substantial number of people.

Operation

Land uses and industrial operations that are potential sources of odor include wastewater treatment plants, sanitary landfills, composting stations, feedlots, asphalt plants, painting/coating operations, and rendering plants (ICAPCD 2017).

The proposed Project would include student housing buildings, which are not expected to produce any nuisance odors; therefore, there would be **no impact** related to odors caused by the proposed Project during operations.

3.4 Biological Resources

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

Potential impacts of the Campus Master Plan related to Biological Resources including species listed as candidate, sensitive, or special-status were evaluated in Section 3.4, Biological Resources of the 2003 Campus Master Plan EIR. The EIR found that buildout of the Calexico site would not result in significant impacts to biological resources. A summary of the prior analysis is provided below along with the current Project-specific analysis for each criterion, as applicable. The analysis presented below is based on the Biological Resources Technical Memorandum prepared by Dudek, included in its entirety as Appendix C to this IS and incorporated herein by this reference.

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

A present-day Project-specific analysis for the proposed affordable student housing Project was conducted to determine whether the Project would have a substantial adverse effect on a listed species. Ornamental trees on the Project site have limited potential to support nesting and foraging for western mastiff bat, a California Department of Fish and Wildlife Species of Special Concern. In general, due to the developed and disturbed conditions of the site and surrounding areas (i.e., no natural habitat areas or preserves), the potential for western mastiff bat to roost on the Project site is extremely low. However, the bat may still use the limited amount of ornamental trees or buildings in the study area and, as a result, may be impacted by construction and development of the Project. Accordingly, potential direct impacts to the bat, a special-status species, are considered significant absent mitigation. The western mastiff bat reproduces in California from April through September, which coincides with the avian nesting season. It forages at night throughout the year. Implementation of MM-BIO-1 would ensure western mastiff bat would not be impacted by Project construction activities as any potential bat roosts in trees or buildings would be surveyed for potential avian nests during the pre-construction survey. Therefore, potential impacts to listed species would be **less than significant with mitigation incorporated.**

In addition to the potential presence of the western mastiff bat on the Project site, the study area contains ornamental trees, shrubs, and maintained grass that potentially would be used by migratory birds for breeding and nesting. The Project site contains two ornamental trees adjacent to the northern boundary, and adjacent to the site there are trees along the northern and western boundaries that could support nesting birds.

Project construction could result in direct and indirect impacts to migratory nesting birds. Indirect impacts to nesting birds from short-term, construction-related noise could result in decreased reproductive success or abandonment of an area used for nesting habitat if construction were conducted during the breeding/nesting season (i.e., February through September). In general, due to the developed and disturbed conditions of the site and surrounding areas (i.e., no natural habitat areas or preserves), the potential for impacts to biological resources to occur is low. However, direct and indirect impacts to nesting birds would be potentially significant absent mitigation. In addition to mitigating potential impacts to the western mastiff bat, implementation of MM-BIO-1 also would ensure that any impacts to nesting birds due to Project construction activities during nesting season would be reduced to **less than significant with mitigation.**

Mitigation Measure

The following mitigation measure would reduce the potential for direct and indirect impacts to special-status species and migratory birds by ensuring that such species would be avoided during construction activities to the extent possible. Implementation of the following mitigation measure would reduce potential impacts to a **less-than-significant level.**

MM-BIO-1: Pre-Construction Nesting Bird and Special-Status Bat Survey. If ground disturbance and/or vegetation clearance activities are scheduled to occur during the avian nesting season (February 1–September–30) and bat reproduction season (April-September), the CSU/SDSU, or its designee, shall retain a biologist to conduct a pre-construction nesting bird and bat surveys within the area to be disturbed and a 500-foot buffer. Surveys shall be conducted within 3 days prior to initiation of ground-disturbing activity between dawn and noon.

If construction begins outside the nesting bird season (i.e., between October 1 and January 31), work may procced without a nesting bird survey. If construction begins outside the nesting season, but crosses into the nesting season (e.g., starts in January and work continues into March), construction activities may proceed without a nesting bird survey. However, anytime construction activities pause for more than 72 hours during the nesting season, an updated nesting bird survey by a biologist shall be conducted prior to the resumption of construction activities.

If an active nest or western mastiff bat roost is detected during the pre-construction survey, avoidance buffers shall be implemented as determined by a biologist retained by the CSU/SDSU. The buffer shall be of sufficient distance to ensure avoidance of adverse effects to the nesting bird or bat by accounting for topography, ambient conditions, species, nest/roost location, and activity type. All nests shall be monitored as determined by the biologist until nestlings have fledged and dispersed, or it is confirmed that the nest has been unsuccessful or abandoned. Any trees observed supporting roosting bats during the pre-construction survey shall not be removed during the bat reproduction period of April-September. Avoidance buffers shall be implemented as determined by a biologist retained by the CSU/SDSU.

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

The IS prepared for the 2003 Campus Master Plan EIR determined that no impact related to adverse effects on riparian habitat or other sensitive natural communities would occur. The study area for the Project presently proposed does not contain riparian vegetation communities or any native vegetation communities including those identified as sensitive according to the California Department of Fish and Wildlife. As a result, **no impacts** to sensitive communities would occur.

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

The IS prepared for the 2003 Campus Master Plan EIR determined that no impact related to adverse effects on wetlands would occur. The Project site does not contain wetland waters of the United States or state. As such, **no impacts** to protected wetlands are expected to occur.

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

The IS prepared for the 2003 Campus Master Plan EIR determined that no impacts related to wildlife movement or migration would occur. The Project presently proposed is not located within an area that functions as a wildlife movement or migration corridor and is within an urban setting that lacks native habitat. As such, the proposed Project would not constrain natural wildlife movement in its vicinity and **no impacts** would occur.

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

The IS prepared for the 2003 Campus Master Plan EIR determined that no impacts related to conflicts with local biological resources policies or ordinances would occur. Preliminarily, as a state entity, the CSU/SDSU is not subject to local government plans, policies, regulations, and guidelines, such as those contained in the City of Calexico General Plan. In addition, as described in the Project Description, the Project site and construction staging area contain only four non-native trees that would require removal. Neither the City nor the CSU/SDSU has any General Plan policies or ordinances that would require these trees be protected. As such, the Project would not conflict with any policies or ordinances protecting biological resources. Therefore, **no impacts** would occur.

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

The IS prepared for the 2003 Campus Master Plan EIR determined that no impact related to conflicts with local habitat conservation plans would occur. There are no habitat conservation plans or natural community conservation plans that have been adopted within the City or within the Project area. The Imperial Irrigation District developed a planning agreement in 2006 for a regional habitat conservation plan, but that plan is still in development and has not yet been adopted (CDFG 2006). As such, the Project would not conflict with any applicable plans and **no impacts** would occur.

3.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

Impacts to historical resources pursuant to Section 15064.5 were evaluated in the IS prepared for the 2003 Campus Master Plan EIR, which concluded that no significant impacts to historical resources would occur. Impacts to archaeological resources pursuant to Section 15064.5 and human remains were evaluated in Section 3.5, Cultural Resources, of the 2003 Campus Master Plan EIR. The EIR concluded that there would be no significant impacts to cultural resources as a result of development of the proposed Campus Master Plan. However, the 2003 Campus Master Plan EIR recommended including a mitigation measure that outlines response protocol and requirements in the event that potential resources were discovered during excavation and/or construction associated with buildout of the Off-Campus Center - Calexico.[4,5] The analysis presented below is based on the Cultural Resources and Tribal Cultural Resources Technical Memorandum prepared by Dudek, included in its entirety as Appendix D to this IS and incorporated herein by this reference.

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Dudek's current cultural resources inventory of the Project site did not identify any historical resources within the Project area. A records search conducted by the Southern California Information Center did not identify any historical resources present within the Project area. Additionally, an intensive pedestrian survey did not identify any historical resources within the Project area. Additionally, there are no historic-era (greater than

4 Section 3.5 Mitigation Measure 1: It is recommended that if an initial finding within the project area where no known resources have been recorded is made, appropriate contact with the local Native American group per the Native American Heritage Commission will ensue, in accordance with the SDSU construction contract conditions, which state that: "If the Contractor discovers any artifacts during excavation and /or construction, the Contractor shall stop all affected work and notify the Trustees, who will call in a qualified archeologist designated by the California Archeological Inventory to assess the discovery and suggest further mitigation, as necessary. If the Contractor discovers human remains, the Contractor shall notify the Trustees, who will be responsible for contacting the county coroner and a qualified archeologist. If the remains are determined to be Native American, the Trustees shall contact the appropriate tribal representatives to oversee removal of the remains." If any buried cultural deposits are discovered during construction, development should be suspended, and the discovery protected and evaluated for its potential eligibility for listing on the National Register of Historic Places or the California Register of Historical Resources.

5 All applicable mitigation measures from the 2003 Campus Master Plan EIR will be included in the Mitigation Monitoring and Reporting Program for this Project.

45 years old) buildings or structures present within the Project area. Therefore, the Project would not result in an adverse change in the significance of a historical resource pursuant to Section 15064.5 and Project implementation would have **no impact** on the significance of a historical resource.

b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?*

The Project-specific analysis conducted for the proposed Project included a review by Dudek of the current cultural resources inventory for the Project site. The review concluded that there is low sensitivity, or low likelihood, for identifying intact subsurface archaeological resource deposits during Project construction. The records search did not identify any archaeological resources within the Project area. Additionally, an intensive pedestrian survey did not identify any archaeological resources pursuant to Section 15064.5 within the Project area. A review of aerial photographs reveals that a majority of the Project area had been previously graded during construction of the adjacent campus structures, parking lot, and roadways. Accordingly, any intact archaeological subsurface deposits that were present likely would have been disturbed by previous grading and would no longer remain intact.

However, because Project development includes ground-disturbing activities associated with construction of the new buildings, the potential to encounter and/or destroy previously undiscovered archaeological materials or features during earth-moving activities, while low, does exist. Any substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 would be a potentially significant impact. Therefore, continued/ongoing implementation of the Cultural Resources mitigation measure included in the 2003 EIR and previously adopted by the Board of Trustees, which requires a temporary suspension of construction activities in the event of an archaeological discovery and evaluation of the find by a qualified archaeologist, is still recommended to ensure impacts would be **less than significant.**

c) *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

The current Project-specific analysis notes that the Project area is not used as a cemetery and is not otherwise known to contain human remains. A pedestrian field survey conducted of the site did not identify any human remains or find any indications that human remains would be expected to be found within the Project area. However, although unlikely, there is the possibility of human remains being discovered during Project-related ground-disturbing activities. Therefore, the provisions of the previously adopted mitigation measure continue in effect through Project construction: if remains are discovered during Project construction activities, the CSU/SDSU and its construction contractor, consistent with the previously adopted mitigation measure, would comply with procedures set forth in the California Public Resources Code (Section 5097.98) and California Health and Safety Code (Section 7050.5).

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the appropriate treatment and disposition of the human remains. If the County coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code Section 5097.98, the NAHC must immediately notify the person or persons it believes to be the Most Likely Descendant from the deceased Native American. The Most Likely Descendant shall complete inspection within 48 hours of being granted access to the site and make recommendations for the treatment and disposition, in consultation with the property owner, of the human remains.

Compliance with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097, in combination with the previously adopted mitigation measure, would ensure appropriate treatment of any human remains if discovered during construction. Impacts would be **less than significant.**

3.6 Energy

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

At the time the 2003 Campus Master Plan EIR was certified, an evaluation of energy was not required under CEQA. In furtherance of the Project presently proposed, and pursuant to CEQA Guidelines Section 15168(c)(1), a Project-specific analysis of the proposed Project's energy impacts relating to construction and operation has been prepared as described below. The analysis presented is based on the Air Quality, Greenhouse Gas Emissions, and Energy Technical Memorandum prepared by Dudek, included in its entirety as Appendix B to this Initial Study (IS) and incorporated herein by this reference.

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

Implementation of the proposed Project would result in energy use for construction and operation, including use of electricity and petroleum-based fuels for off-road equipment. The electricity and fuel used for construction of the proposed Project would be temporary, would be substantially less than that required for Project operation, and would have a negligible contribution to the Project's overall energy consumption. Additionally, although electricity usage at the Off-Campus Center - Calexico would increase due to implementation of the Project, the Project's energy efficiency would exceed the current Building Energy Efficiency Standards (Title 24) in accordance with the CSU Sustainability Policy (CSU 2024a). Further, although the Project would see an increase in petroleum use during construction and operation, vehicles would use less petroleum due to advances in fuel economy and potential reduction in VMT over time. Separate analyses for construction and operational use follow below.

Construction Energy Use

Electricity

Electricity consumed during Project construction would vary throughout the construction period based on the construction activities being performed. Various construction activities would require electricity, including the conveyance of water that would be used for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power. Such electricity demand would be temporary and nominal and would cease upon the completion of construction. Imperial Irrigation District is the electricity provider to the Project site and provided approximately 3,584 gigawatt-hours of electricity to its entire service area in 2022 (CEC 2023a). Overall, construction activities associated with the proposed Project would require limited electricity consumption that would not be expected to have an adverse impact on available Imperial Irrigation District electricity supplies and infrastructure. Therefore, the use of electricity during Project construction would not be wasteful, inefficient, or unnecessary.

Petroleum-Based Fuels

Petroleum-based fuel usage represents most energy consumed during construction. Petroleum fuels would be used to power off-road construction vehicles and equipment on the Project site, construction worker travel to and from the Project site, and construction-material delivery truck trips.

Fuel consumption from construction equipment and vehicles was estimated by converting the total carbon dioxide (CO_2) emissions from each construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. All off-road equipment and vendor trucks are anticipated to use diesel fuel, whereas worker vehicles are analyzed based upon gasoline fuel use. Construction is estimated to last approximately 17 months beginning in November 2024. The conversion factor for gasoline is 8.78 kilograms per metric tons (MT) CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per MT CO_2 per gallon (The Climate Registry 2023). The estimated diesel fuel usage from construction of the proposed Project is shown in Table 7.

Table 7. Estimated Construction Fuel Use

Construction Year	Off-Road Equipment (diesel)	On-Road Vendor Trucks (diesel)	On-Road Haul Trucks (diesel)	On-Road Workers (gasoline)
	Fuel Use (gallons)			
2024	2,794	N/A	276	252
2025	2,905	92	56	267
2026	2,948	118	N/A	248
Total	**8,646**	**210**	**332**	**767**

Source: See Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files, of Appendix B, Air Quality, Greenhouse Gas Emissions, and Energy Technical Memorandum, for complete results.
Totals may not sum precisely due to rounding.
Notes: N/A = not applicable.

As shown in Table 7, construction of the proposed Project is anticipated to require 767 gallons of gasoline and 9,188 gallons of diesel over the 17-month construction period. This amount of petroleum equates to 13,545 therms of energy consumed. The most recent data for the County shows that countywide gas consumption totaled approximately 41 million therms in 2022 (CEC 2023b). Thus, the Project's construction fuel consumption would represent a temporary increase of approximately 0.033% in gas consumption over the current countywide usage. Furthermore, the proposed Project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. The proposed Project would also be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation, which requires the vehicle fleet to reduce emissions by retiring, replacing, or repowering older engines or installing Verified Diesel Emissions Control Strategies. Construction activities would not consume fuel in a wasteful or inefficient manner or contribute to the unnecessary consumption of fuel required over the short-term construction period to power construction equipment. Therefore, impacts associated with construction energy use would be less than significant.

Operations Energy Use

Electricity

The proposed Project would require electricity for multiple purposes at buildout, including cooling, lighting, appliances, etc. Additionally, the supply, conveyance, treatment, and distribution of water would indirectly result in electricity usage. Electricity consumption associated with Project operation is based on the CalEEMod outputs presented in Attachment B of Appendix B.

CalEEMod default values for energy consumption for the proposed Project were applied for the Project analysis. The energy use from nonresidential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. Energy use in buildings is divided by the program into end-use categories subject to Title 24 requirements (end uses associated with the building envelope, such as the heating, ventilating, and air-conditioning system, water heating system, and integrated lighting) and those not subject to Title 24 requirements (such as appliances, electronics, and miscellaneous "plug-in" uses).

Total annual electricity demand associated with proposed Project operation would be approximately 45,858 kilowatt-hours (kWh) per year. Because natural gas is not incorporated in Project operations, the default natural gas consumption assumed by CalEEMod for space heating, water heating, etc. was converted to kWh and added to the demand, totaling 95,571 kWh per year. For context, in 2022, California used approximately 290 billion kWh of electricity (CEC 2023c). Locally, in 2022, nonresidential electricity demand in Imperial County was approximately 891 million kWh (CEC 2023c).

Title 24 of the California Code of Regulations serves to enhance and regulate California's building standards. The most recent amendments to Title 24, Part 6, referred to as the 2022 standards, became effective on January 1, 2023. The proposed Project would exceed the Title 24 Building Energy Efficiency Standards by at least 10% in compliance with the CSU Sustainability Policy (CSU 2024a). Exceedance of the applicable Title 24 standards would reduce overall energy consumption of the proposed Project and would ensure that the energy demands would not be inefficient, wasteful, or otherwise unnecessary, and the Project's effect on electrical demands during operation would be less than significant.

Natural Gas

Consistent with the CSU's goal to minimize use of natural gas and transition to electric alternatives, operation of the proposed Project would be fully electric and would not require natural gas. As such, there would be no impact to natural gas–related supply and infrastructure capacity, and the Project's effect on natural gas demands during operation would be less than significant.

Petroleum

During operation, fuel consumption resulting from the Project would be generated by vehicle fuel consumption, consisting of the trips generated by those student residents commuting to the IVCCD campus from the Project site.

Annual petroleum use from operation from vehicle fuel consumption would be approximately 5,248 gallons per year. By comparison, California as a whole consumed approximately 26 billion gallons of petroleum in 2022 (EIA 2024), and in 2022 Imperial County consumed an estimated 66 million gallons of gasoline and an estimated 30 million gallons of diesel (CEC 2022). As such, petroleum demand required for implementation of the proposed Project is relatively insignificant and would not be inefficient, wasteful, or otherwise unnecessary. The Project's effect on petroleum supply during operation would be less than significant.

Conclusion

In summary, implementation of the Project would increase the demand for electricity and petroleum in the region during construction and operation. However, because the Project would implement all current, applicable regulations and policies, the Project would not be wasteful or inefficient and would not result in unnecessary energy resource consumption. Relatedly, because the proposed Project would comply with and exceed the Title 24 energy conservation standards pursuant to the CSU Sustainability Policy, the proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy. Therefore, impacts would be **less than significant**.

Of note, and consistent with the greenhouse gas (GHG) emissions impact analysis presented in Section 3.8, Greenhouse Gas Emissions, of this IS, it is likely that energy use estimated here is well below what would have been estimated had energy been analyzed in the 2003 EIR. Since 2003, the state has enacted a comprehensive suite of laws to increase efficiencies and thereby reduce energy use associated with water use, solid waste disposal, and building energy use, among others. Accordingly, construction and operation of the proposed Project benefits from the current legal landscape, which serves to reduce energy demand as compared to what was in place in 2003.

b) ***Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?***

The proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. At a minimum, the proposed Project would be subject to and would comply with the 2022 California Building Code (CBC) (24 CCR Part 6). Additionally, as discussed in Section 3.8 of this IS, the proposed Project would not conflict with the CSU Sustainability Policy or the SDSU CAP, which was adopted in 2017 to achieve carbon neutrality, in part, through goals and strategies that support increased energy efficiency and transition to renewable energy alternatives campuswide. Specifically, no natural gas would be used on site, and all space and water heating would be electrified, which is consistent with the CSU's goal to minimize use of natural gas and transition to electric alternatives.

The proposed Project would also not conflict with CARB's Climate Change Scoping Plan, which identifies several strategies to reduce GHG emissions through energy efficiency. As discussed in further detail in Section 3.8 of this IS, the proposed Project would be subject to these strategies, as many are state actions requiring no additional involvement at the project level. As such, implementation of the proposed Project would not conflict with applicable plans for energy efficiency, and the impacts during construction and operation would be **less than significant.**

3.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Impacts related to rupture of a known earthquake fault were evaluated in Section 3.2, Geology/Soils, of the 2003 Campus Master Plan EIR, which concluded that the Off-Campus Center - Calexico is not within the limits of the Alquist-Priolo Special Studies Zones of the Imperial and Brawley Faults (SDSU 2003). Therefore, the EIR did not provide an impact conclusion regarding potential rupture of a known earthquake fault. However, because the Master Plan is not located on the Alquist-Priolo Earthquake Fault Zoning Map, as discussed below, no impact would have been identified. A summary of the prior analysis is provided below along with the current Project-specific analysis for each criterion.

The analysis presented below is based on the Geology and Soils Technical Memorandum and Paleontological Resources Assessment Technical Memorandum prepared by Dudek, included in their entirety as Appendices E and F to this IS and incorporated herein by this reference. The Project-specific geotechnical report (Attachment B of Appendix E) includes recommendations to address strong seismic ground shaking, liquefaction, differential settlement, and seismic densification; these recommendations are required by law to be implemented (Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings [CGS 2022]). Additionally, the Project would be designed in accordance with the CSU Seismic Requirements document (CSU 2024b), which includes specific requirements for the construction of new buildings, to ensure that all CSU buildings provide an acceptable level of earthquake safety for students, employees, and the public.

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

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

Impacts related to rupture of a known earthquake fault were evaluated in Section 3.2, Geology/Soils, of the 2003 Campus Master Plan EIR, which concluded that the Calexico Off-Campus Center - Calexico is not within the limits of the Alquist-Priolo Special Studies Zones of the Imperial and Brawley Faults (SDSU 2003). Therefore, the 2003 Campus Master Plan EIR did not provide an impact conclusion regarding potential rupture of a known earthquake fault. However, because the Master Plan is not located on the Alquist-Priolo Earthquake Fault Zoning Map, as discussed below, it can be assumed no impact was identified.

As to the Project-specific analysis for the presently proposed Project, the Holocene-active Imperial Fault is the closest fault to the Off-Campus Center - Calexico, located approximately 7 miles to the northeast. The campus is not located in an Alquist-Priolo Earthquake Fault Zone, and no known active faults are present in the immediate site vicinity. No new information or substantial changes in circumstances have occurred since certification of the EIR requiring new or additional analysis regarding rupture of a known earthquake fault at the Project site. As a result, surface fault rupture is not anticipated, and the Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving the rupture of a known earthquake fault and **no impact** would occur.

ii) ***Strong seismic ground shaking, or***

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

Impacts related to seismic ground shaking, seismic-related ground failure, and liquefaction were evaluated in Section 3.2, Geology/Soils, of the 2003 Campus Master Plan EIR, which concluded that although no geotechnical conditions were identified to preclude development of the Calexico Master Plan, impacts due to hazards from seismic activity could occur if proper construction techniques are not observed at the detailed design and construction stages (SDSU 2003). Mitigation measures were adopted that require SDSU to: (1) avoid adverse discontinuities in strength between major structural elements, (2) conduct a subsurface geotechnical and soil study to ensure structural integrity prior to detailed site planning, and (3) adhere to recommendations of the geotechnical and soil study in developing grading and construction plans (SDSU 2003, pp. 3.2-4, 3.2-5, and 11-1).[6] With implementation of the mitigation measures, impacts were determined to be less than significant.

Specific to the Project presently proposed, updated information since completion of the EIR related to seismicity, including liquefaction and fluid injection, is summarized here. The Imperial Valley area is subjected to frequent seismic events, with related concerns of ground shaking and liquefaction. The most noteworthy of the numerous faults traversing the Salton Trough is the Holocene-active Coachella section of the San Andreas Fault. There are two other major northwest-trending Holocene-active fault zones bounding the Salton Trough including the San Jacinto Fault to the northwest and the Elsinore Fault to the southwest (see Figure 5 in Appendix E). In addition, the Holocene-active Imperial Fault is located 7 miles northeast of the Off-Campus Center- Calexico, and the Brawley Seismic Zone is located approximately 17 miles to the north. Fluid injection and geothermal energy extraction in the North Brawley Geothermal Field, located within the Brawley Seismic Zone, have been linked to seismic hazards.

Geotechnical borings drilled on the Project site encountered several loose to medium dense, 2- to 4-foot-thick beds of silty sand and nonplastic silt, which are potentially liquefiable under a high seismic demand. Liquefaction-induced settlement and seismic compaction are considered likely to occur given the site surface and subsurface conditions. The estimated liquefaction-induced differential

6 Section 3.2, Geology/Soils, Mitigation Measures 1 and 2: (1) Adverse discontinuities in strength between major structural elements shall be avoided. (2) Prior to detailed site planning, a subsurface geotechnical and soils study shall be conducted to determine the shrink-swell potential and to develop design specific measures to ensure structural integrity. Grading and construction plans shall conform to recommendations of the study (SDSU 2003, pp. 3.2-4, 3.2-5, and 11-1).

settlement is approximately 0.5 inches or less over a horizontal distance of 30 feet. Because the site is essentially level, the potential for significant liquefaction-induced lateral displacement is low.

Since the 2003 EIR was certified, the CEQA Guidelines have been revised (per Appendix G of the 2022 CEQA Statute and Guidelines). Seismic impacts on any given project are no longer considered potentially significant. Rather, impacts would only be considered significant in the event the project directly or indirectly caused seismic impacts to occur. Because construction and operation of the proposed buildings would not induce seismicity, the Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking and, consequently, **no impacts** would occur. For these reasons, the mitigation measure adopted as part of the 2003 Campus Master Plan EIR is not applicable to the proposed Project. Nonetheless, SDSU shall implement the measure to the extent applicable, including the preparation and adherence to recommendations of a geotechnical report.

Regardless, the following is an updated discussion of standard construction and design protocol that would be followed with respect to seismic engineering of the proposed buildings. As required by the 2022 CBC, the proposed Project and associated infrastructure improvements would be constructed in accordance with the recommendations of the Project-specific geotechnical report (Attachment B of Appendix E), which includes recommendations for remedial grading and foundation design to address strong seismic ground shaking, liquefaction, differential settlement, and seismic densification. Accordingly, although referred to as “recommendations” in geotechnical reports, each recommendation is, in fact, required by law to be implemented. More specifically, the geotechnical report recommends the use of thickened and heavily reinforced conventional building foundations or post-tensioned slabs to reduce the potential for distress to the proposed buildings associated with post-liquefaction settlement (Attachment B of Appendix E). Design and construction in accordance with these recommendations would provide, to the extent feasible, an acceptable level of earthquake safety for students, employees, and the public who occupy the buildings.

In addition, the Project would be designed in accordance with the CSU Seismic Requirements document (CSU 2024b), which includes specific requirements for the construction of new buildings, to ensure that all CSU buildings provide an acceptable level of earthquake safety for students, employees, and the public. The CSU Seismic Policy applies to all structures within the bounds of a CSU Campus Master Plan. These seismic requirements set forth procedures to follow to manage current construction programs and limit future seismic risk to acceptable levels. The CSU has established campus-specific seismic ground motion parameters that supersede CBC requirements and implement a conservative evaluation on CBC Structural Risk Category assignments.

The proposed buildings and infrastructure improvements would be constructed under the supervision of a California Geotechnical Engineer and/or California Certified Engineering Geologist. In addition, construction and operation of proposed Project facilities would not increase the potential for earthquakes or seismically induced ground failure to occur. As a result, the Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking or seismic-related ground failure, including liquefaction. For these reasons, **no impacts** would occur.

iv) *Landslides?*

The IS prepared for the 2003 Campus Master Plan EIR determined that no impacts would occur with regard to landslides (SDSU 2003). The topography of the Off-Campus Center - Calexico and surrounding area is relatively flat to gently sloping, and no evidence of ancient landslides or slope instabilities is present. The entirety of the Project site has previously been graded and is relatively flat in nature, with an average elevation of 3.5 feet above mean sea level. With implementation of the required recommendations provided in the Project-specific geotechnical report (see Attachment B of Appendix E), the CBC, grading and construction would not cause slope instability to occur. For example, temporary excavations and any vertical excavations be shored and stabilized during construction. As a result, the Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. As such, impacts would be **less than significant.**

b) *Would the project result in substantial soil erosion or the loss of topsoil?*

The 2003 Campus Master Plan EIR and IS did not specifically address soil erosion and loss of topsoil. Therefore, a discussion regarding the proposed Project's potential to result in substantial soil erosion or the loss of topsoil is provided below.

The Project site is approximately 0.58 acres in size (approximately 25,320 square feet), and the construction staging area would occupy approximately 8,000 square feet, immediately northeast of the Project site, east of existing Campus Building 6, west of Blair Avenue, and south of the existing parking lot (see Figure 2 and Figure 3A). The entirety of the Project site has previously been graded and is relatively flat. The Project would involve site preparation, grading, and excavation associated with Project construction. Excavation depths are anticipated to be 2 to 5 feet, followed by soil backfill and compaction. Approximately 2,600 cubic yards of soil would be removed from the site.

Project grading and construction would temporarily expose on-site soils to wind and water erosion, which in turn could result in sedimentation of downstream drainages. However, compliance with SDSU's stormwater best management practices (BMPs) during grading and construction to minimize the potential for soil erosion. BMPs would be consistent with construction site runoff controls detailed in the SDSU Stormwater Management Plan (SDSU 2022), including erosion controls, sediment controls, and run-on/runoff controls. Typical construction BMPs would include use of straw wattles, sediment basins, sediment fences, covering stockpiled soil, vehicle track-out controls at entrance/exit points, and limitations on work periods during storm events. Based on the SDSU Stormwater Management Plan, construction sites less than 1 acre (such as the Project site) would be inspected weekly by the SDSU Environmental Health and Safety staff for proper BMP implementation. If the Environmental Health and Safety staff deems work is not in compliance with minimum BMPs set forth in the construction contract language, they would provide the contractor with a list of actions required to bring the site into compliance. Staff would re-inspect the site within 72 hours after notifying the contractor of the deficiencies. After construction, the Project site would be developed with impermeable surfaces and approximately 16,000 square feet of on-site landscaping, thus eliminating the potential for soil erosion. As a result, the Project would not result in substantial soil erosion or the loss of topsoil, and impacts would be **less than significant.**

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

The IS completed for the 2003 Campus Master Plan EIR concluded that no impacts would occur with respect to potentially unstable geologic units, including landslides, lateral spreading, subsidence, liquefaction, and collapse (SDSU 2003). Since the EIR was certified, the CEQA Guidelines have been revised (per Appendix G of the 2022 CEQA Statute and Guidelines). Geological hazard impacts on any given project are no longer considered potentially significant. Rather, impacts would only be considered significant in the event the project directly or indirectly caused geologic hazard impacts to occur. Therefore, the following is an updated discussion of potential impacts related to geologic hazards and an updated discussion of protocol that would be followed with respect to geotechnical engineering of the proposed buildings. In addition, updated information since completion of the EIR related to liquefaction and subsidence are summarized below. New information pertaining to liquefaction and subsidence is also presented in Appendix E to this IS.

As described above under (a)-ii and (a)-iii, although the Project would be susceptible to potentially strong seismically induced ground shaking and liquefaction, Project design and construction would be completed in compliance with the 2022 CBC, the recommendations of the Project-specific geotechnical report (see Attachment B of Appendix E), and the CSU Seismic Requirements document (CSU 2024b). CSU Architecture and Engineering review would further assist to offset potential risks to structures and people associated with liquefaction and collapsible soils. In addition, buildings proposed within a liquefaction-prone area would not, in and of itself, increase liquefaction risks to surrounding uses. Although the Project site is potentially susceptible to liquefaction, no slopes are present, thus eliminating the potential for lateral spreading to occur. As described above under (a)-iv, the Project site would not be susceptible to landslides.

On-site clay rich soils are compressible and should experience some time-dependent consolidation settlement (i.e., long-term settlement). Silty sand and silt beds should also settle with initial fill and structural loading (i.e., short-term settlement). Assuming minimal fill placement is needed at the site to achieve the proposed finish grades and foundation loading is limited to the bearing pressures provided in the recommendations of the geotechnical report (Attachment B of Appendix E), most of the long-term settlement should occur in a relatively short time following initial loading. Zones of thick clay could experience some time-dependent consolidation settlement if significant loading from fill or foundation loads are proposed for the Project. However, Project design and construction would be completed in accordance with the recommendations of the Project-specific geotechnical report, which include estimating the settlement magnitude and duration associated with the proposed fill placements and foundation loads. As a result, potential impacts related to compressible soils would be minimized.

Clayey surficial soils present a severe risk of sulfate attack and are also corrosive to very corrosive to buried metals. The geotechnical report (included as Attachment B of Appendix E) recommends placement of 2 to 5 feet of imported sand beneath sidewalks and building slabs-on-grade to reduce the potential for sulfate attack and corrosion. Sulfate-resistant Type V cement is also recommended for use on site. As a result, potential impacts related to sulfate attack and corrosive soils would be minimized.

Natural subsidence has been occurring within the Salton Trough, averaging nearly 2 inches per year at the center of the Salton Sea, and decreasing to zero near the Mexican border and the Project site. This natural subsidence is relatively uniform over large areas. In addition, subsidence in geothermal fields can result in damage to buildings and related infrastructure. Two geothermal facilities are located approximately 3 miles and 3.5 miles northwest of the Calexico site. Satellite radar interferometry was applied to detect surface deformation associated with geothermal development, which determined that distinct areas of subsidence are present in three geothermal fields in the Imperial Valley, including the Salton Sea, Heber, and East Mesa geothermal fields. In addition, ground uplift was observed at the Heber geothermal field. These geothermal fields are located approximately 34 miles northwest, 3 miles northwest, and 15 miles northeast of the Off-Campus Center - Calexico, respectively.

Therefore, subsidence as a result of geothermal activity does not appear to be occurring at the Project site. Well field programs covering production and injection plans in Imperial County are required by the Bureau of Land Management and California Geologic Energy Management Division (CalGEM) for each major geothermal project and are subject to review by CalGEM and Imperial County, thus minimizing the potential for subsidence to occur. In addition, construction and operation of the proposed Project would not result in substantial adverse impacts such that collapse would occur. As a result, the Project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Impacts would be **less than significant**.

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

Impacts related to expansive soils were evaluated in Section 3.2, Geology/Soils, of the 2003 Campus Master Plan EIR, which concluded that although no geotechnical conditions had been identified to preclude development of the Imperial Valley Campus Calexico Project as planned, geology and soil impacts are significant because of the hazards from expansive soils if proper construction techniques are not observed at the detailed design and construction stages (SDSU 2003). Mitigation measures were provided that would require SDSU to: (1) conduct a subsurface geotechnical and soil study to determine the shrink-swell potential prior to detailed site planning, and (2) adhere to recommendations of the geotechnical and soil study in developing grading and construction plans (SDSU 2003, pp. 3.2-4, 3.2-5, and 11-1). With implementation of the mitigation measures, impacts were determined to be less than significant.

Soil sampling completed on the Project site indicated that moderately expansive soils are present in near surface soils, to a depth of 5 feet. Project design and construction would occur in compliance with recommendations of the Project-specific geotechnical report (included as Attachment B of Appendix E) and the provisions of the 2022 CBC, which requires that grading, structural design, and construction be completed such that potentially expansive soils would not adversely affect foundations, piping, and related infrastructure. The geotechnical report recommends that the clay-rich, expansive soil excavated as part of the Project not be re-used as compacted fill. Fill should be imported to replace expansive soil materials underlying the proposed structures, flatwork, and pavements, to depths of 2 to 5 feet. Additional measures include thickened foundations and slabs or post-tensioned slab-on-grade to support the proposed buildings.

Project design would also be completed in accordance with the CSU Architecture and Engineering review process. As a result, construction of the Project on potentially expansive soils would not create substantial direct or indirect risks to life or property. Impacts would be **less than significant**, and no mitigation is required.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The IS completed for the 2003 EIR concluded that no impacts would occur with respect to the use of septic tanks or alternative wastewater disposal systems (SDSU 2003). The proposed buildings would be connected to existing sewer infrastructure operated by the City. As a result, septic tanks or alternative wastewater disposal systems would not be used in association with the Project. **No impacts** would occur.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The IS prepared for the 2003 EIR determined that no impacts to unique paleontological resources or sites or unique geologic features would occur.

As to the Project-specific analysis conducted for the presently proposed Project, no paleontological resources were identified within the Project site based on a records search and desktop geological and paleontological literature review. The nearest locality is located 7 miles west of the Project site and produced shells of freshwater gastropods and mussels (Appendix F). The Project site is underlain by late Pleistocene to Holocene lake deposits, which have high paleontological sensitivity. If intact paleontological resources are located on site, ground-disturbing activities associated with construction of the proposed Project, such as grading during site preparation and trenching for utilities, have the potential to destroy a unique paleontological resource or site. As such, the Project site is considered to be potentially sensitive for paleontological resources, and without mitigation, the potential damage to paleontological resources during construction is considered a potentially significant impact. Given the proximity of past fossil discoveries in the surrounding area within similar Pleistocene deposits, the Project site is highly sensitive for supporting paleontological resources below the depth of fill and weathered lake deposits. However, upon implementation of mitigation measure MM-GEO-1, impacts would be reduced to **less than significant with mitigation incorporated.**

Mitigation Measure

The following mitigation measure would reduce the potential for direct and indirect impacts to any unknown paleontological resources that may be uncovered during Project construction by requiring preparation of an impact mitigation program and establishing the protocol to follow in the event any resources are unearthed. Implementation of the following mitigation measure would reduce impacts to a **less-than-significant level.**

MM-GEO-1: Prior to commencement of any grading activity on site, the CSU/SDSU, or its designee, shall retain a qualified paleontologist consistent with the Society of Vertebrate Paleontology (SVP) (2010) guidelines, to prepare a Paleontological Resource Impact Mitigation Program (PRIMP) for the Project. The PRIMP shall be consistent with the SVP (2010) guidelines and outline the following requirements: worker attendance and environmental awareness training at pre-construction meeting/s; monitoring within the Project site as necessary based on construction plans and/or geotechnical reports; procedures for discoveries and treatment; and methods (including sediment sampling for microvertebrate fossils), for reporting and collections management.

A paleontologist shall attend a pre-construction meeting and shall be on site during the preliminary phase of construction during rough grading and other significant ground-disturbing activities (including augering) to monitor the discovery, if any, of previously undisturbed, fine-grained lake deposits. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the monitor shall temporarily halt and/or divert grading activity to allow recovery of any discovered paleontological resources. Once documentation and collection of the find is completed, the monitor shall allow grading to recommence in the area of the find. Any costs associated with laboratory processing of sediments and fossils, and curation fees are the responsibility of the CSU/SDSU.

3.8 Greenhouse Gas Emissions

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

At the time the 2003 Campus Master Plan EIR was certified, an evaluation of GHG emissions was not required under CEQA. Therefore, the impact of Project-related construction and operational GHG emissions was not previously considered. The CEQA Guidelines were updated in 2018 and pursuant to Section 15168(c)(1) an analysis of a project's GHG emissions is required. Therefore, an analysis of the proposed Project's GHG emissions has been prepared as described below. The analysis presented below is based on the Air Quality, Greenhouse Gas Emissions, and Energy Technical Memorandum prepared by Dudek, included in its entirety as Appendix B to this IS and incorporated herein by this reference.

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction Emissions

CalEEMod was used to calculate the construction GHG emissions based on the construction scenario described in Appendix B. Construction of the Project is anticipated to commence in late November 2024 and would last approximately 17 months, ending in March 2026. On-site sources of GHG emissions include off-road equipment, and off-site sources include vendor trucks and worker vehicles. Table 8 presents forecast construction emissions for the Project from on-site and off-site emission sources.

Table 8. Estimated Annual Construction Greenhouse Gas Emissions

Year	CO_2	CH_4	N_2O	R	CO_2e
	Metric Tons per Year				
2024	33.52	<0.01	<0.01	0.01	33.78
2025	217.65	0.01	<0.01	0.04	218.94
2026	45.14	<0.01	<0.01	0.01	45.39
Total	**296.31**	**0.01**	**<0.01**	**0.05**	**298.11**
				Amortized (30-year Project Life)	*9.94*

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; R = refrigerants; CO_2e = carbon dioxide equivalent.
See Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files, of Appendix B, Air Quality, Greenhouse Gas Emissions, and Energy Technical Memorandum, for complete results.
Totals may not add due to rounding.

As shown in Table 8, the estimated total GHG emissions during Project construction would be approximately 298 MT CO_2e (carbon dioxide equivalent) over the construction period. Estimated Project-generated construction emissions amortized over 30 years would be approximately 10 MT CO_2e per year. GHG emissions generated during construction of the Project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. Therefore, construction impacts associated with directly or indirectly generating a significant quantity of GHG emissions would be **less than significant.**

Operational Emissions

Once operational, the proposed Project would result in GHG emissions from energy use, vehicle travel/mobile sources, solid waste, water use, wastewater generation, and refrigerants. As with construction, GHG emissions from Project operations were estimated using CalEEMod based on a combination of Project-specific details provided by SDSU and default parameters, where necessary. All details for operational criteria air pollutants discussed in Appendix B are also applicable for the estimation of operations-related GHG emissions. As such, see Section 5 of Appendix B for a discussion of the operational emissions calculation methodology.

Mobile

As discussed previously, the proposed Project would not increase SDSU Imperial Valley FTE student enrollment beyond the level previously approved within the 2003 EIR; therefore, the operational mobile source GHG emissions associated with the Off-Campus Center - Calexico need not be included in this assessment. However, the 2003 EIR did not assess the trips generated by those student residents commuting to the IVCCD campus from the Project site. These trips were analyzed within the Transportation Technical Memorandum for the proposed Project. Following the guidance of this document, a conservative estimate of 79 daily trips was used to model these GHG emissions within CalEEMod (Dudek 2024).

Energy

The estimation of operational energy emissions was based on CalEEMod land use defaults and units or total area (i.e., square footage) of the proposed Project land use (i.e., residential). For residential buildings, CalEEMod energy intensity value (electricity or natural gas usage per dwelling unit per year) parameters are based on the Residential Appliance Saturation Survey. Emissions are calculated by multiplying the energy use by the utility carbon intensity (pounds of GHGs per kWh for electricity or 1,000 British thermal units for natural gas) for CO_2 and other GHGs.

Consistent with the CSU's goal to minimize use of natural gas and transition to electric alternatives, no natural gas would be used on site, and all space and water heating would be electrified. Electrifying uses at the site would reduce GHG emissions associated with Project operations by converting a portion of the Project's forecasted natural gas consumption to electricity. To estimate emissions associated with the elimination of natural gas, use of natural gas during operation of the Project was converted to kWh/year and added to the Project electrical consumption in CalEEMod. Electricity consumption (i.e., kWh/year) was adjusted based on the relative efficiency per source of energy use (e.g., efficiency of powering water heaters with electricity versus natural gas). Energy use efficiency data were obtained from the U.S. Energy Information Administration and U.S. Department of Energy, as appropriate. For further details, see Attachment B of Appendix B.

Annual electricity emissions were estimated in CalEEMod using the emissions factors for Imperial Irrigation District, which would be the electricity provider for the Project. CalEEMod default energy intensity factors (CO_2, methane, and N_2O mass emissions per kWh) for Imperial Irrigation District are based on the forecasted factors for the operational year.

Water and Wastewater

Supply, conveyance, treatment, and distribution of water for the proposed Project requires the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the proposed Project requires the use of electricity for conveyance and treatment, along with GHG emissions generated during wastewater treatment (i.e., biological processes). Water consumption estimates for both indoor and outdoor water use and associated electricity consumption from water use and wastewater generation were estimated using CalEEMod default values.

Refrigerants

Refrigerants are substances used in equipment for air conditioning and refrigeration. Most of the refrigerants used today are hydrofluorocarbons or blends thereof, which can have high global warming potential values. All equipment that uses refrigerants has a charge size (i.e., quantity of refrigerant the equipment contains), an operational refrigerant leak rate, and a global warming potential specific to the type of refrigerant. GHG emissions related to refrigerant leaks from operation of the proposed Project were estimated using CalEEMod default parameters. CalEEMod quantifies refrigerant emissions from leaks during regular operation and routine servicing over the equipment lifetime and derives average annual emissions from the lifetime estimate.

Solid Waste

The proposed Project would generate solid waste, resulting in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation for the proposed land use were used to estimate GHG emissions associated with solid waste.

Table 9 presents the estimated annual GHG emissions generated during operation of the proposed Project. The emissions results presented reflect operational year 2026, as it is anticipated to be the first year of operation following completion of Project construction. Details of the emission calculations are provided in Attachment B of Appendix B.

Table 9. Estimated Annual Operational Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	R	CO_2e
	Metric Tons per Year				
Energy	19.79	<0.01	<0.01	N/A	19.88
Mobile	46.27	<0.01	<0.01	0.07	47.19
Water Use	2.85	0.06	<0.01	N/A	4.91
Solid Waste	0.67	0.07	<0.01	N/A	2.33
Area	0.19	<0.01	<0.01	N/A	0.19
Refrigerants	N/A	N/A	N/A	0.01	0.01
Total Annual Operational Emissions	**69.76**	**0.13**	**<0.01**	**0.08**	**74.51**
Amortized 30-year Construction Emissions					*9.94*
Total Annual Project Emissions					**84.45**
SCAQMD Threshold					*3,000*
Threshold Exceeded?					**No**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; R = refrigerants; CO_2e = carbon dioxide equivalent; N/A = not applicable; SCAQMD = South Coast Air Quality Management District.
<0.01 indicates values smaller than 0.005.
See Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files, of Appendix B, Air Quality, Greenhouse Gas Emissions, and Energy Technical Memorandum, for complete results.
Totals may not add due to rounding.

As shown in Table 9, the estimated total GHG emissions during operation of the proposed Project would be approximately 84 MT CO_2e per year, including amortized construction emissions. The proposed Project would not exceed the South Coast Air Quality Management District threshold of 3,000 MT CO_2e per year. Projects below this significance criterion have a minimal contribution to global emissions and are considered to have less-than-significant impacts. Therefore, operational impacts associated with directly or indirectly generating a significant quantity of GHG emissions would be **less than significant**.

b) ***Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?***

Plans adopted to reduce GHG emissions applicable to the proposed Project include the CSU Sustainability Policy, as most recently revised in May 2024; the 2017 Climate Action Plan (CAP) for San Diego State University; CARB's Scoping Plan; and SCAG's Connect SoCal 2024. Each of these plans is described below along with an analysis of the proposed Project's potential to conflict with the related GHG emission reduction goals.

Potential to Conflict with the California State University Sustainability Policy

The CSU Board of Trustees adopted its first systemwide Sustainability Policy in May 2014 and most recently revised the Sustainability Policy in May 2024. The Sustainability Policy was developed to integrate sustainability into all facets of the CSU system, including academics, facility operations, built environment, and student life. The Sustainability Policy focuses mainly on energy and GHG emissions and largely aligns with the State of California's energy and GHG emissions reduction goals (CSU 2024a). It seeks to reduce the environmental impact of construction and operation of buildings and to integrate sustainability across the curriculum through 11 broad policies, including University Sustainability; CAP; Energy Resilience and

Procurement; Energy Conservation, Carbon Reduction, and Utility Management; Water Conservation; Sustainable Procurement; Waste Management; Sustainable Food Service; Sustainable Building and Lands Practices; Physical Plant Management; and Transportation.

The proposed Project would comply with all relevant requirements of the CSU Sustainability Policy. For example, the Project shall meet or exceed the minimum requirements equivalent to Leadership in Energy and Environmental Design Silver and exceed the applicable energy codes and regulations (i.e., California Code of Regulations, Title 24, Part 6, Building Energy Efficiency Standards) by 10%. Additionally, no natural gas would be used on site, and all space and water heating would be electrified, which is consistent with the CSU's goal to minimize use of natural gas and transition to electric alternatives.

Potential to Conflict with the 2017 Climate Action Plan for San Diego State University

The SDSU CAP was adopted in May 2017 to provide goals and strategies to achieve carbon neutrality and improve sustainability efforts campuswide. The CAP includes results of a baseline emissions inventory that summarizes GHG emissions from campus operations in 2015 and projected emissions to future years to inform development of appropriate reduction strategies. Although the SDSU CAP does include goals and strategies that would result in a reduction of GHG emissions at the proposed Project site, the SDSU CAP is not considered qualified per CEQA Guidelines Section 15183.5. Additionally, the CAP was prepared with a focus on the SDSU main campus location in San Diego. Therefore, inclusion of this plan is for informational purposes only.

Emissions sources in the CAP's baseline inventory and emissions projections include energy use, solid waste, water use, and student and faculty/staff commute (i.e., mobile source emissions) associated with activity at SDSU's main campus in San Diego. Overall, emissions from energy use and mobile sources accounted for the majority of GHG emissions in the baseline inventory and therefore present the greatest opportunity for future GHG emissions reductions. As previously discussed, the previously approved FTE student enrollment would not increase with the proposed Project above what was already analyzed in the certified EIR for the approved Off-Campus Center - Calexico Master Plan. The Project features housing that would accommodate both SDSU Imperial Valley and IVCCD students. Those SDSU students living at the Project site would no longer have to commute to school, whereas the IVCCD students would travel to the IVCCD campus from the site. The Transportation Technical Memorandum prepared for this proposed Project determined that the SDSU Imperial Valley students would generate a nominal number of net vehicle trips, whereas the IVCCD students would generate an average 79 daily trips (Dudek 2024; Appendix G, Transportation Assessment). As a whole, the Project was determined to be screened out from conducting a VMT analysis and would result in a less-than-significant VMT impact. The Project is, therefore, unlikely to conflict with the CAP.

The CAP vision for energy highlights a shift from natural gas–based co-generation toward grid energy and on-site renewables. For solid waste, the goal of the CAP is to encourage recycling and move toward zero waste in the future. The CAP's vision for water use is to encourage efficient landscaping (e.g., drought-resistant and native species, limited turf, and efficient irrigation systems) and ensure ultra-low flow and high-performance fixtures are used for potable water systems.

Consistent with this vision, the Project would not use natural gas, and all space and water heating would be electrified. The proposed Project would also exceed the Title 24 Building Energy Efficiency Standards by at least 10% and would meet or exceed the minimum requirements equivalent to Leadership in Energy and Environmental Design Silver consistent with the CSU Sustainability Policy, reducing overall energy demand and consumption.

As such, the proposed Project would support the vision of and not conflict with the overall goal of the SDSU CAP. Specifically, the proposed Project's elimination of natural gas supports SDSU's goal to achieve carbon neutrality through increased energy efficiency for campus operations.

Potential to Conflict with CARB's Scoping Plan

The California state legislature passed the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) to provide initial direction to limit California's GHG emissions to 1990 levels by 2020 and initiate the state's long-range climate objectives. Since the passage of AB 32, the state has adopted GHG emissions reduction targets for future years beyond the initial 2020 horizon year. For the proposed Project, the relevant GHG emissions reduction targets include those established by Senate Bill (SB) 32 and AB 1279, which require GHG emissions be reduced to 40% below 1990 levels by 2030 and 85% below 1990 levels by 2045, respectively. In addition, AB 1279 calls upon the state to achieve net zero GHG emissions by no later than 2045 and achieve and maintain net negative GHG emissions thereafter.

As defined by AB 32, CARB is required to develop the Scoping Plan, which provides the framework for actions to achieve the state's GHG emission targets. The Scoping Plan is required to be updated every 5 years and requires CARB and other state agencies to adopt regulations and initiatives that will reduce GHG emissions statewide. The first Scoping Plan was adopted in 2008, with subsequent updates adopted in 2014, 2017, and (most recently) 2022. Although the Scoping Plan is not directly applicable to specific projects, it does provide the official framework for the measures and regulations that will be pursued by the state's executive branch of government to reduce California's GHG emissions in alignment with the legislatively adopted targets. Therefore, a project would be found to not conflict with the statutes establishing statewide GHG reduction targets if it would meet the Scoping Plan policies and would not impede attainment of the goals therein.

CARB's 2017 Scoping Plan was the first to address the state's strategy for achieving the 2030 GHG reduction target set forth in SB 32 (CARB 2017). The most recent Scoping Plan outlines the state's plan to reduce emissions and achieve carbon neutrality by 2045 in alignment with AB 1279 and assesses the state's progress toward meeting the 2030 SB 32 target (CARB 2022). As such, given that SB 32 and AB 1279 are the relevant GHG emission targets, the 2017 and 2022 Scoping Plans that outline the strategy to achieve those targets are the most applicable to the proposed Project.

To achieve the 2030 goal of 40% below 1990 GHG emission levels, the 2017 Scoping Plan included measures to promote renewable energy and energy efficiency (including the mandates of SB 350), measures to increase the stringency of the Low Carbon Fuel Standard, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and measures to increase the stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, the 2017 Scoping Plan also recommended continuing the Cap-and-Trade Program and a measure to reduce GHGs from refineries by 20%. Many of these measures and programs would result in the reduction of Project-related GHG emissions with no action required at the Project-level. These programs would benefit GHG emission reductions through increased energy efficiency and renewable energy production (SB 350), reduction in carbon intensity of transportation fuels (Low Carbon Fuel Standard), and the accelerated efficiency and electrification of the statewide vehicle fleet (Mobile Source Strategy). Implementation of these statewide programs would result in a reduction of operational GHG emissions over the Project lifetime.

CARB approved the 2022 Scoping Plan in December 2022, which includes the state's plan to reduce anthropogenic emissions to 85% below 1990 levels by 2045 and achieve carbon neutrality by 2045 or earlier. The 2022 Scoping Plan also assesses the progress the state is making toward reducing GHG emissions to at least 40% below 1990 levels by 2030, as is required by SB 32 and laid out in the 2017 Scoping Plan. The carbon reduction programs included in the 2022 Scoping Plan build on and accelerate those currently in place, including moving to zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high global warming potential; providing communities with sustainable options for walking, biking, and public transit; and displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines) (CARB 2022). Implementation of the measures and programs included in the 2022 Scoping Plan largely are the responsibility of policymakers and would result in the reduction of Project-related GHG emissions with no action required at the Project-level. Given that the proposed Project would be fully electric (i.e., no natural gas consumption) and includes the potential for on-site solar power generation, Project implementation would support the 2022 Scoping Plan's goals above.

The 2045 carbon neutrality goal required CARB to expand proposed actions in the 2022 Scoping Plan to include those that capture and store carbon in addition to those that reduce only anthropogenic sources of GHG emissions. The proposed Project would support the state's carbon neutrality goals, as implementation would increase renewable, carbon-free electricity sources within the state, decreasing reliance on fossil fuels. Although transitioning to renewable alternatives will support the state's overall climate goals, the 2022 Scoping Plan also indicates that achieving carbon neutrality will require research, development, and deployment of additional methods to capture atmospheric GHG emissions (e.g., mechanical direct air capture). Given that the specific path to neutrality will require development of technologies and programs that are not currently known or available, the Project's role in supporting the statewide goal would be speculative and cannot be wholly identified at this time.

Overall, the proposed Project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent applicable and required by law. As mentioned above, several Scoping Plan measures would result in reductions of Project-related GHG emissions with no action required at the Project-level, including those related to energy efficiency, reduced fossil fuel use, and renewable energy production. As demonstrated above, the proposed Project would not conflict with CARB's 2017 or 2022 Scoping Plan updates and with the state's ability to achieve the 2030 and 2045 GHG reduction and carbon neutrality goals. Further, the proposed Project's consistency with the applicable measures and programs would assist in meeting Imperial County's contribution to GHG emission reduction targets in California.

Potential to Conflict with SCAG's 2024 RTP/SCS "Connect SoCal"

SCAG has jurisdiction over Imperial County and is responsible for the RTP/SCS. As required by federal and state regulations, the RTP/SCS is updated every 4 years. In April 2024, SCAG adopted the 2024-2050 RTP/SCS. Connect SoCal 2024-2050 builds upon prior planning cycles to update the vision of the region's future (SCAG 2024). SCAG's Connect SoCal 2024–2050 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS is a regional growth management strategy, which targets per capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region pursuant to SB 375. In addition to demonstrating the region's ability to attain the GHG emission reduction targets set forth by CARB, the 2024–2050 RTP/SCS outlines a series of actions and strategies for integrating the transportation network with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Thus, successful implementation of the 2024–2050 RTP/SCS would result in more complete communities with various transportation and housing choices while reducing automobile use.

The 2024–2050 RTP/SCS identifies the following strategy areas to support its environmental goals: Sustainable Development, Air Quality, Clean Transportation, Natural and Agricultural Lands Preservation, and Climate Resilience. An analysis of the Project's compliance with the applicable strategies is presented below.

- **Sustainable Development.** The 2024–2050 RTP/SCS identifies sustainable development, including water and energy-efficient building practices and green infrastructure, as a strategy to reduce GHG emissions. The proposed Project would include green building design and construction practices pursuant to Leadership in Energy and Environmental Design Silver certification. Furthermore, the Project would utilize electricity for water and space heating systems (as opposed to natural gas). The modified Project would continue to promote sustainability at the Off-Campus Center - Calexico.
- **Air Quality.** The 2024–2050 RTP/SCS identifies air quality and meeting federal and state ambient air quality standards as a co-benefit of reducing GHG emissions. The Project would not exceed the ICAPCD's threshold of significance for any criteria air pollutant and would not result in any significant impacts related to air quality following mitigation.
- **Clean Transportation.** The 2024–2050 RTP/SCS identifies EV charging infrastructure, adoption of zero-emission vehicles, and clean transit as ways to reduce GHG emissions from mobile sources. As discussed previously in Chapter 2, the proposed Project would promote clean transportation through its proximity to campus. SDSU Calexico student occupants of the proposed development would reside adjacent to campus, thereby reducing the need to commute to school in personal vehicles. Additionally, the Project would promote clean transportation by providing bicycle storage on site.
- **Natural and Agricultural Lands Preservation.** The 2024–2050 RTP/SCS promotes the conservation and restoration of natural and agricultural lands through several policies, such as quantifying the carbon sequestration potential of natural and agricultural lands and prioritization of sensitive habitat and wildlife corridors for permanent protection. The proposed Project would not result in the removal of natural or agricultural lands.
- **Climate Resilience:** The 2024–2050 RTP/SCS promotes regional coordination and solutions for effective emergency response for climate-related hazards. Additionally, in the category of climate resilience, SCAG has established the following policies: prioritize the most vulnerable populations and communities subject to climate hazards; support local and regional climate and hazard planning; support nature-based solutions to increase regional resilience; promote sustainable water use planning; and support an integrated planning approach to help jurisdictions meet housing needs in a drier environment. Although the proposed Project does not directly pertain to these climate resilience efforts, the Project would not interfere with these policies. The proposed

Project would repurpose existing vacant space on an already developed site, which is generally considered more efficient and sustainable than new construction.

Based on the analysis provided above, the proposed Project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, and impacts would be **less than significant.**

3.9 Hazards and Hazardous Materials

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

Impacts related to hazards and hazardous materials were evaluated in the IS and Section 3.3, Hazardous Materials/Public Safety of the 2003 Campus Master Plan EIR. The 2003 Campus Master Plan EIR determined that the expansion of the Off-Campus Center - Calexico would not result in environmental impacts related to hazardous materials. A summary of the prior analysis is provided below along with the current Project-specific analysis for each criterion is provided below.

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

The presently proposed Project involves construction and operation of an affordable student housing complex to be located within the existing school boundaries. Construction and operation of the proposed Project would require routine use, transport, and disposal of hazardous materials, such as paints, greases, cleaning supplies, and small amounts of diesel and oil (for heavy equipment), as well as any chemicals that may be used as part of the educational function. However, these materials are regulated under federal, state, and local laws, rules, and regulations such that their use, transport, and disposal must be documented and, if quantities exceed reportable thresholds (55 gallons of liquid, 200 cubic feet of gas, or 500 pounds of a solid), additional reporting and safety measures are required to ensure there are no significant hazards to the public or environment. As such this impact would be **less than significant.**

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

As discussed above under criterion (a), although construction and operation of the proposed Project would require the use of hazardous materials, such as paints, greases, cleaning supplies, and small amounts of diesel and oil (for heavy equipment), these materials are regulated under federal, state, and local laws, rules, and regulations such that quantities in excess of reportable thresholds (55 gallons of liquid, 200 cubic feet of gas, or 500 pounds of a solid) require additional reporting and safety measures to ensure there are no significant hazards to the public or environment. These safety measures may include, but are not limited to, emergency response plans, spill prevention plans, and reporting of both stored materials and response measures to the local response agency, either the Certified Unified Program Agency and/or the local fire department. As such this impact would be **less than significant**.

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

The nearest schools to the Project site are the Calexico High School 9th Grade Campus and Dool Elementary School, which are located approximately 630 feet north, and approximately 1,050 feet northwest, respectively. However, as discussed above under criterion (a), although construction and operation of the proposed Project would require the use of hazardous materials, such as paints, greases, cleaning supplies, and small amounts of diesel and oil (for heavy equipment), these materials are regulated under federal, state, and local laws, rules, and regulations such that quantities in excess of reportable thresholds (55 gallons of liquid, 200 cubic feet of gas, or 500 pounds of a solid) require additional reporting and safety measures to ensure there are no significant hazards to the public or environment, including schools. Also, the proposed Project is a residential development that would not use or store acutely hazardous materials. Household cleaners and possibly fertilizers for landscaping may be stored on site but these substances are not considered acutely hazardous materials. As such, impacts would be **less than significant.**

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

According to the California Environmental Protection Agency's regulatory database, the Project site is not identified on a hazardous materials site, nor were any sites identified near that contain hazardous materials that could potentially impact the environmental condition of the proposed Project (Cal EPA 2024). As such, **no impact** would occur.

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

The Calexico International Airport is located approximately 1.15 miles southwest of the Project site. As supported by the analysis in the IS and EIR, the proposed Project would not be located within the Calexico International Airport Compatibility Land Use Plan or within any other current airport land use plan boundaries, nor would construction of the proposed Project require notification to the Federal Aviation Administration under Title 14 of the Code of Federal Regulations, Part 77.9. As such, **no impact** would occur.

f) ***Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?***

As discussed in Section 3.7, Public Services/Utilities, of the 2003 Campus Master Plan EIR, the proposed Calexico site expansion was not anticipated to significantly increase demand for emergency services and the City has adequate personnel to serve the existing campus.

The nearest primary fire agency serving the Off-Center Campus is the City of Calexico Fire Department Station 1, located approximately 725 feet southwest of the Project site. As discussed in Section 3.15, Public Services, of this IS, the City's Fire Department contracts with Imperial County and surrounding cities for the provision of fire services, when needed, to areas within the City, including the Calexico site (SDSU 2003). The Imperial County Fire Department and other surrounding City fire departments have mutual aid agreements and would continue to aid the City, as discussed in the 2003 Campus Master Plan EIR. Designated evacuation routes within the City include SR-111 and SR-98, and Interstate 8 (City of Calexico 2015b). The proposed Project would not impact these evacuation routes as the Project site is not located near these existing highways. As such, **no impact** would occur.

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

According to the California Department of Forestry and Fire Protection (CAL FIRE) Draft Fire Hazard Severity Zones in Local Responsibility Area Map (the Project site is located within a Local Responsibility Area), the nearest mapped High or Very High Fire Hazard Severity Zones are located approximately 30 miles southwest and 55 miles northwest of the Project site (CAL FIRE 2022). Moreover, the City's General Plan does not designate any High or Very High Fire Hazard Severity Zones within the City (CAL FIRE 2024; City of Calexico 2015a). Therefore, **no impact** would occur. For additional discussion related to potential wildfire impacts, please refer to Section 3.20, Wildfire, of this IS.

3.10 Hydrology and Water Quality

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

Impacts related to hydrology and water quality were evaluated in IS and Section 3.8, Hydrology/Flood Control, and Section 3.11, Water Quality, of the 2003 Campus Master Plan EIR. The 2003 Campus Master Plan EIR determined that the expansion of the Off-Campus Center - Calexico would not result in significant environmental impacts related to hydrology and water quality. A summary of the prior analysis is provided below along with the current Project-specific analysis for each criterion. The analysis presented is based on the Hydrology and Water Quality Technical

Memorandum prepared by Dudek, included in its entirety as Appendix H to this IS and incorporated herein by this reference.

a) ***Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?***

Impacts relative to this significance criterion and threshold question are separately addressed in the contexts of Project construction and operation.

Construction

Construction impacts related to water quality were evaluated in Section 3.11, Water Quality, of the 2003 Campus Master Plan EIR, which concluded that the potential surface water and groundwater quality impacts during construction would be less than significant with implementation of a construction stormwater pollution prevention plan, as required by the Clean Water Act (SDSU 2003). Because the Project site is under 1 acre in size, preparation of a stormwater pollution prevention plan is not required.

Project construction activities, such as grading, excavation, and trenching, would result in disturbance of soils on the Project site. Construction site runoff can contain soil particles and sediments from these activities. Dust from construction sites, in addition to spills or leaks from heavy equipment and machinery, staging areas, or building sites can also enter runoff and water bodies. Typical pollutants could include petroleum products and heavy metals from equipment, as well as products such as paints, solvents, and cleaning agents, which could contain hazardous constituents. Sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of construction materials could result in water quality degradation if runoff containing the sediment entered receiving waters in sufficient quantities to exceed water quality objectives. However, contributions of sediment from construction and construction-related pollutants would be minor and not measurable in the context of the watershed.

Installation of stormwater BMPs would be required during grading and construction to minimize the potential for soil erosion and potential off-site migration of construction related pollutants, per the SDSU Stormwater Management Plan (SDSU 2022). BMPs would be consistent with construction site runoff controls detailed in the SDSU Stormwater Management Plan (SDSU 2022), including good site management housekeeping, non-stormwater management, erosion controls, sediment controls, and run-on/runoff controls. Typical construction BMPs would include straw wattles, sediment basins, sediment fences, covering stockpiled soil, vehicle track-out controls at entrance/exit points, limitations on work periods during storm events, temporary secondary containment around portable toilets and equipment fueling areas, and on-site storage of absorbent pads for potential small spills. After construction, the Project site would be developed with impermeable surfaces and approximately 16,000 square feet of on-site landscaping, thus eliminating the potential for soil erosion. Based on the SDSU Stormwater Management Plan, construction sites less than1 acre (such as the Project site) would be inspected weekly by the SDSU Environmental Health and Safety staff for proper BMP implementation. If the Environmental Health and Safety staff deems a project is not in compliance with minimum BMPs set forth in the construction contract language, they would provide the contractor with a list of actions required to bring the site into compliance. Staff would re-inspect the site within 72 hours after notifying the contractor of the deficiencies. Non-stormwater discharges during construction would include periodic application of water for dust control purposes. Because dust control is necessary during windy and dry periods to prevent wind erosion and dust plumes, water would be applied in sufficient quantities to wet the soil but not so excessively as to produce runoff from the construction site. Water applied for dust control would either quickly evaporate or locally infiltrate into shallow surface soils. Water would only be applied in a manner that does not generate runoff. Therefore, water applied for dust control would not result in appreciable effects on groundwater or surface water features and thus would not cause or contribute to exceedances of water quality objectives contained in the applicable basin plan, the Regional Water Quality Control Board's Colorado River Basin Plan.

Based on implementation of the above practices, potential Project impacts relating to violation of surface water and groundwater quality standards or waste discharge requirements during construction would be **less than significant**, and no mitigation is required.

Operation

The analysis presented in Section 3.11, Water Quality, of the 2003 Campus Master Plan EIR, concluded that no significant impacts to water quality were expected because the City has an established storm drain system. In addition, the 2003 Campus Master Plan EIR concluded that the existing Calexico Off-Campus Center - Calexico is a developed and urban use; therefore, no increase in impervious surfaces are anticipated (SDSU 2003). The 2003 Campus Master Plan EIR did not include mitigation measures related to water quality.

As to the present proposed Project, the Project site is predominantly unpaved and includes turf and two trees, which allows stormwater to infiltrate into the subsurface, thus reducing stormwater runoff, erosion, and downstream sedimentation. Following construction, the Project site would be developed with impermeable surfaces and approximately 16,000 square feet of on-site landscaping, thus eliminating the potential for soil erosion and off-site siltation. Runoff from building rooftops and landscaped areas can contain nonpoint source pollutants such as sediment, trash, oil, grease, heavy metals, pesticides, herbicides, and/or fertilizers. Concentrations of pollutants carried in urban runoff are extremely variable, depending on factors such as the volume of runoff reaching the storm drains and time since the last rainfall. Without design features to capture and treat stormwater runoff, the increase in the developed area could have adverse water quality impacts on downstream drainages.

As noted above, SDSU is enrolled under the State Water Resources Control Board Phase II Small Municipal Separate Storm Sewer System (MS4) General Permit 2013-0001 DWQ, which provides permit coverage for non-traditional MS4s, such as public campuses (SWRCB 2024). Stormwater infrastructure would be located throughout the Project site and would direct all stormwater to two stormwater catch basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated near the western boundary of the Project site. In compliance with the Small MS4 General Permit and the SDSU Stormwater Management Plan (SDSU 2022), the catch basins would include bio-retention features. Section 10 of the SDSU Stormwater Management Plan includes post-construction stormwater management protocol, including development, implementation, and enforcement of a program to address discharges of post-construction stormwater runoff from impervious areas for new development and redevelopment projects. The program includes site design measures, low impact development design standards, source control measures, stormwater treatment and baseline hydromodification, alternative designs for bioretention, an alternative post-construction stormwater management program, and operation and maintenance of post-construction stormwater management measures. As a result, the proposed catch basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to off-site stormwater discharge. In addition, proposed landscaping would further reduce potential adverse water quality impacts by reducing impervious surfaces, which increase runoff, collect pollutants, and contribute to adverse water quality impacts.

With construction of proposed bio-retention features and landscaping, water quality impacts would be minimized such that the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water or groundwater quality. Impacts would be **less than significant**, and no mitigation is required.

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

The IS prepared for the 2003 Campus Master Plan EIR determined that no impact would occur regarding decreased groundwater supplies or groundwater recharge (SDSU 2003) based on the following set of facts: (1) the City's Department of Public Works provides potable water services to users within the incorporated city limits, which includes the Off-Campus Center - Calexico; (2) the Imperial Irrigation District distributes raw water from the Colorado River to the City, including the Calexico site and (3) groundwater is not used as a potable or nonpotable water source on the Calexico site. As a result, no impacts would occur with respect to groundwater supplies.

As to the present proposed Project, following Project construction, changes in land cover (e.g., increases in impervious surfaces) could affect the amount of stormwater that percolates into the ground versus the amount that runs off into the downstream storm drains. However, construction of the proposed buildings and associated pedestrian walkways would have a nominal effect on groundwater recharge due to the small scale of the proposed impervious surfaces, in comparison to existing conditions. In addition, the Project would include bio-retention basins that would be located throughout the Project site, and approximately 16,000 square feet of on-site landscaping and hardscaping. These pervious areas would slow runoff and enhance groundwater recharge.

As such, direct impacts of the proposed Project on the local groundwater table would be negligible. The Project would not substantially interfere with groundwater recharge such that the Project may impede sustainable groundwater management of the underlying groundwater basin. Impacts would be **less than significant**.

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

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

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

iii) ***Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?***

Impacts related to changes in drainage patterns and potential increased runoff were evaluated in Section 3.8, Hydrology/Flood Control, of the 2003 Campus Master Plan EIR, which concluded that the majority of the Off-Campus Center - Calexico consists of impervious surfaces and is surrounded by urban development (SDSU 2003). No increase in impervious surfaces would occur because of the Project, and as a result, the Project would not have an adverse impact on the hydrology of the site or surrounding area and impacts were less than significant.

The presently proposed Project would involve the construction of additional improvements that would increase the impervious surface area; these include the proposed buildings, pedestrian walkways, and landscaping. As discussed above under criterion (a), the Project site is predominantly unpaved and includes turf and trees, which allows stormwater to infiltrate into the subsurface, thus reducing stormwater runoff, erosion, and downstream flooding. Similarly, following construction, the Project site would be developed with impermeable surfaces and approximately 16,000 square feet of on-site landscaping, thus eliminating the potential for soil erosion and siltation of downstream of the site.

In compliance with the Phase II Small MS4 General Permit, stormwater infrastructure would be located throughout the Project site and would direct all stormwater to two bio-retention basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated near the western boundary of the Project site. These basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to off-site stormwater discharge. In addition, proposed landscaping would further reduce stormwater runoff velocities and minimize the potential for off-site flooding of City streets and storm drains. With construction of proposed bio-retention basins and landscaping, stormwater runoff impacts would be minimized such that the Project would not result in siltation of downstream waterways, flooding of adjacent streets and storm drains, and polluted runoff. Impacts relative to existing drainage patterns would be **less than significant**, and no mitigation is required.

iv) *Impede or redirect flood flows?*

The IS prepared for the 2003 Campus Master Pan EIR determined that no impact would occur regarding 100-year flood hazard areas (SDSU 2003). The Off-Campus Center - Calexico, including the Project site, is not located within a Special Flood Hazard Area. Therefore, neither construction nor operation of the proposed Project would impede or redirect flood flows, and **no impacts** would occur relative to flood flows.

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

The IS prepared for the 2003 Campus Master Plan EIR determined that no impact would occur regarding flooding, including flooding as a result of failure of a levee or dam or inundation by seiche, tsunami, or mudflow (SDSU 2003).

Specific to the proposed Project, As discussed above under criterion (c)-iv, the Off-Campus Center – Calexico is not located within a Special Flood Hazard Area. The Project site is not located in proximity to the Pacific Ocean and would therefore not be susceptible to tsunamis. A seiche is oscillations in an enclosed body of water, such as a lake or reservoir, typically because of seismically induced ground shaking. No such bodies of water are located adjacent to the Project site; therefore, the proposed Project would not be susceptible to seiches. Since certification of the 2003 Campus Master Plan EIR, the CEQA Guidelines have been revised (per Appendix G of the 2023 CEQA Statute and Guidelines), and impacts related to failure of a levee or dam or inundation by mudflow are no longer evaluated under CEQA. Therefore, flooding related to levees, dams, and mudflows have not been evaluated.

For the reasons provided, neither construction nor operation of the proposed Project would risk the release of pollutants due to Project inundation. As such, **no impacts** related to pollutant release within flood hazard areas would occur.

e) ***Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?***

The 2003 Campus Master Plan EIR and IS did not specifically address conflicts with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan. Therefore, a discussion regarding this issue specific to the proposed Project is provided below. Impacts related to construction and operation are addressed separately.

Construction

As previously discussed, stormwater BMPs would be installed during grading and construction to minimize the potential for soil erosion and potential off-site migration of construction related pollutants. BMPs would be consistent with construction site runoff controls detailed in the SDSU Stormwater Management Plan (SDSU 2022), including good site management housekeeping, non-stormwater management, erosion controls, sediment controls, and run-on/runoff controls. After construction, the Project site would be developed with impermeable surfaces and approximately 16,000 square feet of on-site landscaping, thus eliminating the potential for soil erosion. These measures would substantially reduce the potential for impacts to surface water quality occurring during construction. Therefore, the Project would not conflict with or obstruct implementation of water quality objectives contained in the Regional Water Quality Control Board's Colorado River Basin Plan and impacts from construction would be **less than significant.**

Operations

The proposed Project would be subject to the requirements of the Regional Water Quality Control Board's Colorado River Basin Plan, which outlines water quality objectives for all surface water resources within the Basin, including the nearby New River. Compliance with the Colorado River Basin Plan is implemented through waste discharge requirements for all surface water discharges, including stormwater. SDSU is enrolled under the State Water Resources Control Board Phase II Small MS4 General Permit 2013-0001 DWQ, which provides permit coverage for non-traditional MS4s, such as public campuses and is required to implement stormwater BMPs that comply with water quality objectives, including capturing and treating stormwater runoff, as discussed above (SWRCB 2024). The Project would include construction of numerous biofiltration features and landscaping, which would ensure that the Project is consistent with the Colorado River Basin Plan's water quality objectives.

Further, groundwater would not be used as a water source for the Project. Therefore, the Project would not conflict with or obstruct implementation of the Colorado River Basin Plan or a Groundwater Sustainability Plan (under the Sustainable Groundwater Management Act). As a result, **no impacts** would occur.

3.11 Land Use and Planning

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

The 2003 Campus Master Plan EIR and IS determined that no impact related to physical division of an established community would occur as a result of buildout of the Imperial Valley Campus Master Plan at the Calexico site. The EIR further determined that development at the Off-Campus Center - Calexico would be limited to the existing urban campus, which is integrated with the surrounding community, and the Master Plan expansion would be compatible with adjacent existing development in the City and land use plans. Therefore, no impacts would occur.

a) Would the project physically divide an established community?

The proposed Project includes a four-building complex that would provide affordable student housing on the existing Off-Campus Center - Calexico. The proposed Project would further implement buildout of the Calexico Master Plan as analyzed in the 2003 Campus Master Plan EIR and would be consistent with the existing educational uses. The Project is located within the existing CSU Off-Campus Center Calexico and does not include construction of a new roadway or rail lines that could divide an existing community. For these reasons, the proposed Project would not physically divide an established community, and **no impact** would occur.

b) Would the project 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?

As previously noted in Chapter 2, as a state agency, the CSU/SDSU is not subject to local land use plans, policies, or regulations. For information purposes, the Project site is zoned by the City as Open Space (City of Calexico 2021).

Although not subject to local government planning and regulations, in the interest of transparency and for information purposes, the CSU/SDSU may consider a project's consistency with local plans and policies of those jurisdictions that surround campus locations, as appropriate. The Project site is designated Public Facilities in the City's General Plan and zoned Open Space (City of Calexico 2015a, 2021). Implementation of the proposed Project would be consistent with the land use designation and zoning of the site. The proposed affordable student housing complex would be sited generally within the footprint of Building 21, as identified on the Imperial Valley Campus Master Plan and previously analyzed in the 2003 Campus Master Plan EIR (see Figure 3A). To the extent any adjustments may be necessary to the Master Plan to accommodate the proposed Project, a Minor Modification would be processed by the CSU as part of the proposed Project approvals. Implementation of the proposed Project would be consistent with both the local government's existing land use designation and zoning of the site. Further, as determined through this IS, any impacts associated with construction and operation of the proposed Project would be either less than significant or less than significant with the incorporation of mitigation. Therefore, the Project would be consistent with local plans and policies established to protect environmental resources. For these reasons, implementation of the proposed Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect and impacts would be **less than significant.**

3.12 Mineral Resources

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

The IS prepared for the 2003 Campus Master Plan EIR determined that no impact would occur with regard to loss of availability of a known or locally important mineral resource.

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

The Imperial County General Plan's Conservation and Open Space Element does not identify the Project site as containing existing mineral resources (County of Imperial 2016). The City of Calexico General Plan does not identify locations where mineral resources may be present (City of Calexico 2015a). Because the Project site does not contain existing mineral resources, construction and operation of the proposed Project would not result in the loss of availability of a known mineral resource of value to the region or state. **No impact** would occur.

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

As stated above under criterion (a), the Imperial County General Plan does not identify the Project site as containing existing mineral resources, including a locally important mineral resource recovery site. As such, the proposed Project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local land use plan. Therefore, **no impact** would occur.

3.13 Noise

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

The IS prepared for the 2003 Campus Master Plan EIR determined that there would be no impact with respect to generation of noise levels in excess of standards established in the local General Plan or noise ordinance or applicable standards of other agencies. The IS also concluded no impact due to generation of excessive groundborne vibration or groundborne noise levels and no significant impact regarding exposure of people working or residing in the area to excessive aviation noise levels from sufficiently proximate public or private airports or airfields. For these reasons, the EIR focused on an assessment of potentially significant temporary or permanent increases to outdoor ambient noise levels. The analysis presented below is based on the Noise Technical Memorandum prepared by Dudek, included in its entirety as Appendix I to this IS and incorporated herein by this reference. A summary of the prior analysis, including significance determinations and mitigation, if applicable, is provided below, along with analysis specific to the present proposed Project.

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

On-Site Construction Noise (Temporary)

The 2003 Campus Master Plan EIR does not provide predicted construction noise levels for the proposed Project site but does establish that construction activities would be of a "lesser degree" than the construction of the Brawley Campus site (SDSU 2003). Table 3.9-1 of the 2003 Campus Master Plan EIR identifies predicted construction noise levels at the Brawley Campus site, where construction equipment would operate at a nearest distance of 300 feet from noise-sensitive receptors. No impacts associated with the construction of the proposed Brawley Campus site were expected.

Using a Roadway Construction Noise Model-emulating Excel workbook, the predicted noise level exposures from the proposed construction activities at the nearest studied residential noise-sensitive receptor are summarized in Table 10. The nearest residential noise-sensitive receptor is represented by the outdoor ambient noise measurement location ST4 (as shown in Table 5) and is the closest distance to each construction phase area on the Project site. Although the prediction results in Table 10 are presented as 8-hour energy equivalent continuous sound level (L_{eq}) values, they are essentially equivalent to hourly L_{eq} values because construction equipment would operate 8 hours during a typical work shift within the City's established construction period (see Table 10 of Appendix I).

Table 10. On-Site Construction Noise Model Results Summary without Mitigation (Noise-Sensitive Receptor at ST4 – Residence)

Construction Phase (from Table 9 of Appendix I)	Construction Noise (dBA 8-hour L_{eq}) at ST4* – Nearest Residential Noise-Sensitive Receptor			
	Construction Noise Levels	Exceed City's 75 dBA 8-hour L_{eq} Threshold? (Yes/No)	Existing Noise Levels at ST4*	Temporary Noise Level Increase
Site Preparation	75.6	Yes	59.5	16.1
Grading	75.6	Yes		16.1
Building Construction	76.9	Yes		17.4
Paving/Architectural Coating	75.0	Yes		15.5

Source: See Attachment C of Appendix I for complete results.
Notes: dBA = A-weighted decibel; L_{eq} = energy equivalent continuous sound level.
* Measured outdoor ambient noise levels at measurement location ST4 can be found in Table 5 in Appendix I, Noise Technical Memorandum.

Project construction noise at the nearest noise-sensitive receptor would be higher than the measured ambient levels of the Project site (see Appendix I, Table 5, Measured Baseline Outdoor Ambient Noise Levels), so nearby sensitive receptors may experience temporary noise level increases of up to 24.6 A-weighted decibels (dBA). The predicted construction noise levels at the noise-sensitive receptor appearing in Table 10 would exceed the City's 75 dBA 8-hour L_{eq} threshold if mitigation is not incorporated. Table 11 shows the predicted noise level exposures from the proposed construction activities at the nearest studied noise-sensitive receptor with a 6-foot-tall temporary construction noise barrier incorporated.

Table 11. On-Site Construction Noise Model Results Summary with Mitigation (Noise-Sensitive Receptor – Residence)

Construction Phase (from Table 9 of Appendix I)	Construction Noise (dBA 8-hour L_{eq}) at ST4* – Nearest Residential Noise-Sensitive Receptor			
	Construction Noise Levels	Exceed City's 75 dBA 8-hour L_{eq} Threshold? (Yes/No)	Existing Noise Levels at ST4*	Temporary Noise Level Increase
Site Preparation	73.4	No	59.5	13.9
Grading	73.4	No		13.9
Building Construction	74.6	No		15.1
Paving/Architectural Coating	72.8	No		13.3

Source: See Attachment C of Appendix I for complete results.
Notes: dBA = A-weighted decibel; L_{eq} = energy equivalent continuous sound level.
* Measured outdoor ambient noise levels at measurement location ST4 can be found in Table 5 in Appendix I, Noise Technical Memorandum.

Implementation of MM-NOI-1 would require SDSU, prior to the commencement of construction activities, to direct the contractor to install a 6-foot-tall temporary construction noise barrier along the southern and eastern Project boundaries to remain in place throughout the entire construction process. As a result, all predicted construction noise levels at the noise-sensitive receptor identified in Table 11 would be below the City's 75 dBA 8-hour L_{eq} threshold. On this basis, and with a 6-foot-tall temporary construction noise barrier incorporated during Project construction, construction noise levels would be **less than significant with mitigation incorporated.**

Mitigation Measure

The following mitigation measure would reduce the potential for direct and indirect impacts noise impacts during construction by requiring installation of a temporary construction noise barrier. Implementation of the following mitigation measure would reduce potential impacts to a **less-than-significant level.**

MM-NOI-1: Prior to the commencement of construction activities, the CSU/SDSU, or its designee, shall direct the construction contractor to install a 6-foot-tall temporary construction noise barrier (either solid plywood or chain link fencing with sound blankets) along the southern and eastern Project boundaries to remain in place throughout the entire construction process.

Operation Noise

Roadway Traffic Noise

The 2003 Campus Master Plan EIR states that buildout of the Master Plan for Calexico would produce an additional 830 average daily trips (ADT) to an estimated existing 5,000 ADT based on field observations performed by ISE (SDSU 2003). The Project-related 830 ADT trip generation would increase traffic noise levels within a range of 0.5 to 1 dBA CNEL (Community Noise Equivalent Level), which would not constitute a significant impact, and aggregate levels would fall below the 65 dBA CNEL that is compatible for the proposed campus expansion (SDSU 2003).

The proposed Project would not increase student enrollment above what was evaluated in the 2003 Campus Master Plan EIR; therefore, substantial changes to localized traffic patterns beyond what was analyzed in the EIR are not anticipated (see Appendix I). Any traffic related to the proposed Project would be traffic generated by those IVCCD students commuting to school, or incidental work or personal trips by SDSU Calexico students.

Table 12 summarizes the predicted increases in traffic noise attributable to the Project along adjacent roadways (Blair Avenue and East 7th Street). As shown in Table 12, roadway traffic noise attributable to the proposed Project would not increase existing traffic noise levels by more than 3 dBA CNEL (which is not discernable to the human ear); therefore, impacts would be **less than significant**.

Table 12. Traffic Noise Levels with and without Project

Street Name	From	To	Noise Level without Project (dBA CNEL)	Noise Level with Project (dBA CNEL)	Project Increase (dBA CNEL)
Blair Avenue	East Sherman Street	East 7th Street	56.4	56.5	0.1
East 7th Street	Blair Avenue	Giles Avenue	54.9	55.2	0.3
East 7th Street	Heber Avenue	Blair Avenue	55.2	55.5	0.3

Source: Appendix I, Noise Technical Memorandum.
Notes: dBA = A-weighted decibel; CNEL = Community Noise Equivalent Level.

Additionally, the CNEL values appearing in Table 12 suggest that corresponding hourly L_{eq} values associated with roadway traffic noise after the Project is operational would not exceed the City's daytime (7:00 a.m. to 10:00 p.m.) or nighttime (10:00 p.m. to 7:00 a.m.) interior noise thresholds of 45 dBA and 35 dBA L_{eq}, respectively. For example, the occupant of a housing unit facing Blair Avenue with a partially open window would experience a 15-decibel reduction from exterior to interior traffic noise intrusion, or a 25-decibel reduction with a closed window. Thus, an exterior traffic noise level of 56.5 dBA hourly L_{eq} (existing plus Project noise) along Blair Avenue would be reduced to an interior noise level of 41.5 dBA hourly L_{eq} when a window is partially open, or 31.5 dBA hourly L_{eq} when a window is closed.

After applying these same exterior-to-interior decibel reductions attributed to building sound insulation, both predicted scenario noise levels appearing in Table 12 would be below the City's 45 dBA CNEL interior noise limit during daytime hours, and during nighttime hours, interior noise levels would likely be even lower because the California Department of Transportation (Caltrans) assumes that 15% of average daily traffic would occur at night (Caltrans 2013). Therefore, a potential exterior-to-interior traffic noise intrusion impact would be **less than significant**.

Stationary Sources

Predicted noise exposure levels attributed to concurrent operation of the proposed Project on-site stationary sources (i.e., heating, ventilation, and air conditioning systems) as modeled appear in Table 13. As shown on Table 13, the predicted noise levels at the studied noise-sensitive receptor locations would not exceed the City's exterior noise level threshold for single-family residential land uses (at the property line) of 50 dBA hourly L_{eq} during daytime hours (7:00 a.m. to 10:00 p.m.) or 40 dBA hourly L_{eq} during nighttime hours (10:00 p.m. to 7:00 a.m.); therefore, potential noise impacts associated with Project operation would be **less than significant.**

Table 13. Project Operation Noise Prediction Model Results Summary

Modeled Receptor	Modeled Property Line Receptor Distance from Project Boundary	Predicted Operation Noise (dBA hourly L_{eq}) at Indicated Modeled Property Line Receptor
R1	85 feet northeast	19.6
R2	85 feet east	21.4
R3	85 feet east	23.6
R4	90 feet south	32.8
R5	100 feet south	29.3

Source: Appendix I, Noise Technical Memorandum.
Note: R = Receptor; dBA = A-weighted decibel; L_{eq} = energy equivalent continuous sound level.

For additional information and details, see Appendix I, Figure 6, Predicted Stationary Source Operation Noise from Proposed Project.

b) ***Would the project result in generation of excessive groundborne vibration or groundborne noise levels?***

On-Site Construction Activities

Construction, groundborne vibration velocity levels attributed to anticipated on-site usage of a dozer, loader, and vibratory roller were calculated at the nearest off-site noise-sensitive receptor to the construction of the Project.

For example, the Project's paving phase would occur as close as 95 feet to the western façade of the nearest off-site receptor along Blair Avenue. At this distance, and using a reference groundborne peak particle velocity (PPV) of 0.21 inches per second (ips) for the roller at a distance of 25 feet, the estimated PPV at the receiving building façade and likely closest interior occupied space can be estimated as follows:

$$PPV_{rcvr} = 0.21*(25/95)^{1.5} = 0.028 \text{ ips}$$

As shown in Table 14, predicted groundborne vibration velocity levels are below the Caltrans guidance-based 0.3 ips PPV threshold for avoiding building damage to older residential structures and the 0.2 ips PPV threshold for occupant annoyance.

Subsequent on-site construction activities would involve greater quantities of equipment but would be less vibratory than a roller and/or their distances to the studied sensitive receptors would be much greater. Hence, groundborne vibration generated from these more distant or lower magnitude sources of on-site vibration would be substantially less than the estimates in Table 14 and the Caltrans guidance-based vibration exposure thresholds. Therefore, on the basis of compliance with these standards, impacts associated with construction vibration would be **less than significant.**

Table 14. Predicted On-Site Construction Vibration at Nearest Noise-Sensitive Receptor

Studied Receptor (Description)	Anticipated Vibration Source Closest Distance (feet)	Predicted PPV (ips) and VdB (rms) for Indicated Equipment Type					
		Dozer		Loader		Roller	
		PPV	VdB	PPV	VdB	PPV	VdB
Residence 95 feet East along Blair Avenue	95	0.012	70	0.012	70	0.028	77

Source: Appendix I, Noise Technical Memorandum.
Note: PPV (ips) = peak particle velocity (inches per second); VdB (rms) = vibration decibels (root mean square).

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

The Calexico International Airport is approximately 6,000 feet, or 1.15 miles from the Project site. The Compatibility Map for Calexico International Airport shown in the Imperial County General Plan Noise Element does not provide noise contours (County of Imperial 2015). However, the Calexico International Airport is not a major airport, and due to the distance of approximately 1.15 miles from the Project site, construction workers and post-construction Project operational or maintenance staff on site are not likely be exposed to excessive noise levels. Thus, there would be a **less-than-significant** impact associated with aviation noise levels.

3.14 Population and Housing

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

The 2003 Campus Master Plan EIR evaluated buildout of the Off-Campus Center - Calexico with a total FTE of 850 students at the Calexico site. The IS prepared for the EIR determined that the increase of 250 students over existing enrollment levels would be within the established goals of the Campus Master Plan. As a result, the EIR determined that impacts related to substantial unplanned population growth would be less than significant. Similarly, the IS prepared as part of the 2003 Campus Master Plan EIR determined that there would be no displacement of people or housing and, therefore, no impacts would occur.

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

The proposed Project would involve the construction and operation of a four-building complex that would provide affordable student housing on the Calexico site. As discussed in Chapter 2, the proposed Project would result in the addition of 80 student beds and would serve the existing Calexico student population and IVCCD Imperial Valley College students and would not increase enrollment above previously approved levels. The live-in manager unit would be occupied by an on-site manager, which would result in the employment of one new SDSU staff member in addition to the previously analyzed and approved existing faculty/staff. The new staff member would likely come from the existing surrounding communities and, in any event, would not constitute "substantial unplanned population growth" in the area.

The students and new staff member that would live and work at the proposed Project are reasonably assumed to currently reside in the surrounding communities, including in the City. The Project would not result in the construction of any new homes, businesses, or infrastructure that would otherwise induce population growth. Because the proposed Project would not increase and/or exceed enrollment beyond the previously analyzed and approved 850 FTE students, implementation of the proposed Project would be consistent with the findings of the 2003 Campus Master Plan EIR and impacts would be **less than significant**.

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

The proposed Project would involve the construction and operation of a four-building complex that would provide affordable student housing at the Off-Campus Center - Calexico. The Project site consists of vacant and undeveloped land with two trees located along the northern boundary of the site and a chain-link fence that separates the Project site from the recently removed temporary Campus Buildings 201, which were located immediately west of the Project site. Other existing uses surrounding the Project site include an administrative building and surface parking lot to the north, Blair Avenue to the east, and East 7th Street to the south. There is no existing housing within the Calexico site. The proposed construction staging area for the Project would be sited within undeveloped portions of the school site, generally within the location of future Building 21, as identified on the Campus Master Plan. Because there is no existing housing at the Off-Campus Center - Calexico and the Project does not include demolition or modification of any structures that serve as housing, **no impact** related to the displacement of people or housing would occur.

3.15 Public Services

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES – Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

Impacts related to public services were evaluated in the IS and Section 3.7 of the 2003 Campus Master Plan EIR. The IS and EIR determined that the expansion of the Off-Campus Center - Calexico would not result in significant environmental impacts related to public services. A summary of the prior analysis included in the IS and 2003 Campus Master Plan EIR is provided below along with the current Project-specific analysis for each criterion.

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

Fire protection?

The 2003 Campus Master Plan EIR determined that buildout of the Master Plan at the Off-Campus Center – Calexico would not substantially increase demand for City fire protection services and no impact would occur.

As to the presently proposed Project, the 2003 EIR noted that fire protection services at the Project site are provided by the City of Calexico Fire Department, which has two fire stations, one at 415 East 4th Street (Station 1) and another at 900 Grant Street (Station 2) (City of Calexico 2020a). Station 1 is located approximately 725 feet southwest of the Project site. If needed, the City of Calexico Fire Department maintains a significant emergency response resource directory and has mutual aid agreements with other governmental agencies in order to gain access to specialized equipment and resources (City of Calexico 2020a).

The Project site is located within an area mapped as a Local Responsibility Area by CAL FIRE (2022). The "Local Responsibility Area" designation means that fire response services for the Project site are within the responsibility of a local, rather than state agency—in this case, the City of Calexico Fire Department—although the Off-Campus Center - Calexico is located on state property. As to the hazard severity designation, the entire campus is located within a non-wildland/non-urban area and not identified by CAL FIRE as within a mapped Fire Hazard Severity Zone. The nearest mapped High or Very High Fire Hazard Severity Zones are located approximately 30 miles southwest and 55 miles northwest of the Project site (CAL FIRE 2022). Please see Section 3.20 of this IS for additional information regarding fire protection services.

The proposed Project would involve construction and operation of a four-building complex that would provide affordable student housing. As described in Section 3.14, Population and Housing, of this IS, the proposed Project would result in the addition of 80 student beds on campus and would not increase student enrollment beyond previously approved levels. Although students would spend more time on campus, which could result in a slight increase in calls for service than under existing conditions, this potential increase in calls for service would not be substantial. Therefore, the proposed Project would not substantially increase the demand for fire protection services requiring the provision of, or need for, new or physically altered fire protection facilities. Therefore, impacts would be **less than significant.**

Police protection?

The 2003 Campus Master Plan EIR determined that buildout of the SDSU Imperial Valley Campus Master Plan at Calexico would not substantially increase demand for police protection services, and no impact would occur.

Police protection services at the Project site are provided by the City of Calexico Police Department located at 420 East 5th Street within the City, approximately 770 feet southwest of the Calexico site. The City of Calexico Police Department is the primary reporting and investigating agency for crimes occurring on the SDSU Calexico property. The campus does not have its own police department.

As described in Section 3.14 of this IS, the proposed Project would provide housing for previously approved enrollment; as such, the Project would not increase student enrollment above prior approved levels. Although operation of the Project would result in students spending more time on campus, which could result in a slight increase in calls for service than under existing conditions, this potential increase in calls for service would not be substantial. As such, the proposed Project would not substantially increase the demand for police services beyond that considered in the 2003 Campus Master Plan EIR such that the Project would require the provision of or need for new or physically altered police protection facilities; therefore, impacts would be **less than significant.**

Schools?

The 2003 Campus Master Plan EIR determined that buildout of the SDSU Imperial Valley Campus Master Plan at Calexico would increase the City's higher education opportunities but would not result in an increased demand for schools because it would not involve an increase in permanent new residents or generate an increase in school student enrollment. As a result, no impact would occur.

As to the present proposed Project, the Off-Campus Center - Calexico is located within the Calexico Unified School District, which serves K-12 students (CUSD 2024). The proposed Project would provide housing for previously approved enrollment and would result in one new staff member (on-site management) that would serve and support the students. Even assuming the one new additional staff member has a family with children that would attend the local schools, the limited number of additional students would not result in a substantial increase in school attendance resulting in the need for new or physically altered school/educational facilities; therefore, impacts would be **less than significant.**

Parks?

The IS prepared for the 2003 Campus Master Plan EIR determined that buildout of the Off-Campus Center - Calexico would not remove any existing recreational areas and no impacts related to the provision of or need for new or physically altered park facilities would occur.

The City owns and maintains 22 parks totaling 60 acres, or approximately 1.7 acres per 1,000 residents. In addition, the City operates 122 acres of open space (City of Calexico 2020b). The closest City-owned park to the Project site is Rockwood Plaza, which is located adjacent to the Project site across East 7th Street, approximately 200 feet southwest. The proposed Project would provide student housing for 80 students, although not increase SDSU Calexico and IVCCD enrollment above previously approved levels; however, students would spend more time on campus, which could result in the increased use of recreational facilities in the Project area than under existing conditions. This potential increase in use of recreational facilities would not be substantial and would not substantially increase the demand on parks within the Project area resulting in a need for new or physically altered park facilities; therefore, impacts would be **less than significant.**

Other public facilities?

The 2003 Campus Master Plan EIR determined that buildout of the SDSU Imperial Valley Campus Master Plan at Calexico would not result in an increased demand for library facilities (or other public facilities) as the Off-Campus Center - Calexico provides library and reference resources for students and, therefore, no impact would occur.

As to the present proposed Project, which would provide student housing and not increase enrollment above previously approved levels, although, students would spend more time on campus than under existing conditions, which could result in increased demand of library services. Students enrolled at SDSU Calexico would likely use campus-provided library services, whereas IVCCD students likely would use IVCCD library services. Accordingly, any potential increase in demand for public library services would not be substantial and would not require the provision of new or physically altered library facilities. Therefore, impacts would be **less than significant.**

3.16 Recreation

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

The IS prepared for the 2003 Campus Master Plan EIR determined that buildout of the Imperial Valley Campus Master Plan and the Calexico site expansion would not remove any existing recreational facilities and would not increase demand on campus for existing recreational facilities. As such, no impact would occur.

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

As to the proposed Project, the City owns and operates 22 parks totaling 60 acres, or approximately 1.7 acres per 1,000 residents. In addition, the City operates 122 acres of open space (City of Calexico 2020b). The closest City-owned park to the Project site is Rockwood Plaza, which is located adjacent to the Project site across East 7th Street, approximately 200 feet southwest. Imperial County operates eight parks and recreational facilities within the County (County of Imperial 2024). The nearest County-owned park is the Heber Community Center, located at 1132 Heber Avenue, Heber, California 92249, approximately 4.75 miles northwest of the Project site (County of Imperial 2024).

The proposed Project would provide student housing on the Off-Campus Center - Calexico. As discussed in Section 3.14, in addition to one new staff member, the Project would result in a less-than-significant impact related to population increase because the Project would serve and support the previously approved student enrollment; as such, the Project would not increase student enrollment above prior approved levels. Although operation of the Project would result in students spending more time on campus, which could result in an increase in demand on recreational facilities, this potential increase in demand would not substantially increase demand on parks within the City or Imperial County such that substantial physical deterioration of existing facilities would occur or be accelerated. Therefore, impacts would be **less than significant**.

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

As described above, the proposed Project would result in the addition of one new staff member that would serve and support the previously approved students; as such, the Project would not increase student enrollment above prior approved levels. Although the Project would result in students spending more time on campus, which could result in a slight increase in demand on recreational facilities, this potential increase in demand would not be substantial.

The proposed Project does not include the construction or expansion of recreational facilities, nor would it require the construction or expansion of recreational facilities as a result of increased recreational users such that a physical effect on the environment would occur. As such, impacts would be **less than significant.**

3.17 Transportation

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION – Would the project:				
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

The Transportation Impact Analysis prepared for the 2003 Campus Master Plan EIR analyzed the potential traffic impacts associated with 850 FTE students commuting to and from the Off-Campus Center - Calexico. The Transportation Impact Analysis and EIR determined that there would be no significant transportation impacts as a result of development of the Calexico Campus Master Plan. The Transportation Impact Analysis concluded that there would be no construction-related impacts or Project-related impacts during operation and no mitigation measures were required or identified in the 2003 Campus Master Plan EIR or IS. The analysis presented below is based on the Transportation Assessment prepared by Dudek, included in its entirety as Appendix G to this IS and incorporated herein by this reference.

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

The proposed Project would be constructed and developed consistent with the previously approved Campus Master Plan, which is the governing document regulating development on the Off-Campus Center - Calexico. The Project would be built generally on the site of Future Building 21, as shown on the approved Campus Master Plan (see Figure 3A). The proposed Project does not include any modifications to the City's circulation system, including transit, roadway, bicycle, or pedestrian facilities, outside the campus boundaries.

Although the Project falls under the purview of the CSU and would not directly affect the City's Circulation Element, the Project would not preclude implementation of any City-related goals and policies. Additionally, it would provide Calexico students easy access to the Off-Campus Center - Calexico and reduce the need for vehicular trips, as well as facilitate use of alternative modes such as walking and biking.

The proposed Project would not conflict with the existing transit system. Near the proposed Project, Imperial Valley Transit Route 1 N runs north-south and serves the Imperial Avenue Corridor from the City to El Centro and has a stop at Encinitas and East 7th Street. Route 1 N operates weekdays and weekends. Imperial Valley Transit Route 21 also runs north-south on the Imperial Avenue Corridor between the City and Imperial Valley College. Route 21 operates during the academic calendar of Imperial Valley College. The nearest bus stops (for Routes 1N and 21) are located at Encinitas Avenue and East 7th Street, approximately 0.2 miles from the Project site. Construction of the proposed Project would not affect existing and planned transit operations.

As to pedestrian and bicycle facilities, there are existing sidewalks along both sides of Blair Avenue and East 7th Street adjacent to the Project site. There are no Class II marked bike facilities along roadways near the proposed Project. The Project would use existing driveways along East Sherman Street to access the complex and would not impede the function of any existing campus or City pedestrian or bicycle facilities and, in fact, would facilitate bicycle travel by providing 15 bike racks as part of the Project.

Any transportation-related improvements constructed as part of the proposed Project would be constructed on site and would be consistent with the Campus Master Plan and any applicable CSU policies. Moreover, the Project would not preclude implementation of any City plans or policies regarding existing or proposed roadways or bicycle or pedestrian facilities in the area. As such, the Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, and impacts would be **less than significant**.

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

CEQA Guidelines Section 15064.3(b) focuses on VMT for determining the significance of transportation impacts. The Guidelines define VMT as “the amount and distance of automobile travel attributable to a project.” “Automobile” refers to on-road passenger vehicles, specifically cars and light trucks. The Governor’s Office of Planning and Research has clarified in its Technical Advisory (OPR 2018) that heavy-duty truck VMT is not required to be included in the estimation of a project’s VMT.

The Project proposes a total of 82 beds, including 40 affordable housing student beds for students of the Off-Campus Center - Calexico, 40 student beds for students of the Imperial Valley College, and a two-bedroom live-in manager unit. VMT-related impacts attributable to the SDSU Calexico students and the Imperial Valley College students are each addressed separately below.

Calexico Off-Campus Center Students

With respect to the 40 student beds that would be occupied by students of the Off-Campus Center - Calexico, as previously noted, vehicle trips associated with these students were previously analyzed in the 2003 EIR, and, therefore, no further analysis of traffic impacts associated with these students is required under CEQA. Moreover, we note that per the CSU Transportation Impact Study Manual, on-campus housing serving students, faculty, and staff is included in the list of projects screened from required project-level VMT assessment such that no analysis of VMT-related impacts is necessary. This is because those students attending the Off-Campus Center - Calexico would not generate daily vehicular trips commuting back and forth to school because they would be residing on-campus. Further, rather than adding VMT to the roadway network, a certain number of vehicle trips would be removed from the network as a result of the Project as those students who previously commuted to school would no longer need to do so, thereby reducing rather than increasing VMT.

Although some new trips for the purposes of shopping or recreation would occur, based on typical student practice and finances, it is reasonable to assume that students would carpool, bike, or use transit, thereby further reducing VMT. Finally, it also is noted that the proposed Project would be restricted as affordable housing, and, therefore, offered only to students of families of very-low- or low-income. As such, and consistent with relevant data, it is anticipated that there would be a low rate of car ownership among these students, further resulting in reduced trips and related VMT.

In conclusion, any vehicle trips that would be generated by the 40 students attending SDSU Calexico were previously accounted for and analyzed in the 2003 EIR and no further analysis is necessary. Further, even assuming VMT analysis was required, although there would be nominal new student trips and related VMT generated by the 40 SDSU students and one SDSU staff occupying the proposed Project beds, the proposed Project would result in reducing VMT as students would no longer need to commute to school. Lastly, because the Project housing would serve students included in the FTE students analyzed in the 2003 EIR, the Project would be consistent with the RTP. Therefore, impacts related to VMT generated by SDSU Calexico students would be less than significant.

Imperial Valley College Students

As to the 40 student beds that would be occupied by Imperial Valley College students, these students would commute to the Imperial Valley College site from the proposed Project site and would generate new vehicle trips at the Project site. The Imperial Valley College is approximately 11.5 miles from the site of the proposed Project. However, when considering both vehicle trips and VMT, it is noted that these Imperial Valley College students are already generating existing trips and VMT by commuting from their homes in nearby Imperial and El Centro, as well as other parts of Imperial County, to attend the community college. Therefore, these students would not be generating new trips but, instead, would generate the same number of trips but with a different origin. Also to be considered is the increased likelihood that students would carpool back and forth to the community college because they would now be living in the same residence. Therefore, at the county or regional level, in Dudek's professional judgment the net change in trip length would not be substantial.

Additionally, the number of vehicle trips generated by the Imperial Valley College students would meet a different project screening criteria provided for in the CSU Transportation Impact Study Manual by generating less than 110 vehicle trips per day.[7] To calculate the number of vehicle trips that would be generated by the 40 Imperial Valley College students, the trip rate for off-campus student housing provided in the Institute of Transportation Engineers Trip Generation Handbook, 11th Edition (ITE 2021), was applied to the 40 students. Note that this rate is considered conservative under the circumstances in that it is not for affordable student housing, which statistically would generate fewer vehicle trips than standard student housing.

As shown below in Table 15, the proposed student housing for the Imperial Valley College students is estimated to generate 79 ADT, with three AM peak-hour trips and six PM peak-hour trips.

7 Projects generating less than 110 vehicle trips per day are presumed to result in a less-than-significant impact. See the California State University Transportation Impact Study Manual (2019), pp. 11-12.

Table 15. Imperial Valley College Student Trip Generation

Land Use	Size/Units		Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Generation Rates[1]									
Off-Campus Student Apartment (low-rise) 0.5 miles from Campus	Bedrooms		3.97	0.04	0.12	0.16	0.16	0.15	0.31
Trip Generation									
Housing for Imperial Valley College Students	20	Bedrooms[2]	**79**	1	2	3	3	3	6

Source: Appendix G, Transportation Assessment.
Notes:
1 Trip rates from Institute of Transportation Engineers Trip Generation Manual, 11th Edition, 2021.
2 The Project consists of three residential buildings, including two student housing buildings with 40 student beds each. Each student housing building includes five four-bedroom for a total of 80 student beds. The trip generation is estimated only for 40 student beds that would be allocated to the Imperial Valley College. The Institute of Transportation Engineers trip rate is per bedroom, and the trip rate has been established per bedroom unit, which could include two to five beds. Therefore, conservatively assuming each bedroom would have two beds, the trip generation has been estimated for 20 bedrooms (40 beds ÷ 2 beds per bedroom).

Therefore, the student housing proposed for the Imperial Valley Community College students and the on-site manager would meet the Project screening criteria by generating less than 110 vehicle trips per day, and impacts related to VMT would be less than significant. The proposed Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and impacts would be **less than significant**

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

The proposed Project would involve construction of three residential buildings and one community building and use existing roadways and driveways for access and circulation. The rectangular grass lawn on the northwest corner of East 7th Street and Blair Avenue would be used as a construction staging area. The Project would maintain vehicular access to the site via an existing entrance on East Sherman Street via an existing parking lot. This parking lot is shown on Figure 4, north of the Physical Plant Building.

During construction, it is anticipated that temporary sidewalk and lane closures would be required on the westside of Blair Avenue and the northside of East 7th Street. To ensure access to all road users during construction and to reduce potential hazard impacts associated with construction activities, MM-TRA-1 is proposed, which would require preparation and implementation of a traffic control plan during construction activities. Implementation of the traffic control plan would reduce any potential impacts related to hazards to less than significant.

The Project would not introduce incompatible uses or other hazards associated with Project operations. Therefore, with implementation of MM-TRA-1, potential impacts associated with a hazardous geometric design feature, or incompatible uses would be **less than significant with mitigation incorporated.**

The following mitigation measure would reduce the potential for direct and indirect impacts during Project construction activities to pedestrians, bicyclists, motorists, and emergency vehicles by requiring preparation of a traffic control plan consistent with Caltrans guidelines to ensure the safety of these interests. Implementation of the mitigation measure would reduce potential impacts to **less-than-significant.**

MM-TRA-1: Prior to the commencement of construction activities, the CSU/SDSU, or its designee, shall prepare a traffic control plan, consistent with guidelines available through the California Department of Transportation, to ensure the safe passage of pedestrians, bicyclists, motorists, and emergency vehicles in the immediate vicinity of construction activities. The traffic control plan shall be implemented during Project construction activities and shall be discontinued upon completion of Project construction.

d) ***Would the project result in inadequate emergency access?***

Construction of the proposed Project may require temporary road closures in public rights-of-way on Blair Avenue and East 7th Street. As mentioned above, a traffic control plan would be implemented to provide access to all road users during construction, and to prevent interference with emergency response vehicles. The Project would be designed and constructed to state standards and would ensure emergency access would be maintained during construction, per the requirements of the City's fire department. Upon completion, the Project site would continue to be accessible via the existing driveway on East Sherman Street. Therefore, construction and operation of the proposed Project would not result in inadequate emergency access and impacts would be **less than significant.**

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Impacts related to tribal cultural resources and the requirements for consultation between lead agencies and California Native American Tribes were introduced as part of the CEQA Guidelines in 2015, with the implementation of AB 52. As such, the tribal cultural resources questions included in Appendix G of the CEQA Guidelines were not previously evaluated in the 2003 Campus Master Plan EIR or IS. The analysis presented below is based on the Cultural Resources and Tribal Cultural Resources Technical Memorandum prepared by Dudek, included in its entirety as Appendix D to this IS and incorporated herein by this reference.

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

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

and

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Dudek's cultural resources inventory of the site of the proposed Project included a records search, archival research, a search of the NAHC Sacred Lands File, and a pedestrian survey. The South Coast Information Center records search and pedestrian survey did not identify any cultural resources within the Project area.

A search of the NAHC Sacred Lands File was conducted and the NAHC responded with results indicating the potential presence of relevant resources within the geographic area. The NAHC also provided a list of Native American Tribes and individuals/organizations with traditional geographic associations that might have knowledge of cultural resources in this area. A copy of the NAHC contact list is included in Appendix D. Dudek sent outreach letters to all Native American group representatives included on the NAHC contact list on July 19, 2024. These letters request additional information relating to tribal cultural resources or other Native American resources that may be impacted by construction or operation of the Project. To date, no responses have been received.

In compliance with AB 52, the lead agency is responsible for conducting government to government consultation with pertinent tribal entities. In accordance with the law's requirements, SDSU mailed AB 52 notification letters to all NAHC recommended tribes on July 26, 2024. SDSU received responses from the Campo Band of Mission Indians and the Viejas Band of Kumeyaay Indians. The Viejas Band of Kumeyaay Indians responded via email on August 1, 2024 and stated that should a Kumeyaay tribe in closer proximity to the Project site request to provide Kumeyaay Cultural Monitoring Services, Viejas Band of Kumeyaay Indians would defer to them. Campo Band of Mission Indians responded to the AB 52 notification and requested consultation. Because Campo Band of Mission Indians are in closer proximity to the Project site, Viejas Band of Kumeyaay Indians deferred to Campo Band of Mission Indians.

A virtual meeting between representatives of CSU/SDSU and the Campo Band of Mission Indians was held on August 26, 2024. During the AB 52 consultation meeting, Campo Band of Mission Indians did not identify any tribal cultural resources within the Project area. Although consultations with the Campo Band of Mission Indians did not uncover the presence of tribal cultural resources in the Project area, the potential exists that such resources may be uncovered during Project construction.

To mitigate any potential significant impacts related to tribal cultural resources, the following mitigation measure TCR-1 is recommended to reduce potential impacts to tribal cultural resources to **less than significant.** Campo Band of Mission Indians and Viejas Band of Kumeyaay Indians reviewed and approved of mitigation measure TCR-1.

Mitigation Measures

The following mitigation measure would reduce potential impacts relating to unanticipated discoveries to a less-than-significant level. See section 3.5, Cultural Resources, of this IS for a discussion of cultural resources.

MM-TCR-1:

Although the potential for discovery of tribal cultural resources on the Project site is considered low, in response to requests made during AB 52 consultation meetings, the California State University/San Diego State University (the CSU/SDSU) shall authorize tribal monitoring during Project construction grading activities and shall provide appropriate remuneration for such monitoring consistent with standard practices. The CSU/SDSU retains the authority to select the monitor, which shall be provided by the Campo Band of Mission Indians. Such monitoring by a single tribal monitor shall be authorized on a daily basis during Project construction grading activities; however, in the event a monitor is not available on any given day, Project construction activities may continue uninterrupted.

In the event tribal cultural resources are inadvertently encountered during construction activities, work in the immediate area shall stop and a qualified archaeologist meeting the Secretary of the Interior's Professional Standards shall assess the discovery in consultation with the Campo Band of Mission Indians to evaluate the resource and develop a plan for treatment and disposition of the resource. If avoidance is not feasible, additional work such as data recovery may be warranted. Following evaluation by a qualified archaeologist, in consultation with the Campo Band of Mission Indians and the CSU/SDSU, construction shall be permitted to resume.

If the CSU/SDSU, or its designee, discovers, human remains during construction of the Project, the CSU/SDSU, or its designee, shall contact the County Coroner and a qualified archaeologist in compliance with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097. If the remains are determined to be Native American, CSU/SDSU shall contact the appropriate tribal representatives to oversee removal of the remains.

The CSU/SDSU shall relinquish ownership of all tribal cultural resources unearthed during the tribal monitoring conducted during ground disturbing activities to the appropriate representative of the Campo Band of Mission Indians, as determined through the appropriate process, for respectful and dignified treatment and disposition, including reburial at a protected location on-site. All cultural materials that are associated with burial and/or funerary goods shall be repatriated to the Most Likely Descendant as determined by the Native American Heritage Commission, per California Public Resources Code Section 5097.98.

3.19 Utilities and Service Systems

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

Impacts related to utilities and service systems were evaluated in Section 3.7, Public Services/Utilities; Section 3.8, Hydrology; and Section 3.11, Water Quality, of the 2003 Campus Master Plan EIR. The 2003 Campus Master Plan EIR determined that the expansion of the Off-Campus Center - Calexico would not result in environmental impacts related to utilities and service systems. A summary of the prior analysis is provided below along with the current Project-specific analysis for each criterion.

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

Impacts related to the relocation or construction of new or expanded water, wastewater treatment, electric power, natural gas, and telecommunications facilities were evaluated in Section 3.7, Public Services/ Utilities, of the 2003 Campus Master Plan EIR. Impacts related to new stormwater drainage facilities were evaluated in Section 3.8, Hydrology, and Section 3.11, Water Quality, of the EIR. The EIR determined that the expansion of the Off-Campus Center - Calexico would not result in environmental impacts regarding new or expanded wastewater, storm drain, and electric power facilities because the existing uses on site would not change and impacts were determined to be less than significant.

As discussed in further detail below, the present proposed Project would require new points of connection for water, wastewater, electric power, and telecommunications from existing utility lines/facilities to serve the new affordable student housing complex. The Project would also require new stormwater infrastructure, including on-site bio-retention/filtration features, which would connect to existing or planned off-site systems. No natural gas usage is proposed. Analysis of the potential impacts associated with the related infrastructure improvements is provided below.

Water

The proposed Project would be located within the City, and potable water is currently provided to the Project site by the City. The proposed Project would require new on-site water infrastructure, such as water mains and laterals, which would connect to an existing water main in East 7th Street. The required connections to off-site municipal infrastructure would be completed in coordination with the City's Department of Public Works. Installation of the new water mains and laterals would consist of either trenching to the depth of pipe placement or the use of different trenchless technologies, which cause substantially less ground disturbance. Trenching results in a temporary stockpiling of soil along the length of the trench, pending backfilling, which could result in potential short-term soil erosion. In accordance with the Construction General Permit, BMPs for protecting stormwater runoff from sediment and erosion would be implemented. Additionally, the Project would be required to comply with Regulation VIII, Fugitive Dust Control Measures, of Imperial County Air Pollution Control District's (ICAPCD's) Rules and Regulations, requiring use of water, tarps, or other suitable material (such as vegetative ground cover) during construction, which would reduce fugitive dust and potential soil erosion associated with construction activities. Although the Project would require the installation of distribution water piping and connection to an existing off-site water main, the Project would not involve construction of new or expanded off-site water facilities.

For the reasons discussed above, the Project would have a **less-than-significant impact** related to the relocation or construction of new or expanded water facilities.

Wastewater

The City provides wastewater or sewer collection, treatment, and disposal services. The Project would require connections to existing City infrastructure located within Blair Avenue in coordination with the City/Department of Public Works. The 2003 Campus Master Plan EIR determined that buildout of the Off-

Campus Center - Calexico would not generate a substantial increase in demand that would exceed the capacity of existing conveyance and treatment infrastructure that could result in a significant impact.

Similar to installation of new or extended water lines (discussed above), installation of new or extended sewer lines would consist of either trenching to the depth of pipe placement or the use of different trenchless technologies, which cause substantially less ground disturbance. As described in Section 3.7, Geology and Soils, of this IS, in accordance with the Small MS4 General Permit, BMPs for protecting stormwater runoff from sediment and erosion would be implemented. Additionally, the Project would be required to comply with Regulation VIII of ICAPCD's Rules and Regulations, which would reduce fugitive dust and potential soil erosion associated with construction activities. Therefore, there is adequate, existing wastewater infrastructure to serve the Project, and Project implementation would not result or require construction of new or expanded wastewater treatment facilities off site. The Project would have a **less-than-significant impact** related to the relocation or construction of new or expanded wastewater facilities.

Stormwater Drainage

Following Project construction, the impervious areas of the site would increase, resulting in a potential for stormwater runoff volumes and/or stormwater runoff rates to increase. As discussed in Section 3.10, Hydrology and Water Quality, of this IS, the Project would require new stormwater infrastructure (including on-site bio-retention/filtration features), which would connect to the City's existing storm drain infrastructure. The inclusion of proposed bio-retention features and landscaping would reduce on-site runoff such that the Project would not create or contribute excess runoff stormwater that would exceed the capacity of existing or planned stormwater systems. Therefore, existing or planned off-site systems would be adequate to serve the Project, and no additional off-site construction associated with new or expanded stormwater drainage facilities would be required.

Regarding stormwater drainage improvements on the Project site, similar to the discussion above for construction of water and wastewater infrastructure, construction of the on-site stormwater infrastructure would be completed in accordance with the Small MS4 General Permit and the SDSU Stormwater Management Plan. Stormwater BMPs would be installed during grading and construction to minimize the potential for soil erosion and potential off-site migration of construction related pollutants. BMPs would be consistent with construction site runoff controls detailed in the SDSU Stormwater Management Plan (SDSU 2022). Additionally, the Project would be required to comply with Regulation VIII of ICAPCD's Rules and Regulations, which would reduce fugitive dust and potential soil erosion associated with construction of stormwater drainage improvements.

For the reasons discussed above, the Project would have a **less-than-significant impact** related to the relocation or construction of new or expanded stormwater facilities.

Electric Power

Electrical services within the Project area are provided by IID in coordination with the City. New utility connections and infrastructure would be required to support electrical services for the proposed Project. Additionally, the Project would include solar-ready design features that would facilitate and optimize the future installation of a photovoltaic solar system. As stated in the 2003 Campus Master Plan EIR, the increase in electrical demand would not be substantial and it would not have a significant impact on the IID's ability to provide electricity to the area and impacts were determined to be less than significant.

The Project would connect to on-site electrical power infrastructure via an existing 12kV, three phase, three wire, 60 Hertz overhead line routed along East 7th Street. Underground service throughout the proposed complex would be provided from a utility pad-mounted transformer. Construction to connect to the on-site electrical power infrastructure would require soils excavation and recompaction. However, similar to the discussion above for construction of water, wastewater, and stormwater infrastructure, construction work and related soil disturbances associated with establishing the connections to on-site electrical infrastructure would be temporary and would be completed in accordance with the Construction General Permit. Stormwater BMPs would be installed during grading and construction to minimize the potential for soil erosion and potential off-site migration of construction related pollutants. BMPs would be consistent with construction site runoff controls detailed in the SDSU Stormwater Management Plan (SDSU 2022). Additionally, the Project would be required to comply with Regulation VIII of ICAPCD's Rules and Regulations, which would reduce associated fugitive dust and potential soil erosion during construction. No other new or expanded infrastructure would be required. Therefore, the proposed Project would have a **less-than-significant impact** related to the relocation or construction of new or expanded electric power facilities.

Telecommunication

As discussed in the 2003 Campus Master Plan EIR, a telephone company is a publicly regulated utility and is obligated to serve the community and improve telecommunications facilities as needed. For internet services, the Project site is served by AT&T. The proposed Project would require a new point of connection for on-site telecommunications and would connect to the existing AT&T communications via the on-campus minimum point of entry. Any facility upgrades or line extensions that may be necessary to facilitate the proposed Project would be undertaken on site or within the public right-of-way. Similar to that described above for construction of water, wastewater, stormwater, and electrical infrastructure, installation of telecommunications infrastructure would be completed in accordance with the Construction General Permit. Typical construction BMPs would include straw wattles, sediment basins, sediment fences, covering stockpiled soil, vehicle track-out controls at entrance/exit points, limitations on work periods during storm events, temporary secondary containment around portable toilets and equipment fueling areas, and on-site storage of absorbent pads for potential small spills. Additionally, the Project would be required to comply with Regulation VIII of ICAPCD's Rules and Regulations, which would reduce associated fugitive dust and potential soil erosion during construction. No other new or expanded infrastructure would be required. As such, potential impacts associated with the construction or relocation of necessary telecommunications infrastructure to serve the proposed Project would be **less than significant.**

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

Impacts related to water supply were addressed in Section 3.7, Public Services/Utilities, of the 2003 Campus Master Plan EIR. The EIR found that the increase of an additional 250 FTE students (to an enrollment of 850 FTE students) would not present a substantial increase in water demand. Therefore, impacts were determined to be less than significant. A Project-specific analysis of water supply availability during normal, dry, and multiple dry years is provided below.

The City of Calexico Public Works Department provides water service to the Project site. The City purchases raw imported water from the IID, which then delivers the water to the City via IID-owned and operated canals. The proposed Project's water demand would be approximately 6,111 gallons of water per day (7.42 acre-feet per year (AFY) or 2.4 million gallons per year. The City of Calexico 2020 Urban Water Management Plan (Calexico UWMP) provides demand projections over the next 20 years during normal, dry, and multiple dry years (City of Calexico 2022). The total demand through 2045 was projected using per-capita consumption rates that were based on the City's averages for the prior 4 years. The Calexico UWMP notes that the City will be able to provide 2,887 million gallons (or 8,860 AFY) of water under normal weather conditions in 2045, with an available leftover supply capacity of 33 million gallons. Therefore, the proposed Project's water demand of 7.42 AFY would represent a nominal fraction (approximately 0.08%) of the City's total available water supply. The Calexico UWMP further forecasts no water supply shortage in the future during normal, dry, and multiple dry years (City of Calexico 2022).

Additionally, the Project would comply with minimum mandatory standards pertaining to the planning and design of sustainable site development and water conservation set forth in the most recent California Green Building Standards (CALGreen). For these reasons, the Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years. This impact would be **less than significant**.

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

The IS prepared for the 2003 Campus Master Plan EIR determined that there would be adequate wastewater treatment capacity to accommodate demand associated with buildout of the Off-Campus Center - Calexico (in addition to the existing commitments). Impacts were determined to be less than significant.

The City operates its own wastewater treatment system and would provide wastewater treatment services for the Project. According to the City's 2018 Draft Service Area Plan, the wastewater treatment plant has an average daily flow capacity of 2 million gallons per day and a peak daily flow capacity of 3.1 million gallons per day (City of Calexico 2018). Based on forecasted water demand, the proposed Project's wastewater generation is estimated to be approximately 0.003 million gallons per day of wastewater, which is 0.25% of remaining treatment capacity during peak flow days. Therefore, the City (i.e., the wastewater treatment provider for the proposed Project) would have adequate capacity to serve the Project's projected wastewater treatment demand, in addition to the provider's existing commitments. Impacts would be **less than significant**.

d) ***Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?***

Impacts related to solid waste collection and disposal associated with buildout of the Off-Campus Center - Calexico were evaluated in Section 3.7, Public Services/Utilities, of the 2003 Campus Master Plan EIR. According to the EIR, the Calexico site is not anticipated to generate a substantial increase in solid waste under normal operation. Buildout of the Master Plan would cause a short-term increase in solid waste; however, this was not considered significant due to the capacity of the landfill and the short-term nature of the increase. Impacts were determined to be less than significant.

As to the present proposed Project, the nearest active solid waste facility to the Project site is the Imperial Landfill, located approximately 12 miles north. The Imperial Landfill accepts a variety of waste, including municipal waste, and has a permitted capacity of 1,700 tons per day, a remaining capacity of 12,027,900 tons, and a maximum permitted capacity of 19,514,700 tons through 2051 (CalRecycle 2019). The proposed Project would generate approximately 7.48 tons of solid waste per year (Dudek 2024; Appendix B). Therefore, annual waste generated by the Project after buildout would represent 0.0006% of the Imperial Landfill's remaining capacity and 0.0004% of Imperial Landfill's maximum permitted capacity. As a result, the Imperial Landfill has adequate capacity to serve solid waste generated by both construction and operation of the proposed Project. Further, in accordance with CALGreen Section 5.408, a Construction Waste Management Plan for recycling and/or salvaging would be implemented for reuse of a minimum of 65% of nonhazardous construction and demolition debris generated during Project construction. Because implementation of the Project would be adequately served by existing solid waste facilities and would not otherwise impair attainment of solid waste reduction goals, impacts would be **less than significant.**

e) ***Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?***

The IS prepared for the 2003 Campus Master Plan EIR determined that expansion of the Off-Campus Center - Calexico would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. As such, impacts were determined to be less than significant.

As to the present proposed Project, landfill facilities that would serve the Project are regulated under federal, state, and local laws. For example, the California Department of Resources Recycling and Recovery, the Regional Water Quality Control Board, the local Air Pollution Control District, and the Local Enforcement Agencies all perform inspections of waste management facilities to ensure that they are being operated in compliance with applicable federal, state, and local regulations (County of Imperial 2023). Additionally, waste management operators, agencies, and property owners are required to comply with applicable solid waste reduction and diversion requirements set forth in AB 75, AB 939, AB 341, AB 1327, AB 1374, and AB 1826. Solid waste disposal following Project buildout would also be completed in compliance with CALGreen, as described above, which sets forth recycling requirements for construction and demolition projects. For residential construction projects, 65% of the debris generated (by weight) must be recycled. Because the CSU/SDSU is required to comply with federal, state, and local management and reduction statutes and regulations related to the disposal of solid waste once the proposed Project is operational, this impact would be **less than significant**.

3.20 Wildfire

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

Impacts related to wildfire were introduced as part of the CEQA Guidelines Appendix G in 2019. As such, the wildfire criterion included in Appendix G were not previously evaluated in the 2003 Campus Master Plan EIR or IS.

As to the present proposed Project, as described in Section 3.15 of this IS, applicable mapping of the Project site shows that the site is not located within a State Responsibility Area or a Very High Fire Hazard Severity Zone (CAL FIRE 2022). The nearest mapped High or Very High Fire Hazard Severity Zones are located approximately 30 miles southwest and 55 miles northwest of the Project site. Additionally, the City has entered into mutual aid agreements with surrounding communities, including Imperial County and Mexicali, to ensure that adequate fire protection and services are provided to the City, including the Project site (SDSU 2003). The City provides fire protection services to the campus.

Because the Project site is not located in or near an State Responsibility Area or lands classified as Very High Fire Hazard Severity Zones, it is not necessary to address the other inquiries presented in Appendix G. However, for information purposes, the following additional information is provided.

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

As described in Section 3.9, Hazards and Hazardous Materials, of this IS, designated evacuation routes within the City include SR-111 and SR-98, and Interstate 8 (City of Calexico 2015b). Additionally, the Project does not propose any road closures nor any modifications to existing emergency access routes and, therefore, would not substantially impair an adopted emergency response plan or emergency evacuation plan. No impact would occur.

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

Because the site is not located in or near an area presenting wildfire hazard conditions, the Project is not anticipated to exacerbate wildfire risk and therefore result in exposure to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Furthermore, the approximately 0.58-acre Project site is flat and does not contain any slopes and construction and operation of the Project would comply with all required building, fire, and safety code standards (e.g., Titles 19 and 24 of the California Code of Regulations and the California Health and Safety Code). As such, the Project is not expected to exacerbate any wildfire risks, which may expose on-site occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. No impact would occur.

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

The proposed Project would tie into existing City and IID infrastructure but would not create conditions that could exacerbate fire risk. The proposed Project does not involve the installation or maintenance of any infrastructure, other than electrical lines described herein, that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. Impacts would be less than significant.

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

The Project site is situated on a relatively flat site with no known previous fire events. As a result, the potential to expose people or structure to significant risk associated with post-fire conditions such as downslope or downstream flooding or landslides is not anticipated. No impact would occur.

3.21 Mandatory Findings of Significance

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

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

The IS prepared for the 2003 Master Plan EIR determined that development areas associated with buildout of the Off-Campus Center - Calexico do not contain rare or endangered plant or animal habitat and thus, implementation of the Imperial Valley Campus Master Plan would not significantly reduce populations of those species. Similarly, the IS determined that there were no known cultural resources within the Project area and, therefore, such resources would not be directly impacted through implementation of the Master Plan. Impacts were determined to be less than significant.

As discussed in Section 3.4, Biological Resources, of this IS, no mitigation measures were identified in the 2003 Campus Master Plan EIR. The proposed Project would include mitigation measure MM-BIO-1 to reduce or avoid potentially significant impacts to protected Western Mastiff Bats and nesting birds (see MM-BIO-1 in Section 3.4 of this IS). The proposed Project would also require implementation of a new mitigation measure MM-GEO-1 discussed in Section 3.7 of this IS. Mitigation measure MM-GEO-1 would address the potential for unknown paleontological resources. Additionally, MM-AQ-1, MM-NOI-1, MM-TRA-1, and MM-TCR-1 would reduce or avoid potential impacts to sensitive receptors exposure to pollutant concentrations, ambient noise levels during construction, and hazardous construction-related road conditions, and tribal cultural resources, respectively. With implementation of these mitigation measures (i.e., MM-AQ-1, MM-NOI-1, MM-BIO-1, MM-GEO-1, and MM-TCR-1), the proposed Project's potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory, would be **less than significant with mitigation incorporated.**

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

The IS prepared for the 2003 Campus Master Plan EIR determined that buildout of the Off-Campus Center - Calexico would have no cumulatively considerable impacts.

The proposed Project would involve the construction and operation of a new affordable student housing complex to be located generally within the footprint of Building 21, as identified in the previously approved Calexico Campus Master Plan. As described in Section 3.14 of this IS, implementation of the Project would not increase FTE student enrollment above prior approved levels. Furthermore, as presented throughout this IS, the proposed Project would result in less-than-significant impacts or impacts that would be mitigated to less-than-significant levels.[8] The proposed Project would implement all applicable mitigation measures identified in the 2003 Campus Master Plan EIR, as well as additional, Project-specific mitigation measures identified in this IS, to reduce or avoid potential impacts to sensitive receptors' exposure to pollutant concentrations (see MM-AQ-1 in Section 3.3), nesting birds and bats (see MM-BIO-1 in Section 3.4), cultural resources (see Section 3.5), tribal cultural resources (see MM-TCR-1 in Section 3.18), paleontological resources (see MM-GEO-1 in Section 3.7), ambient noise levels during construction (see MM-NOI-1 in Section 3.13). Finally, all development projects in the City are guided by the policies identified in the City's General Plan and by the regulations established in the City's Municipal Code. Compliance with applicable land use and environmental regulations would help ensure that environmental effects associated with the proposed Project do not combine with effects from reasonably foreseeable future development in the City to cause cumulatively considerable significant impacts. For these reasons, impacts would be **less than significant with mitigation incorporated.**

8 The 2003 EIR identified mitigation measures applicable to cultural resources and geology/soils (see SDSU 2003 pages 3.2-4 through 3.2-5).

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

The IS prepared for the 2003 Campus Master Plan EIR determined that buildout of the Off-Campus Center – Calexico would not result in environmental effects that would cause substantial adverse effects on human beings and no impact would occur.

As evaluated throughout this IS, with the incorporation of mitigation measures identified in the 2003 Campus Master Plan EIR and of additional, Project-specific mitigation measures identified in this IS to address potentially significant impacts to air quality, biological resources, cultural/tribal resources, noise, paleontological resources, and transportation, environmental impacts associated with the proposed Project would be reduced to a less-than-significant level. Therefore, with mitigation measures incorporated, the proposed Project would not directly or indirectly cause substantial adverse effects on human beings, and impacts would be **less than significant with mitigation incorporated.**

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4 References and Preparers

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4.2 List of Preparers

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Danielle Morone, Partner

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Kimberly Narel, Biologist
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Mark Storm, INCE Bd. Cert., Senior Acoustician
Nick Segovia, INCE, Acoustician
Gabe Romero, Environmental Planner

SDSU Imperial Valley Off-Campus Center -
Calexico Affordable Student Housing Project

SAN DIEGO STATE UNIVERSITY

Figure 1
Regional Map

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SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

SAN DIEGO STATE UNIVERSITY

Figure 2
Vicinity Map

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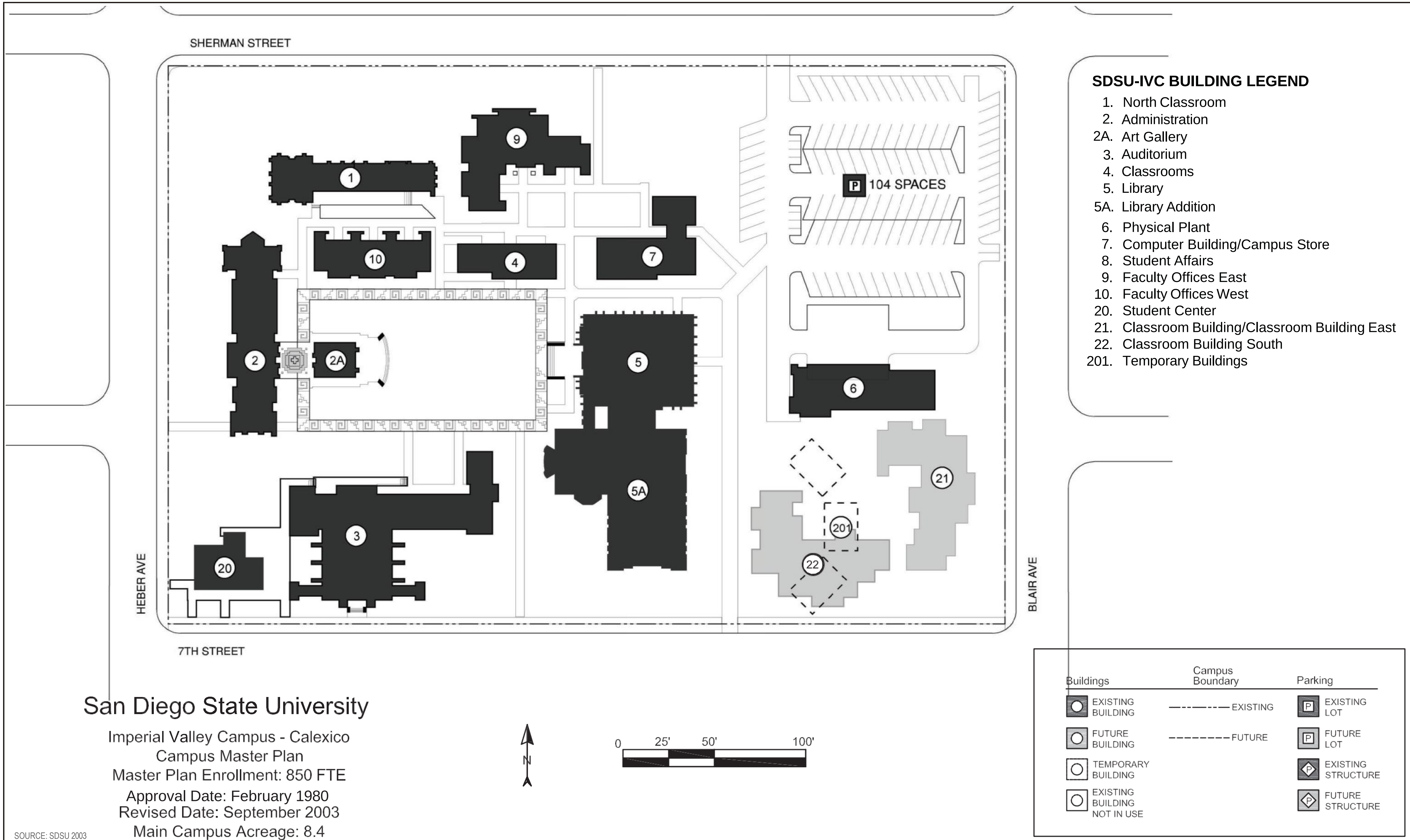

SOURCE: SDSU 2003

SDSU Imperial Valley Off-Campus Center -
Calexico Affordable Student Housing Project

San Diego State University

Figure 3A
Existing Campus Master Plan

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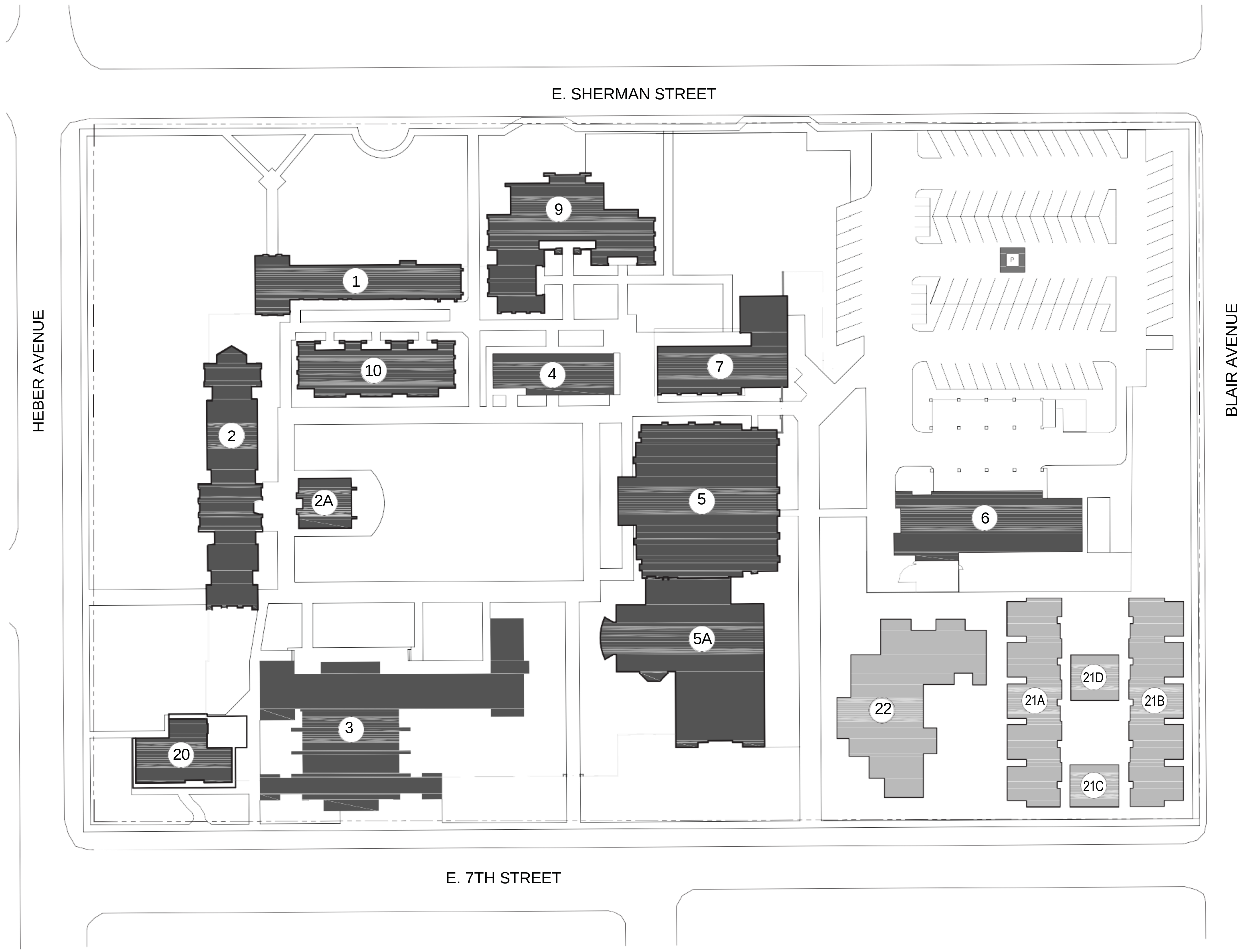
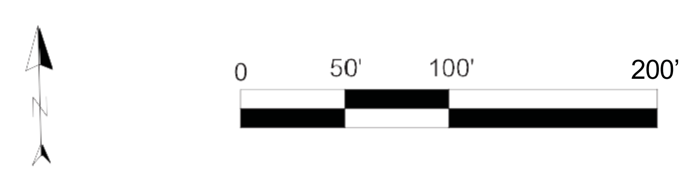


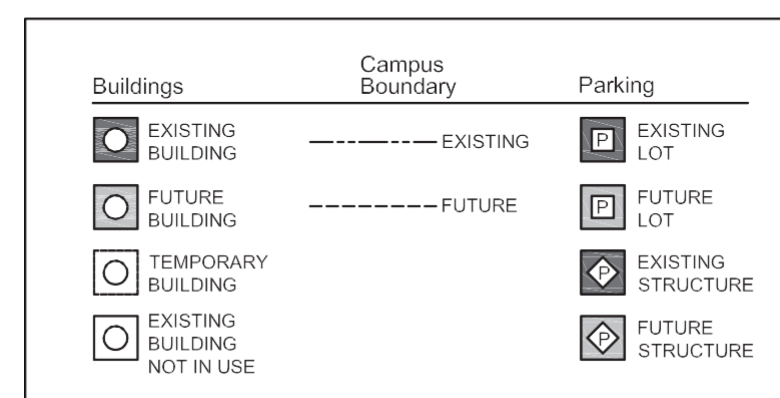
SDSU-IVC BUILDING LEGEND

1. North Classroom
2. Administration
2A. Art Gallery
3. Auditorium
4. Classrooms
5. Library
5A. Library Addition
6. Physical Plant
7. Computer Building/Campus Store
8. Student Affairs
9. Faculty Offices East
10. Faculty Offices West
20. Student Center
21A. Student Housing West
21B. Student Housing East
21C. Student Housing Office
21D. Student Housing Community Center
22. Classroom Building South

PROPOSED
San Diego State University
Imperial Valley Campus - Calexico
Campus Master Plan
Master Plan Enrollment: 850 FTE
Approval Date: 1980
Revised Date: September 2003
Main Campus Acreage: 8.4

SOURCE: SDSU 2024





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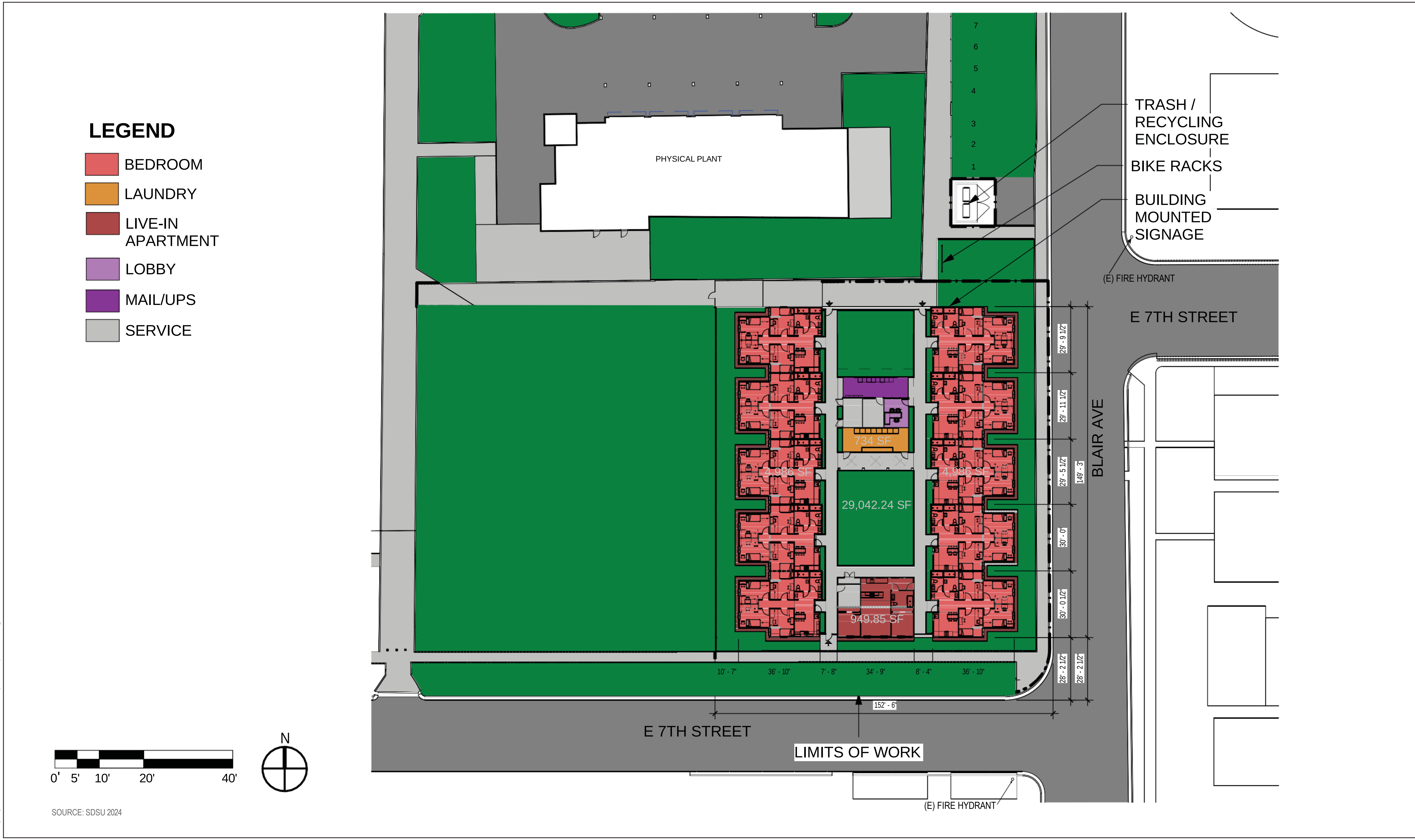

FIGURE 4

Site Plan

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SOURCE: SDSU 2024

SDSU Imperial Valley Off-Campus Center -
Calexico Affordable Student Housing Project

SAN DIEGO STATE UNIVERSITY

Figure 5
Project Renderings

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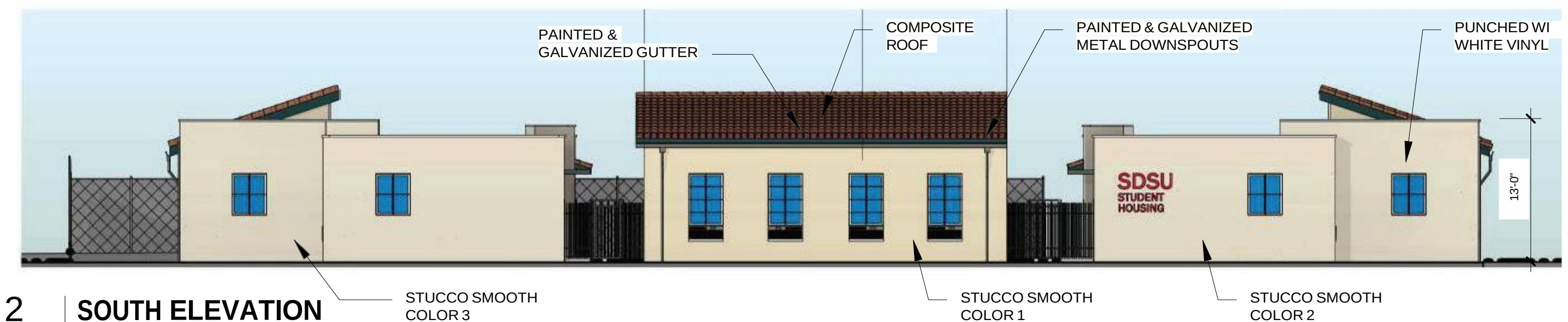
1 EAST ELEVATION

SCALE: 1/16" = 1'-0"



2 SOUTH ELEVATION

SCALE: 1/16" = 1'-0"

3 NORTH ELEVATION

SCALE: 1/16" = 1'-0"

4 WEST ELEVATION

SCALE: 1/16" = 1'-0"

SOURCE: SDSU 2024

0' 2' 4' 8' 16'

SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

SAN DIEGO STATE UNIVERSITY

Figure 6
Building Elevations

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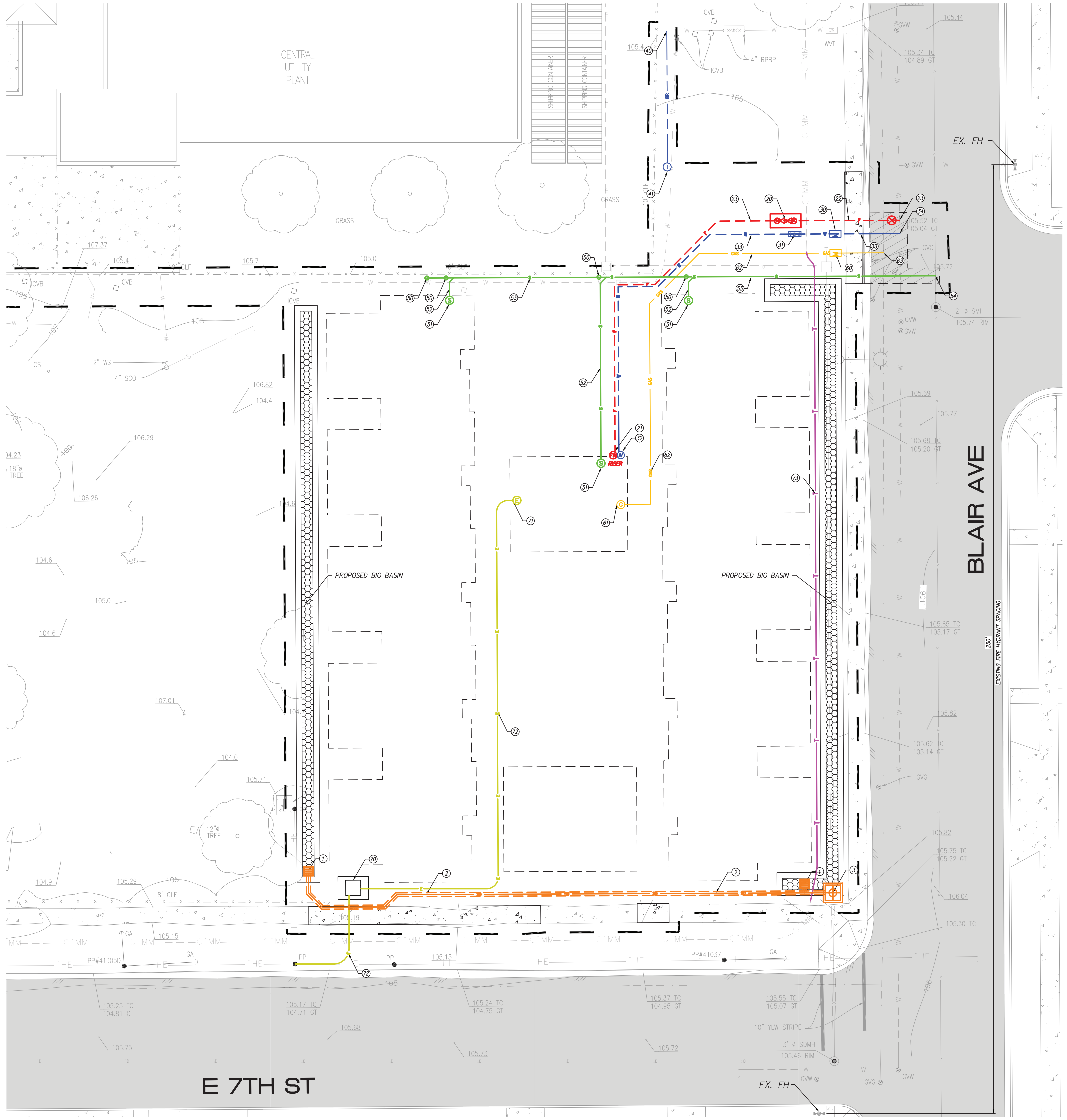


UTILITY CONSTRUCTION NOTES

STORM DRAIN NOTES

1. INSTALL 24"x24" CATCH BASIN.
2. INSTALL 8" HDPE STORM DRAIN.
3. INSTALL STORM DRAIN MANHOLE AND CONNECT TO EXISTING STORM DRAIN.

FIRE NOTES

20. INSTALL DOUBLE DETECTOR CHECK VALVE ASSEMBLY WITH FDC.
21. POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING PLAN FOR CONTINUATION.
22. INSTALL 6" FIRE SERVICE.
23. CONNECT 6" FIRE LATERAL TO EXISTING WATER MAIN (TO BE DONE BY CITY FORCES).

WATER NOTES

30. INSTALL 1.5" DOMESTIC WATER METER.
31. INSTALL 1.5" DOMESTIC WATER BACKFLOW PREVENTER.
32. POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING PLAN FOR CONTINUATION.
33. INSTALL 2" WATER SERVICE.
34. CONNECT 2" WATER LATERAL TO EXISTING WATER MAIN (TO BE DONE BY CITY FORCES).

IRRIGATION NOTES

40. TAP EXISTING IRRIGATION WATER LINE.
41. INSTALL IRRIGATION SERVICE. SEE LANDSCAPE PLAN FOR CONTINUATION.

SEWER NOTES

50. INSTALL SEWER CLEANOUT.
51. POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING PLAN FOR CONTINUATION.
52. INSTALL 4" SEWER.
53. INSTALL 6" SEWER.
54. CONNECT TO EXISTING 6" SEWER.

GAS NOTES

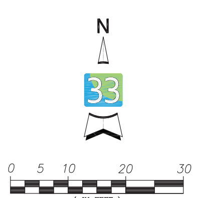
60. INSTALL GAS METER. FOR REFERENCE ONLY, SEE PLUMBING PLAN FOR MORE DETAIL.
61. POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING PLAN FOR CONTINUATION.
62. INSTALL 0.75" GAS SERVICE. FOR REFERENCE ONLY, SEE PLUMBING PLAN FOR MORE DETAIL.
63. CONNECT 0.75" GAS LATERAL TO EXISTING GAS MAIN.

ELECTRIC/TELECOM NOTES

70. PAD MOUNTED TRANSFORMER. FOR REFERENCE ONLY, SEE ELECTRICAL PLAN FOR MORE DETAIL.
71. POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE ELECTRICAL PLAN FOR CONTINUATION.
72. ELECTRIC CONDUIT. FOR REFERENCE ONLY, SEE ELECTRICAL PLAN FOR MORE DETAIL.
73. TELECOM CONDUIT. FOR REFERENCE ONLY, SEE TELECOM PLAN FOR MORE DETAIL.

LEGEND

LIMIT OF WORK	
PROPOSED PRIVATE WATER SERVICE	W
PROPOSED PRIVATE IRRIGATION SERVICE	IRR
PROPOSED PRIVATE FIRE SERVICE	F
PROPOSED PRIVATE SEWER LATERAL	S
PROPOSED PRIVATE STORM DRAIN	SD
PROPOSED PRIVATE TELECOM	T
PROPOSED PRIVATE GAS SERVICE	GAS
PROPOSED PRIVATE ELECTRICAL	E
PROPOSED BIO BASIN	



latitude 33
PLANNING & ENGINEERING
10731 Treena Street, San Diego, CA 92131
Tel 858.751.0633

SOURCE: SDSU 2024

SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

San Diego State University

Figure 7
Utilities Plan

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Appendix A

Aesthetics and Visual Resources Technical Memorandum

MEMORANDUM

To:	Kara Peterson; San Diego State University
From:	Eden Vitakis and Josh Saunders, Dudek
Subject:	SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project – Aesthetics and Visual Resources Technical Memorandum
Date:	December 12, 2024
cc:	Sarah Lozano, Mollie Brogdon; Dudek, Michael Haberkorn; Gatzke Dillon & Ballance
Attachments:	A – Figures

Dudek has conducted an evaluation pursuant to the requirements of the California Environmental Quality Act (CEQA), California Public Resources Code 21000 et seq., to document existing visual conditions and potential impacts related to the aesthetic and visual character and views associated with construction and operation of the proposed San Diego State University (SDSU) Calexico Affordable Student Housing Project (project or proposed project), to be located at the SDSU Imperial Valley Off-Campus Center located in downtown Calexico, California. This technical memorandum provides the results of the aesthetics and visual resources analysis.

1 Project Overview and Background

In September 2003, the California State University (CSU) certified an environmental impact report for the SDSU Imperial Valley Master Plan Project (State Clearinghouse No. 2002051010) and approved a Campus Master Plan for the expansion and improvement of the SDSU Imperial Valley Off-Campus Center, which includes locations in Calexico and Brawley, both located in Imperial County (SDSU 2003). The Off-Campus Center is an extension of SDSU's main campus in San Diego and furthers the University's regional educational mission to provide additional educational opportunities to the outlying communities of Imperial County. The previously certified and approved Campus Master Plan and EIR provided the authorization necessary for enrollment of 850 full-time equivalent (FTE)[1] students at the Off-Campus Center, corresponding associated faculty and staff, and a framework for development of the facilities necessary to serve this projected enrollment and campus population.

The Off-Campus Center - Calexico is approximately 8.3 acres in size and is located in the City of Calexico (City). Most of the Calexico location is built out, consisting of several educational and support facilities. The environmental impacts associated with development of the Off-Campus Center – Calexico were evaluated at a program level of review in the 2003 EIR. In the CSU's continuing effort to build out the Imperial Valley Off-Campus Center and provide additional educational opportunities, SDSU presently proposes construction and operation of a four-building complex that would provide affordable student housing at the Calexico location for 80 students and a resident manager. Additional details regarding the proposed housing is provided below.

2 Project Location and Existing Conditions

The Off-Campus Center – Calexico is located at 720 Heber Avenue in downtown Calexico, approximately 0.5 miles north of the United States–Mexico border (see Figure 1, Regional Map). Regional access to the Off-Campus Center is provided via SR-111 and SR-98 to the north. The Calexico location is bordered by four streets: Heber Avenue to

1 A full-time equivalent (FTE) student is one full-time student taking 15 course credits, or 3 part-time students each taking 5-course credits.

the west, Sherman Street to the north, Blair Avenue to the east, and 7th Street to the south. Residential uses bound the Calexico complex to the north, east, south, and west. Other surrounding uses include Calexico High School, located northeast, and Calexico City Hall, located immediately south. The Off-Campus Center - Calexico currently consists of 17 buildings and an associated surface parking lot (see Figure 2, Vicinity Map, and Figure 3A, Existing Campus Master Plan).

As a state entity, the CSU/SDSU is not subject to local government plans, regulations, and guidelines, such as those contained in the City's General Plan. The above notwithstanding, for information purposes, the Off-Campus Center -Calexico is zoned as Open Space and is designated as Public Facilities in the City's General Plan (City of Calexico 2015a).

The proposed Project site is approximately 0.58 acres in size (25,320 square feet) and is located at the southeast corner of the campus, at the northwest corner of East 7th Street and Blair Avenue (see Figure 2). The entirety of the Project site has previously been graded and is relatively flat in nature, with an average elevation of 3.5 feet above mean sea level. The Project site encompasses the locations identified in the Campus Master Plan as future Building 21 (see Figure 3A and Figure 3B, Proposed Campus Master Plan). The Project site consists of vacant and undeveloped land with two trees located along the northern boundary of the site. A chain-link fence separates the Project site from the recently removed temporary Campus Buildings 201, which were located immediately west of the Project site.

3 Project Description

3.1 Affordable Student Housing Complex

The proposed Project would involve the construction of a single-story, four-building complex approximately 12,840 square feet in size that would provide for affordable student housing. The complex would include three student housing buildings, including one smaller live-in unit building, and a community building. Two of the three proposed residential buildings would each be approximately 5,500 square feet in size and would include five four-bedroom, two-bathroom apartment units, totaling 40 student beds per building (two student beds per bedroom, 80 student beds in total). The third proposed residential building would be a live-in manager unit that would consist of a single two-bedroom, one-bathroom apartment. The proposed live-in unit would also include approximately 100 square feet of office space that is intended to provide a space for tenant meetings, social services, or counseling. All apartment units would also be equipped with a living area and kitchen. The proposed community building program would be approximately 840 square feet and include laundry, mail, restroom, electrical, and maintenance facilities. The mail room would be located outside, under the shaded amenity patio of the community building (see Table 1).

Table 1. Affordable Student Housing Complex Area Calculations

	Quantity	Area (Square Feet)	Beds
Residential Buildings (3)			
4-Bedroom, 8-Bed Unit	5	5,150	40
4-Bedroom, 8-Bed Unit	5	5,150	40
Live-In Unit	1	1,000	2

Table 1. Affordable Student Housing Complex Area Calculations

	Quantity	Area (Square Feet)	Beds
Office (Included in Live-In Unit)	N/A	N/A	N/A
Subtotal	*11*	*11,300*	*82*
Community Building (1)			
Laundry Room	1	300	N/A
Service Rooms	4	450	N/A
Restroom	2	100	N/A
Mail/Package (Outside)	1	270	N/A
Subtotal	*N/A*	*1,150*	*N/A*
Other			
Trash/Recycling Enclosure	1	850	N/A
Open Space	N/A	2,300	N/A
Landscaping/hardscaping	N/A	12,500	N/A
Subtotal	*N/A*	*13,650*	*N/A*
Combined Total	**N/A**	**26,100**	**82**

Note: N/A = not applicable.
All square foot amounts presented in the table are approximate amounts only and may not add to the site plan area totals described in this document due to rounding.

Other on-site proposed amenities include a courtyard, bike racks, and a community waste enclosure. The courtyard would be approximately 1,600 square feet and would be centrally located in the proposed complex (see Figure 4, Site Plan). Approximately 15 bike racks would be provided throughout the Project site. A community waste enclosure at the northeast corner of the Project site would allow residents a convenient place to dispose of waste and recyclables.

3.1.1 Operation

The Off-Campus Center - Calexico, including the Project site, is owned and operated by the CSU/SDSU. The CSU Board of Trustees, on behalf of SDSU, is the lead agency responsible for certifying the adequacy and completeness of this document and approval of the proposed Project. SDSU and the IVCCD have received joint funding under the State of California Higher Education Student Housing Grant Program to construct the proposed Project.

To support basic housing needs for students in the Imperial Valley, SDSU and IVCCD have executed a 30-year master lease agreement that details operation of the Project. This agreement dictates that 40 of the 80 proposed student beds would be reserved for IVCCD students who attend the Imperial Valley College in Imperial. Likewise, 40 of the proposed 80 student beds, would be reserved for SDSU Off-Campus Center - Calexico students. A 2-bedroom unit would also provide living space for on-site management, for a total of 82 beds. SDSU would be responsible for operating, managing, and maintaining the proposed Project once operational.

Student beds made available under the proposed Project would be leased/rented to eligible low-income students. Eligible low-income students are defined as having 30% of 50% of the Annual Median Income for Imperial County. In the event, after a good faith outreach effort, there is not sufficient demand from students meeting the eligibility requirements within 90 days of the start of the fall semester, unassigned beds may be leased at market rates to SDSU and IVCCD students not meeting the low-income eligibility requirements. In addition to meeting the low-income criteria, eligible students would be required to be enrolled students and take a minimum average of 12 degree-applicable units per semester term, or the quarterly equivalent (with exceptions permitted), to facilitate timely degree completion.

3.1.2 Other Project Elements

Building and Site Design

The proposed buildings have been designed to reflect the character and massing of the existing Off-Campus Center - Calexico, as well as the surrounding neighborhood (see Figure 5, Project Renderings). Building design is centered around a courtyard-style housing complex and would consist of smooth stucco walls with downspouts and rafters, punctuated by composite terra cotta–colored roof tile accents and windows. Maximum building heights would range from 14 feet to 18 feet (see Figure 6, Building Elevations).

Landscaping, Other Site Improvements, and Lighting

The Project would include approximately 16,000 square feet of on-site landscaping and hardscape improvements (i.e., pedestrian walkways). All proposed landscaping would consist of drought-tolerant, indigenous plants. The landscape scheme would include shrubs, hedges, and a variety of trees. A total of 39 trees would be added to the Project site including five fan palms, eight mesquite trees, six evergreen elms, and 20 yucca trees.

All exterior on-site lighting would be hooded or shielded, directed downward, and would be compliant with applicable standards for lighting control and light pollution reduction (i.e., Title 24, American National Standards Institute/Illuminating Engineering Society).

The proposed complex would be secured via an iron security fence that would measure 6 feet in height and run approximately 64 linear feet, connecting to the proposed buildings. Access to the complex would only be available to residents and their guests via two pedestrian gates located at the northwestern corner and southern portion of the proposed complex. The gates would be equipped with security card access for residents.

Utilities and Public Services

New points of connection for domestic water, fire supply water, sewer, storm drainage and electrical connections from existing utility lines would be required to serve the proposed Project. Potable water service, as well as sewer collection services at the Project site, would be provided by the City. The Project would connect to an existing sanitary sewer maintenance access line located in Blair Avenue via new 6-inch mains. Connections for water (including domestic, fire, and irrigation) would be from an existing water main located in Blair Avenue. Distribution water pipes would be extended underground to serve each proposed building. A new water meter would be located in the proposed maintenance room in the community building. Adequate water treatment capacity and supply and sewer treatment capacity exists within the City's water and sewer system to accommodate the Project; therefore, no capacity upgrades to infrastructure would be necessary.

Stormwater drainage includes two stormwater catch basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated immediately east of the existing chain-link fence at the western boundary of the Project site. The proposed catch basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to stormwater discharge into the City's stormwater system via one new storm drain located in the southeast corner of the Project site.

Electrical services within the Project area are provided by Imperial Irrigation District, which provides electric power to over 158,000 customers in the Imperial Valley in addition to areas of Riverside and San Diego counties (IID 2024). New utility connections and infrastructure would be required to support electrical services on site. The Project would connect to on-site electrical power infrastructure via an existing 12kV, three phase, three wire, 60 Hertz overhead line routed along East 7th Street. No natural gas usage is proposed for the Project.

The Project would require a new point of connection for on-site telecommunications and would connect to the existing AT&T communications via the on-campus minimum point of entry.

Access, Circulation, and Parking

Regional access to the Project site is provided via SR-111 and SR-98 to the north. Local access is provided via Blair Avenue and East 7th Street. Parking to the Project site is available in the existing campus parking lot, immediately north of the Project site, which has sufficient capacity to serve the proposed Project. On-site circulation improvements would consist of additional paved pathway/pedestrian walkway features throughout the proposed complex and along the northern boundary of the Project site (see Figure 4). Emergency access would be provided directly adjacent to the Project site on East 7th Street and Blair Avenue.

3.1.3 Design Standards and Energy Efficiency

In May 2014, the CSU Board of Trustees broadened the application of sustainable practices to all areas of the university by adopting the first systemwide sustainability policy, which applies sustainable principles across all areas of university operations, including facility operations and utility management. In May 2024, the CSU Sustainability Policy was updated to expand on existing sustainability goals (CSU 2024). The CSU Sustainability Policy seeks to integrate sustainability into all facets of the CSU, including academics, facility operations, the built environment, and student life (CSU 2018). Relatedly, the state has also strengthened energy-efficiency requirements in the California Green Building Standards Code (Title 24 of the California Code of Regulations).

As a result, all CSU new construction, remodeling, renovation, and repair projects, including the proposed Project, would be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable state energy codes and regulations. Progress submittals during design are monitored for individual envelope, indoor lighting, and mechanical system performances. In compliance with these goals, the proposed Project would be equipped with solar ready design features that would facilitate and optimize the future installation of a solar photovoltaic (PV) system.

3.1.4 Off-Site Improvements

Off-site improvements would include the resurfacing of a portion of Blair Avenue adjacent to the eastern boundary of the Project site that would be disturbed as a result of trenching to make necessary connections to the existing

water main and sanitary sewer maintenance access. Any area disturbed as a result of this connection within Blair Avenue would be resurfaced to existing conditions. All off-site improvements would occur within the Blair Avenue right-of-way.

3.1.5 Construction

Construction would be performed by qualified contractors. Plans and specifications would incorporate stipulations regarding standard CSU/SDSU requirements and acceptable construction practices, such as those set forth in the SDSU Stormwater Management Plan, CSU Seismic Policy, The CSU Office of the Chancellor Guidelines, and the CSU Sustainability Policy, regarding grading and demolition, safety measures, vehicle operation and maintenance, excavation stability, erosion control, drainage alteration, groundwater disposal, public safety, and dust control.

Construction Timeline

Construction of the proposed Project would take approximately 17 months to complete and is estimated to begin as early as January 2024 and be completed by May 2026, with occupancy planned for fall 2026. Construction activities would generally occur Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m., with the potential for weekend construction on Saturday between 9:00 a.m. and 5:00 p.m. No construction would occur on Sundays or holidays or at night.

Construction Activities

A construction mobilization or staging area would be located immediately northeast of the proposed Project site and would occupy approximately 8,000 square feet. The area would be located east of existing Campus Building 6, west of Blair Avenue, and south of the existing parking lot (see Figure 2 and Figure 3A). To accommodate use of this area, four trees would be removed.

Construction would include site preparation, grading and excavation, utility installation/trenching, building foundation pouring, building construction, and landscaping. Excavation depths are anticipated to be 3 feet below grade. The majority of waste (i.e., excavated gravel/soil) generated during Project construction would be balanced/used within the site. Approximately 2,600 cubic yards of soil would be removed from the site and exported to Republic Services Allied Imperial Landfill, approximately 12 miles north. The entire Project site, including construction mobilization area (approximately 34,000 square feet in total) would be disturbed as a result of Project construction. Two trees would be removed from the Project site to accommodate the proposed Project.

Table 2 displays the construction equipment anticipated to be used during construction.

Table 2. Anticipated Construction Equipment

Aerial Lifts	Pressure Washers
Air Compressors	Pumps
Cement and Mortar Mixers	Rollers
Concrete/Industrial Saws	Rough Terrain Forklifts
Dumpers/Tenders	Rubber-Tired Dozers
Excavators	Rubber-Tired Loaders
Forklifts	Scrapers

Table 2. Anticipated Construction Equipment

Generator Sets	Signal Boards
Graders	Skid Steer Loaders
Off-Highway Tractors	Surfacing Equipment
Off-Highway Trucks	Sweepers/Scrubbers
Other Construction Equipment	Tractors/Loaders/Backhoes
Other General Industrial Equipment	Trenchers
Other Material Handling Equipment	Welders
Plate Compactors	

Source: Dorsey and Nielson Construction Inc, pers. comm., 2024

Construction Waste

The Project would generate construction debris during on-site clearing activities. In accordance with Section 5.408 of the California Green Building Standards Code, the Project would implement a construction waste management plan for recycling and/or salvaging for reuse of at least 65% of nonhazardous construction/demolition debris. Additionally, the Project would be required to meet Leadership in Energy and Environmental Design v4 requirements for waste reduction during construction. Solid waste generated during construction would be hauled off site to the Republic Services Allied Imperial Landfill at 104 East Robinson Road in Imperial, California.

4 Analysis Methodology

The analysis presented here considers the potential environmental impacts of the proposed project relative to existing conditions. Establishment of the project site's existing visual resource conditions has been informed using information from the previously certified 2003 EIR (SDSU 2003) related to views and visual character, updated, as applicable, based on recent observations and photographic documentation of the campus taken from Google Earth. The location of street view images referenced in the discussion below is presented on Figure 7, Key Map. Images of features on the project site and in the surrounding area are depicted on Figure 8, Existing Conditions: Project Site, and Figure 9, Existing Conditions: Surrounding Area. Other information reviewed during preparation of this analysis includes the California Department of Transportation Scenic Highway System Map (Caltrans 2024), the City's General Plan (Conservation and Open Space Element) (City of Calexico 2007), and population estimates from the United States Census Bureau (United States Census Bureau 2024).

5 Visual Resources

5.1 Existing Conditions

Visual Character and Quality

Regional

The Calexico campus is located within south central Imperial County, which lies within the southeastern corner of California near the Mexico border. Imperial County consists of a broad, relatively flat desert environment that is bordered on the west and east by distant mountainous and hilly terrain and is traversed by a number of state highways/routes and Interstate 8. In addition to including several incorporated cities (including Calexico), portions of Imperial County, including the areas surrounding the Calexico area, have been transformed into agricultural fields through the construction of canals (and drains) and importation of irrigation water. Residential and commercial development have been increasing in Calexico, in response to a growing population and its close proximity to Mexicali, which is immediately south of the US–Mexico International border. According to an Albert A. Webb Associates survey and aerial photography conducted in March 2004, the City had approximately 2,060 acres of existing residential uses, 290 acres of commercial uses, and 255 acres of industrial uses, and the remaining acreage within the City consisted of vacant land, parks, schools, and agricultural/open space uses (City of Calexico 2007).

Project Site and Surrounding Area

As described above, the project site is currently vacant, undeveloped land. The project site is unfenced along its frontages of adjacent Blair Avenue and East 7th Street, and in addition to sidewalks, the light poles and wood poles supporting an overhead electrical line border the site (see Photos A and B on Figure 8). To the north of the project site lies the campus physical plant building, clumped mature trees, and a campus surface parking lot. The campus physical plant building is a single-story, rectangular building, abutted on the east by two metallic shipping containers. A wood awning is installed off the north-facing façade of the building and partially covers outdoor space that provides access to four service bays at the plant. The referenced circular parking lot is gated, features striped diagonal stalls, and is bordered on three sides by turf and tree landscaping. Green vinyl fabric is installed on a section of the chain-link fence that surrounds the physical plant site and is visible from Blair Avenue (see Photo C on Figure 9). Residential areas are located to the immediate east and south of the project site (see Photo D on Figure 9, which includes residences to the east and south of the project site as viewed from East 7th Street), and generally surround the Off-Campus Center - Calexico on nearly all sides. Surrounding residences are typically one story, with fences and driveways. There is one two-story apartment building located directly southwest of the site of the proposed project. Residences are varying natural shades (i.e., tans, browns, reds, and light colors). As previously described, temporary campus buildings previously were located to the west of the project site. This area is now vacant with some mature trees (see Photo E on Figure 9). Mature trees are sporadically planted between buildings throughout campus. Lastly, Rockwood Plaza is located approximately 300 feet west of the southwestern corner of the project site, and Calexico City Hall lies in the western portion of Rockwood Plaza (see Photo F on Figure 9). As shown in Photo F, Rockwood Plaza includes turf areas, pedestrian path, mostly mature trees, and covered playgrounds (the City Hall complex is visible beyond trees in the center of the photo).

Scenic Vistas

While the City's General Plan Conservation and Open Space Element does not identify scenic vistas, it does mention available vistas of "expansive, flat, contiguous, irrigated cropland set against distant mountains" from unspecified locations (City of Calexico 2007). Although not considered scenic vistas, the City's croplands are identified as scenic visual resources by the City. While they surround the entirety of Calexico, the nearest croplands are located approximately 1 mile west of the project site. Further natural features that may be considered scenic resources include the New River, which flows north into Calexico and is approximately 0.7 miles from the southwestern corner of the project site. Public access to the New River is currently prohibited due to severe contamination. Additionally, the Imperial Sand Dunes Recreational Area is located approximately 27 miles from the northeastern corner of the project site.

Scenic Highways

The nearest state scenic highway (SR-8 at Yuha Cutoff; an eligible state scenic highway) is located approximately 31 miles to the northwest of the project site. SR-78 at SR-86, an additional eligible state scenic highway, is located approximately 37 miles to the northwest of the project site.

Light and Glare

The project site is vacant and undeveloped. Thus, there are no existing sources of lighting on the project site. In addition to residential and commercial uses located around the proposed project, the Off-Campus Center - Calexico is the primary source of fixed lighting and potential glare in the immediate project area. Specifically, street and campus parking lot lighting (pole-mounted lights are installed along the parking lot perimeter) and wall-mounted lighting on the exterior of the campus buildings contribute light sources to the existing nighttime environment. Lighting from residences may include outdoor lighting by entryways.

6 Impact Analysis and Conclusions

6.1 Thresholds of Significance

The thresholds of significance used to evaluate the impacts of the proposed project related to aesthetics and visual resources are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). A significant impact under CEQA would occur if the proposed project would:

A. Have a substantial adverse effect on a scenic vista.
B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
C. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.
D. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

6.2 Impact Analysis

a) Would the project have a substantial adverse effect on a scenic vista?

The initial study prepared as part of the 2003 Campus Master Plan EIR determined that no impact would occur from development of the Campus Master Plan with regard to potential adverse effects to scenic vistas (SDSU 2003).

As previously described, the City's General Plan does not identify any scenic vistas. In addition, there are no City-identified scenic resources within the immediate area of the project site. Furthermore, views of cropland are not available from public vantage points near the project site or nearby segments of surrounding road. Therefore, construction and operation of the proposed project would have **no impact** on a scenic vista.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The initial study prepared for the 2003 EIR determined that no impact would occur with regard to substantial damage to scenic resources within a state scenic highway (SDSU 2003).

The project site is located approximately 31 miles from the nearest state scenic highway (i.e., SR-8 from the Yuha Cutoff). As a result, construction activities and operation of the project would not be visible from any state scenic highway. In addition, the project site does not support trees, rock outcrops, historic buildings, or other potentially scenic resources, including scenic visual resources identified in the City's General Plan Conservation and Open Space Element (i.e., croplands). Therefore, the proposed project would have **no impact** on scenic resources.

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

The 2003 EIR did not analyze potential impacts to the existing visual character or quality of public views of the project site and its surroundings (SDSU 2003). A discussion regarding the proposed project's potential to substantially degrade the existing visual character or quality of public views of the site and its surroundings is provided below.

In accordance with Section 21071 of the California Public Resources Code, "urbanized area" means either of the following:

(1) [An incorporated City that] Has a population of at least 100,000 persons.

(2) [An incorporated City that] Has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons.

As of July 1, 2022, the estimated population of Calexico was 38,249 persons (United States Census Bureau 2024). Calexico is not contiguous with any incorporated cities in the United States. Therefore, Calexico is considered to be a non-urbanized area for purposes of CEQA, and accordingly, impacts are assessed in accordance with the first portion of the visual character threshold.

In the immediate area surrounding the project site, Calexico's existing visual character reflects a primarily residential environment as evidenced by the presence of single- and multifamily homes near the Off-Campus Center - Calexico. However, the existing Off-Campus Center - Calexico contributes to the local visual environment and adds an educational facility with verticality and mass to the landscape. The project would be developed on a currently vacant and undeveloped lot with two trees located along the northern boundary of the site. Renderings of the proposed project are presented on Figures 5, and as shown on the figure, the project entails the introduction of a single-story, four-building complex with site landscaping and other amenities that would support affordable student housing at the Off-Campus Center - Calexico.

As proposed, the project structures would not be significantly larger than the existing campus buildings and would be of a similar scale as residential structures in the immediate surrounding area. Further, proposed landscaping would be consistent with existing campus development and would enable the project to blend into the existing setting. Therefore, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Impacts would be **less than significant** relative to existing visual character.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The IS prepared for the Campus Master Plan 2003 EIR determined that impacts regarding the creation of a new source of substantial light or glare which would adversely affect day or nighttime views in the area would be less than significant.

Construction of the proposed project would occur over approximately 17 months. While a detailed lighting plan or schedule has not been prepared, lighting sources anticipated to be installed on the project site to support the project would be similar to the existing lighting at the Off-Campus Center - Calexico, updated consistent with current Title 24 requirements. For example, walkway lighting consisting of low post or standard pole lighting could be installed in addition to wall-mounted ("wall pack") fixtures on the exterior of the project structures. Overhead lighting in common areas (i.e., pathways, near building entrance) could also be installed. Consistent with existing uses at the Off-Campus Center - Calexico, new lighting sources would be of appropriate intensity for the intended use (e.g., safety, security, and/or general illumination for pedestrians) and would generally be hooded and directed downward to minimize potential for skyglow, glare, and/or light trespass to off-campus areas.

In addition, all exterior lighting sources installed on the project site would be compliant with California Energy Code allowances for lighting power and lighting control requirements and with Title 24, Part 6, the California Green Building Standards Code requirements related to light pollution reduction. For example, Title 24, Part 6, Section 130 outlines mandatory requirements for lighting systems and equipment for nonresidential occupancies. These include but are not limited to wattage requirements, lighting controls, and light shielding/glare requirements in accordance with American National Standards Institute/Illuminating

Engineering Society standards. Because lighting installed on the project site would be hooded, directed downward, and compliant with applicable standards for lighting control and light pollution reduction (i.e., Title 24, American National Standards Institute/Illuminating Engineering Society) for lighting control and light pollution reduction, the project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. Accordingly, impacts related to light and glare would be **less than significant**, and no mitigation is required.

7 References

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Attachment A

Figures

SOURCE: ESRI

DUDEK

0 4 8 Miles

FIGURE 1

Regional Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

SOURCE: AERIAL-ESRI MAPPING SERVICE 2023; DEVELOPMENT-SDSU 2024

FIGURE 2

Vicinity Map

DUDEK

0 100 200 Feet

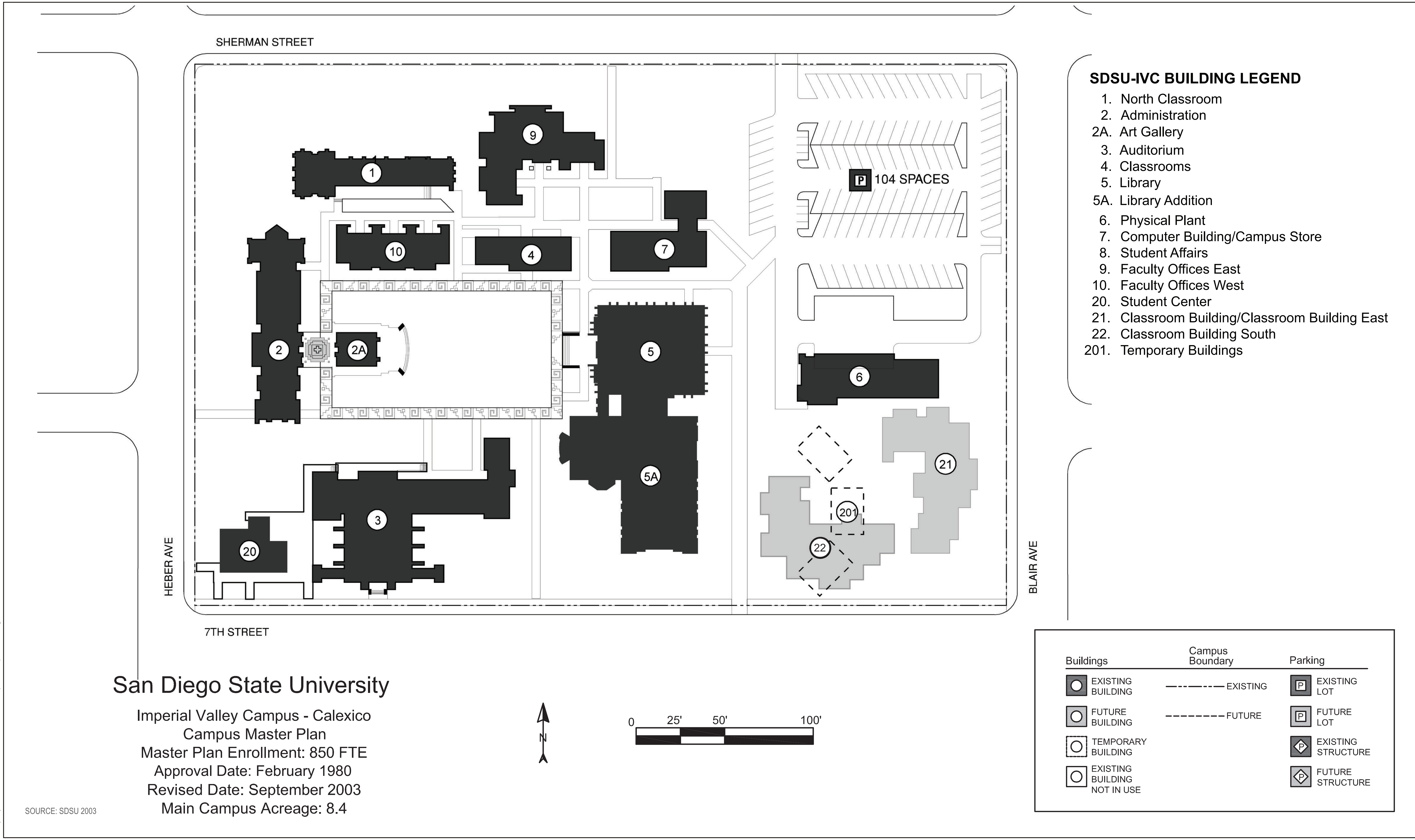
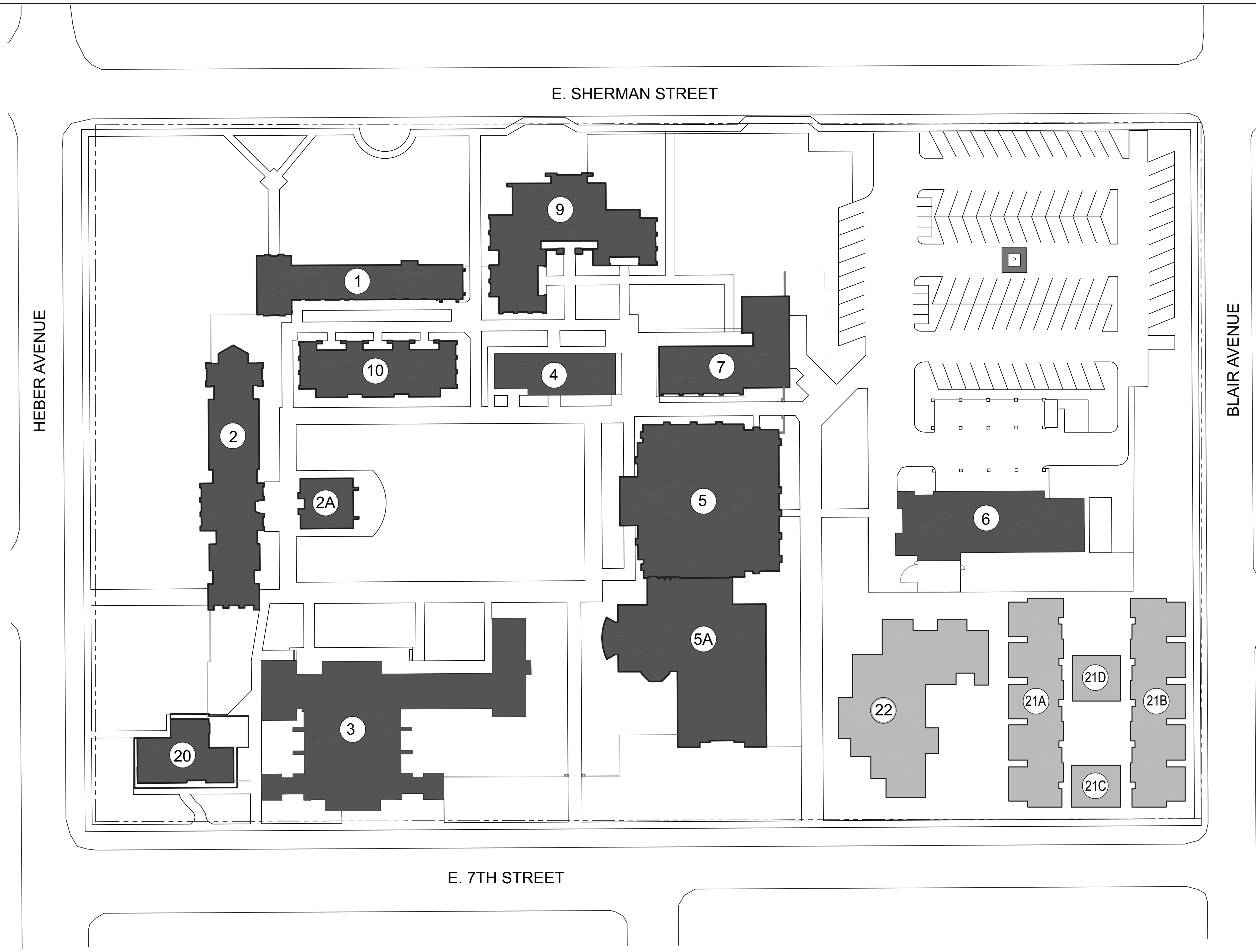


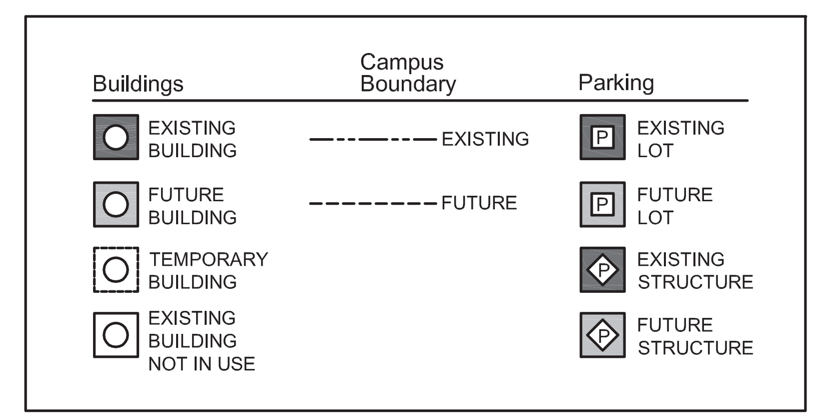
FIGURE 3A

Existing Campus Master Plan

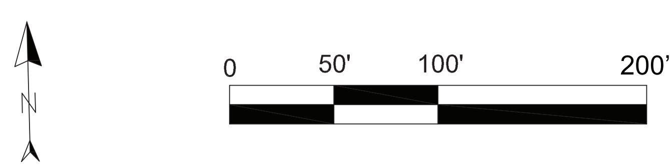


SDSU-IVC BUILDING LEGEND

1. North Classroom
2. Administration
2A. Art Gallery
3. Auditorium
4. Classrooms
5. Library
5A. Library Addition
6. Physical Plant
7. Computer Building/Campus Store
8. Student Affairs
9. Faculty Offices East
10. Faculty Offices West
20. Student Center
21A. Student Housing West
21B. Student Housing East
21C. Student Housing Office
21D. Student Housing Community Center
22. Classroom Building South



PROPOSED
San Diego State University
Imperial Valley Campus - Calexico
Campus Master Plan
Master Plan Enrollment: 850 FTE
Approval Date: 1980
Revised Date: September 2003
Main Campus Acreage: 8.4



SOURCE: SDSU 2024

FIGURE 3B
Proposed Campus Master Plan

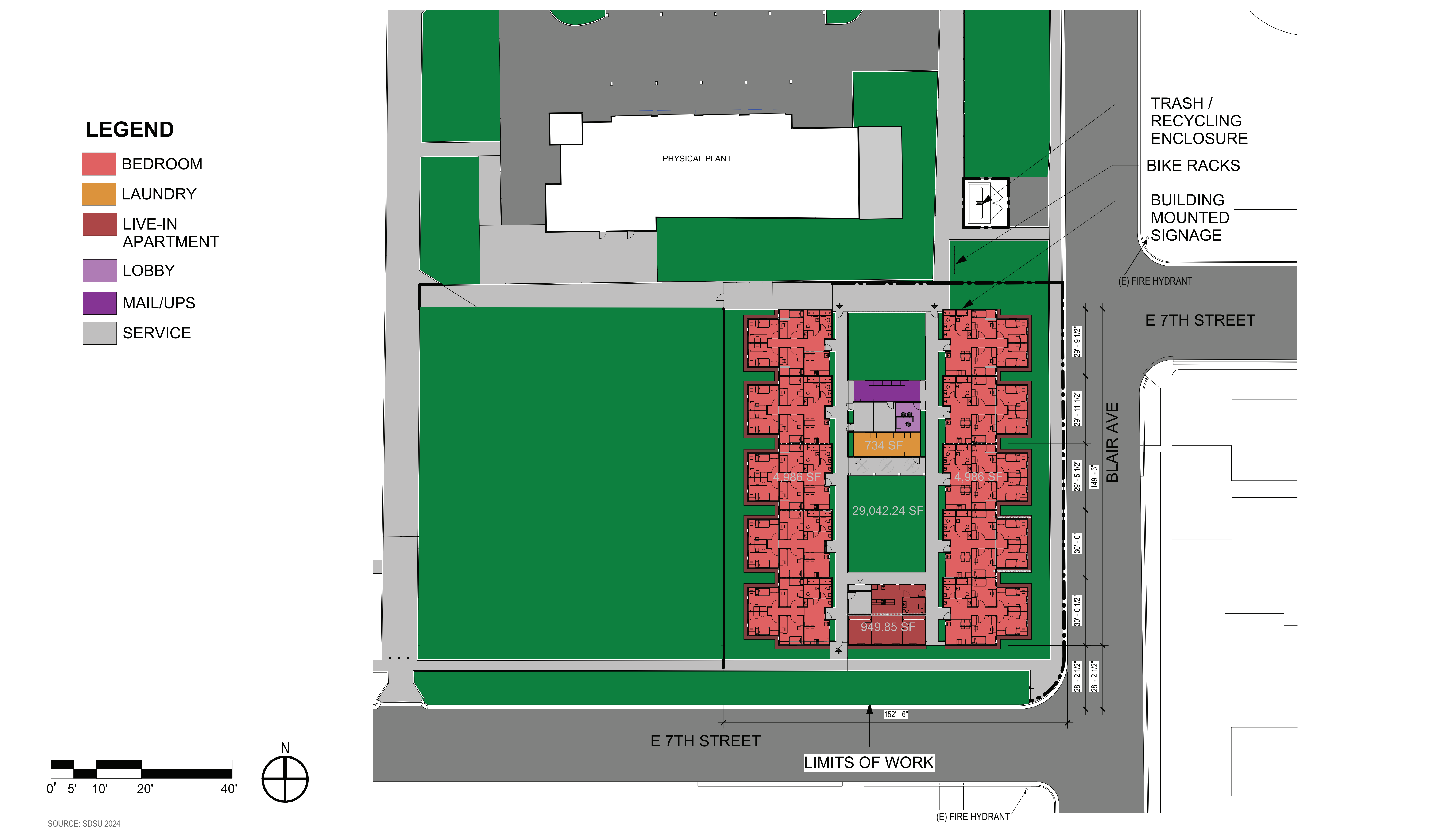


FIGURE 4
Site Plan

SOURCE: SDSU 2024

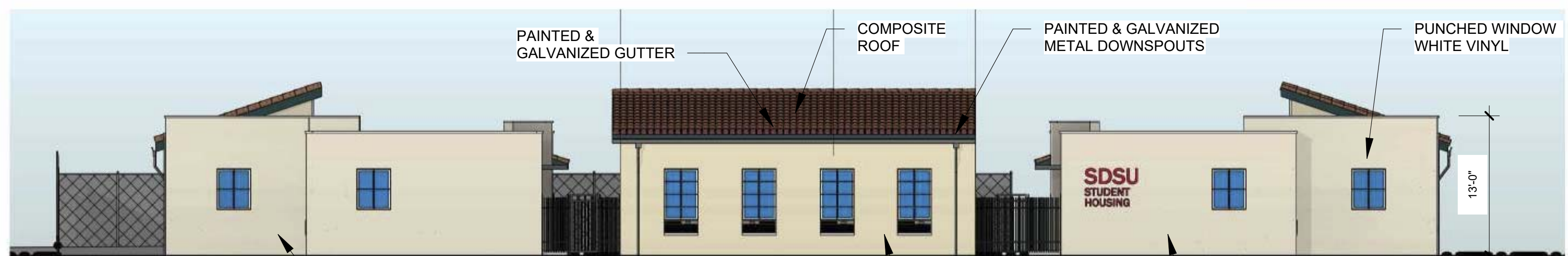
DUDEK

FIGURE 5

Project Renderings

1 EAST ELEVATION

SCALE: 1/16" = 1'-0"



2 SOUTH ELEVATION

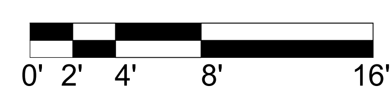
SCALE: 1/16" = 1'-0"

3 NORTH ELEVATION

SCALE: 1/16" = 1'-0"

4 WEST ELEVATION

SCALE: 1/16" = 1'-0"

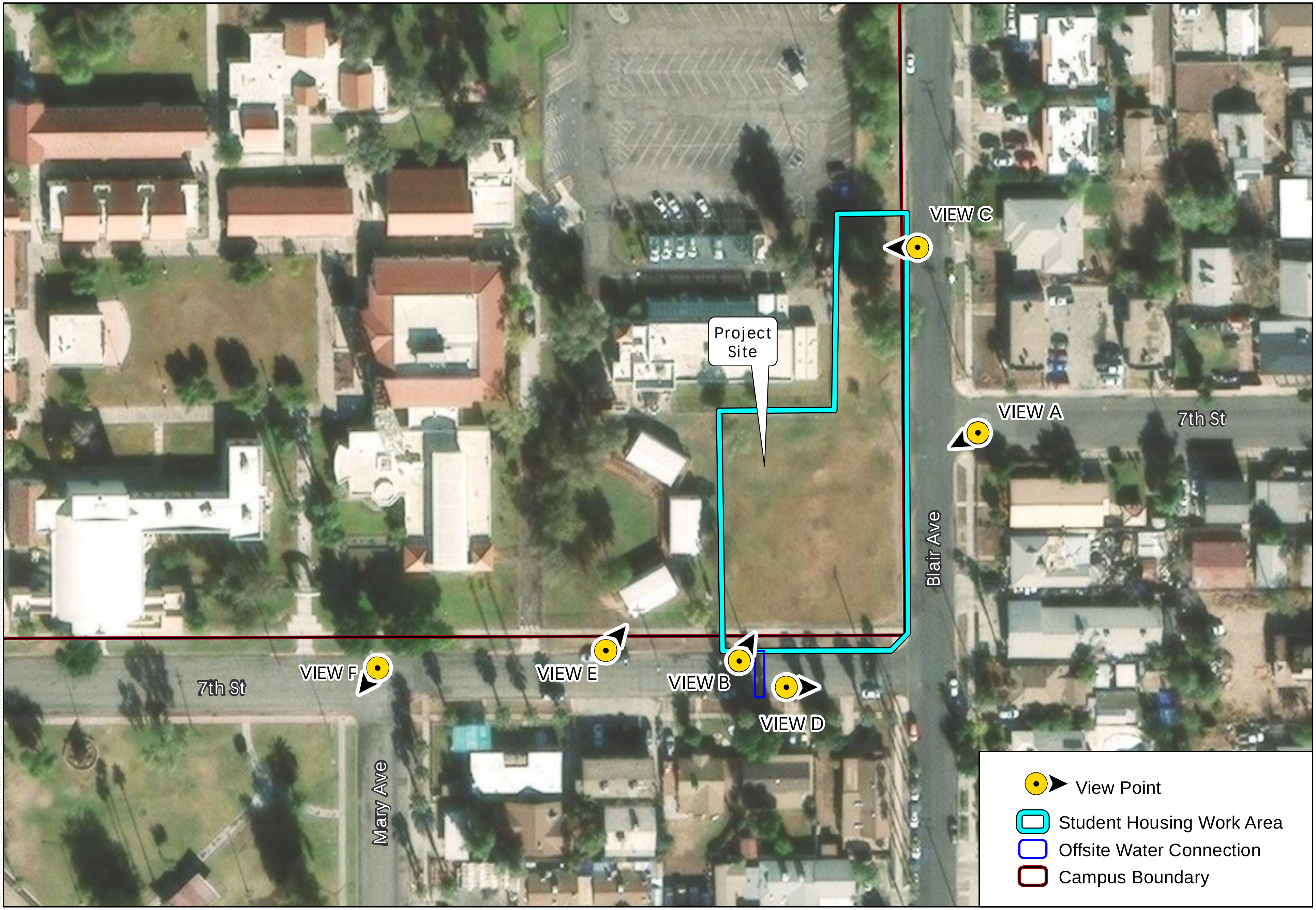


SOURCE: SDSU 2024

DUDEK

FIGURE 6

Elevations



SOURCE: AERIAL-ESRI MAPPING SERVICE 2023

DUDEK

0 50 100 Feet

FIGURE 7
Key Map

SOURCE: GOOGLE EARTH STREET VIEW 2020, 2023

DUDEK

FIGURE 8

Existing Conditions: Project Site

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing

SOURCE: GOOGLE EARTH STREET VIEW 2020, 2023

DUDEK

FIGURE 9

Existing Conditions: Surrounding Area

Visual Technical Memorandum for the SDSU Imperial Valley-Calexico Campus Affordable Student Housing

Appendix B

Air Quality, Greenhouse Gas Emissions, and Energy Technical Memorandum

MEMORANDUM

To:	Kara Peterson, San Diego State University
From:	Collin Paludi, Air Quality Specialist, Dudek Nicholas Lorenzen, Air Quality Specialist, Dudek
Subject:	SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project – Air Quality, Greenhouse Gas Emissions, and Energy Technical Memorandum
Date:	December 12, 2024
cc:	Sarah Lozano, Mollie Brogdon, Dudek; Michael Haberkorn, Gatzke Dillon & Ballance
Attachments:	A – Figures B – Air Quality and Greenhouse Gas Emissions CalEEMod Output Files C – Construction Health Risk Modeling Files

Dudek has conducted an evaluation to determine potential impacts related to air quality, greenhouse gas (GHG) emissions, and energy associated with the proposed San Diego State University (SDSU) Calexico Affordable Student Housing Project (Project or proposed Project), to be located at the SDSU Imperial Valley Off-Campus Center, located in Calexico, California.

This assessment uses the significance thresholds in Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.) and, while the California State University (CSU) as a state agency is not subject to local or regional planning regulations, is based on the emissions-based significance thresholds recommended by the Imperial County Air Pollution Control District (ICAPCD) and other applicable thresholds of significance.

The certified 2003 SDSU Imperial Valley Campus Master Plan Project environmental impact report (2003 EIR) analyzed the air quality impacts associated with development of a Campus Master Plan at the Calexico site at a program level of review. This technical memorandum presents an analysis of potential impacts associated with construction and operation of the proposed housing at a Project-specific level of review, evaluating the potential for Project-generated construction and operational criteria air pollutant emissions to exceed established state and federal ambient air quality standards, result in adverse health impacts on sensitive receptors, result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, or conflict with the implementation of applicable air quality management plans. This technical memorandum also evaluates if implementation of the proposed Project would result in GHG emissions that would have a significant impact on the environment or if the Project would conflict with applicable plans, policies, or regulations for the purpose of reducing GHG emissions. Finally, this technical memorandum evaluates if implementation of the Project would result in wasteful, inefficient, or unnecessary consumption of energy or conflict with plans for renewable energy or energy efficiency.

As described below, this technical memorandum concludes that the proposed Project would result in less-than-significant impacts related to air quality, GHG emissions, and energy use.

1 Project Overview and Background

In September 2003, the CSU certified an environmental impact report for the SDSU Imperial Valley Master Plan Project (State Clearinghouse No. 2002051010) and approved a Campus Master Plan for the expansion and improvement of the SDSU Imperial Valley Off-Campus Center, which includes locations in Calexico and Brawley, both located in Imperial County (SDSU 2003). The Off-Campus Center is an extension of SDSU's main campus in San Diego and furthers the University's regional educational mission to provide additional educational opportunities to the outlying communities of Imperial County. The previously certified and approved Campus Master Plan and EIR provided the authorization necessary for enrollment of 850 full-time equivalent (FTE)[1] students at the Off-Campus Center, corresponding associated faculty and staff, and a framework for development of the facilities necessary to serve this projected enrollment and campus population.

The Off-Campus Center - Calexico is approximately 8.3 acres in size and is located in the City of Calexico (City). Most of the Calexico location is built out, consisting of several educational and support facilities. The environmental impacts associated with development of the Off-Campus Center – Calexico were evaluated at a program level of review in the 2003 EIR. In the CSU's continuing effort to build out the Imperial Valley Off-Campus Center and provide additional educational opportunities, SDSU presently proposes construction and operation of a four-building complex that would provide affordable student housing at the Calexico location for 80 students and a resident manager. Additional details regarding the proposed housing is provided below.

2 Project Location and Existing Conditions

The Off-Campus Center – Calexico is located at 720 Heber Avenue in downtown Calexico, approximately 0.5 miles north of the United States–Mexico border (see Figure 1, Regional Map). Regional access to the Off-Campus Center is provided via SR-111 and SR-98 to the north. The Calexico location is bordered by four streets: Heber Avenue to the west, Sherman Street to the north, Blair Avenue to the east, and 7th Street to the south. Residential uses bound the Calexico complex to the north, east, south, and west. Other surrounding uses include Calexico High School, located northeast, and Calexico City Hall, located immediately south. The Off-Campus Center - Calexico currently consists of 17 buildings and an associated surface parking lot (see Figure 2, Vicinity Map, and Figure 3A, Existing Campus Master Plan).

As a state entity, the CSU/SDSU is not subject to local government plans, regulations, and guidelines, such as those contained in the City's General Plan. The above notwithstanding, for information purposes, the Off-Campus Center -Calexico is zoned as Open Space and is designated as Public Facilities in the City's General Plan (City of Calexico 2015a).

The proposed Project site is approximately 0.58 acres in size (25,320 square feet) and is located at the southeast corner of the campus, at the northwest corner of East 7th Street and Blair Avenue (see Figure 2). The entirety of the Project site has previously been graded and is relatively flat in nature, with an average elevation of 3.5 feet above mean sea level. The Project site encompasses the locations identified in the Campus Master Plan as future Building 21 (see Figure 3A and Figure 3B, Proposed Campus Master Plan). The Project site consists of vacant and undeveloped land with two trees located along the northern boundary of the site. A chain-link fence separates the Project site from the recently removed temporary Campus Buildings 201, which were located immediately west of the Project site.

1 A full-time equivalent (FTE) student is one full-time student taking 15 course credits, or 3 part-time students each taking 5 course credits.

3 Project Description

3.1 Affordable Student Housing Complex

The proposed Project would involve the construction of a single-story, four-building complex approximately 12,840 square feet in size that would provide for affordable student housing. The complex would include three student housing buildings, including one smaller live-in unit building, and a community building. Two of the three proposed residential buildings would each be approximately 5,500 square feet in size and would include five four-bedroom, two-bathroom apartment units, totaling 40 student beds per building (two student beds per bedroom, 80 student beds in total). The third proposed residential building would be a live-in manager unit that would consist of a single two-bedroom, one-bathroom apartment. The proposed live-in unit would also include approximately 100 square feet of office space that is intended to provide a space for tenant meetings, social services, or counseling. All apartment units would also be equipped with a living area and kitchen. The proposed community building program would be approximately 840 square feet and include laundry, mail, restroom, electrical, and maintenance facilities. The mail room would be located outside, under the shaded amenity patio of the community building (see Table 1).

Table 1. Affordable Student Housing Complex Area Calculations

	Quantity	Area (Square Feet)	Beds
Residential Buildings (3)			
4-Bedroom, 8-Bed Unit	5	5,150	40
4-Bedroom, 8-Bed Unit	5	5,150	40
Live-In Unit	1	1,000	2
Office (Included in Live-In Unit)	N/A	N/A	N/A
Subtotal	*11*	*11,300*	*82*
Community Building (1)			
Laundry Room	1	300	N/A
Service Rooms	4	450	N/A
Restroom	2	100	N/A
Mail/Package (Outside)	1	270	N/A
Subtotal	*N/A*	*1,150*	*N/A*
Other			
Trash/Recycling Enclosure	1	850	N/A
Open Space	N/A	2,300	N/A
Landscaping/hardscaping	N/A	12,500	N/A
Subtotal	*N/A*	*13,650*	*N/A*
Combined Total	**N/A**	**26,100**	**82**

Note: N/A = not applicable.
All square foot amounts presented in the table are approximate amounts only and may not add to the site plan area totals described in this document due to rounding.

Other on-site proposed amenities include a courtyard, bike racks, and a community waste enclosure. The courtyard would be approximately 1,600 square feet and would be centrally located in the proposed complex (see Figure 4, Site

Plan). Approximately 15 bike racks would be provided throughout the Project site. A community waste enclosure at the northeast corner of the Project site would allow residents a convenient place to dispose of waste and recyclables.

3.1.1 Operation

The Off-Campus Center - Calexico, including the Project site, is owned and operated by the CSU/SDSU. The CSU Board of Trustees, on behalf of SDSU, is the lead agency responsible for certifying the adequacy and completeness of this document and approval of the proposed Project. SDSU and the IVCCD have received joint funding under the State of California Higher Education Student Housing Grant Program to construct the proposed Project.

To support basic housing needs for students in the Imperial Valley, SDSU and IVCCD have executed a 30-year master lease agreement that details operation of the Project. This agreement dictates that 40 of the 82 proposed student beds would be reserved for IVCCD students who attend the Imperial Valley College in Imperial. Likewise, 40 of the proposed 82 beds, would be reserved for SDSU Off-Campus Center - Calexico students. A 2-bedroom unit would also provide living space for on-site management. SDSU would be responsible for operating, managing, and maintaining the proposed Project once operational.

Student beds made available under the proposed Project would be leased/rented to eligible low-income students. Eligible low-income students are defined as having 30% of 50% of the Annual Median Income for Imperial County. In the event, after a good faith outreach effort, there is not sufficient demand from students meeting the eligibility requirements within 90 days of the start of the fall semester, unassigned beds may be leased at market rates to SDSU and IVCCD students not meeting the low-income eligibility requirements. In addition to meeting the low-income criteria, eligible students would be required to be enrolled students and take a minimum average of 12 degree-applicable units per semester term, or the quarterly equivalent (with exceptions permitted), to facilitate timely degree completion.

3.1.2 Other Project Elements

Building and Site Design

The proposed buildings have been designed to reflect the character and massing of the existing Off-Campus Center - Calexico, as well as the surrounding neighborhood. Building design is centered around a courtyard-style housing complex and would consist of smooth stucco walls with downspouts and rafters, punctuated by composite terra cotta–colored roof tile accents and windows. Maximum building heights would range from 14 feet to 18 feet.

Landscaping, Other Site Improvements, and Lighting

The Project would include approximately 16,000 square feet of on-site landscaping and hardscape improvements (i.e., pedestrian walkways). All proposed landscaping would consist of drought-tolerant, indigenous plants. The landscape scheme would include shrubs, hedges, and a variety of trees. A total of 39 trees would be added to the Project site including five fan palms, eight mesquite trees, six evergreen elms, and 20 yucca trees.

All exterior on-site lighting would be hooded or shielded, directed downward, and would be compliant with applicable standards for lighting control and light pollution reduction (i.e., Title 24, American National Standards Institute/Illuminating Engineering Society).

The proposed complex would be secured via an iron security fence that would measure 6 feet in height and run approximately 64 linear feet, connecting to the proposed buildings. Access to the complex would only be available to residents and their guests via two pedestrian gates located at the northwestern corner and southern portion of the proposed complex. The gates would be equipped with security card access for residents.

Utilities and Public Services

New points of connection for domestic water, fire supply water, sewer, storm drainage and electrical connections from existing utility lines would be required to serve the proposed Project. Potable water service, as well as sewer collection services at the Project site, would be provided by the City. The Project would connect to an existing sanitary sewer maintenance access line located in Blair Avenue via new 6-inch mains. Connections for water (including domestic, fire, and irrigation) would be from an existing water main located in Blair Avenue. Distribution water pipes would be extended underground to serve each proposed building. A new water meter would be located in the proposed maintenance room in the community building. Adequate water treatment capacity and supply and sewer treatment capacity exists within the City's water and sewer system to accommodate the Project; therefore, no capacity upgrades to infrastructure would be necessary.

Stormwater drainage includes two stormwater catch basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated immediately east of the existing chain-link fence at the western boundary of the Project site. The proposed catch basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to stormwater discharge into the City's stormwater system via one new storm drain located in the southeast corner of the Project site.

Electrical services within the Project area are provided by Imperial Irrigation District, which provides electric power to over 158,000 customers in the Imperial Valley in addition to areas of Riverside and San Diego counties (IID 2024). New utility connections and infrastructure would be required to support electrical services on site. The Project would connect to on-site electrical power infrastructure via an existing 12kV, three phase, three wire, 60 Hertz overhead line routed along East 7th Street. No natural gas usage is proposed for the Project.

The Project would require a new point of connection for on-site telecommunications and would connect to the existing AT&T communications via the on-campus minimum point of entry.

Access, Circulation, and Parking

Regional access to the Project site is provided via SR-111 and SR-98 to the north. Local access is provided via Blair Avenue and East 7th Street. Parking to the Project site is available in the existing campus parking lot, immediately north of the Project site, which has sufficient capacity to serve the proposed Project. On-site circulation improvements would consist of additional paved pathway/pedestrian walkway features throughout the proposed complex and along the northern boundary of the Project site (see Figure 4). Emergency access would be provided directly adjacent to the Project site on East 7th Street and Blair Avenue.

3.1.3 Design Standards and Energy Efficiency

In May 2014, the CSU Board of Trustees broadened the application of sustainable practices to all areas of the university by adopting the first systemwide sustainability policy, which applies sustainable principles across all areas of university operations, including facility operations and utility management. In May 2024, the CSU Sustainability Policy was updated to expand on existing sustainability goals (CSU 2024). The CSU Sustainability Policy seeks to integrate sustainability into all facets of the CSU, including academics, facility operations, the built environment, and student life (CSU 2018). Relatedly, the state has also strengthened energy-efficiency requirements in the California Green Building Standards Code (Title 24 of the California Code of Regulations).

As a result, all CSU new construction, remodeling, renovation, and repair projects, including the proposed Project, would be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable state energy codes and regulations. Progress submittals during design are monitored for individual envelope, indoor lighting, and mechanical system performances. In compliance with these goals, the proposed Project would be equipped with solar ready design features that would facilitate and optimize the future installation of a solar photovoltaic (PV) system.

3.1.4 Off-Site Improvements

Off-site improvements would include the resurfacing of a portion of Blair Avenue adjacent to the eastern boundary of the Project site that would be disturbed as a result of trenching to make necessary connections to the existing water main and sanitary sewer maintenance access. Any area disturbed as a result of this connection within Blair Avenue would be resurfaced to existing conditions. All off-site improvements would occur within the Blair Avenue right-of-way.

3.1.5 Construction

Construction would be performed by qualified contractors. Plans and specifications would incorporate stipulations regarding standard CSU/SDSU requirements and acceptable construction practices, such as those set forth in the SDSU Stormwater Management Plan, CSU Seismic Policy, The CSU Office of the Chancellor Guidelines, and the CSU Sustainability Policy, regarding grading and demolition, safety measures, vehicle operation and maintenance, excavation stability, erosion control, drainage alteration, groundwater disposal, public safety, and dust control.

Construction Timeline

Construction of the proposed Project would take approximately 17 months to complete and is estimated to begin as early as January 2025 and be completed by May 2026, with occupancy planned for fall 2026. Construction activities would generally occur Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m., with the potential for weekend construction on Saturday between 9:00 a.m. and 5:00 p.m. No construction would occur on Sundays or holidays or at night.

Construction Activities

A construction mobilization or staging area would be located immediately northeast of the proposed Project site and would occupy approximately 8,000 square feet. The area would be located east of existing Campus Building 6, west of Blair Avenue, and south of the existing parking lot (see Figure 2 and Figure 3A). To accommodate use of this area, four trees would be removed.

Construction would include site preparation, grading and excavation, utility installation/trenching, building foundation pouring, building construction, and landscaping. Excavation depths are anticipated to be 3 feet below grade. The majority of waste (i.e., excavated gravel/soil) generated during Project construction would be balanced/used within the site. Approximately 2,600 cubic yards of soil would be removed from the site and exported to Republic Services Allied Imperial Landfill, approximately 12 miles north. The entire Project site, including construction mobilization area (approximately 34,000 square feet in total) would be disturbed as a result of Project construction. Two trees would be removed from the Project site to accommodate the proposed Project.

Table 2 displays the construction equipment anticipated to be used during construction.

Table 2. Anticipated Construction Equipment

Aerial Lifts	Pressure Washers
Air Compressors	Pumps
Cement and Mortar Mixers	Rollers
Concrete/Industrial Saws	Rough Terrain Forklifts
Dumpers/Tenders	Rubber-Tired Dozers
Excavators	Rubber-Tired Loaders
Forklifts	Scrapers
Generator Sets	Signal Boards
Graders	Skid Steer Loaders
Off-Highway Tractors	Surfacing Equipment
Off-Highway Trucks	Sweepers/Scrubbers
Other Construction Equipment	Tractors/Loaders/Backhoes
Other General Industrial Equipment	Trenchers
Other Material Handling Equipment	Welders
Plate Compactors	

Source: Dorsey and Nielson Construction Inc, pers. comm., 2024

Construction Waste

The Project would generate construction debris during on-site clearing activities. In accordance with Section 5.408 of the California Green Building Standards Code, the Project would implement a construction waste management plan for recycling and/or salvaging for reuse of at least 65% of nonhazardous construction/demolition debris. Additionally, the Project would be required to meet Leadership in Energy and Environmental Design v4 requirements for waste reduction during construction. Solid waste generated during construction would be hauled off site to the Republic Services Allied Imperial Landfill at 104 East Robinson Road in Imperial, California.

4 Analysis Methodology

The analysis presented herein considers the potential environmental impacts of the proposed Project relative to existing conditions. Establishment of the Project site's existing air quality, GHG emissions, and energy conditions and assessment of Project-attributed changes in air quality, GHG emissions, and energy impacts has been prepared using information contained in the previously certified 2003 EIR, with the information updated, as necessary, to reflect specific conditions of the proposed Project.

At the time the EIR for the SDSU Imperial Valley Campus Master Plan Project was certified in 2003, an evaluation of GHG emissions and energy was not required under CEQA. Since that time, California's legal landscape has changed relative to the consideration of GHG emissions and energy under CEQA via the enactment of numerous statutory schemes; the promulgation of implementing regulations; the issuance of executive orders and planning documents at the state, regional, and local levels; and the publication of relevant judicial decisions. While CEQA now requires evaluation of potential GHG emission and energy impacts of a project, based on the *Citizens for Responsible Equitable Environmental Development v. City of San Diego* (2011) decision and other published case law, information about the effects of GHG emissions and energy is not "new information" triggering a requirement to prepare a subsequent or supplemental EIR under CEQA Guidelines Section 15162(a)(3).

However, as this proposed Project is being considered under the umbrella of the 2003 EIR, this environmental analysis also has considered the relevance of CEQA Guidelines Section 15168(c)(1), which addresses the use of program EIRs for purposes of streamlining the environmental review of implementing projects. Under that provision, "[i]f a later activity would have effects that were not examined in the program EIR, a new Initial Study would need to be prepared leading to either an EIR or a Negative Declaration." Therefore, pursuant to CEQA Guidelines Section 15168(c)(1), an analysis of the proposed Project's GHG emissions and energy has been prepared, as described in Sections 5 and 6 below.

The Project site is located within the Salton Sea Air Basin (SSAB) and is within the jurisdictional boundaries of ICAPCD, which has jurisdiction over the central portion of Riverside County (Coachella Valley) and all of Imperial County, where the proposed Project is located. Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutants that are evaluated include reactive organic gases (ROGs), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides, particulate matter with an aerodynamic diameter less than or equal to 10 microns in size (coarse particulate matter, or PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in size (fine particulate matter, or $PM_{2.5}$). ROGs and NO_x are important because they are precursors to ozone (O_3).

Criteria air pollutant emissions associated with construction of the proposed Project were estimated for the following emission sources: operation of off-road construction equipment, architectural coating, on-road vendor (material delivery) trucks, and worker vehicles. The operational criteria air pollutant emissions were estimated from area sources, mobile sources, energy sources, and stationary sources.

4.1 Construction Modeling Methodology

The California Emissions Estimator Model (CalEEMod) Version 2022.1 was used to estimate emissions from construction and operation of the proposed Project (CAPCOA 2022). CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant and GHG emissions associated with construction activities and operation of a variety of land use projects, such as residential, commercial, and industrial facilities. CalEEMod input parameters, including the land use type that represents the Project and its size, construction schedule, and anticipated use of construction equipment, were based on information provided by the applicant or default model parameters if Project specifics were unavailable. Based on the proposed Project schedule, construction would commence in November 2024 and last approximately 17 months, ending in March 2026 [2]. The first year of the proposed Project's operation would be 2026, after completion of construction. The analysis contained herein is based on the following subset area schedule assumptions (duration of phases is approximate and phases overlap):

- Grading – 2.5 months (November 2024–February 2025)
- Building Construction – 12 months (March 2025–March 2026)
- Architectural Coating – 5 months (July 2025–December 2025)

The estimated construction duration was provided by the Project applicant. The construction equipment mix used for estimating the construction emissions of the Project is based on information provided by the Project applicant and is shown in Table 3, Construction Scenario Assumptions.

Table 3. Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Grading	14	0	6	Graders	1	8
				Tractors/Loaders/ Backhoes	2	8
				Rubber-Tired Dozers	1	8
				Dumpers/Tenders	1	8
Building Construction	8	2	0	Forklift	6	8
				Tractors/Loaders/ Backhoes	2	8
				Cement and Mortar Mixers	1	8
				Aerial Lifts	3	8
				Skid Steer Loaders	1	8
				Welders	2	8
Architectural Coating	2	0	0	Air Compressor	1	6

Note: See Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files, for details.

For the analysis, it was assumed that heavy construction equipment would be operating 5 days per week (22 days per month) during Project construction. Construction worker and vendor trips were based on applicant-provided

2 The analysis assumes a construction start date of November 2024, which represented the earliest date construction would initiate at the time this technical memorandum was prepared. The construction schedule has since been revised to start in January 2025 and conclude in May 2025; the operational date has not changed. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant and GHG emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

data. Equipment emissions were estimated using the CalEEMod default emission factors for the construction duration.

4.2 Operation Modeling Methodology

Emissions from the operational phase of the Project were estimated using CalEEMod. Operational year 2026 was assumed, as it would be the first year following completion of construction.

Mobile Sources

As discussed previously, the proposed Project would not increase SDSU Imperial Valley FTE enrollment beyond the level previously approved within the 2003 EIR; therefore, the mobile emissions associated with the SDSU Off-Campus Center - Calexico were previously analyzed and do not need to be included in this assessment. However, the 2003 EIR did not estimate the trips generated by those student residents commuting to the IVCCD campus from the Project site. These trips, therefore, were analyzed within the transportation technical memorandum for the proposed Project. Following the guidance of the transportation technical memorandum, a conservative estimate of 79 daily trips was used to model emissions associated with the IVCCD student residents within CalEEMod (Dudek 2024).

Area Sources

CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (CAPCOA 2022). Consumer product ROG emissions are estimated in CalEEMod based on the floor area of residential buildings and on the default factor of pounds of ROG per building square foot per day.

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers. The emissions associated with landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per dwelling unit per day) and number of summer days (when landscape maintenance would generally be performed) and winter days (CAPCOA 2022).

Energy

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage. Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site. Per the applicant and consistent with the CSU's aim to minimize use of natural gas and transition to electric alternatives, no natural gas would be used on site. All space and water heating will be electrified.

4.3 Construction Health Risk Methodology

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. ICAPCD recommends a carcinogenic (cancer) risk threshold of 10 in 1 million. Additionally, some toxic air contaminants (TACs) increase non-cancer health risk due to long-term (chronic) exposures. The Chronic Hazard Index is the sum of the individual substance chronic hazard indices for all TACs affecting the same target organ system. ICAPCD recommends a Chronic Hazard Index significance threshold of one (project increment).

The exhaust from diesel engines is a complex mixture of gases, vapors, and particles, many of which are known human carcinogens. Diesel particulate matter (DPM) has established cancer risk factors and relative exposure values for long-term chronic health hazard impacts. No short-term, acute relative exposure level has been established for DPM; therefore, acute impacts of DPM are not addressed in this assessment. The health risk assessment (HRA) prepared for the Project evaluated the risk to existing nearby residents from DPM generated by operation of on-site construction equipment and from haul and vendor trucks accessing the site during construction.

The dispersion modeling of DPM was performed using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), which is the model the ICAPCD requires for atmospheric dispersion of emissions. AERMOD is a steady-state Gaussian plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of surface and elevated sources, building downwash, and simple and complex terrain (EPA 2023a). For the Project, AERMOD was run with all sources emitting unit emissions (1 gram per second) to obtain the "X/Q" values. X/Q is a dispersion factor that is the average effluent concentration normalized by source strength and is used as a way to simplify the representation of emissions from many sources. The X/Q values of ground-level concentrations were determined for construction emissions using AERMOD and the maximum concentrations determined for the 1hour and period-averaging periods. Principal parameters of this modeling are presented in Table 4, Construction Health Risk Assessment AERMOD Principal Parameters.

Table 4. Construction Health Risk Assessment AERMOD Principal Parameters

Parameter	Details
Meteorological Data	The latest 4-year meteorological data (2015–2018, 2021) for the Imperial County Airport Station (KIPL) from CARB were downloaded and then input to AERMOD.
Urban versus Rural Option	Urban areas typically have more surface roughness, as well as structures and low-albedo surfaces that absorb more sunlight—and thus more heat—relative to rural areas. Based on the area surrounding the Project site, the urban option was selected.
Terrain Characteristics and Elevation Data	The digital elevation model files were imported into AERMOD so that complex terrain features were evaluated as appropriate, and elevations were assigned to the emission sources and receptors. Digital elevation data were obtained through AERMOD View in the U.S. Geological Survey's National Elevation Dataset format with an approximately 30-meter (1 arc-second) resolution.
Emission Sources and Release Parameters	Air dispersion modeling of DPM from construction activities was conducted using emissions estimated using CalEEMod, assuming emissions would occur 5 days per week. The construction equipment DPM emissions were modeled as a line of adjacent volume sources where construction activity is anticipated to occur. The line of adjacent volume sources were assumed to have a release height of 3.4 meters, a plume height of 6.8 meters, and a plume width of 8.6 meters (SBCAPCD 2023).

Table 4. Construction Health Risk Assessment AERMOD Principal Parameters

Parameter	Details
Receptors	Discrete receptors were located at residences immediately adjacent to the Project site.

Notes: AERMOD = American Meteorological Society/Environmental Protection Agency Regulatory Model; CARB = California Air Resources Board; DPM = diesel particulate matter; CalEEMod = California Emissions Estimator Model.
See Attachment C, Construction Health Risk Modeling Files, for additional information.

Dispersion model plot files from AERMOD were then imported into the California Air Resources Board (CARB) Hotspots Analysis and Reporting Program (HARP2) to determine health risk, which requires peak 1-hour emission rates and annual emission rates for all pollutants for each modeling source. The Project's potential cancer and non-cancer health impacts from construction assume an exposure duration of 20.28 months, including the 17-month construction period and starting at the third trimester of pregnancy, which is the earliest age at which children could be exposed. The risk results were then compared to ICAPCD thresholds to assess Project impact significance.

5 Air Quality Assessment

5.1 Air Quality Impact Analysis and Conclusions

5.1.1 Thresholds of Significance

The significance criteria used to evaluate the Project impacts to air quality are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). For the purposes of this air quality analysis, a significant impact would occur if the Project would:

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

Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) indicates that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to determine whether a project would have a significant impact on air quality.

ICAPCD has established numeric significance thresholds (see Table 5) to assist lead agencies in determining whether a proposed project may have a significant air quality impact. A project would result in a substantial contribution to an existing air quality violation of the National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) for O_3, which is a nonattainment pollutant, if the project's construction or operational emissions would exceed ICAPCD's ROG or NO_x significance thresholds. These emissions-based thresholds for O_3 precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O_3 impacts to occur) because O_3 itself is not emitted directly, and the effects of an individual project's emissions of O_3 precursors (ROG and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods. The SSAB is also designated as nonattainment for the federal and state PM_{10} standards and designated as unclassified or in attainment for all other criteria air pollutants.

The 2017 ICAPCD CEQA Handbook provides guidelines and numeric thresholds for determining the significance of project impacts and the recommended level of environmental analysis required based on total anticipated emissions from project operations (ICAPCD 2017). These guidelines are provided in Table 5, ICAPCD Air Quality Significance Thresholds, below and are organized by Tier I and Tier II projects. Per the ICAPCD CEQA Handbook, projects whose operational emissions are below Tier I thresholds are not required to develop a comprehensive air quality analysis report or an EIR and can rely on an initial study to determine that impacts are less than significant. As discussed in Section 5.1.2, Air Quality Assessment Impact Analysis, below, the proposed Project is considered a Tier I project per ICAPCD guidelines (ICAPCD 2017).

Table 5. ICAPCD Air Quality Significance Thresholds

Pollutant	Emissions (pounds per day)		
	Operational		Construction
	Tier 1	Tier II	
ROGs	<137	137 and greater	75
NO_x	<137	137 and greater	100
CO	<550	550 and greater	550
SO_x	<150	150 and greater	N/A
PM_{10}	<150	150 and greater	150
$PM_{2.5}$	<550	550 and greater	N/A
Level of Significance	Less than Significant	Significant Impact	N/A
Level of Analysis	Initial Study	Comprehensive Air Quality Analysis Report	N/A
Environmental Document	Negative Declaration	MND or EIR	N/A

Source: ICAPCD 2017.
Notes: ICAPCD = Imperial County Air Pollution Control District; ROG = reactive organic gas; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; N/A = not applicable; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; MND = mitigated negative declaration; EIR = environmental impact report.

Thresholds of significance for project construction are also provided in Table 5. According to ICAPCD CEQA guidance, construction particulate matter impacts for Tier I projects should be assessed qualitatively as opposed to quantitatively, although it is ultimately at the discretion of the lead agency to quantify construction emissions. As described below, the proposed Project is below the operational thresholds for Tier I projects and thus is not required to quantitatively evaluate PM_{10} impacts for construction. However, construction emissions were quantified for disclosure purposes.

Regardless of project size and whether construction emissions are quantified, ICAPCD requires implementation of standard measures for construction equipment and fugitive PM_{10} at all construction sites. These standard measures are listed below and are collectively known as Regulation VIII, Fugitive Dust Control Measures, of ICAPCD's Rules and Regulations. The fugitive dust benefits from implementation of these regulatory compliance measures were not included in the CalEEMod emissions modeling given that the measures cannot be readily quantified. In this case, fugitive dust emissions (PM_{10}) generated during Project construction would likely be lower than the estimates reported in Table 6, Estimated Maximum Daily Construction Criteria Air Pollutant Emissions, below.

a) All disturbed areas, including Bulk Material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover.
b) All on-site and off-site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.
c) All unpaved traffic areas one (1) acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emission shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.
d) The transport of Bulk Materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of Bulk Material. In addition, the cargo compartment of all Haul Trucks is to be cleaned and/or washed at delivery site after removal of Bulk Material.
e) All Track-Out or Carry-Out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an Urban area.
f) Movement of Bulk Material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.
g) The construction of any new Unpaved Road is prohibited within any area with a population of 500 or more unless the road meets the definition of a Temporary Unpaved Road. Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.

5.1.2 Impact Analysis

The analysis prepared for the 2003 EIR determined that there would be no significant air quality impacts as a result of development of the SDSU Off-Campus Center Master Plan - Calexico. The air quality assessment concluded that there would be no construction-related impacts or project-related exceedances for any criteria air pollutants during operation. As such, no air quality–related mitigation measures were required or identified in the 2003 EIR. A summary of the prior analysis is provided below along with the current Project-specific analysis for each Appendix G significance criteria, as applicable.

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

The proposed Project site is located within the SSAB, which includes all of Imperial County and the central portion of Riverside County (Coachella Valley). Imperial County, where the Project site is located, is within the jurisdictional boundaries of the ICAPCD. The ICAPCD is responsible for developing and implementing the clean air plans for attainment and maintenance of the NAAQS and CAAQS in the SSAB, including the

2018 PM_{10} State Implementation Plan and the 2017 State Implementation Plan for the 75 parts per billion 8-hour Ozone Standard.

The previous analysis prepared for the 2003 EIR found that the project would have less-than-significant impacts related to conflicting with implementation of the applicable air quality plan. Given that the proposed Project is within the scope of the approved Off-Campus Center Master Plan - Calexico and certified EIR, that determination remains applicable. However, because ICAPCD has adopted additional air quality plans since certification of the EIR in 2003, a discussion of the proposed Project's potential to conflict with applicable plans that post-date the certified EIR is provided below.

The most efficient approach to determining project consistency with applicable air quality plans is assessing whether the proposed development is consistent with the growth anticipated by the land use plans that were used for preparation of the air quality plans. The relevant land use plan for the proposed Project is the 2003 Off-Campus Center Master Plan - Calexico. Local and regional plans, including the City's 2007 General Plan and the Imperial County General Plan, are not applicable because as a state entity, the CSU/SDSU is not subject to local government plans, regulations, and guidelines.

Relatedly, ICAPCD's air quality attainment plans are based, in part, on regional population and employment (and thus vehicle miles traveled [VMT]) growth projections from the Southern California Association of Governments (SCAG), which is the designated Metropolitan Planning Organization for Imperial County. Thus, a project's conformance with SCAG's Metropolitan Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2016[3]) that was considered in the preparation of the air quality attainment plans would demonstrate that the project would not conflict with or obstruct implementation of the air quality plans.

As discussed in Section 3, Project Description, student enrollment and corresponding faculty and staff resulting from the proposed Project would remain within the approved maximum FTE enrollment analyzed in the previously certified EIR and approved Off-Campus Center Master Plan - Calexico for development of the Calexico Center, which itself is included in Imperial County's General Plan Land Use Element (Imperial County 2015) which was in turn used to create SCAG's growth forecast for the region.[3] Therefore, implementation of the proposed Project would not result in development in excess of what was anticipated in the approved Off-Campus Center Master Plan - Calexico and Imperial County General Plan, and would not result population growth beyond what was assumed in SCAG's RTP/SCS. As the proposed Project is consistent with the growth projections used to prepare the air quality management plans for the SSAB (2018 PM_{10} and 2017 Ozone State Implementation Plans), the Project would be consistent with these plans. Impacts related to the potential to conflict with or obstruct implementation of the applicable air quality plans would be **less than significant.**

b) Would the project 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?

The nonattainment status of regional pollutants is a result of past and present development, and ICAPCD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the

3 Note that, while the Connect SoCal 20216 RTP/SCS is not the most current RTP/SCS adopted by SCAG, it is referenced here for contextual consistency as the regional plan considered during the preparation of the relevant regional air quality treatment plans.

determination of whether a project's individual emissions would have a cumulatively considerable contribution resulting in an impact on air quality.

The air quality analysis prepared for the 2003 EIR found that there would be no significant construction-related air quality impacts and no project-related exceedances or excessive concentrations of any criteria air pollutants per either state or federal standards.

The construction emissions estimate in the 2003 EIR was based on "typical worst day construction activities associated with a school campus construction project similar to the proposed project" (SDSU 2003). The EIR's "typical worst day" equipment-related emissions estimation parameters included use of forklifts, off-highway trucks, tracked loaders, tracked tractor/dozers, scrapers, and rollers. The total equipment hours (i.e., total pieces of equipment × total hours of daily operation per piece) for the "typical worst day" were approximately 68 equipment hours per day. Additionally, the total earthwork quantity used in the 2003 EIR analysis was 10,000 cubic yards of material over 30 days, or 866 tons per day. As discussed in the Project-specific analysis below, the construction equipment and activity anticipated for implementation of the proposed Project is within the impact analysis envelope of the certified 2003 EIR.

While the proposed Project fits within the impact analysis envelope of the 2003 EIR for equipment use and grading, the prior EIR assessment did not estimate emissions associated with off-site worker or vendor trips. Given that emissions from these sources have the potential to result in air quality impacts with construction of the proposed Project, an updated Project-specific estimate of air quality emissions from Project construction is provided.

Additionally, the operational emissions estimate in the 2003 EIR included emissions from motor vehicles associated with the projected FTE enrollment of 850 ultimately expected at the Calexico Center. The analysis found that trip generation associated with this increase in FTE would result in no exceedances of ICAPCD threshold levels for all criteria air pollutants. Given that the proposed Project would not increase the previously approved maximum FTE enrollment, the proposed Project is consistent with the 850 FTE previously analyzed in the 2003 EIR. However, as described in Section 3, the proposed Project would also accommodate IVCCD students who use their personal vehicles to commute to the IVCCD campus from the Project site. The emissions associated with these trips were not previously analyzed and are therefore included in the analysis herein.

The Project-specific analysis for air quality impacts is discussed separately for construction and operation below.

Construction

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and ROG off-gassing) and off-site sources (i.e., on-road vendor trucks and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and, for particulate matter, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated.

Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of ROGs, NO_x, CO, PM_{10}, and $PM_{2.5}$. Additionally, PM_{10} and $PM_{2.5}$ emissions would be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. The proposed Project would be required to comply with ICAPCD Regulation VIII (Fugitive Dust Control Measures) to control dust emissions generated during any dust-generating activities. Standard construction measures that would be employed to reduce fugitive dust emissions include limiting visible emissions to no greater than 20% opacity through use of chemical stabilizers, dust suppressants, and/or watering. Based on the developed nature of the Project site and surrounding areas and given that on-site and off-site roads would be paved, the default percentage of paved road was adjusted to more accurately represent on-road travel during Project construction. To account for potential unpaved vehicle movement within the Project site vicinity, it was conservatively estimated that 95% of all travel (i.e., worker and vendor trips) would be on paved roads, with 5% on unpaved roads.

CalEEMod Version 2022.1 was used to estimate emissions from construction of the proposed Project. CalEEMod default construction parameters were used when detailed Project-specific information was not available, including specific off-road equipment for each phase. The construction equipment needed to build out the proposed Project is similar to that analyzed in the 2003 EIR. Maximum daily activity would require approximately 48 equipment hours per day, which is well within the scope of the 68 hours analyzed for the “typical worst day” in the 2003 EIR.

According to preliminary Project detail, the material movement estimated for construction of the proposed Project is 2,600 cubic yards of cut to be exported off site, which also is within the scope of the previously identified 10,000 cubic yards analyzed in the 2003 EIR. Additional detail on Project-specific construction parameters is included in Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files.

Table 6, Estimated Maximum Daily Construction Criteria Air Pollutant Emissions, presents the estimated maximum daily construction emissions generated during Project construction. Details of the emission calculations are provided in Attachment B.

Table 6. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
2024	1.82	17.12	17.27	0.03	28.14	4.54
2025	2.32	15.25	16.27	0.03	28.03	4.45
2026	0.81	7.07	10.99	0.02	12.74	1.47
Maximum	2.64	17.12	17.27	0.03	28.14	4.54
ICAPCD Threshold	*75*	*100*	*550*	*N/A*	*150*	*N/A*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: ROG = reactive organic gas; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; ICAPCD = Imperial County Air Pollution Control District; N/A = not applicable.
Emission reductions from implementation of Mitigation Measure (MM) AQ-1, which requires Tier 4 engines for all construction equipment greater than 50 horsepower, would reduce NO_x and PM emissions. Emission reductions from MM-AQ-1 were not captured in this table.
See Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files, for complete results.

As shown in Table 6, Project construction would not exceed ICAPCD's daily thresholds. Therefore, construction impacts associated with criteria air pollutant emissions would be **less than significant.**

Operation

Criteria air pollutant emissions from daily operation of the proposed Project were estimated using a combination of CalEEMod default parameters and Project-specific information provided by the applicant, where available. Operational year 2026 was analyzed as it is anticipated to be the first year of operation following completion of Project construction. Criteria air pollutant emissions sources and associated information are discussed in Section 4.3, Construction Health Risk Methodology. Table 7, Estimated Maximum Daily Operations Criteria Air Pollutant Emissions, presents the estimated maximum daily emissions generated during operation of the proposed Project. Details of the emission calculations are provided in Attachment B.

Table 7. Estimated Maximum Daily Operations Criteria Air Pollutant Emissions

Source	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
Mobile	0.38	0.19	1.91	<0.01	137.03	13.67
Area	0.34	0.01	0.57	<0.01	<0.01	<0.01
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.72**	**0.20**	**2.48**	**<0.01**	**137.03**	**13.67**
ICAPCD Threshold	*137*	*137*	*550*	*150*	*150*	*550*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: ROG = reactive organic gas; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; ICAPCD = Imperial County Air Pollution Control District.
<0.01 indicates values smaller than 0.005.
See Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files, for complete results.

As shown in Table 7, the proposed Project would not exceed ICAPCD's significance thresholds during operations. Therefore, operational impacts associated with criteria air pollutant emissions would be **less than significant.**

In considering cumulative impacts from the proposed Project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SSAB is designated as nonattainment for the CAAQS and NAAQS. If a project's emissions would exceed ICAPCD's significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SSAB. If a project does not exceed thresholds and is determined to have less-than-significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if: (1) the project's contribution accounts for a significant proportion of the cumulative total emissions and (2) the project is inconsistent with ICAPCD air quality plans, which address cumulative emissions in the SSAB.

The SSAB has been designated as a federal and state nonattainment area for O_3 and PM_{10}. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SSAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction of the proposed Project would generate ROG and NO_x emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. As indicated in Tables 6 and 7, Project-generated construction and operational emissions would not exceed ICAPCD's emission-based significance thresholds for any criteria air pollutant.

Cumulative localized impacts would potentially result if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the proposed Project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be speculative. However, future projects would be subject to CEQA and would require an air quality analysis and, where necessary, mitigation if the project would exceed ICAPCD's significance thresholds. Criteria air pollutant emissions associated with construction activity of future proposed projects also would be reduced through implementation of control measures required by ICAPCD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to ICAPCD Regulation VIII (Fugitive Dust Control Measures), which sets forth general and specific requirements for all construction sites in the ICAPCD.

Based on the previous considerations, the Project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and cumulative impacts would be **less than significant.**

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, older adults, and people with cardiovascular and chronic respiratory diseases. According to CARB, sensitive receptor locations may include hospitals, schools, and daycare centers (CARB 2023). The closest sensitive receptors include residences approximately 80 feet to the south of the Project site and approximately 100 feet to the east of the Project site.

The air quality analysis prepared for the 2003 EIR found that there would be no significant impact related to exposure of sensitive receptors to substantial pollutant concentrations. The analysis focused on the use of chemical toxics (i.e., pesticides) associated with adjacent/past agricultural activity and its impact on receptors near the Project site. The analysis found that there would be no significant impacts related to pesticide drift, and no mitigation measures were required. The Project-specific analysis provided below expands this discussion to include the impact of pollutants generated during construction and operation on sensitive receptors proximate to the site.

CO Hot Spots

Exposure to high concentrations of CO can result in dizziness, fatigue, chest pain, headaches, and impairment of central nervous system functions. Mobile source impacts, including those related to CO, occur essentially on two scales of motion. Regionally, Project-related construction travel would add to regional trip generation and increase the VMT within the local airshed and the SSAB. Locally, construction traffic would be added to the roadway system in the vicinity of the Project site. Although the SSAB is currently an attainment area for CO, there is a potential for the formation of microscale CO "hotspots" to occur immediately around points of congested traffic. Hotspots can form if such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles cold-started and operating at pollution-inefficient speeds, and/or is operating on roadways crowded with non-Project traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SSAB is steadily decreasing.

The proposed Project would generate trips associated with construction worker vehicles and construction vendor trucks accessing the site. Title 40 of the California Code of Regulations, Section 93.123(c)(5), states that "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site." Accordingly, while Project construction would involve on-road vehicle trips from trucks and workers during construction, construction activities would last approximately 17 months and would not require a Project-level construction hotspot analysis. As such, potential Project-generated impacts associated with CO hotspots would be **less than significant.**

Valley Fever Exposure

Valley fever is a fungus that lives in the top 2 to 12 inches of soil; therefore, during soil disturbance, the fungal spores can be released into the air. The spores are too small to be seen by the naked eye, and there is no reliable way to test the soils for spores (CDPH 2021). The disease is caused by inhalation of dust containing *Coccidioides immitis*, the fungal spore. Most people who are exposed have no or very mild systems; however, in a small percentage of the population, it can generate more serious symptoms of meningitis, pneumonia, or chronic fatigue.

The Project site is located in Imperial County, which is a county where valley fever is considered endemic. With 20 reported incidences of valley fever in 2022 (CDPH 2022), the rate of valley fever in Imperial County is 11.2 per 100,000 people, which is lower than the California average of 19.1 per 100,000 people. Furthermore, Statewide incidence of valley fever decreased 6.8% from 2021 and 16.6% from 2019 (CDPH 2022).

Construction workers have increased risk of valley fever exposure where their tasks include the disturbance of soils where fungal spores are found. Valley fever infection rates are highest in California from June to November. Therefore, a risk of valley fever infection exists for construction personnel working on the Project in the peak summer and fall months.

Importantly, the risk of exposure to valley fever from construction-related dust during Project build-out would be minimized by Project compliance with the ICAPCD's Regulation VIII, Fugitive Dust Control Measures. Rule VIII sets forth best available control measures and standards of practice for minimizing and preventing the generation of dust; examples of such measures include the regular watering of disturbed soil and the application of chemical stabilizers to minimize dust. Due to the Project's compliance with these applicable regulatory standards, which suppress the release of dust that may contain fungal spores, impacts to construction workers and nearby sensitive receptors would be **less than significant**

Toxic Air Contaminants

TACs are defined as substances 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. Health effects from carcinogenic air toxics are usually described in terms of cancer risk, with a recommended an incremental threshold of 10 in 1 million. “Incremental cancer risk” is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard Office of Environmental Health Hazard Assessment risk-assessment methodology (OEHHA 2015). In addition, some TACs have non-carcinogenic effects, which are evaluated using a Hazard Index of 1 or more for acute (short-term) and chronic (long-term) non-carcinogenic effects (OEHHA 2015). The greatest potential for TAC emissions during construction would be DPM emissions from heavy equipment use.

An HRA was performed to evaluate potential health risk associated with construction of the Project. Concentrations of TACs would be highest during construction due to the intensity and concurrence of off-road equipment usage. Conversely, operation of the Project, which is residential in nature and would not include any on-site stationary sources (e.g., emergency generator), would not generate considerable quantities of TACs; therefore, an operational HRA is not required for the Project.

The following discussion summarizes the dispersion modeling and HRA methodology. Supporting construction HRA documentation, including detailed assumptions, is presented in Attachment C, Construction Health Risk Modeling Files.

As discussed in Section 4.3, a construction HRA was performed to estimate the Maximum Individual Cancer Risk and the Chronic Hazard Index for residential receptors as a result of Project construction. Results of the construction HRA are presented in Table 8, Construction Health Risk Assessment Results – Unmitigated.

Table 8. Construction Health Risk Assessment Results – Unmitigated

Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
Maximum Individual Cancer Risk – Residential	Per million	58.26	10	Potentially Significant
Chronic Hazard Index – Residential	Index value	0.04	1.0	Less than Significant

Source: Attachment C, Construction Health Risk Modeling Files.
Note: CEQA = California Environmental Quality Act.

As shown in Table 8, Project construction activities would result in a Residential Maximum Individual Cancer Risk of 58.26 in 1 million, which exceeds the significance threshold of 10 in 1 million. Project construction would result in a Residential Chronic Hazard Index of 0.04, which is below the 1.0 significance threshold.

The following mitigation shall be implemented to reduce TAC emissions in the form of DPM during construction:

MM-AQ-1 Construction Equipment Emissions Reductions. Prior to the commencement of construction activities, CSU/SDSU, or its designee, shall direct the construction contractor to demonstrate that all 75-horsepower or greater diesel-powered equipment is powered with Tier 4 Final engines certified by the California Air Resources Board (CARB) and that all such equipment shall be used during Project construction.

An exemption from this requirement may be granted if (1) CSU/SDSU, or its designee, documents equipment with Tier 4 Final engines is not reasonably available and (2) the required corresponding reductions in criteria air pollutant emissions can be achieved for the Project from other combinations of construction equipment. Before an exemption may be granted, CSU/SDSU, or its designee, shall (1) demonstrate that at least two construction fleet owners/operators in Imperial County were contacted and that those owners/operators confirmed Tier 4 Final equipment could not be located within Imperial County during the desired construction schedule and (2) the proposed replacement equipment has been evaluated using the California Emissions Estimator Model (CalEEMod), the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) and the Hotspots Analysis and Reporting Program (HARP2) or other industry standard emission estimation method and health risk assessment tools and documentation is provided to the lead agency to confirm that necessary Project-generated emissions and health risk reductions are achieved.

MM-AQ-1, which requires the use of Tier 4 Final engines on construction equipment, shall be implemented to reduce DPM during construction. Table 9, Construction Health Risk Assessment Results – Mitigated, summarizes the results of the HRA for Project construction after mitigation.

Table 9. Construction Health Risk Assessment Results – Mitigated

Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
Maximum Individual Cancer Risk – Residential	Per million	8.28	10.0	Less than significant with mitigation
Chronic Hazard Index – Residential	Index value	0.01	1.0	Less than significant

Source: Attachment C, Construction Health Risk Modeling Files.
Note: CEQA = California Environmental Quality Act.

As shown in Table 9, the results of the construction HRA for the Project demonstrate that the construction emissions, following implementation of MM-AQ-1, would result in a potential incremental increase in cancer risk and chronic risk concentrations that would each be below the respective thresholds. As such, the Project would result in a **less-than-significant impact** in regard to potential health risk resulting from mitigated TAC emissions generated during construction.

Health Impacts of Criteria Air Pollutants

The SSAB is designated as nonattainment for O_3 for the NAAQS and CAAQS. Thus, existing O_3 levels in the SSAB are at unhealthy levels during certain periods. The health effects associated with O_3 generally relate to reduced lung function. Because the proposed Project would not involve construction activities that would result in O_3 precursor emissions (ROG or NO_x) that would exceed the ICAPCD thresholds, the Project is not anticipated to substantially contribute to regional O_3 concentrations and associated health impacts. Similar to construction, Project operation would not lead to exceedance of any ICAPCD threshold.

In addition to O_3, NO_x emissions contribute to potential exceedances of the NAAQS and CAAQS for nitrogen dioxide (NO_2) (since NO_2 is a constituent of NO_x). Exposure to NO_2 can cause lung irritation, bronchitis, and pneumonia and can lower resistance to respiratory infections. As depicted in Tables 6 and 7, Project construction and operation would not exceed the ICAPCD localized thresholds for NO_x. Thus, construction and operation of the proposed Project are not expected to exceed the NO_2 standards or contribute to associated health effects.

CO tends to be a localized impact associated with congested intersections. CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. CO hotspots were discussed previously as a less-than-significant impact. Thus, the proposed Project's CO emissions would not contribute to the health effects associated with this pollutant.

The SSAB is also designated as nonattainment for PM_{10} under the NAAQS and CAAQS. Particulate matter contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing (EPA 2023b). As with O_3 and NO_x, the proposed Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed ICAPCD thresholds. Accordingly, the proposed Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, the proposed Project would not result in any potentially significant contribution to local or regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Impacts would be **less than significant**.

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

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

The initial study prepared for the 2003 EIR found there would be no impact related to objectionable odors affecting a substantial number of people. Given that the proposed Project's construction and operational activities are within the scope of the 2003 EIR, the proposed Project remains consistent with that determination. A discussion of odors specific to the proposed Project is provided below for additional context.

Construction

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the proposed Project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and architectural coatings. Such odors would be temporary, disperse rapidly from the proposed Project site, and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, there would be no impact from construction odors that would affect a substantial number of people.

Operation

Land uses and industrial operations that are potential sources of odor include wastewater treatment plants, sanitary landfills, composting stations, feedlots, asphalt plants, painting/coating operations, and rendering plants (ICAPCD 2017). In addition to the odor source, local meteorological conditions and the distance between the sensitive receptor(s) and the odor source may affect the potential for a project to frequently expose the public to objectionable odors. Although localized air quality impacts are focused on potential impacts to sensitive receptors, such as residences and schools, other land uses where people may congregate (e.g., workplaces) or uses with the intent to attract people (e.g., restaurants and visitor-serving accommodations) should also be considered in the evaluation of potential odor nuisance impacts. The proposed Project would include student housing buildings, which are not expected to produce any nuisance odors; therefore, there would be no impact related to odors caused by the proposed Project during operations.

6 Greenhouse Gas Emissions Assessment

GHGs are those that absorb infrared radiation (i.e., trap heat) in the earth's atmosphere. The trapping and buildup of heat in the atmosphere near the earth's surface (the troposphere) is referred to as the "greenhouse effect" and is a natural process that contributes to the regulation of the earth's temperature, creating a livable environment on earth. The earth's temperature depends on the balance between energy entering and leaving the planet's system, and many factors (natural and human) can cause changes in the earth's energy balance. Human activities that generate and emit GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the earth's surface temperature to rise. This rise in temperature has led to large-scale changes to the earth's system (e.g., temperature, precipitation, wind patterns), which are collectively referred to as climate change. Global climate change is a cumulative impact; a project contributes to this impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. Thus, GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008).

As defined in California Health and Safety Code Section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride (see also CEQA Guidelines Section 15364.5). The primary GHGs that would be emitted by Project-related construction and operations include CO_2, CH_4, and N_2O.

The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare each GHG's ability to trap heat in the atmosphere relative to another gas. The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons (MT) of CO_2 equivalent (CO_2e). Consistent with CalEEMod Version 2022.1, this GHG emissions analysis uses the following GWPs: 25 for CH_4 (i.e., emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2) and 298 for N_2O, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

GHG emissions associated with construction of the proposed Project were estimated for the following emission sources: operation of off-road construction equipment, on-road vendor trucks, and worker vehicles. GHG emission sources associated with operation of the proposed Project include area, energy, solid waste, water, and wastewater categories. The detailed proposed Project construction and operational modeling parameters are included in Attachment B.

6.1 Greenhouse Gas Impact Analysis and Conclusions

6.1.1 Thresholds of Significance

The significance criteria used to evaluate the proposed Project's GHG emissions impacts are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). For the purposes of this GHG emissions analysis, the proposed Project would have a significant environmental impact if it would:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009). The State of California has not adopted emission-based thresholds for GHG emissions under CEQA. The Governor's Office of Planning and Research's Technical Advisory, titled Discussion Draft CEQA and Climate Change Advisory (OPR 2018), states the following:

> [N]either the CEQA statute nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for performing an impact analysis. This is left to lead agency judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable.... Even in the absence of clearly defined thresholds for greenhouse gas emissions, such emissions must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact.

Furthermore, the advisory document indicates that "in the absence of regulatory standards for greenhouse gas emissions or other scientific data to clearly define what constitutes a 'significant impact', individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice" (OPR 2018). CEQA Guidelines Section 15064.7(c) specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." Neither the CSU/SDSU nor ICAPCD has adopted a numeric significance threshold for determining significant impacts associated with project-level GHG emissions. Therefore, in the absence of guidance from these agencies, the significance analysis for the proposed Project's GHG emissions relies on guidance from the neighboring South Coast Air Quality Management District (SCAQMD), as described below.

In October 2008, SCAQMD staff published numeric CEQA significance thresholds for lead agencies to use in assessing GHG impacts of residential and commercial development projects, as presented in its draft guidance document, Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans (SCAQMD 2008). This document, which built upon the California Air Pollution Control Officers Association's previous guidance, explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the SCAQMD Governing Board. However, in December 2008, the SCAQMD Governing Board adopted an interim 10,000 MT CO_2e per year screening level threshold for stationary source/industrial projects for which SCAQMD is the lead agency (SCAQMD 2010). The 10,000 MT CO_2e per year threshold, which was derived from GHG reduction targets established in Executive Order S-3-05, was based on the conclusion that the threshold was consistent with achieving an emissions capture rate of 90% of all new or modified stationary source projects.

SCAQMD also formed a GHG CEQA Significance Threshold Working Group to work with its staff on developing GHG CEQA significance thresholds. From December 2008 to September 2010, SCAQMD staff hosted working group meetings and revised its 2008 draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The most recent proposal issued by SCAQMD, issued in September 2010, uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

Tier 1 Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.

Tier 2 Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.

Tier 3 Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO_2e per year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e per year), commercial projects (1,400 MT CO_2e per year), and mixed-use projects (3,000 MT CO_2e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO_2e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.

Tier 4 Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of Assembly Bill (AB) 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO_2e per-service population for project-level analyses and 6.6 MT CO_2e per-service population for plan-level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

Tier 5 Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

CEQA Guidelines Section 15064.7(c) specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." Therefore, to determine the proposed Project's potential to generate GHG emissions that would have a significant impact on the environment, its GHG emissions were compared to SCAQMD's 3,000 MT CO_2e per year screening threshold recommended for non-industrial projects. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the proposed project, which is assumed to be 30 years (SCAQMD 2008). This impact analysis, therefore, adds amortized construction emissions to the estimated annual operational emissions and then compares operational emissions to the proposed SCAQMD threshold of 3,000 MT CO_2e per year.

6.1.2 Impact Analysis

As discussed in Section 4, Analysis Methodology, at the time the 2003 EIR was certified, an evaluation of GHG emissions was not required under CEQA. Therefore, the impact of Project-related construction and operational GHG emissions was not previously considered. Pursuant to CEQA Guidelines Section 15168(c)(1), an analysis of the proposed Project's GHG emissions has been prepared as described below.

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction Emissions

CalEEMod was used to calculate the construction GHG emissions based on the construction scenario described in Section 5, Air Quality Assessment. Construction of the Project is anticipated to commence in late November 2024 and would last approximately 17 months, ending in March 2026. On-site sources of GHG emissions include off-road equipment, and off-site sources include vendor trucks and worker vehicles. Additional details are provided in Attachment B. Table 10, Estimated Annual Construction Greenhouse Gas Emissions, presents construction emissions for the Project from on-site and off-site emission sources.

Table 10. Estimated Annual Construction Greenhouse Gas Emissions

Year	CO_2	CH_4	N_2O	R	CO_2e
	Metric Tons per Year				
2024	33.52	<0.01	<0.01	0.01	33.78
2025	217.65	0.01	<0.01	0.04	218.94
2026	45.14	<0.01	<0.01	0.01	45.39
Total	**296.31**	**0.01**	**<0.01**	**0.05**	**298.11**
Amortized (30-year project life)					*9.94*

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; R = refrigerants; CO_2e = carbon dioxide equivalent.
See Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files, for complete results.
Totals may not add due to rounding.

As shown in Table 10, the estimated total GHG emissions during Project construction would be approximately 298 MT CO2e over the construction period. Estimated Project-generated construction emissions amortized over 30 years would be approximately 10 MT CO2e per year. GHG emissions generated during construction of the Project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions.

Operational Emissions

Once operational, the proposed Project would result in GHG emissions from energy use, vehicle travel/mobile sources, solid waste, water use, wastewater generation, and refrigerants. As with construction, GHG emissions from Project operations were estimated using CalEEMod based on a combination of Project-specific details provided by the applicant and default parameters, where necessary. All details for operational criteria air pollutants discussed in Section 4.2, Operation Modeling Methodology, are also applicable for the estimation of operations-related GHG emissions. As such, see Section 5 for a discussion of the operational emissions calculation methodology.

Mobile

As discussed previously, the proposed Project would not increase SDSU Imperial Valley FTE enrollment beyond the level previously approved within the 2003 EIR; therefore, the operational mobile source GHG emissions associated with the Off-Campus Center - Calexico need not be included in this assessment. However, the 2003 EIR did not assess the trips generated by those student residents commuting to the IVCCD campus from the Project site. These trips were analyzed within the transportation technical memorandum for the proposed Project. Following the guidance of this document, a conservative estimate of 79 daily trips was used to model these GHG emissions within CalEEMod (Dudek 2024).

Energy

The estimation of operational energy emissions was based on CalEEMod land use defaults and units or total area (i.e., square footage) of the proposed Project land use (i.e residential). For residential buildings, CalEEMod energy intensity value (electricity or natural gas usage per dwelling unit per year) parameters are based on the Residential Appliance Saturation Survey (RASS). Emissions are calculated by multiplying the energy use by the utility carbon intensity (pounds of GHGs per kilowatt-hour [kWh] for electricity or 1,000 British thermal units for natural gas) for CO_2 and other GHGs.

Consistent with the CSU's aim to minimize use of natural gas and transition to electric alternatives, no natural gas would be used on site, and all space and water heating would be electrified. Electrifying uses at the site would reduce GHG emissions associated with Project operations by converting a portion of the Project's forecasted natural gas consumption to electricity. To estimate emissions associated with the elimination of natural gas, use of natural gas during operation of the Project was converted to kWh/year and added to the Project electrical consumption in CalEEMod. Electricity consumption (i.e., kWh/year) was adjusted based on the relative efficiency per source of energy use (e.g., efficiency of powering water heaters with electricity versus natural gas). Energy use efficiency data were obtained from the U.S. Energy Information Administration and U.S. Department of Energy, as appropriate. For further details, see Attachment B.

Annual electricity emissions were estimated in CalEEMod using the emissions factors for Imperial Irrigation District, which would be the electricity provider for the Project. CalEEMod default energy intensity factors (CO_2, CH_4, and N_2O mass emissions per kWh) for Imperial Irrigation District are based on the forecasted factors for the operational year.

Water and Wastewater

Supply, conveyance, treatment, and distribution of water for the proposed Project requires the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the proposed Project requires the use of electricity for conveyance and treatment, along with GHG emissions generated during wastewater treatment (i.e., biological processes). Water consumption estimates for both indoor and outdoor water use and associated electricity consumption from water use and wastewater generation were estimated using CalEEMod default values.

Refrigerants

Refrigerants are substances used in equipment for air conditioning and refrigeration. Most of the refrigerants used today are HFCs or blends thereof, which can have high GWP values. All equipment that uses refrigerants has a charge size (i.e., quantity of refrigerant the equipment contains), an operational refrigerant leak rate, and a GWP specific to the type of refrigerant. GHG emissions related to refrigerant leaks from operation of the proposed Project were estimated using CalEEMod default parameters. CalEEMod quantifies refrigerant emissions from leaks during regular operation and routine servicing over the equipment lifetime and derives average annual emissions from the lifetime estimate.

Solid Waste

The proposed Project would generate solid waste, resulting in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation for the proposed land use were used to estimate GHG emissions associated with solid waste.

Table 11, Estimated Annual Operational Greenhouse Gas Emissions, presents the estimated annual GHG emissions generated during operation of the proposed Project. The emissions results presented reflect operational year 2026, as it is anticipated to be the first year of operation following completion of Project construction. Details of the emission calculations are provided in Attachment B.

Table 11. Estimated Annual Operational Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	R	CO_2e
	Metric Tons per Year				
Energy	19.79	<0.01	<0.01	N/A	19.88
Mobile	46.27	<0.01	<0.01	0.07	47.19
Water Use	2.85	0.06	<0.01	N/A	4.91
Solid Waste	0.67	0.07	<0.01	N/A	2.33
Area	0.19	<0.01	<0.01	N/A	0.19
Refrigerants	N/A	N/A	N/A	0.01	0.01
Total Annual Operational Emissions	**69.76**	**0.13**	**<0.01**	**0.08**	**74.51**
Amortized 30-year Construction Emissions					*9.94*
Total Annual Project Emissions					**84.45**
SCAQMD Threshold					*3,000*
Threshold Exceeded?					**No**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; R = refrigerants; CO_2e = carbon dioxide equivalent; N/A = not applicable; SCAQMD = South Coast Air Quality Management District.

<0.01 indicates values smaller than 0.005.
See Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files, for complete results.
Totals may not add due to rounding.

As shown in Table 11, the estimated total GHG emissions during operation of the proposed Project would be approximately 84 MT CO_2e per year, including amortized construction emissions. The proposed Project would not exceed the SCAQMD threshold of 3,000 MT CO_2e per year. Projects below this significance criterion have a minimal contribution to global emissions and are considered to have less-than-significant impacts. Therefore, operational impacts associated with directly or indirectly generating a significant quantity of GHG emissions would be **less than significant.**

Of note, it is likely that emissions estimated here are well below what would have been estimated had GHG emissions been analyzed in the 2003 EIR. Since 2003, the State of California has enacted a comprehensive suite of laws to increase efficiencies and thereby reduce GHG emissions associated with water use, solid waste disposal, and building energy use. Accordingly, construction and operation of the proposed Project benefits from the current landscape, which serves to reduce GHG emissions as compared to what was in place in 2003.

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

Plans adopted to reduce GHG emissions applicable to the proposed Project include the CSU Sustainability Policy, as most recently revised in May 2024; the 2017 Climate Action Plan (CAP) for San Diego State University; CARB's Scoping Plan; and SCAG's Connect SoCal 2024. Each of these plans is described below along with an analysis of the proposed Project's potential to conflict with the related GHG emission reduction goals.

Potential to Conflict with the California State University Sustainability Policy

The CSU Board of Trustees adopted its first systemwide Sustainability Policy in May 2014 and most recently revised the Sustainability Policy in May 2024. The Sustainability Policy was developed to integrate sustainability into all facets of the CSU system, including academics, facility operations, built environment, and student life. The Sustainability Policy focuses mainly on energy and GHG emissions and largely aligns with the State of California's energy and GHG emissions reduction goals (CSU 2024). It aims to reduce the environmental impact of construction and operation of buildings and to integrate sustainability across the curriculum through 11 broad policies, including University Sustainability; CAP; Energy Resilience and Procurement; Energy Conservation, Carbon Reduction, and Utility Management; Water Conservation; Sustainable Procurement; Waste Management; Sustainable Food Service; Sustainable Building and Lands Practices; Physical Plant Management; and Transportation.

The proposed Project would comply with all relevant requirements of the CSU Sustainability Policy. For example, the Project shall meet or exceed the minimum requirements equivalent to Leadership in Energy and Environmental Design (LEED) Silver and exceed the applicable energy codes and regulations (i.e., California Code of Regulations, Title 24, Part 6, Building Energy Efficiency Standards) by 10%. Additionally, no natural gas would be used on site, and all space and water heating would be electrified, which is consistent with the CSU's aim to minimize use of natural gas and transition to electric alternatives.

Potential to Conflict with the 2017 Climate Action Plan for San Diego State University

The SDSU CAP was adopted in May 2017 to provide goals and strategies to achieve carbon neutrality and improve sustainability efforts campuswide. The CAP includes results of a baseline emissions inventory that summarizes GHG emissions from campus operations in 2015 and projected emissions to future years to inform development of appropriate reduction strategies. While the SDSU CAP does include goals and strategies that would result in a reduction of GHG emissions at the proposed Project site, the SDSU CAP is not considered qualified per CEQA Guidelines Section 15183.5. Additionally, the CAP was prepared with a focus on the SDSU main campus location in San Diego. Therefore, inclusion of this plan is for informational purposes only.

Emissions sources in the CAP's baseline inventory and emissions projections include energy use, solid waste, water use, and student and faculty/staff commute (i.e., mobile source emissions) associated with activity at SDSU's main campus in San Diego. Overall, emissions from energy use and mobile sources accounted for the majority of GHG emissions in the baseline inventory and therefore present the greatest opportunity for future GHG emissions reductions. As previously discussed, the previously approved FTE student enrollment would not increase with the proposed Project above what was already analyzed in the certified 2003 EIR for the approved Off-Campus Center Master Plan - Calexico. The Project features housing that would accommodate both SDSU Imperial Valley and IVCCD students. Those SDSU students living at the Project site would no longer have to commute to school, while the IVCCD students would travel to the IVCCD campus from the site. The transportation technical memorandum prepared for this proposed Project determined that the SDSU Imperial Valley students would generate a nominal number of net vehicle trips, while the IVCCD students would generate an average 79 daily trips (Dudek 2024). As a whole, the Project was determined to be screened out from conducting a VMT analysis and would result in a less-than-significant VMT impact. The Project is, therefore, unlikely to conflict with the CAP.

The CAP vision for energy highlights a shift from natural gas–based co-generation toward grid energy and on-site renewables. For solid waste, the CAP aims to encourage recycling and move toward zero waste in the future. The CAP's vision for water use is to encourage efficient landscaping (e.g., drought-resistant and native species, limited turf, and efficient irrigation systems) and ensure ultra-low flow and high-performance fixtures are used for potable water systems.

Consistent with this vision, the Project would not use natural gas, and all space and water heating would be electrified. The proposed Project would also exceed the Title 24 Building Energy Efficiency Standards by at least 10% and would meet or exceed the minimum requirements equivalent to LEED Silver consistent with the CSU Sustainability Policy, reducing overall energy demand and consumption.

As such, the proposed Project would support the vision of and not conflict with the overall goal of the SDSU CAP. Specifically, the proposed Project's elimination of natural gas supports SDSU's goal to achieve carbon neutrality through increased energy efficiency for campus operations.

Potential to Conflict with CARB's Scoping Plan

The California State legislature passed the Global Warming Solutions Act of 2006 (AB 32) to provide initial direction to limit California's GHG emissions to 1990 levels by 2020 and initiate the state's long-range climate objectives. Since the passage of AB 32, the state has adopted GHG emissions reduction targets for future years beyond the initial 2020 horizon year. For the proposed Project, the relevant GHG emissions reduction targets include those established by Senate Bill (SB) 32 and AB 1279, which require GHG emissions be reduced to 40% below 1990 levels by 2030 and 85% below 1990 levels by 2045, respectively. In addition, AB 1279 calls upon the state to achieve net zero GHG emissions by no later than 2045 and achieve and maintain net negative GHG emissions thereafter.

As defined by AB 32, CARB is required to develop the Scoping Plan, which provides the framework for actions to achieve the state's GHG emission targets. The Scoping Plan is required to be updated every 5 years and requires CARB and other state agencies to adopt regulations and initiatives that will reduce GHG emissions statewide. The first Scoping Plan was adopted in 2008, with subsequent updates adopted in 2014, 2017, and (most recently) 2022. While the Scoping Plan is not directly applicable to specific projects, it does provide the official framework for the measures and regulations that will be pursued by the state's executive branch of government to reduce California's GHG emissions in alignment with the legislatively adopted targets. Therefore, a project would be found to not conflict with the statutes establishing statewide GHG reduction targets if it would meet the Scoping Plan policies and would not impede attainment of the goals therein.

CARB's 2017 Scoping Plan was the first to address the state's strategy for achieving the 2030 GHG reduction target set forth in SB 32 (CARB 2017). The most recent Scoping Plan outlines the state's plan to reduce emissions and achieve carbon neutrality by 2045 in alignment with AB 1279 and assesses the state's progress towards meeting the 2030 SB 32 target (CARB 2022). As such, given that SB 32 and AB 1279 are the relevant GHG emission targets, the 2017 and 2022 Scoping Plans that outline the strategy to achieve those targets are the most applicable to the proposed Project.

To achieve the 2030 goal of 40% below 1990 GHG emission levels, the 2017 Scoping Plan included measures to promote renewable energy and energy efficiency (including the mandates of SB 350), measures to increase the stringency of the Low Carbon Fuel Standard, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and measures to increase the stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, the 2017 Scoping Plan also recommended continuing the Cap-and-Trade Program and a measure to reduce GHGs from refineries by 20%. Many of these measures and programs would result in the reduction of Project-related GHG emissions with no action required at the Project-level. These programs would benefit GHG emission reductions through increased energy efficiency and renewable energy production (SB 350), reduction in carbon intensity of transportation fuels (Low Carbon Fuel Standard), and the accelerated efficiency and electrification of the statewide vehicle fleet (Mobile Source Strategy). Implementation of these statewide programs would result in a reduction of operational GHG emissions over the Project lifetime.

CARB approved the 2022 Scoping Plan in December 2022, which includes the state's plan to reduce anthropogenic emissions to 85% below 1990 levels by 2045 and achieve carbon neutrality by 2045 or earlier. The 2022 Scoping Plan also assesses the progress the state is making towards reducing GHG emissions to at least 40% below 1990 levels by 2030, as is required by SB 32 and laid out in the 2017 Scoping Plan. The carbon reduction programs included in the 2022 Scoping Plan build on and accelerate those currently in place, including moving to zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high GWP; providing communities with sustainable options for walking, biking, and public transit; and displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines) (CARB 2022). Implementation of the measures and programs included in the 2022 Scoping Plan largely are the responsibility of policymakers and would result in the reduction of Project-related GHG emissions with no action required at the Project-level. Given that the proposed Project would be fully electric (i.e., no natural gas consumption) and includes the potential for on-site solar power generation, Project implementation would support the 2022 Scoping Plan's goals above.

The 2045 carbon neutrality goal required CARB to expand proposed actions in the 2022 Scoping Plan to include those that capture and store carbon in addition to those that reduce only anthropogenic sources of GHG emissions. The proposed Project would support the state's carbon neutrality goals, as implementation would increase renewable, carbon-free electricity sources within the state, decreasing reliance on fossil fuels. While transitioning to renewable alternatives will support the state's overall climate goals, the 2022 Scoping Plan also indicates that achieving carbon neutrality will require research, development, and deployment of additional methods to capture atmospheric GHG emissions (e.g., mechanical direct air capture). Given that the specific path to neutrality will require development of technologies and programs that are not currently known or available, the Project's role in supporting the statewide goal would be speculative and cannot be wholly identified at this time.

Overall, the proposed Project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent applicable and required by law. As mentioned above, several Scoping Plan measures would result in reductions of Project-related GHG emissions with no action required at the Project-level, including those related to energy efficiency, reduced fossil fuel use, and renewable energy production. As demonstrated above, the proposed Project would not conflict with CARB's 2017 or 2022 Scoping Plan updates and with the state's ability to achieve the 2030 and 2045 GHG reduction and carbon neutrality goals. Further, the proposed Project's consistency with the applicable measures and programs would assist in meeting Imperial County's contribution to GHG emission reduction targets in California.

Potential to Conflict with SCAG's 2024 RTP/SCS "Connect SoCal"

The Southern California Association of Governments has jurisdiction over Imperial County and is responsible for the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). As required by federal and state regulations, the RTP/SCS is updated every 4 years. In April 2024, SCAG adopted the 2024-2050 RTP/SCS. Connect SoCal 2024-2050 builds upon prior planning cycles to update the vision of the region's future (SCAG 2024). SCAG's Connect SoCal 2024–2050 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS is a regional growth management strategy, which targets per capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region pursuant to SB 375. In addition to demonstrating the region's ability to attain the GHG emission reduction targets set forth by CARB, the 2024–2050 RTP/SCS outlines a series of actions and strategies for integrating the transportation network with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Thus, successful implementation of the 2024–2050 RTP/SCS would result in more complete communities with various transportation and housing choices while reducing automobile use.

The 2024–2050 RTP/SCS identifies the following strategy areas to support its environmental goals: Sustainable Development, Air Quality, Clean Transportation, Natural and Agricultural Lands Preservation, and Climate Resilience. An analysis of the Project's compliance with the applicable strategies is presented below.

- Sustainable Development. The 2024–2050 RTP/SCS identifies sustainable development, including water and energy-efficient building practices and green infrastructure, as a strategy to reduce GHG emissions. The proposed Project would include green building design and construction practices pursuant to LEED Silver certification. Furthermore, the Project would utilize electricity for water and space heating systems (as opposed to natural gas). The modified Project would continue to promote sustainability at the Off-Campus Center - Calexico.
- Air Quality. The 2024–2050 RTP/SCS identifies air quality and meeting federal and state ambient air quality standards as a co-benefit of reducing GHG emissions. The Project would not exceed the ICAPCD's threshold of significance for any criteria air pollutant and would not result in any significant impacts related to air quality following mitigation.
- Clean Transportation. The 2024–2050 RTP/SCS identifies EV charging infrastructure, adoption of zero-emission vehicles, and clean transit as ways to reduce GHG emissions from mobile sources. As discussed previously in Section 3, Project Description, the proposed Project would promote clean transportation through its proximity to campus. Student occupants of the proposed development would be adjacent to campus, thereby reducing the need to commute to school in personal vehicles. Additionally, the Project would promote clean transportation by providing bicycle storage on-site.
- Natural and Agricultural Lands Preservation. The 2024–2050 RTP/SCS promotes the conservation and restoration of natural and agricultural lands through several policies, such as quantifying the carbon sequestration potential of natural and agricultural lands and prioritization of sensitive habitat and wildlife corridors for permanent protection. The proposed Project would not result in the removal of natural or agricultural lands.
- Climate Resilience: The 2024–2050 RTP/SCS promotes regional coordination and solutions for effective emergency response for climate-related hazards. Additionally, in the category of climate resilience, SCAG has established the following policies: prioritize the most vulnerable populations and communities subject to climate hazards; support local and regional climate and hazard planning; support nature-based solutions to increase regional resilience; promote sustainable water use planning; and, support an integrated planning approach to help jurisdictions meet housing needs in a drier environment. While the proposed Project does not directly pertain to these climate resilience efforts, the Project would not interfere with these policies. The proposed Project would repurpose existing vacant space on an already developed site, which is generally considered more efficient and sustainable than new construction.

Based on the analysis provided above the proposed Project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, and impacts would be **less than significant**.

7 Energy Assessment

Project implementation would result in energy use for construction and operation, including use of electricity and petroleum-based fuels. The proposed Project's impact on energy resources is discussed separately below for construction and operation. Energy consumption (electricity and petroleum consumption) was estimated using CalEEMod data from the air quality and GHG assessment, which was based on modeling inputs developed in consultation with the Project applicant, as well as default parameters where necessary. For further detail on the modeling parameters and results of the energy analysis, please refer to the Attachment B.

7.1 Energy Impact Analysis and Conclusions

7.1.1 Thresholds of Significance

The significance criteria used to evaluate the proposed Project's energy impacts are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). For the purposes of this energy analysis, the proposed Project would have a significant environmental impact if it would:

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

7.1.2 Impact Analysis

As discussed in Section 4, at the time the 2003 EIR was certified, an evaluation of energy was not required under CEQA. Pursuant to CEQA Guidelines Section 15168(c)(1), an analysis of the proposed Project's energy impacts relating to construction and operation of the proposed affordable student housing apartments has been prepared as described below.

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

Implementation of the proposed Project would result in energy use for construction and operation, including use of electricity and petroleum-based fuels for off-road equipment. The electricity and fuel used for construction of the proposed Project would be temporary, would be substantially less than that required for Project operation, and would have a negligible contribution to the Project's overall energy consumption. Additionally, although electricity usage at the Off-Campus Center - Calexico would increase due to the implementation of the Project, the Project's energy efficiency would exceed the current Building Energy Efficiency Standards (Title 24) in accordance with the CSU Sustainability Policy (CSU 2024). Further, while the Project would see an increase in petroleum use during construction and operation, vehicles would use less petroleum due to advances in fuel economy and potential reduction in VMT over time.

Construction Energy Use

Electricity

Electricity consumed during Project construction would vary throughout the construction period based on the construction activities being performed. Various construction activities would require electricity, including the conveyance of water that would be used for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power. Such electricity demand would be temporary and nominal and would cease upon the completion of construction. Imperial Irrigation District is the electricity provider to the Project site and provided approximately 3,584 gigawatt-hours of electricity in 2022 (CEC 2023a). Overall, construction activities associated with the proposed Project would require limited electricity consumption that would not be expected to have an adverse impact on available Imperial Irrigation District electricity supplies and infrastructure. Therefore, the use of electricity during Project construction would not be wasteful, inefficient, or unnecessary.

Petroleum-Based Fuels

Petroleum-based fuel usage represents most energy consumed during construction. Petroleum fuels would be used to power off-road construction vehicles and equipment on the Project site, construction worker travel to and from the Project site, as well as construction material delivery truck trips.

Fuel consumption from construction equipment and vehicles was estimated by converting the total CO_2 emissions from each construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. All off-road equipment and vendor trucks are anticipated to use diesel fuel, while worker vehicles are analyzed based upon gasoline fuel use. Construction is estimated to last approximately 17 months beginning in November 2024. The conversion factor for gasoline is 8.78 kilograms per MT CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per MT CO_2 per gallon (The Climate Registry 2023). The estimated diesel fuel usage from construction of the proposed Project is shown in Table 12, Estimated Construction Fuel Use.

Table 12. Estimated Construction Fuel Use

Construction Year	Off-Road Equipment (diesel)	On-Road Vendor Trucks (diesel)	On-Road Haul Trucks (diesel)	On-Road Workers (gasoline)
	Fuel Use (gallons)			
2024	2,794	N/A	276	252
2025	2,905	92	56	267
2026	2,948	118	N/A	248
Total	**8,646**	**210**	**332**	**767**

Notes: N/A = not applicable.
See Attachment B, Air Quality and Greenhouse Gas Emissions CalEEMod Output Files, for complete results.
Totals may not sum precisely due to rounding.

As shown in Table 12, construction of the proposed Project is anticipated to require 767 gallons of gasoline and 9,188 gallons of diesel over the 17-month construction period. The proposed Project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. The proposed Project would also be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation, which requires the vehicle fleet to reduce emissions by retiring, replacing, or repowering older engines or installing Verified Diesel Emissions Control Strategies. Therefore, impacts associated with construction energy use would be **less than significant.**

Operations Energy Use

Electricity

The proposed Project would require electricity for multiple purposes at buildout, including cooling, lighting, appliances, etc. Additionally, the supply, conveyance, treatment, and distribution of water would indirectly result in electricity usage. Electricity consumption associated with Project operation is based on the CalEEMod outputs presented in Attachment B.

CalEEMod default values for energy consumption for the proposed Project were applied for the Project analysis. The energy use from non-residential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. Energy use in buildings is divided by the program into end-use categories subject to Title 24 requirements (end-uses associated with the building envelope, such as the heating, ventilating, and air-conditioning system, water heating system, and integrated lighting) and those not subject to Title 24 requirements (such as appliances, electronics, and miscellaneous "plug-in" uses).

According to the applicant, total annual electricity demand associated with proposed Project operation would be approximately 45,858 kWh per year. Because natural gas is not incorporated in Project operations, the default natural gas consumption assumed by CalEEMod for space heating, water heating, etc. was converted to kWh and added to the demand, totaling 95,571 kWh per year. For context, in 2022, California used approximately 290 billion kWh of electricity (CEC 2023b). Locally, in 2022, non-residential electricity demand in Imperial County was approximately 891 million kWh (CEC 2023b).

Title 24 of the California Code of Regulations serves to enhance and regulate California's building standards. The most recent amendments to Title 24, Part 6, referred to as the 2022 standards, became effective on January 1, 2023. The proposed Project would exceed the Title 24 Building Energy Efficiency Standards by at least 10% in compliance with the CSU Sustainability Policy (CSU 2024). Exceedance of the applicable Title 24 standards would reduce overall energy consumption of the proposed Project and would ensure that the energy demands would not be inefficient, wasteful, or otherwise unnecessary, and the Project's effect on electrical demands during operation would be **less than significant.**

Natural Gas

Consistent with the CSU's aim to minimize use of natural gas and transition to electric alternatives, operation of the proposed Project would be fully electric and would not require natural gas. As such, there would be no impact to natural gas–related supply and infrastructure capacity, and the Project's effect on natural gas demands during operation would be **less than significant.**

Petroleum

During operation, fuel consumption resulting from the Project would be generated by vehicle fuel consumption, consisting of the trips generated by those student residents commuting to the IVCCD campus from the Project site.

Annual petroleum use from operation from vehicle fuel consumption would be approximately 5,248 gallons per year. By comparison, California as a whole consumed approximately 26 billion gallons of petroleum in 2022 (EIA 2023), and in 2022 Imperial County consumed an estimated 66 million gallons of gasoline and an estimated 30 million gallons of diesel (CEC 2022). As such, petroleum demand required for implementation of the proposed Project is relatively insignificant and would not be inefficient, wasteful, or otherwise unnecessary. The Project's effect on petroleum supply during operation would be **less than significant.**

In summary, implementation of the Project would increase the demand for electricity and petroleum in the region during construction and operation. However, because the Project would implement all current, applicable regulations and policies, the Project would not be wasteful or inefficient and would not result in unnecessary energy resource consumption. Relatedly, since the proposed Project would comply with and exceed the Title 24 energy conservation standards pursuant to the CSU Sustainability Policy, the proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy. Therefore, impacts would be **less than significant.**

Of note, and consistent with the discussion of GHG emissions impact above (Section 6.1.2, Greenhouse Gas Emissions Assessment Impact Analysis), it is likely that energy use estimated here is well below what would have been estimated had energy been analyzed in the 2003 EIR. Since 2003, the state has enacted a comprehensive suite of laws to increase efficiencies and thereby reduce energy use associated with water use, solid waste disposal, and building energy use, among others. Accordingly, construction and operation of the proposed Project benefits from the current legal landscape, which serves to reduce energy demand as compared to what was in place in 2003.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. At a minimum, the proposed Project would be subject to and would comply with the 2022 California Building Code (24 CCR Part 6). Additionally, as discussed in Section 6.1.2, the proposed Project would not conflict with the CSU Sustainability Policy or the SDSU CAP, which was adopted in 2017 to achieve carbon neutrality, in part, through goals and strategies that support increased energy efficiency and transition to renewable energy alternatives campuswide. Specifically, no natural gas would be used on site, and all space and water heating would be electrified, which is consistent with the CSU's aim to minimize use of natural gas and transition to electric alternatives.

The proposed Project would also not conflict with CARB's Climate Change Scoping Plan, which identifies several strategies to reduce GHG emissions through energy efficiency. As discussed in further detail in Section 6.1.2, the proposed Project would be subject to these strategies as many are state actions requiring no additional involvement at the project level. As such, implementation of the proposed Project would not conflict with applicable plans for energy efficiency, and the impacts during construction and operation would be **less than significant.**

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Attachment A

Figures

SOURCE: ESRI

DUDEK

0 4 8 Miles

FIGURE 1

Regional Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

SOURCE: AERIAL-ESRI MAPPING SERVICE 2023; DEVELOPMENT-SDSU 2024

DUDEK

0 100 200 Feet

FIGURE 2

Vicinity Map

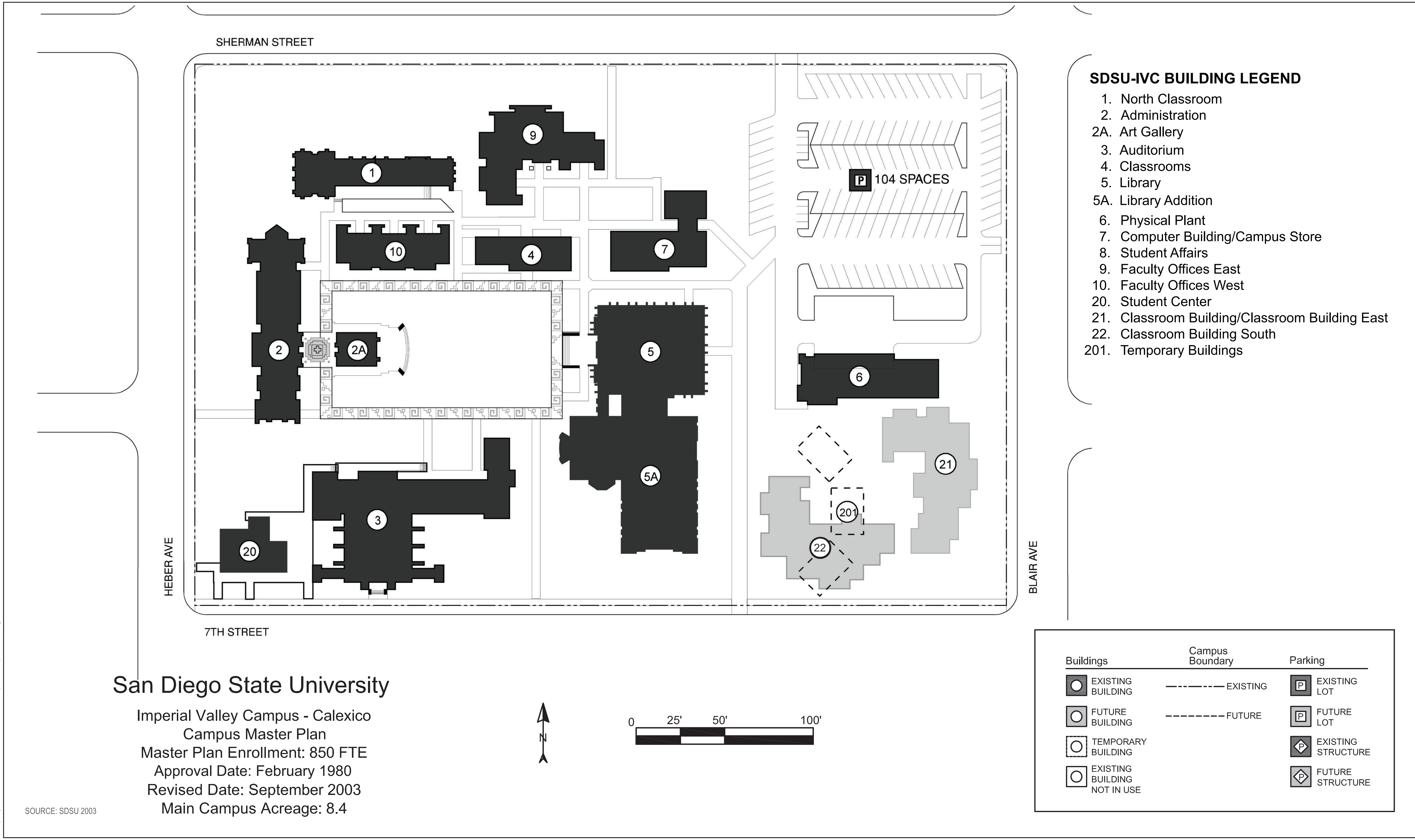

FIGURE 3A

Existing Campus Master Plan

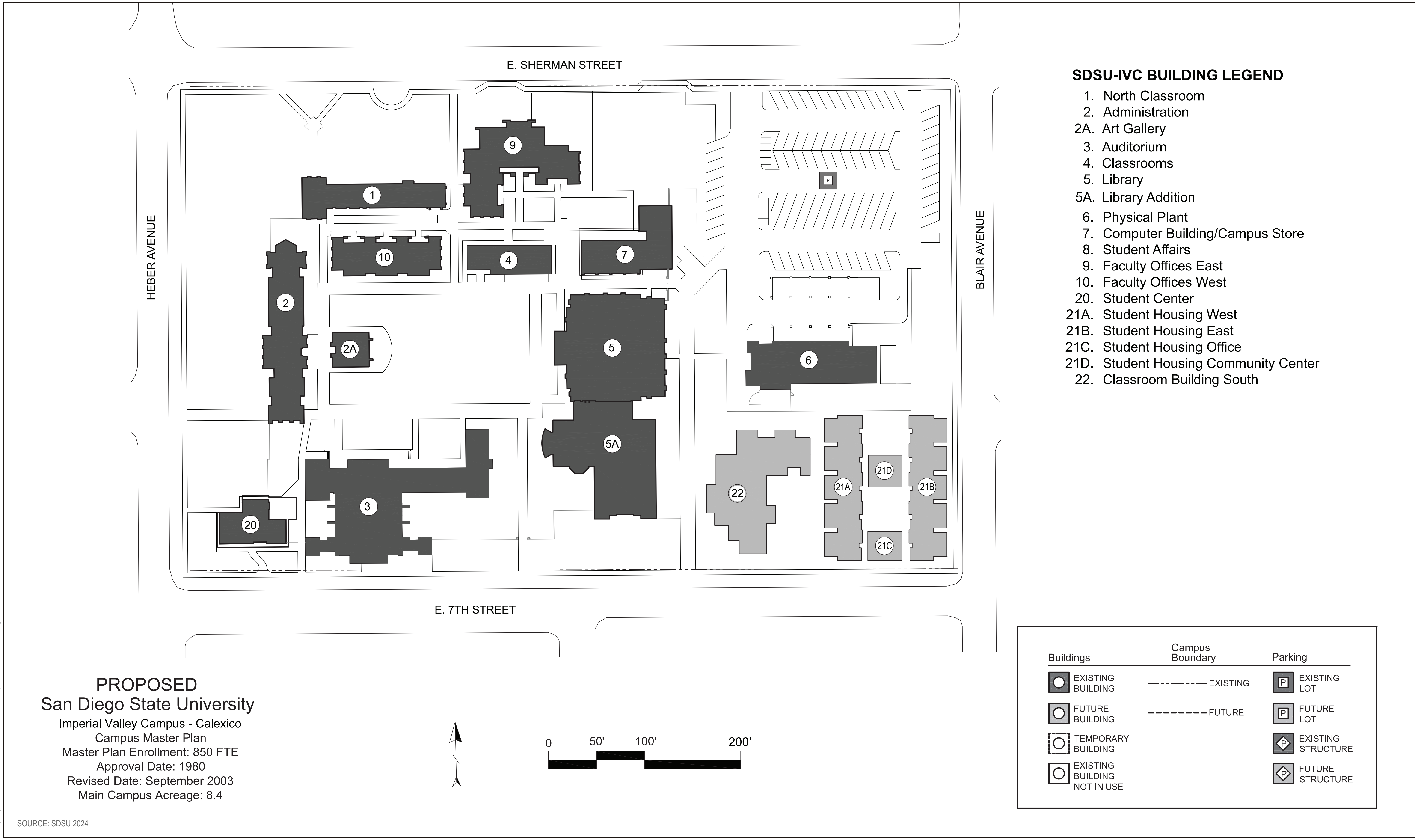

FIGURE 3B

Proposed Campus Master Plan

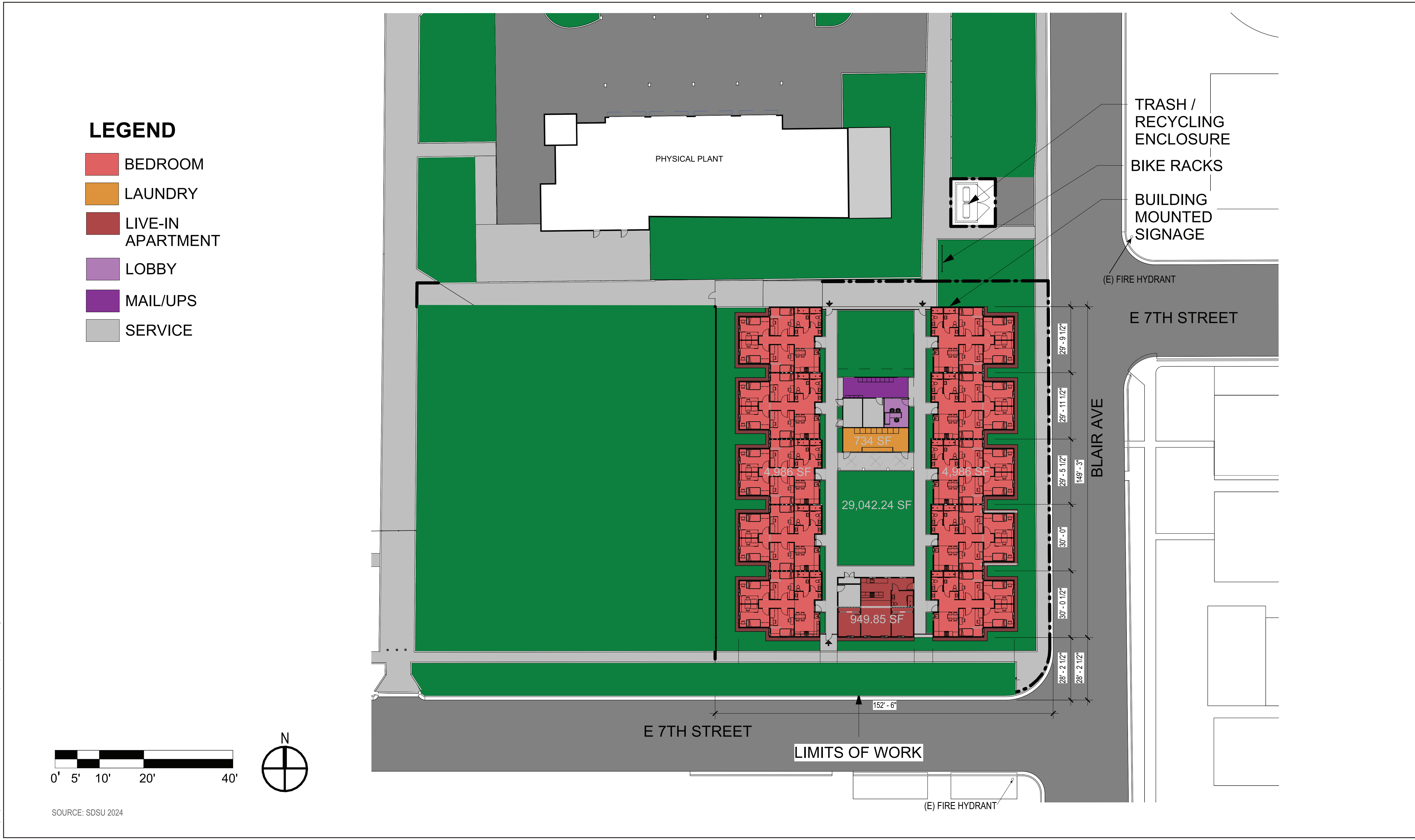

FIGURE 4

Site Plan

Attachment B

Air Quality and Greenhouse Gas Emissions
CalEEMod Output Files

SDSU Calexico Housing Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SDSU Calexico Housing
Construction Start Date	5/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	4.80
Location	32.6717893759576, -115.4911915049235
County	Imperial
City	Calexico
Air District	Imperial County APCD
Air Basin	Salton Sea
TAZ	5612
EDFZ	19
Electric Utility	Imperial Irrigation District
Gas Utility	Southern California Gas
App Version	2022.1.1.25

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Apartments Low Rise	10.0	Dwelling Unit	0.58	11,656	18,105	—	36.0	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.54	2.34	8.29	12.9	0.02	0.30	15.3	15.6	0.27	1.54	1.81	—	1,877	1,877	0.07	0.03	0.72	1,887
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.52	2.32	17.1	17.3	0.03	0.78	27.4	28.1	0.72	3.82	4.54	—	3,029	3,029	0.12	0.07	0.04	3,052
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.23	1.10	5.96	8.43	0.01	0.23	10.4	10.7	0.21	1.15	1.36	—	1,315	1,315	0.05	0.02	0.22	1,322
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.23	0.20	1.09	1.54	< 0.005	0.04	1.91	1.95	0.04	0.21	0.25	—	218	218	0.01	< 0.005	0.04	219

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.54	2.34	8.29	12.9	0.02	0.30	15.3	15.6	0.27	1.54	1.81	—	1,877	1,877	0.07	0.03	0.72	1,887
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.17	1.82	17.1	17.3	0.03	0.78	27.4	28.1	0.72	3.82	4.54	—	3,029	3,029	0.12	0.07	0.04	3,052
2025	2.52	2.32	15.3	16.3	0.03	0.68	27.4	28.0	0.62	3.82	4.45	—	3,021	3,021	0.12	0.07	0.03	3,044
2026	0.96	0.81	7.07	11.0	0.02	0.23	12.5	12.7	0.21	1.26	1.47	—	1,692	1,692	0.07	0.02	0.01	1,701
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.14	0.12	1.14	1.17	< 0.005	0.05	1.80	1.85	0.05	0.25	0.30	—	202	202	0.01	< 0.005	0.04	204
2025	1.23	1.10	5.96	8.43	0.01	0.23	10.4	10.7	0.21	1.15	1.36	—	1,315	1,315	0.05	0.02	0.22	1,322
2026	0.16	0.13	1.13	1.78	< 0.005	0.04	1.98	2.02	0.03	0.20	0.23	—	273	273	0.01	< 0.005	0.04	274
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.03	0.02	0.21	0.21	< 0.005	0.01	0.33	0.34	0.01	0.05	0.05	—	33.5	33.5	< 0.005	< 0.005	0.01	33.8
2025	0.23	0.20	1.09	1.54	< 0.005	0.04	1.91	1.95	0.04	0.21	0.25	—	218	218	0.01	< 0.005	0.04	219
2026	0.03	0.02	0.21	0.33	< 0.005	0.01	0.36	0.37	0.01	0.04	0.04	—	45.1	45.1	< 0.005	< 0.005	0.01	45.4

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.74	0.72	0.20	2.48	< 0.005	< 0.005	137	137	< 0.005	13.7	13.7	7.79	470	477	0.82	0.03	1.15	507
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.59	0.58	0.21	1.45	< 0.005	< 0.005	137	137	< 0.005	13.7	13.7	7.79	429	437	0.82	0.03	0.11	466
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.63	0.61	0.19	1.81	< 0.005	< 0.005	121	121	< 0.005	12.1	12.1	7.79	414	421	0.81	0.03	0.50	450
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	0.11	0.03	0.33	< 0.005	< 0.005	22.1	22.1	< 0.005	2.21	2.21	1.29	68.5	69.8	0.13	< 0.005	0.08	74.5

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.40	0.38	0.19	1.91	< 0.005	< 0.005	137	137	< 0.005	13.7	13.7	—	335	335	0.02	0.02	1.07	342
Area	0.34	0.34	0.01	0.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.52	1.52	< 0.005	< 0.005	—	1.52
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	120	120	0.01	< 0.005	—	120
Water	—	—	—	—	—	—	—	—	—	—	—	3.76	13.4	17.2	0.39	0.01	—	29.6
Waste	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.74	0.72	0.20	2.48	< 0.005	< 0.005	137	137	< 0.005	13.7	13.7	7.79	470	477	0.82	0.03	1.15	507
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.30	0.29	0.21	1.45	< 0.005	< 0.005	137	137	< 0.005	13.7	13.7	—	296	296	0.02	0.02	0.03	302
Area	0.29	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	120	120	0.01	< 0.005	—	120
Water	—	—	—	—	—	—	—	—	—	—	—	3.76	13.4	17.2	0.39	0.01	—	29.6
Waste	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.59	0.58	0.21	1.45	< 0.005	< 0.005	137	137	< 0.005	13.7	13.7	7.79	429	437	0.82	0.03	0.11	466
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.30	0.28	0.18	1.39	< 0.005	< 0.005	121	121	< 0.005	12.1	12.1	—	279	279	0.02	0.02	0.41	285
Area	0.33	0.33	< 0.005	0.42	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.12	1.12	< 0.005	< 0.005	—	1.13
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	120	120	0.01	< 0.005	—	120
Water	—	—	—	—	—	—	—	—	—	—	—	3.76	13.4	17.2	0.39	0.01	—	29.6
Waste	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.63	0.61	0.19	1.81	< 0.005	< 0.005	121	121	< 0.005	12.1	12.1	7.79	414	421	0.81	0.03	0.50	450
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.05	0.05	0.03	0.25	< 0.005	< 0.005	22.1	22.1	< 0.005	2.21	2.21	—	46.3	46.3	< 0.005	< 0.005	0.07	47.2
Area	0.06	0.06	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.19	0.19	< 0.005	< 0.005	—	0.19
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	19.8	19.8	< 0.005	< 0.005	—	19.9
Water	—	—	—	—	—	—	—	—	—	—	—	0.62	2.23	2.85	0.06	< 0.005	—	4.91
Waste	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.33
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	0.11	0.11	0.03	0.33	< 0.005	< 0.005	22.1	22.1	< 0.005	2.21	2.21	1.29	68.5	69.8	0.13	< 0.005	0.08	74.5

3. Construction Emissions Details

3.1. Grading (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.07	1.74	16.7	16.1	0.02	0.77	—	0.77	0.71	—	0.71	—	2,588	2,588	0.10	0.02	—	2,597
Dust From Material Movement	—	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.11	1.07	< 0.005	0.05	—	0.05	0.05	—	0.05	—	172	172	0.01	< 0.005	—	173
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.20	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	28.5	28.5	< 0.005	< 0.005	—	28.6
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.12	1.01	0.00	0.00	19.2	19.2	0.00	1.94	1.94	—	186	186	0.01	0.01	0.02	188
Vendor	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	0.00
Hauling	0.01	0.01	0.35	0.10	< 0.005	< 0.005	5.36	5.37	< 0.005	0.54	0.55	—	255	255	< 0.005	0.04	0.01	267
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	1.26	1.26	0.00	0.13	0.13	—	13.3	13.3	< 0.005	< 0.005	0.02	13.5
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.35	0.35	< 0.005	0.04	0.04	—	16.9	16.9	< 0.005	< 0.005	0.02	17.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.23	0.23	0.00	0.02	0.02	—	2.20	2.20	< 0.005	< 0.005	< 0.005	2.23
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	2.81	2.81	< 0.005	< 0.005	< 0.005	2.94

3.3. Grading (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.90	1.60	14.8	15.2	0.02	0.67	—	0.67	0.62	—	0.62	—	2,589	2,589	0.11	0.02	—	2,598

Dust From Material Movement	—	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.30	1.34	< 0.005	0.06	—	0.06	0.05	—	0.05	—	228	228	0.01	< 0.005	—	229
Dust From Material Movement	—	—	—	—	—	—	0.24	0.24	—	0.12	0.12	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.24	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	37.7	37.7	< 0.005	< 0.005	—	37.9
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.10	0.93	0.00	0.00	19.2	19.2	0.00	1.94	1.94	—	182	182	0.01	0.01	0.02	184
Vendor	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	0.00
Hauling	0.01	0.01	0.34	0.10	< 0.005	< 0.005	5.36	5.37	< 0.005	0.54	0.55	—	250	250	< 0.005	0.04	0.01	262

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	1.67	1.67	0.00	0.17	0.17	—	17.3	17.3	< 0.005	< 0.005	0.03	17.5
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.47	0.47	< 0.005	0.05	0.05	—	22.0	22.0	< 0.005	< 0.005	0.02	23.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.31	0.31	0.00	0.03	0.03	—	2.86	2.86	< 0.005	< 0.005	< 0.005	2.89
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	3.64	3.64	< 0.005	< 0.005	< 0.005	3.82

3.5. Building Construction (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.98	0.81	7.27	10.5	0.02	0.27	—	0.27	0.25	—	0.25	—	1,526	1,526	0.06	0.01	—	1,531
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.98	0.81	7.27	10.5	0.02	0.27	—	0.27	0.25	—	0.25	—	1,526	1,526	0.06	0.01	—	1,531
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.57	0.48	4.27	6.17	0.01	0.16	—	0.16	0.14	—	0.14	—	896	896	0.04	0.01	—	899
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.78	1.13	< 0.005	0.03	—	0.03	0.03	—	0.03	—	148	148	0.01	< 0.005	—	149
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.94	0.00	0.00	11.0	11.0	0.00	1.11	1.11	—	123	123	< 0.005	< 0.005	0.43	125
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	1.52	1.52	< 0.005	0.15	0.16	—	63.0	63.0	< 0.005	0.01	0.17	65.7
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.06	0.53	0.00	0.00	11.0	11.0	0.00	1.11	1.11	—	104	104	0.01	< 0.005	0.01	105
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	1.52	1.52	< 0.005	0.15	0.16	—	63.0	63.0	< 0.005	0.01	< 0.005	65.6
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.39	0.00	0.00	6.37	6.37	0.00	0.64	0.64	—	65.7	65.7	< 0.005	< 0.005	0.11	66.6
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.88	0.88	< 0.005	0.09	0.09	—	37.0	37.0	< 0.005	0.01	0.04	38.5
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	1.16	1.16	0.00	0.12	0.12	—	10.9	10.9	< 0.005	< 0.005	0.02	11.0
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	6.12	6.12	< 0.005	< 0.005	0.01	6.38
Hauling	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	0.00

3.7. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.92	0.76	6.94	10.5	0.02	0.23	—	0.23	0.21	—	0.21	—	1,526	1,526	0.06	0.01	—	1,531
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.11	1.68	< 0.005	0.04	—	0.04	0.03	—	0.03	—	245	245	0.01	< 0.005	—	246
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.20	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	40.5	40.5	< 0.005	< 0.005	—	40.7
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.04	0.04	0.05	0.49	0.00	0.00	11.0	11.0	0.00	1.11	1.11	—	102	102	0.01	< 0.005	0.01	103
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	1.52	1.52	< 0.005	0.15	0.16	—	61.8	61.8	< 0.005	0.01	< 0.005	64.4
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	1.74	1.74	0.00	0.18	0.18	—	17.6	17.6	< 0.005	< 0.005	0.03	17.9
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.24	0.24	< 0.005	0.02	0.02	—	9.91	9.91	< 0.005	< 0.005	0.01	10.3
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.32	0.32	0.00	0.03	0.03	—	2.92	2.92	< 0.005	< 0.005	< 0.005	2.96
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.71
Hauling	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	0.00

3.9. Architectural Coating (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	1.33	1.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	1.33	1.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.27	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	40.2	40.2	< 0.005	< 0.005	—	40.4
Architectural Coatings	0.40	0.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.66	6.66	< 0.005	< 0.005	—	6.68
Architectural Coatings	0.07	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.23	0.00	0.00	2.75	2.75	0.00	0.28	0.28	—	30.8	30.8	< 0.005	< 0.005	0.11	31.2
Vendor	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	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.01	0.13	0.00	0.00	2.75	2.75	0.00	0.28	0.28	—	26.0	26.0	< 0.005	< 0.005	< 0.005	26.4
Vendor	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	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.82	0.82	0.00	0.08	0.08	—	8.43	8.43	< 0.005	< 0.005	0.01	8.55
Vendor	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	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.15	0.15	0.00	0.02	0.02	—	1.40	1.40	< 0.005	< 0.005	< 0.005	1.41
Vendor	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	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.40	0.38	0.19	1.91	< 0.005	< 0.005	137	137	< 0.005	13.7	13.7	—	335	335	0.02	0.02	1.07	342
Total	0.40	0.38	0.19	1.91	< 0.005	< 0.005	137	137	< 0.005	13.7	13.7	—	335	335	0.02	0.02	1.07	342

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.30	0.29	0.21	1.45	< 0.005	< 0.005	137	137	< 0.005	13.7	13.7	—	296	296	0.02	0.02	0.03	302
Total	0.30	0.29	0.21	1.45	< 0.005	< 0.005	137	137	< 0.005	13.7	13.7	—	296	296	0.02	0.02	0.03	302
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.05	0.05	0.03	0.25	< 0.005	< 0.005	22.1	22.1	< 0.005	2.21	2.21	—	46.3	46.3	< 0.005	< 0.005	0.07	47.2
Total	0.05	0.05	0.03	0.25	< 0.005	< 0.005	22.1	22.1	< 0.005	2.21	2.21	—	46.3	46.3	< 0.005	< 0.005	0.07	47.2

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	120	120	0.01	< 0.005	—	120
Total	—	—	—	—	—	—	—	—	—	—	—	—	120	120	0.01	< 0.005	—	120
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	120	120	0.01	< 0.005	—	120
Total	—	—	—	—	—	—	—	—	—	—	—	—	120	120	0.01	< 0.005	—	120

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	19.8	19.8	< 0.005	< 0.005	—	19.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	19.8	19.8	< 0.005	< 0.005	—	19.9

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	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
Total	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

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.25	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.05	0.05	0.01	0.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.52	1.52	< 0.005	< 0.005	—	1.52
Total	0.34	0.34	0.01	0.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.52	1.52	< 0.005	< 0.005	—	1.52
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.25	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.29	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipment	0.01	0.01	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.19	0.19	< 0.005	< 0.005	—	0.19
Total	0.06	0.06	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.19	0.19	< 0.005	< 0.005	—	0.19

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	3.76	13.4	17.2	0.39	0.01	—	29.6
Total	—	—	—	—	—	—	—	—	—	—	—	3.76	13.4	17.2	0.39	0.01	—	29.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	3.76	13.4	17.2	0.39	0.01	—	29.6
Total	—	—	—	—	—	—	—	—	—	—	—	3.76	13.4	17.2	0.39	0.01	—	29.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	0.62	2.23	2.85	0.06	< 0.005	—	4.91
Total	—	—	—	—	—	—	—	—	—	—	—	0.62	2.23	2.85	0.06	< 0.005	—	4.91

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1
Total	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1
Total	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.33
Total	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.33

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Grading	Grading	11/28/2024	2/14/2025	5.00	57.0	—
Building Construction	Building Construction	3/7/2025	3/23/2026	5.00	272	—

Architectural Coating	Architectural Coating	7/23/2025	12/23/2025	5.00	110	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Building Construction	Aerial Lifts	Electric	Average	3.00	8.00	46.0	0.31
Building Construction	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37
Building Construction	Welders	Diesel	Average	2.00	8.00	46.0	0.45
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Grading	—	—	—	—
Grading	Worker	14.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT

Grading	Hauling	6.00	12.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	8.00	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	2.00	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.00	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	23,603	7,868	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Grading	—	2,600	33,482	0.00	—

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Low Rise	—	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	255	457	0.03	< 0.005
2026	255	457	0.03	< 0.005
2024	0.00	457	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Low Rise	79.0	87.8	67.8	28,710	331	368	284	120,278

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
23603.399999999998	7,868	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	270

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Low Rise	95,571	457	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Low Rise	1,961,875	452,965

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Low Rise	7.48	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

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

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	29.4	annual days of extreme heat
Extreme Precipitation	0.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

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

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	70.3
AQ-PM	71.2
AQ-DPM	96.6
Drinking Water	52.7
Lead Risk Housing	72.6

Pesticides	0.00
Toxic Releases	49.1
Traffic	95.0
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	72.5
Haz Waste Facilities/Generators	50.1
Impaired Water Bodies	99.5
Solid Waste	0.00
Sensitive Population	—
Asthma	69.3
Cardio-vascular	91.0
Low Birth Weights	29.7
Socioeconomic Factor Indicators	—
Education	92.5
Housing	92.9
Linguistic	99.6
Poverty	88.7
Unemployment	99.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	0.744257667
Employed	5.530604389
Median HI	0.333632747

Education	—
Bachelor's or higher	34.49249326
High school enrollment	100
Preschool enrollment	26.78044399
Transportation	—
Auto Access	4.978827153
Active commuting	64.80174516
Social	—
2-parent households	12.53689208
Voting	9.534197357
Neighborhood	—
Alcohol availability	37.35403567
Park access	81.35506224
Retail density	86.68035416
Supermarket access	72.93725138
Tree canopy	9.508533299
Housing	—
Homeownership	18.58077762
Housing habitability	25.1764404
Low-inc homeowner severe housing cost burden	64.49377647
Low-inc renter severe housing cost burden	12.38290774
Uncrowded housing	27.15257282
Health Outcomes	—
Insured adults	9.008084178
Arthritis	0.0
Asthma ER Admissions	41.2
High Blood Pressure	0.0

Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	85.8
Cognitively Disabled	22.1
Physically Disabled	3.2
Heart Attack ER Admissions	6.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	73.3
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	6.8
Elderly	27.3
English Speaking	0.3
Foreign-born	88.7
Outdoor Workers	10.7

Climate Change Adaptive Capacity	—
Impervious Surface Cover	18.3
Traffic Density	87.1
Traffic Access	23.0
Other Indices	—
Hardship	98.9
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	96.0
Healthy Places Index Score for Project Location (b)	3.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	El Centro Corridor

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Attachment C

Construction Health Risk Modeling Files

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** AERMOD Input Produced by:
** AERMOD View Ver. 12.0.0
** Lakes Environmental Software Inc.
** Date: 6/19/2024
** File: U:\Documents\AQ_GHG\HARP2\SDSU Calexico Con HRA\SDSU Calexico Con HRA.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE U:\Documents\AQ_GHG\HARP2\SDSU Calexico Con HRA\SDSU Calexico Con HR
   MODELOPT DFAULT CONC
   AVERTIME 1 PERIOD
   URBANOPT 179057
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL "SDSU Calexico Con HRA.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
```

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**

**

SO STARTING

** Source Location **

** Source ID - Type - X Coord. - Y Coord. **

** --

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE1

** DESCRSRC

** PREFIX

** Length of Side = 5.00

** Configuration = Adjacent

** Emission Rate = 1.0

** Vertical Dimension = 10.00

** SZINIT = 4.65

** Nodes = 27

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** 641508.165, 3615948.371, 1.70, 5.00, 2.33

** 641509.241, 3615873.052, 1.80, 5.00, 2.33

** 641426.748, 3615874.486, 1.67, 5.00, 2.33

** 641427.465, 3615921.471, 1.77, 5.00, 2.33

** 641494.535, 3615923.982, 1.61, 5.00, 2.33

** 641493.459, 3615945.143, 1.66, 5.00, 2.33

** 641505.295, 3615945.143, 1.69, 5.00, 2.33

** 641504.937, 3615878.432, 1.68, 5.00, 2.33

** 641429.976, 3615877.356, 1.69, 5.00, 2.33

** 641431.410, 3615916.450, 1.74, 5.00, 2.33

** 641495.970, 3615918.243, 1.60, 5.00, 2.33

** 641498.122, 3615940.481, 1.66, 5.00, 2.33

** 641500.274, 3615884.529, 1.63, 5.00, 2.33

** 641436.073, 3615882.018, 1.65, 5.00, 2.33

** 641435.356, 3615910.711, 1.71, 5.00, 2.33

** 641491.307, 3615912.505, 1.59, 5.00, 2.33

** 641493.101, 3615890.268, 1.61, 5.00, 2.33

** 641441.453, 3615885.964, 1.65, 5.00, 2.33

** 641440.377, 3615906.766, 1.70, 5.00, 2.33

** 641485.569, 3615907.842, 1.60, 5.00, 2.33

** 641486.645, 3615895.289, 1.60, 5.00, 2.33

** 641446.833, 3615890.268, 1.65, 5.00, 2.33

** 641445.757, 3615903.538, 1.69, 5.00, 2.33

** 641481.265, 3615904.255, 1.60, 5.00, 2.33

** 641481.265, 3615898.158, 1.60, 5.00, 2.33

** 641449.702, 3615897.082, 1.67, 5.00, 2.33

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LOCATION L0000002 VOLUME 641501.655 3615947.870 1.67

LOCATION L0000003 VOLUME 641506.640 3615948.254 1.68

LOCATION L0000004 VOLUME 641508.214 3615944.901 1.69

LOCATION L0000005 VOLUME 641508.286 3615939.901 1.69

LOCATION L0000006 VOLUME 641508.357 3615934.902 1.68

LOCATION L0000007 VOLUME 641508.428 3615929.902 1.68

LOCATION L0000008 VOLUME 641508.500 3615924.903 1.68

LOCATION L0000009 VOLUME 641508.571 3615919.903 1.67

LOCATION L0000010 VOLUME 641508.643 3615914.904 1.67

LOCATION L0000011 VOLUME 641508.714 3615909.904 1.67

LOCATION L0000012 VOLUME 641508.786 3615904.905 1.67

LOCATION L0000013 VOLUME 641508.857 3615899.905 1.68

LOCATION L0000014 VOLUME 641508.928 3615894.906 1.69
LOCATION L0000015 VOLUME 641509.000 3615889.906 1.70
LOCATION L0000016 VOLUME 641509.071 3615884.907 1.71
LOCATION L0000017 VOLUME 641509.143 3615879.907 1.71
LOCATION L0000018 VOLUME 641509.214 3615874.908 1.73
LOCATION L0000019 VOLUME 641506.097 3615873.106 1.71
LOCATION L0000020 VOLUME 641501.098 3615873.193 1.67
LOCATION L0000021 VOLUME 641496.099 3615873.280 1.64
LOCATION L0000022 VOLUME 641491.100 3615873.367 1.62
LOCATION L0000023 VOLUME 641486.101 3615873.454 1.61
LOCATION L0000024 VOLUME 641481.101 3615873.541 1.61
LOCATION L0000025 VOLUME 641476.102 3615873.628 1.60
LOCATION L0000026 VOLUME 641471.103 3615873.715 1.60
LOCATION L0000027 VOLUME 641466.104 3615873.802 1.60
LOCATION L0000028 VOLUME 641461.104 3615873.889 1.61
LOCATION L0000029 VOLUME 641456.105 3615873.976 1.62
LOCATION L0000030 VOLUME 641451.106 3615874.063 1.63
LOCATION L0000031 VOLUME 641446.107 3615874.150 1.64
LOCATION L0000032 VOLUME 641441.107 3615874.237 1.66
LOCATION L0000033 VOLUME 641436.108 3615874.324 1.68
LOCATION L0000034 VOLUME 641431.109 3615874.410 1.70
LOCATION L0000035 VOLUME 641426.757 3615875.125 1.71
LOCATION L0000036 VOLUME 641426.834 3615880.124 1.72
LOCATION L0000037 VOLUME 641426.910 3615885.123 1.73
LOCATION L0000038 VOLUME 641426.986 3615890.123 1.75
LOCATION L0000039 VOLUME 641427.063 3615895.122 1.76
LOCATION L0000040 VOLUME 641427.139 3615900.122 1.77
LOCATION L0000041 VOLUME 641427.215 3615905.121 1.79
LOCATION L0000042 VOLUME 641427.292 3615910.120 1.80

LOCATION L0000043 VOLUME 641427.368 3615915.120 1.81

LOCATION L0000044 VOLUME 641427.444 3615920.119 1.83

LOCATION L0000045 VOLUME 641431.110 3615921.608 1.80

LOCATION L0000046 VOLUME 641436.107 3615921.795 1.76

LOCATION L0000047 VOLUME 641441.103 3615921.982 1.71

LOCATION L0000048 VOLUME 641446.100 3615922.169 1.70

LOCATION L0000049 VOLUME 641451.096 3615922.356 1.69

LOCATION L0000050 VOLUME 641456.093 3615922.543 1.67

LOCATION L0000051 VOLUME 641461.089 3615922.730 1.66

LOCATION L0000052 VOLUME 641466.086 3615922.917 1.65

LOCATION L0000053 VOLUME 641471.082 3615923.104 1.64

LOCATION L0000054 VOLUME 641476.079 3615923.291 1.64

LOCATION L0000055 VOLUME 641481.075 3615923.478 1.63

LOCATION L0000056 VOLUME 641486.072 3615923.665 1.63

LOCATION L0000057 VOLUME 641491.068 3615923.852 1.62

LOCATION L0000058 VOLUME 641494.458 3615925.511 1.63

LOCATION L0000059 VOLUME 641494.204 3615930.504 1.64

LOCATION L0000060 VOLUME 641493.950 3615935.498 1.65

LOCATION L0000061 VOLUME 641493.696 3615940.491 1.66

LOCATION L0000062 VOLUME 641493.801 3615945.143 1.66

LOCATION L0000063 VOLUME 641498.801 3615945.143 1.67

LOCATION L0000064 VOLUME 641503.801 3615945.143 1.68

LOCATION L0000065 VOLUME 641505.276 3615941.637 1.68

LOCATION L0000066 VOLUME 641505.250 3615936.637 1.68

LOCATION L0000067 VOLUME 641505.223 3615931.637 1.67

LOCATION L0000068 VOLUME 641505.196 3615926.637 1.67

LOCATION L0000069 VOLUME 641505.169 3615921.637 1.66

LOCATION L0000070 VOLUME 641505.142 3615916.638 1.66

LOCATION L0000071 VOLUME 641505.115 3615911.638 1.65

LOCATION L0000072 VOLUME 641505.088 3615906.638 1.65

LOCATION L0000073 VOLUME 641505.061 3615901.638 1.66

LOCATION L0000074 VOLUME 641505.034 3615896.638 1.66

LOCATION L0000075 VOLUME 641505.008 3615891.638 1.67

LOCATION L0000076 VOLUME 641504.981 3615886.638 1.67

LOCATION L0000077 VOLUME 641504.954 3615881.638 1.68

LOCATION L0000078 VOLUME 641503.143 3615878.406 1.67

LOCATION L0000079 VOLUME 641498.144 3615878.334 1.63

LOCATION L0000080 VOLUME 641493.144 3615878.262 1.60

LOCATION L0000081 VOLUME 641488.145 3615878.191 1.59

LOCATION L0000082 VOLUME 641483.145 3615878.119 1.59

LOCATION L0000083 VOLUME 641478.146 3615878.047 1.58

LOCATION L0000084 VOLUME 641473.146 3615877.975 1.58

LOCATION L0000085 VOLUME 641468.147 3615877.904 1.57

LOCATION L0000086 VOLUME 641463.147 3615877.832 1.59

LOCATION L0000087 VOLUME 641458.148 3615877.760 1.60

LOCATION L0000088 VOLUME 641453.148 3615877.688 1.61

LOCATION L0000089 VOLUME 641448.149 3615877.616 1.63

LOCATION L0000090 VOLUME 641443.149 3615877.545 1.64

LOCATION L0000091 VOLUME 641438.150 3615877.473 1.66

LOCATION L0000092 VOLUME 641433.150 3615877.401 1.69

LOCATION L0000093 VOLUME 641430.043 3615879.179 1.70

LOCATION L0000094 VOLUME 641430.226 3615884.176 1.71

LOCATION L0000095 VOLUME 641430.409 3615889.173 1.73

LOCATION L0000096 VOLUME 641430.593 3615894.169 1.74

LOCATION L0000097 VOLUME 641430.776 3615899.166 1.75

LOCATION L0000098 VOLUME 641430.959 3615904.163 1.76

LOCATION L0000099 VOLUME 641431.143 3615909.159 1.77

LOCATION L0000100 VOLUME 641431.326 3615914.156 1.78

LOCATION L0000101 VOLUME 641434.114 3615916.525 1.76

LOCATION L0000102 VOLUME 641439.112 3615916.664 1.72

LOCATION L0000103 VOLUME 641444.110 3615916.803 1.70

LOCATION L0000104 VOLUME 641449.108 3615916.942 1.68

LOCATION L0000105 VOLUME 641454.106 3615917.080 1.67

LOCATION L0000106 VOLUME 641459.104 3615917.219 1.65

LOCATION L0000107 VOLUME 641464.102 3615917.358 1.63

LOCATION L0000108 VOLUME 641469.100 3615917.497 1.62

LOCATION L0000109 VOLUME 641474.098 3615917.636 1.62

LOCATION L0000110 VOLUME 641479.096 3615917.775 1.62

LOCATION L0000111 VOLUME 641484.094 3615917.913 1.61

LOCATION L0000112 VOLUME 641489.092 3615918.052 1.61

LOCATION L0000113 VOLUME 641494.090 3615918.191 1.61

LOCATION L0000114 VOLUME 641496.270 3615921.349 1.63

LOCATION L0000115 VOLUME 641496.752 3615926.325 1.64

LOCATION L0000116 VOLUME 641497.234 3615931.302 1.65

LOCATION L0000117 VOLUME 641497.715 3615936.279 1.66

LOCATION L0000118 VOLUME 641498.152 3615939.703 1.67

LOCATION L0000119 VOLUME 641498.344 3615934.706 1.66

LOCATION L0000120 VOLUME 641498.536 3615929.710 1.65

LOCATION L0000121 VOLUME 641498.728 3615924.714 1.64

LOCATION L0000122 VOLUME 641498.921 3615919.717 1.63

LOCATION L0000123 VOLUME 641499.113 3615914.721 1.63

LOCATION L0000124 VOLUME 641499.305 3615909.725 1.62

LOCATION L0000125 VOLUME 641499.497 3615904.728 1.62

LOCATION L0000126 VOLUME 641499.689 3615899.732 1.63

LOCATION L0000127 VOLUME 641499.881 3615894.736 1.63

LOCATION L0000128 VOLUME 641500.074 3615889.739 1.64

LOCATION L0000129 VOLUME 641500.266 3615884.743 1.64

LOCATION	L0000130	VOLUME	641495.492	3615884.342	1.60
LOCATION	L0000131	VOLUME	641490.496	3615884.147	1.59
LOCATION	L0000132	VOLUME	641485.500	3615883.951	1.59
LOCATION	L0000133	VOLUME	641480.503	3615883.756	1.58
LOCATION	L0000134	VOLUME	641475.507	3615883.560	1.58
LOCATION	L0000135	VOLUME	641470.511	3615883.365	1.57
LOCATION	L0000136	VOLUME	641465.515	3615883.170	1.58
LOCATION	L0000137	VOLUME	641460.519	3615882.974	1.59
LOCATION	L0000138	VOLUME	641455.523	3615882.779	1.61
LOCATION	L0000139	VOLUME	641450.526	3615882.583	1.62
LOCATION	L0000140	VOLUME	641445.530	3615882.388	1.64
LOCATION	L0000141	VOLUME	641440.534	3615882.193	1.66
LOCATION	L0000142	VOLUME	641436.060	3615882.554	1.68
LOCATION	L0000143	VOLUME	641435.935	3615887.552	1.69
LOCATION	L0000144	VOLUME	641435.810	3615892.551	1.70
LOCATION	L0000145	VOLUME	641435.685	3615897.549	1.71
LOCATION	L0000146	VOLUME	641435.560	3615902.547	1.73
LOCATION	L0000147	VOLUME	641435.435	3615907.546	1.74
LOCATION	L0000148	VOLUME	641437.188	3615910.770	1.73
LOCATION	L0000149	VOLUME	641442.186	3615910.930	1.70
LOCATION	L0000150	VOLUME	641447.183	3615911.091	1.68
LOCATION	L0000151	VOLUME	641452.181	3615911.251	1.66
LOCATION	L0000152	VOLUME	641457.178	3615911.411	1.64
LOCATION	L0000153	VOLUME	641462.175	3615911.571	1.62
LOCATION	L0000154	VOLUME	641467.173	3615911.731	1.60
LOCATION	L0000155	VOLUME	641472.170	3615911.891	1.60
LOCATION	L0000156	VOLUME	641477.168	3615912.052	1.60
LOCATION	L0000157	VOLUME	641482.165	3615912.212	1.60
LOCATION	L0000158	VOLUME	641487.163	3615912.372	1.60

LOCATION	L0000159	VOLUME	641491.376	3615911.654	1.59
LOCATION	L0000160	VOLUME	641491.778	3615906.671	1.59
LOCATION	L0000161	VOLUME	641492.180	3615901.687	1.59
LOCATION	L0000162	VOLUME	641492.582	3615896.703	1.59
LOCATION	L0000163	VOLUME	641492.984	3615891.719	1.59
LOCATION	L0000164	VOLUME	641489.569	3615889.973	1.59
LOCATION	L0000165	VOLUME	641484.586	3615889.558	1.59
LOCATION	L0000166	VOLUME	641479.604	3615889.143	1.58
LOCATION	L0000167	VOLUME	641474.621	3615888.728	1.58
LOCATION	L0000168	VOLUME	641469.638	3615888.312	1.58
LOCATION	L0000169	VOLUME	641464.656	3615887.897	1.58
LOCATION	L0000170	VOLUME	641459.673	3615887.482	1.60
LOCATION	L0000171	VOLUME	641454.690	3615887.067	1.62
LOCATION	L0000172	VOLUME	641449.707	3615886.651	1.63
LOCATION	L0000173	VOLUME	641444.725	3615886.236	1.65
LOCATION	L0000174	VOLUME	641441.364	3615887.678	1.66
LOCATION	L0000175	VOLUME	641441.106	3615892.672	1.67
LOCATION	L0000176	VOLUME	641440.848	3615897.665	1.68
LOCATION	L0000177	VOLUME	641440.589	3615902.658	1.69
LOCATION	L0000178	VOLUME	641441.263	3615906.787	1.69
LOCATION	L0000179	VOLUME	641446.262	3615906.906	1.67
LOCATION	L0000180	VOLUME	641451.261	3615907.025	1.65
LOCATION	L0000181	VOLUME	641456.259	3615907.144	1.64
LOCATION	L0000182	VOLUME	641461.258	3615907.263	1.62
LOCATION	L0000183	VOLUME	641466.256	3615907.382	1.60
LOCATION	L0000184	VOLUME	641471.255	3615907.501	1.59
LOCATION	L0000185	VOLUME	641476.254	3615907.620	1.59
LOCATION	L0000186	VOLUME	641481.252	3615907.739	1.59
LOCATION	L0000187	VOLUME	641485.627	3615907.162	1.59

LOCATION L0000188 VOLUME 641486.054 3615902.181 1.59

LOCATION L0000189 VOLUME 641486.481 3615897.199 1.59

LOCATION L0000190 VOLUME 641483.586 3615894.903 1.59

LOCATION L0000191 VOLUME 641478.625 3615894.277 1.58

LOCATION L0000192 VOLUME 641473.665 3615893.652 1.58

LOCATION L0000193 VOLUME 641468.704 3615893.026 1.58

LOCATION L0000194 VOLUME 641463.743 3615892.400 1.59

LOCATION L0000195 VOLUME 641458.783 3615891.775 1.61

LOCATION L0000196 VOLUME 641453.822 3615891.149 1.62

LOCATION L0000197 VOLUME 641448.861 3615890.523 1.64

LOCATION L0000198 VOLUME 641446.594 3615893.214 1.65

LOCATION L0000199 VOLUME 641446.190 3615898.197 1.66

LOCATION L0000200 VOLUME 641445.786 3615903.181 1.67

LOCATION L0000201 VOLUME 641450.398 3615903.632 1.65

LOCATION L0000202 VOLUME 641455.397 3615903.733 1.63

LOCATION L0000203 VOLUME 641460.396 3615903.834 1.62

LOCATION L0000204 VOLUME 641465.395 3615903.935 1.60

LOCATION L0000205 VOLUME 641470.394 3615904.036 1.59

LOCATION L0000206 VOLUME 641475.393 3615904.137 1.59

LOCATION L0000207 VOLUME 641480.392 3615904.238 1.59

LOCATION L0000208 VOLUME 641481.265 3615900.129 1.59

LOCATION L0000209 VOLUME 641478.237 3615898.055 1.59

LOCATION L0000210 VOLUME 641473.240 3615897.885 1.58

LOCATION L0000211 VOLUME 641468.243 3615897.714 1.58

LOCATION L0000212 VOLUME 641463.246 3615897.544 1.60

LOCATION L0000213 VOLUME 641458.249 3615897.374 1.62

LOCATION L0000214 VOLUME 641453.252 3615897.203 1.63

** End of LINE VOLUME Source ID = SLINE1

** Source Parameters **

** LINE VOLUME Source ID = SLINE1

SRCPARAM L0000001	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000002	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000003	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000004	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000005	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000006	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000007	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000008	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000009	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000010	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000011	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000012	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000013	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000014	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000015	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000016	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000017	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000018	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000019	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000020	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000021	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000022	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000023	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000024	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000025	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000026	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000027	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000028	0.0046728972	5.00	2.33	4.65

SRCPARAM	L0000029	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000030	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000031	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000032	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000033	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000034	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000035	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000036	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000037	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000038	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000039	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000040	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000041	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000042	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000043	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000044	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000045	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000046	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000047	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000048	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000049	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000050	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000051	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000052	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000053	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000054	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000055	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000056	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000057	0.0046728972	5.00	2.33	4.65

SRCPARAM L0000058	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000059	0.0046728972	5.00	2.33	4.65
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SRCPARAM L0000062	0.0046728972	5.00	2.33	4.65
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SRCPARAM L0000069	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000070	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000071	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000072	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000073	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000074	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000075	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000076	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000077	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000078	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000079	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000080	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000081	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000082	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000083	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000084	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000085	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000086	0.0046728972	5.00	2.33	4.65

SRCPARAM	L0000087	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000088	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000089	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000090	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000091	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000092	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000093	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000094	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000095	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000096	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000097	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000098	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000099	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000100	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000101	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000102	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000103	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000104	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000105	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000106	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000107	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000108	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000109	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000110	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000111	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000112	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000113	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000114	0.0046728972	5.00	2.33	4.65
SRCPARAM	L0000115	0.0046728972	5.00	2.33	4.65

SRCPARAM L0000116	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000117	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000118	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000119	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000120	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000121	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000122	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000123	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000124	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000125	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000126	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000127	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000128	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000129	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000130	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000131	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000132	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000133	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000134	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000135	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000136	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000137	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000138	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000139	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000140	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000141	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000142	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000143	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000144	0.0046728972	5.00	2.33	4.65

SRCPARAM L0000145	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000146	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000147	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000148	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000149	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000150	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000151	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000152	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000153	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000154	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000155	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000156	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000157	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000158	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000159	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000160	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000161	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000162	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000163	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000164	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000165	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000166	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000167	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000168	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000169	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000170	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000171	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000172	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000173	0.0046728972	5.00	2.33	4.65

SRCPARAM L0000174	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000175	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000176	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000177	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000178	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000179	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000180	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000181	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000182	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000183	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000184	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000185	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000186	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000187	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000188	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000189	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000190	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000191	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000192	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000193	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000194	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000195	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000196	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000197	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000198	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000199	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000200	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000201	0.0046728972	5.00	2.33	4.65
SRCPARAM L0000202	0.0046728972	5.00	2.33	4.65

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   SRCPARAM L0000203    0.0046728972    5.00    2.33    4.65
   SRCPARAM L0000204    0.0046728972    5.00    2.33    4.65
   SRCPARAM L0000205    0.0046728972    5.00    2.33    4.65
   SRCPARAM L0000206    0.0046728972    5.00    2.33    4.65
   SRCPARAM L0000207    0.0046728972    5.00    2.33    4.65
   SRCPARAM L0000208    0.0046728972    5.00    2.33    4.65
   SRCPARAM L0000209    0.0046728972    5.00    2.33    4.65
   SRCPARAM L0000210    0.0046728972    5.00    2.33    4.65
   SRCPARAM L0000211    0.0046728972    5.00    2.33    4.65
   SRCPARAM L0000212    0.0046728972    5.00    2.33    4.65
   SRCPARAM L0000213    0.0046728972    5.00    2.33    4.65
   SRCPARAM L0000214    0.0046728972    5.00    2.33    4.65
** ------------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED "SDSU Calexico Con HRA.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
```

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**

**

ME STARTING

  SURFFILE C:\Users\nlorenzen\Downloads\KIPL_747185_03144\KIPL_747185_03144\KIPL_2015-2018_2021_ADJU.SFC

  PROFFILE C:\Users\nlorenzen\Downloads\KIPL_747185_03144\KIPL_747185_03144\KIPL_2015-2018_2021_ADJU.PFL

  SURFDATA 3144 2015

  UAIRDATA 3190 2015

  PROFBASE -17.7 METERS

ME FINISHED

**

****************************************

** AERMOD Output Pathway

****************************************

**

**

OU STARTING

  RECTABLE ALLAVE 1ST

  RECTABLE 1 1ST

** Auto-Generated Plotfiles

  PLOTFILE 1 ALL 1ST "SDSU Calexico Con HRA.AD\01H1GALL.PLT" 31

  PLOTFILE PERIOD ALL "SDSU Calexico Con HRA.AD\PE00GALL.PLT" 32

  SUMMFILE "SDSU Calexico Con HRA.sum"

OU FINISHED



 *** Message Summary For AERMOD Model Setup ***
```

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)

A Total of 3 Warning Message(s)

A Total of 0 Informational Message(s)

******** FATAL ERROR MESSAGES ********

*** NONE ***

******** WARNING MESSAGES ********

ME W340 530 PRBASE: Possible Error in PROFBASE Input: Value is < 0 PROFBASE

ME W186 531 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used 0.50

ME W187 531 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

****

*** SETUP Finishes Successfully ***

****

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** MODEL SETUP OPTIONS SUMMARY ***

- -

** Model Options Selected:

* Model Uses Regulatory DEFAULT Options

* Model Is Setup For Calculation of Average CONCentration Values.

* NO GAS DEPOSITION Data Provided.

* NO PARTICLE DEPOSITION Data Provided.

* Model Uses NO DRY DEPLETION. DDPLETE = F

* Model Uses NO WET DEPLETION. WETDPLT = F

* Stack-tip Downwash.

* Model Accounts for ELEVated Terrain Effects.

* Use Calms Processing Routine.

* Use Missing Data Processing Routine.

* No Exponential Decay.

* Model Uses URBAN Dispersion Algorithm for the SBL for 214 Source(s),

for Total of 1 Urban Area(s):

Urban Population = 179057.0 ; Urban Roughness Length = 1.000 m

* Urban Roughness Length of 1.0 Meter Used.

* ADJ_U* - Use ADJ_U* option for SBL in AERMET

* CCVR_Sub - Meteorological data includes CCVR substitutions

* TEMP_Sub - Meteorological data includes TEMP substitutions

* Model Assumes No FLAGPOLE Receptor Heights.

* The User Specified a Pollutant Type of: PM_10

**Model Calculates 1 Short Term Average(s) of: 1-HR

and Calculates PERIOD Averages

**This Run Includes: 214 Source(s); 1 Source Group(s); and 57 Receptor(s)

with: 0 POINT(s), including

0 POINTCAP(s) and 0 POINTHOR(s)

and: 214 VOLUME source(s)

and: 0 AREA type source(s)

and: 0 LINE source(s)

and: 0 RLINE/RLINEXT source(s)

and: 0 OPENPIT source(s)

and: 0 BUOYANT LINE source(s) with a total of 0 line(s)

and: 0 SWPOINT source(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 19191

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor

Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours m for Missing Hours

b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = -17.70 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0

Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07

Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.6 MB of RAM.

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: SDSU Calexico Con HRA.err

**File for Summary of Results: SDSU Calexico Con HRA.sum

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY	AIRCRAFT
L0000001	0	0.46729E-02	641496.7	3615947.5	1.7	5.00	2.33	4.65	YES		NO
L0000002	0	0.46729E-02	641501.7	3615947.9	1.7	5.00	2.33	4.65	YES		NO
L0000003	0	0.46729E-02	641506.6	3615948.3	1.7	5.00	2.33	4.65	YES		NO
L0000004	0	0.46729E-02	641508.2	3615944.9	1.7	5.00	2.33	4.65	YES		NO
L0000005	0	0.46729E-02	641508.3	3615939.9	1.7	5.00	2.33	4.65	YES		NO
L0000006	0	0.46729E-02	641508.4	3615934.9	1.7	5.00	2.33	4.65	YES		NO
L0000007	0	0.46729E-02	641508.4	3615929.9	1.7	5.00	2.33	4.65	YES		NO
L0000008	0	0.46729E-02	641508.5	3615924.9	1.7	5.00	2.33	4.65	YES		NO
L0000009	0	0.46729E-02	641508.6	3615919.9	1.7	5.00	2.33	4.65	YES		NO
L0000010	0	0.46729E-02	641508.6	3615914.9	1.7	5.00	2.33	4.65	YES		NO
L0000011	0	0.46729E-02	641508.7	3615909.9	1.7	5.00	2.33	4.65	YES		NO
L0000012	0	0.46729E-02	641508.8	3615904.9	1.7	5.00	2.33	4.65	YES		NO
L0000013	0	0.46729E-02	641508.9	3615899.9	1.7	5.00	2.33	4.65	YES		NO
L0000014	0	0.46729E-02	641508.9	3615894.9	1.7	5.00	2.33	4.65	YES		NO

L0000015	0	0.46729E-02	641509.0	3615889.9	1.7	5.00	2.33	4.65	YES	NO
L0000016	0	0.46729E-02	641509.1	3615884.9	1.7	5.00	2.33	4.65	YES	NO
L0000017	0	0.46729E-02	641509.1	3615879.9	1.7	5.00	2.33	4.65	YES	NO
L0000018	0	0.46729E-02	641509.2	3615874.9	1.7	5.00	2.33	4.65	YES	NO
L0000019	0	0.46729E-02	641506.1	3615873.1	1.7	5.00	2.33	4.65	YES	NO
L0000020	0	0.46729E-02	641501.1	3615873.2	1.7	5.00	2.33	4.65	YES	NO
L0000021	0	0.46729E-02	641496.1	3615873.3	1.6	5.00	2.33	4.65	YES	NO
L0000022	0	0.46729E-02	641491.1	3615873.4	1.6	5.00	2.33	4.65	YES	NO
L0000023	0	0.46729E-02	641486.1	3615873.5	1.6	5.00	2.33	4.65	YES	NO
L0000024	0	0.46729E-02	641481.1	3615873.5	1.6	5.00	2.33	4.65	YES	NO
L0000025	0	0.46729E-02	641476.1	3615873.6	1.6	5.00	2.33	4.65	YES	NO
L0000026	0	0.46729E-02	641471.1	3615873.7	1.6	5.00	2.33	4.65	YES	NO
L0000027	0	0.46729E-02	641466.1	3615873.8	1.6	5.00	2.33	4.65	YES	NO
L0000028	0	0.46729E-02	641461.1	3615873.9	1.6	5.00	2.33	4.65	YES	NO
L0000029	0	0.46729E-02	641456.1	3615874.0	1.6	5.00	2.33	4.65	YES	NO
L0000030	0	0.46729E-02	641451.1	3615874.1	1.6	5.00	2.33	4.65	YES	NO
L0000031	0	0.46729E-02	641446.1	3615874.1	1.6	5.00	2.33	4.65	YES	NO
L0000032	0	0.46729E-02	641441.1	3615874.2	1.7	5.00	2.33	4.65	YES	NO
L0000033	0	0.46729E-02	641436.1	3615874.3	1.7	5.00	2.33	4.65	YES	NO
L0000034	0	0.46729E-02	641431.1	3615874.4	1.7	5.00	2.33	4.65	YES	NO
L0000035	0	0.46729E-02	641426.8	3615875.1	1.7	5.00	2.33	4.65	YES	NO
L0000036	0	0.46729E-02	641426.8	3615880.1	1.7	5.00	2.33	4.65	YES	NO
L0000037	0	0.46729E-02	641426.9	3615885.1	1.7	5.00	2.33	4.65	YES	NO
L0000038	0	0.46729E-02	641427.0	3615890.1	1.8	5.00	2.33	4.65	YES	NO
L0000039	0	0.46729E-02	641427.1	3615895.1	1.8	5.00	2.33	4.65	YES	NO
L0000040	0	0.46729E-02	641427.1	3615900.1	1.8	5.00	2.33	4.65	YES	NO

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY	AIRCRAFT
L0000041	0	0.46729E-02	641427.2	3615905.1	1.8	5.00	2.33	4.65	YES		NO
L0000042	0	0.46729E-02	641427.3	3615910.1	1.8	5.00	2.33	4.65	YES		NO
L0000043	0	0.46729E-02	641427.4	3615915.1	1.8	5.00	2.33	4.65	YES		NO
L0000044	0	0.46729E-02	641427.4	3615920.1	1.8	5.00	2.33	4.65	YES		NO
L0000045	0	0.46729E-02	641431.1	3615921.6	1.8	5.00	2.33	4.65	YES		NO
L0000046	0	0.46729E-02	641436.1	3615921.8	1.8	5.00	2.33	4.65	YES		NO
L0000047	0	0.46729E-02	641441.1	3615922.0	1.7	5.00	2.33	4.65	YES		NO
L0000048	0	0.46729E-02	641446.1	3615922.2	1.7	5.00	2.33	4.65	YES		NO
L0000049	0	0.46729E-02	641451.1	3615922.4	1.7	5.00	2.33	4.65	YES		NO
L0000050	0	0.46729E-02	641456.1	3615922.5	1.7	5.00	2.33	4.65	YES		NO
L0000051	0	0.46729E-02	641461.1	3615922.7	1.7	5.00	2.33	4.65	YES		NO
L0000052	0	0.46729E-02	641466.1	3615922.9	1.7	5.00	2.33	4.65	YES		NO
L0000053	0	0.46729E-02	641471.1	3615923.1	1.6	5.00	2.33	4.65	YES		NO
L0000054	0	0.46729E-02	641476.1	3615923.3	1.6	5.00	2.33	4.65	YES		NO

L0000055	0	0.46729E-02	641481.1	3615923.5	1.6	5.00	2.33	4.65	YES	NO
L0000056	0	0.46729E-02	641486.1	3615923.7	1.6	5.00	2.33	4.65	YES	NO
L0000057	0	0.46729E-02	641491.1	3615923.9	1.6	5.00	2.33	4.65	YES	NO
L0000058	0	0.46729E-02	641494.5	3615925.5	1.6	5.00	2.33	4.65	YES	NO
L0000059	0	0.46729E-02	641494.2	3615930.5	1.6	5.00	2.33	4.65	YES	NO
L0000060	0	0.46729E-02	641494.0	3615935.5	1.7	5.00	2.33	4.65	YES	NO
L0000061	0	0.46729E-02	641493.7	3615940.5	1.7	5.00	2.33	4.65	YES	NO
L0000062	0	0.46729E-02	641493.8	3615945.1	1.7	5.00	2.33	4.65	YES	NO
L0000063	0	0.46729E-02	641498.8	3615945.1	1.7	5.00	2.33	4.65	YES	NO
L0000064	0	0.46729E-02	641503.8	3615945.1	1.7	5.00	2.33	4.65	YES	NO
L0000065	0	0.46729E-02	641505.3	3615941.6	1.7	5.00	2.33	4.65	YES	NO
L0000066	0	0.46729E-02	641505.2	3615936.6	1.7	5.00	2.33	4.65	YES	NO
L0000067	0	0.46729E-02	641505.2	3615931.6	1.7	5.00	2.33	4.65	YES	NO
L0000068	0	0.46729E-02	641505.2	3615926.6	1.7	5.00	2.33	4.65	YES	NO
L0000069	0	0.46729E-02	641505.2	3615921.6	1.7	5.00	2.33	4.65	YES	NO
L0000070	0	0.46729E-02	641505.1	3615916.6	1.7	5.00	2.33	4.65	YES	NO
L0000071	0	0.46729E-02	641505.1	3615911.6	1.7	5.00	2.33	4.65	YES	NO
L0000072	0	0.46729E-02	641505.1	3615906.6	1.7	5.00	2.33	4.65	YES	NO
L0000073	0	0.46729E-02	641505.1	3615901.6	1.7	5.00	2.33	4.65	YES	NO
L0000074	0	0.46729E-02	641505.0	3615896.6	1.7	5.00	2.33	4.65	YES	NO
L0000075	0	0.46729E-02	641505.0	3615891.6	1.7	5.00	2.33	4.65	YES	NO
L0000076	0	0.46729E-02	641505.0	3615886.6	1.7	5.00	2.33	4.65	YES	NO
L0000077	0	0.46729E-02	641505.0	3615881.6	1.7	5.00	2.33	4.65	YES	NO
L0000078	0	0.46729E-02	641503.1	3615878.4	1.7	5.00	2.33	4.65	YES	NO
L0000079	0	0.46729E-02	641498.1	3615878.3	1.6	5.00	2.33	4.65	YES	NO
L0000080	0	0.46729E-02	641493.1	3615878.3	1.6	5.00	2.33	4.65	YES	NO

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY	AIRCRAFT
L0000081	0	0.46729E-02	641488.1	3615878.2	1.6	5.00	2.33	4.65	YES		NO
L0000082	0	0.46729E-02	641483.1	3615878.1	1.6	5.00	2.33	4.65	YES		NO
L0000083	0	0.46729E-02	641478.1	3615878.0	1.6	5.00	2.33	4.65	YES		NO
L0000084	0	0.46729E-02	641473.1	3615878.0	1.6	5.00	2.33	4.65	YES		NO
L0000085	0	0.46729E-02	641468.1	3615877.9	1.6	5.00	2.33	4.65	YES		NO
L0000086	0	0.46729E-02	641463.1	3615877.8	1.6	5.00	2.33	4.65	YES		NO
L0000087	0	0.46729E-02	641458.1	3615877.8	1.6	5.00	2.33	4.65	YES		NO
L0000088	0	0.46729E-02	641453.1	3615877.7	1.6	5.00	2.33	4.65	YES		NO
L0000089	0	0.46729E-02	641448.1	3615877.6	1.6	5.00	2.33	4.65	YES		NO
L0000090	0	0.46729E-02	641443.1	3615877.5	1.6	5.00	2.33	4.65	YES		NO
L0000091	0	0.46729E-02	641438.2	3615877.5	1.7	5.00	2.33	4.65	YES		NO
L0000092	0	0.46729E-02	641433.2	3615877.4	1.7	5.00	2.33	4.65	YES		NO
L0000093	0	0.46729E-02	641430.0	3615879.2	1.7	5.00	2.33	4.65	YES		NO
L0000094	0	0.46729E-02	641430.2	3615884.2	1.7	5.00	2.33	4.65	YES		NO

L0000095	0	0.46729E-02	641430.4	3615889.2	1.7	5.00	2.33	4.65	YES	NO
L0000096	0	0.46729E-02	641430.6	3615894.2	1.7	5.00	2.33	4.65	YES	NO
L0000097	0	0.46729E-02	641430.8	3615899.2	1.8	5.00	2.33	4.65	YES	NO
L0000098	0	0.46729E-02	641431.0	3615904.2	1.8	5.00	2.33	4.65	YES	NO
L0000099	0	0.46729E-02	641431.1	3615909.2	1.8	5.00	2.33	4.65	YES	NO
L0000100	0	0.46729E-02	641431.3	3615914.2	1.8	5.00	2.33	4.65	YES	NO
L0000101	0	0.46729E-02	641434.1	3615916.5	1.8	5.00	2.33	4.65	YES	NO
L0000102	0	0.46729E-02	641439.1	3615916.7	1.7	5.00	2.33	4.65	YES	NO
L0000103	0	0.46729E-02	641444.1	3615916.8	1.7	5.00	2.33	4.65	YES	NO
L0000104	0	0.46729E-02	641449.1	3615916.9	1.7	5.00	2.33	4.65	YES	NO
L0000105	0	0.46729E-02	641454.1	3615917.1	1.7	5.00	2.33	4.65	YES	NO
L0000106	0	0.46729E-02	641459.1	3615917.2	1.7	5.00	2.33	4.65	YES	NO
L0000107	0	0.46729E-02	641464.1	3615917.4	1.6	5.00	2.33	4.65	YES	NO
L0000108	0	0.46729E-02	641469.1	3615917.5	1.6	5.00	2.33	4.65	YES	NO
L0000109	0	0.46729E-02	641474.1	3615917.6	1.6	5.00	2.33	4.65	YES	NO
L0000110	0	0.46729E-02	641479.1	3615917.8	1.6	5.00	2.33	4.65	YES	NO
L0000111	0	0.46729E-02	641484.1	3615917.9	1.6	5.00	2.33	4.65	YES	NO
L0000112	0	0.46729E-02	641489.1	3615918.1	1.6	5.00	2.33	4.65	YES	NO
L0000113	0	0.46729E-02	641494.1	3615918.2	1.6	5.00	2.33	4.65	YES	NO
L0000114	0	0.46729E-02	641496.3	3615921.3	1.6	5.00	2.33	4.65	YES	NO
L0000115	0	0.46729E-02	641496.8	3615926.3	1.6	5.00	2.33	4.65	YES	NO
L0000116	0	0.46729E-02	641497.2	3615931.3	1.7	5.00	2.33	4.65	YES	NO
L0000117	0	0.46729E-02	641497.7	3615936.3	1.7	5.00	2.33	4.65	YES	NO
L0000118	0	0.46729E-02	641498.2	3615939.7	1.7	5.00	2.33	4.65	YES	NO
L0000119	0	0.46729E-02	641498.3	3615934.7	1.7	5.00	2.33	4.65	YES	NO
L0000120	0	0.46729E-02	641498.5	3615929.7	1.7	5.00	2.33	4.65	YES	NO

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY	AIRCRAFT
L0000121	0	0.46729E-02	641498.7	3615924.7	1.6	5.00	2.33	4.65	YES		NO
L0000122	0	0.46729E-02	641498.9	3615919.7	1.6	5.00	2.33	4.65	YES		NO
L0000123	0	0.46729E-02	641499.1	3615914.7	1.6	5.00	2.33	4.65	YES		NO
L0000124	0	0.46729E-02	641499.3	3615909.7	1.6	5.00	2.33	4.65	YES		NO
L0000125	0	0.46729E-02	641499.5	3615904.7	1.6	5.00	2.33	4.65	YES		NO
L0000126	0	0.46729E-02	641499.7	3615899.7	1.6	5.00	2.33	4.65	YES		NO
L0000127	0	0.46729E-02	641499.9	3615894.7	1.6	5.00	2.33	4.65	YES		NO
L0000128	0	0.46729E-02	641500.1	3615889.7	1.6	5.00	2.33	4.65	YES		NO
L0000129	0	0.46729E-02	641500.3	3615884.7	1.6	5.00	2.33	4.65	YES		NO
L0000130	0	0.46729E-02	641495.5	3615884.3	1.6	5.00	2.33	4.65	YES		NO
L0000131	0	0.46729E-02	641490.5	3615884.1	1.6	5.00	2.33	4.65	YES		NO
L0000132	0	0.46729E-02	641485.5	3615884.0	1.6	5.00	2.33	4.65	YES		NO
L0000133	0	0.46729E-02	641480.5	3615883.8	1.6	5.00	2.33	4.65	YES		NO
L0000134	0	0.46729E-02	641475.5	3615883.6	1.6	5.00	2.33	4.65	YES		NO

L0000135	0	0.46729E-02	641470.5	3615883.4	1.6	5.00	2.33	4.65	YES	NO
L0000136	0	0.46729E-02	641465.5	3615883.2	1.6	5.00	2.33	4.65	YES	NO
L0000137	0	0.46729E-02	641460.5	3615883.0	1.6	5.00	2.33	4.65	YES	NO
L0000138	0	0.46729E-02	641455.5	3615882.8	1.6	5.00	2.33	4.65	YES	NO
L0000139	0	0.46729E-02	641450.5	3615882.6	1.6	5.00	2.33	4.65	YES	NO
L0000140	0	0.46729E-02	641445.5	3615882.4	1.6	5.00	2.33	4.65	YES	NO
L0000141	0	0.46729E-02	641440.5	3615882.2	1.7	5.00	2.33	4.65	YES	NO
L0000142	0	0.46729E-02	641436.1	3615882.6	1.7	5.00	2.33	4.65	YES	NO
L0000143	0	0.46729E-02	641435.9	3615887.6	1.7	5.00	2.33	4.65	YES	NO
L0000144	0	0.46729E-02	641435.8	3615892.6	1.7	5.00	2.33	4.65	YES	NO
L0000145	0	0.46729E-02	641435.7	3615897.5	1.7	5.00	2.33	4.65	YES	NO
L0000146	0	0.46729E-02	641435.6	3615902.5	1.7	5.00	2.33	4.65	YES	NO
L0000147	0	0.46729E-02	641435.4	3615907.5	1.7	5.00	2.33	4.65	YES	NO
L0000148	0	0.46729E-02	641437.2	3615910.8	1.7	5.00	2.33	4.65	YES	NO
L0000149	0	0.46729E-02	641442.2	3615910.9	1.7	5.00	2.33	4.65	YES	NO
L0000150	0	0.46729E-02	641447.2	3615911.1	1.7	5.00	2.33	4.65	YES	NO
L0000151	0	0.46729E-02	641452.2	3615911.3	1.7	5.00	2.33	4.65	YES	NO
L0000152	0	0.46729E-02	641457.2	3615911.4	1.6	5.00	2.33	4.65	YES	NO
L0000153	0	0.46729E-02	641462.2	3615911.6	1.6	5.00	2.33	4.65	YES	NO
L0000154	0	0.46729E-02	641467.2	3615911.7	1.6	5.00	2.33	4.65	YES	NO
L0000155	0	0.46729E-02	641472.2	3615911.9	1.6	5.00	2.33	4.65	YES	NO
L0000156	0	0.46729E-02	641477.2	3615912.1	1.6	5.00	2.33	4.65	YES	NO
L0000157	0	0.46729E-02	641482.2	3615912.2	1.6	5.00	2.33	4.65	YES	NO
L0000158	0	0.46729E-02	641487.2	3615912.4	1.6	5.00	2.33	4.65	YES	NO
L0000159	0	0.46729E-02	641491.4	3615911.7	1.6	5.00	2.33	4.65	YES	NO
L0000160	0	0.46729E-02	641491.8	3615906.7	1.6	5.00	2.33	4.65	YES	NO

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY	AIRCRAFT
L0000161	0	0.46729E-02	641492.2	3615901.7	1.6	5.00	2.33	4.65	YES		NO
L0000162	0	0.46729E-02	641492.6	3615896.7	1.6	5.00	2.33	4.65	YES		NO
L0000163	0	0.46729E-02	641493.0	3615891.7	1.6	5.00	2.33	4.65	YES		NO
L0000164	0	0.46729E-02	641489.6	3615890.0	1.6	5.00	2.33	4.65	YES		NO
L0000165	0	0.46729E-02	641484.6	3615889.6	1.6	5.00	2.33	4.65	YES		NO
L0000166	0	0.46729E-02	641479.6	3615889.1	1.6	5.00	2.33	4.65	YES		NO
L0000167	0	0.46729E-02	641474.6	3615888.7	1.6	5.00	2.33	4.65	YES		NO
L0000168	0	0.46729E-02	641469.6	3615888.3	1.6	5.00	2.33	4.65	YES		NO
L0000169	0	0.46729E-02	641464.7	3615887.9	1.6	5.00	2.33	4.65	YES		NO
L0000170	0	0.46729E-02	641459.7	3615887.5	1.6	5.00	2.33	4.65	YES		NO
L0000171	0	0.46729E-02	641454.7	3615887.1	1.6	5.00	2.33	4.65	YES		NO
L0000172	0	0.46729E-02	641449.7	3615886.7	1.6	5.00	2.33	4.65	YES		NO
L0000173	0	0.46729E-02	641444.7	3615886.2	1.7	5.00	2.33	4.65	YES		NO
L0000174	0	0.46729E-02	641441.4	3615887.7	1.7	5.00	2.33	4.65	YES		NO

L0000175	0	0.46729E-02	641441.1	3615892.7	1.7	5.00	2.33	4.65	YES	NO
L0000176	0	0.46729E-02	641440.8	3615897.7	1.7	5.00	2.33	4.65	YES	NO
L0000177	0	0.46729E-02	641440.6	3615902.7	1.7	5.00	2.33	4.65	YES	NO
L0000178	0	0.46729E-02	641441.3	3615906.8	1.7	5.00	2.33	4.65	YES	NO
L0000179	0	0.46729E-02	641446.3	3615906.9	1.7	5.00	2.33	4.65	YES	NO
L0000180	0	0.46729E-02	641451.3	3615907.0	1.7	5.00	2.33	4.65	YES	NO
L0000181	0	0.46729E-02	641456.3	3615907.1	1.6	5.00	2.33	4.65	YES	NO
L0000182	0	0.46729E-02	641461.3	3615907.3	1.6	5.00	2.33	4.65	YES	NO
L0000183	0	0.46729E-02	641466.3	3615907.4	1.6	5.00	2.33	4.65	YES	NO
L0000184	0	0.46729E-02	641471.3	3615907.5	1.6	5.00	2.33	4.65	YES	NO
L0000185	0	0.46729E-02	641476.3	3615907.6	1.6	5.00	2.33	4.65	YES	NO
L0000186	0	0.46729E-02	641481.3	3615907.7	1.6	5.00	2.33	4.65	YES	NO
L0000187	0	0.46729E-02	641485.6	3615907.2	1.6	5.00	2.33	4.65	YES	NO
L0000188	0	0.46729E-02	641486.1	3615902.2	1.6	5.00	2.33	4.65	YES	NO
L0000189	0	0.46729E-02	641486.5	3615897.2	1.6	5.00	2.33	4.65	YES	NO
L0000190	0	0.46729E-02	641483.6	3615894.9	1.6	5.00	2.33	4.65	YES	NO
L0000191	0	0.46729E-02	641478.6	3615894.3	1.6	5.00	2.33	4.65	YES	NO
L0000192	0	0.46729E-02	641473.7	3615893.7	1.6	5.00	2.33	4.65	YES	NO
L0000193	0	0.46729E-02	641468.7	3615893.0	1.6	5.00	2.33	4.65	YES	NO
L0000194	0	0.46729E-02	641463.7	3615892.4	1.6	5.00	2.33	4.65	YES	NO
L0000195	0	0.46729E-02	641458.8	3615891.8	1.6	5.00	2.33	4.65	YES	NO
L0000196	0	0.46729E-02	641453.8	3615891.1	1.6	5.00	2.33	4.65	YES	NO
L0000197	0	0.46729E-02	641448.9	3615890.5	1.6	5.00	2.33	4.65	YES	NO
L0000198	0	0.46729E-02	641446.6	3615893.2	1.7	5.00	2.33	4.65	YES	NO
L0000199	0	0.46729E-02	641446.2	3615898.2	1.7	5.00	2.33	4.65	YES	NO
L0000200	0	0.46729E-02	641445.8	3615903.2	1.7	5.00	2.33	4.65	YES	NO

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY	AIRCRAFT
L0000201	0	0.46729E-02	641450.4	3615903.6	1.7	5.00	2.33	4.65	YES		NO
L0000202	0	0.46729E-02	641455.4	3615903.7	1.6	5.00	2.33	4.65	YES		NO
L0000203	0	0.46729E-02	641460.4	3615903.8	1.6	5.00	2.33	4.65	YES		NO
L0000204	0	0.46729E-02	641465.4	3615903.9	1.6	5.00	2.33	4.65	YES		NO
L0000205	0	0.46729E-02	641470.4	3615904.0	1.6	5.00	2.33	4.65	YES		NO
L0000206	0	0.46729E-02	641475.4	3615904.1	1.6	5.00	2.33	4.65	YES		NO
L0000207	0	0.46729E-02	641480.4	3615904.2	1.6	5.00	2.33	4.65	YES		NO
L0000208	0	0.46729E-02	641481.3	3615900.1	1.6	5.00	2.33	4.65	YES		NO
L0000209	0	0.46729E-02	641478.2	3615898.1	1.6	5.00	2.33	4.65	YES		NO
L0000210	0	0.46729E-02	641473.2	3615897.9	1.6	5.00	2.33	4.65	YES		NO
L0000211	0	0.46729E-02	641468.2	3615897.7	1.6	5.00	2.33	4.65	YES		NO
L0000212	0	0.46729E-02	641463.2	3615897.5	1.6	5.00	2.33	4.65	YES		NO
L0000213	0	0.46729E-02	641458.2	3615897.4	1.6	5.00	2.33	4.65	YES		NO
L0000214	0	0.46729E-02	641453.3	3615897.2	1.6	5.00	2.33	4.65	YES		NO

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID SOURCE IDs

----------- ----------

ALL L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 ,

L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 ,

L0000017 , L0000018 , L0000019 , L0000020 , L0000021 , L0000022 , L0000023 , L0000024 ,

L0000025 , L0000026 , L0000027 , L0000028 , L0000029 , L0000030 , L0000031 , L0000032 ,

L0000033 , L0000034 , L0000035 , L0000036 , L0000037 , L0000038 , L0000039 , L0000040 ,

L0000041 , L0000042 , L0000043 , L0000044 , L0000045 , L0000046 , L0000047 , L0000048 ,

L0000049 , L0000050 , L0000051 , L0000052 , L0000053 , L0000054 , L0000055 , L0000056 ,

L0000057 , L0000058 , L0000059 , L0000060 , L0000061 , L0000062 , L0000063 , L0000064 ,

L0000065 , L0000066 , L0000067 , L0000068 , L0000069 , L0000070 , L0000071 , L0000072 ,

L0000073 , L0000074 , L0000075 , L0000076 , L0000077 , L0000078 , L0000079 , L0000080 ,

L0000081 , L0000082 , L0000083 , L0000084 , L0000085 , L0000086 , L0000087 , L0000088 ,

L0000089 , L0000090 , L0000091 , L0000092 , L0000093 , L0000094 , L0000095 , L0000096 ,

L0000097 , L0000098 , L0000099 , L0000100 , L0000101 , L0000102 , L0000103 , L0000104 ,

L0000105 , L0000106 , L0000107 , L0000108 , L0000109 , L0000110 , L0000111 , L0000112 ,

L0000113 , L0000114 , L0000115 , L0000116 , L0000117 , L0000118 , L0000119 , L0000120 ,

L0000121 , L0000122 , L0000123 , L0000124 , L0000125 , L0000126 , L0000127 , L0000128 ,

L0000129 , L0000130 , L0000131 , L0000132 , L0000133 , L0000134 , L0000135 , L0000136 ,

L0000137 , L0000138 , L0000139 , L0000140 , L0000141 , L0000142 , L0000143 , L0000144 ,

L0000145 , L0000146 , L0000147 , L0000148 , L0000149 , L0000150 , L0000151 , L0000152 ,

L0000153 , L0000154 , L0000155 , L0000156 , L0000157 , L0000158 , L0000159 , L0000160 ,

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID SOURCE IDs

----------- ----------

L0000161 , L0000162 , L0000163 , L0000164 , L0000165 , L0000166 , L0000167 , L0000168 ,

L0000169 , L0000170 , L0000171 , L0000172 , L0000173 , L0000174 , L0000175 , L0000176 ,

L0000177 , L0000178 , L0000179 , L0000180 , L0000181 , L0000182 , L0000183 , L0000184 ,

L0000185 , L0000186 , L0000187 , L0000188 , L0000189 , L0000190 , L0000191 , L0000192 ,

L0000193 , L0000194 , L0000195 , L0000196 , L0000197 , L0000198 , L0000199 , L0000200 ,

L0000201 , L0000202 , L0000203 , L0000204 , L0000205 , L0000206 , L0000207 , L0000208 ,

L0000209 , L0000210 , L0000211 , L0000212 , L0000213 , L0000214 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID URBAN POP SOURCE IDs
-------- --------- ----------

179057. L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 ,
L0000008 ,

L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 ,

L0000017 , L0000018 , L0000019 , L0000020 , L0000021 , L0000022 , L0000023 , L0000024 ,

L0000025 , L0000026 , L0000027 , L0000028 , L0000029 , L0000030 , L0000031 , L0000032 ,

L0000033 , L0000034 , L0000035 , L0000036 , L0000037 , L0000038 , L0000039 , L0000040 ,

L0000041 , L0000042 , L0000043 , L0000044 , L0000045 , L0000046 , L0000047 , L0000048 ,

L0000049 , L0000050 , L0000051 , L0000052 , L0000053 , L0000054 , L0000055 , L0000056 ,

L0000057 , L0000058 , L0000059 , L0000060 , L0000061 , L0000062 , L0000063 , L0000064 ,

L0000065 , L0000066 , L0000067 , L0000068 , L0000069 , L0000070 , L0000071 , L0000072 ,

L0000073 , L0000074 , L0000075 , L0000076 , L0000077 , L0000078 , L0000079 , L0000080 ,

L0000081 , L0000082 , L0000083 , L0000084 , L0000085 , L0000086 , L0000087 , L0000088 ,

L0000089 , L0000090 , L0000091 , L0000092 , L0000093 , L0000094 , L0000095 , L0000096 ,

L0000097 , L0000098 , L0000099 , L0000100 , L0000101 , L0000102 , L0000103 , L0000104 ,

L0000105 , L0000106 , L0000107 , L0000108 , L0000109 , L0000110 , L0000111 , L0000112 ,

L0000113 , L0000114 , L0000115 , L0000116 , L0000117 , L0000118 , L0000119 , L0000120 ,

L0000121 , L0000122 , L0000123 , L0000124 , L0000125 , L0000126 , L0000127 , L0000128 ,

L0000129 , L0000130 , L0000131 , L0000132 , L0000133 , L0000134 , L0000135 , L0000136 ,

L0000137 , L0000138 , L0000139 , L0000140 , L0000141 , L0000142 , L0000143 , L0000144 ,

L0000145 , L0000146 , L0000147 , L0000148 , L0000149 , L0000150 , L0000151 , L0000152 ,

L0000153 , L0000154 , L0000155 , L0000156 , L0000157 , L0000158 , L0000159 , L0000160 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID URBAN POP SOURCE IDs

-------- --------- ----------

L0000161 , L0000162 , L0000163 , L0000164 , L0000165 , L0000166 , L0000167 , L0000168 ,

L0000169 , L0000170 , L0000171 , L0000172 , L0000173 , L0000174 , L0000175 , L0000176 ,

L0000177 , L0000178 , L0000179 , L0000180 , L0000181 , L0000182 , L0000183 , L0000184 ,

L0000185 , L0000186 , L0000187 , L0000188 , L0000189 , L0000190 , L0000191 , L0000192 ,

L0000193 , L0000194 , L0000195 , L0000196 , L0000197 , L0000198 , L0000199 , L0000200 ,

L0000201 , L0000202 , L0000203 , L0000204 , L0000205 , L0000206 , L0000207 , L0000208 ,

L0000209 , L0000210 , L0000211 , L0000212 , L0000213 , L0000214 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

```
( 641545.0, 3616010.1,    1.7,    1.7,    0.0);     ( 641547.0, 3615987.8,    1.7,    1.7,    0.0);
( 641545.0, 3615961.0,    1.7,    1.7,    0.0);     ( 641539.1, 3615940.1,    1.7,    1.7,    0.0);
( 641547.0, 3615902.9,    1.8,    1.8,    0.0);     ( 641547.0, 3615886.0,    1.9,    1.9,    0.0);
( 641548.5, 3615871.6,    1.9,    1.9,    0.0);     ( 641541.0, 3615852.3,    1.8,    1.8,    0.0);
( 641542.5, 3615841.8,    1.8,    1.8,    0.0);     ( 641543.0, 3615825.0,    1.8,    1.8,    0.0);
( 641544.0, 3615796.7,    1.8,    1.8,    0.0);     ( 641557.4, 3615810.6,    1.8,    1.8,    0.0);
( 641490.4, 3615811.1,    1.8,    1.8,    0.0);     ( 641502.8, 3615829.9,    1.8,    1.8,    0.0);
( 641483.0, 3615839.4,    1.7,    1.7,    0.0);     ( 641463.1, 3615835.4,    1.7,    1.7,    0.0);
( 641440.8, 3615840.3,    1.7,    1.7,    0.0);     ( 641420.4, 3615837.4,    1.7,    1.7,    0.0);
( 641430.8, 3615810.6,    1.7,    1.7,    0.0);     ( 641423.4, 3615824.0,    1.7,    1.7,    0.0);
( 641281.9, 3615789.7,    1.9,    1.9,    0.0);     ( 641231.8, 3615821.5,    1.7,    1.7,    0.0);
( 641230.8, 3615842.3,    1.7,    1.7,    0.0);     ( 641228.8, 3615864.7,    1.7,    1.7,    0.0);
( 641233.8, 3615887.0,    1.6,    1.6,    0.0);     ( 641235.2, 3615946.1,    1.6,    1.6,    0.0);
( 641232.8, 3615983.3,    1.6,    1.6,    0.0);     ( 641275.0, 3616053.8,    1.6,    1.6,    0.0);
( 641299.3, 3616053.3,    1.7,    1.7,    0.0);     ( 641312.2, 3616053.3,    1.7,    1.7,    0.0);
( 641334.0, 3616052.8,    1.7,    1.7,    0.0);     ( 641344.5, 3616055.8,    1.7,    1.7,    0.0);
( 641359.3, 3616053.8,    1.6,    1.6,    0.0);     ( 641374.7, 3616053.3,    1.7,    1.7,    0.0);
( 641410.0, 3616055.8,    1.7,    1.7,    0.0);     ( 641420.9, 3616054.8,    1.7,    1.7,    0.0);
( 641433.8, 3616066.7,    1.7,    1.7,    0.0);     ( 641456.1, 3616053.8,    1.7,    1.7,    0.0);
```

(641469.6, 3616056.3, 1.7, 1.7, 0.0); (641588.7, 3615989.8, 1.7, 1.7, 0.0);
(641584.2, 3615937.2, 1.7, 1.7, 0.0); (641602.6, 3615935.7, 1.7, 1.7, 0.0);
(641609.5, 3615952.5, 1.7, 1.7, 0.0); (641609.0, 3615969.9, 1.7, 1.7, 0.0);
(641608.6, 3615992.3, 1.7, 1.7, 0.0); (641607.6, 3616013.1, 1.7, 1.7, 0.0);
(641582.7, 3615901.9, 1.8, 1.8, 0.0); (641605.6, 3615905.9, 1.7, 1.7, 0.0);
(641582.2, 3615888.0, 1.8, 1.8, 0.0); (641604.1, 3615839.9, 1.8, 1.8, 0.0);
(641607.6, 3615813.5, 1.7, 1.7, 0.0); (641597.6, 3615795.7, 1.7, 1.7, 0.0);
(641563.9, 3615792.7, 1.7, 1.7, 0.0); (641559.9, 3615781.3, 1.8, 1.8, 0.0);
(641478.5, 3615787.7, 1.9, 1.9, 0.0); (641433.3, 3615793.7, 1.7, 1.7, 0.0);
(641229.3, 3616057.8, 1.7, 1.7, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: C:\Users\nlorenzen\Downloads\KIPL_747185_03144\KIPL_747185_03144\KIPL_2015-2018_ Met Version: 19191

Profile file: C:\Users\nlorenzen\Downloads\KIPL_747185_03144\KIPL_747185_03144\KIPL_2015-2018_

Surface format: FREE

Profile format: FREE

Surface station no.: 3144 Upper air station no.: 3190

Name: UNKNOWN Name: UNKNOWN

Year: 2015 Year: 2015

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
15	01	01	1	01	-3.7	0.077	-9.000	-9.000	-999.	52.	11.5	0.02	0.86	1.00	1.30	326.	10.0	273.1	2.0
15	01	01	1	02	-8.9	0.121	-9.000	-9.000	-999.	101.	18.2	0.03	0.86	1.00	1.96	29.	10.0	274.2	2.0
15	01	01	1	03	-10.3	0.130	-9.000	-9.000	-999.	113.	19.5	0.03	0.86	1.00	2.13	97.	10.0	273.1	2.0
15	01	01	1	04	-6.4	0.102	-9.000	-9.000	-999.	79.	15.2	0.03	0.86	1.00	1.67	144.	10.0	273.8	2.0

15 01 01 1 05 -6.0 0.099 -9.000 -9.000 -999. 75. 14.7 0.03 0.86 1.00 1.62 138. 10.0 273.8
2.0

15 01 01 1 06 -4.0 0.082 -9.000 -9.000 -999. 57. 12.8 0.04 0.86 1.00 1.23 156. 10.0 270.9
2.0

15 01 01 1 07 -5.9 0.098 -9.000 -9.000 -999. 73. 14.4 0.03 0.86 1.00 1.60 246. 10.0 270.4
2.0

15 01 01 1 08 -1.3 0.055 -9.000 -9.000 -999. 31. 11.5 0.03 0.86 0.47 0.86 258. 10.0 273.1
2.0

15 01 01 1 09 33.7 0.092 0.407 0.007 73. 67. -2.1 0.04 0.86 0.29 0.84 209. 10.0 277.0
2.0

15 01 01 1 10 77.4 0.111 0.789 0.005 232. 89. -1.6 0.04 0.86 0.23 0.97 206. 10.0 279.2
2.0

15 01 01 1 11 106.8 0.119 1.236 0.005 647. 98. -1.4 0.03 0.86 0.21 1.08 22. 10.0 282.0
2.0

15 01 01 1 12 119.7 0.123 1.510 0.005 1051. 104. -1.4 0.02 0.86 0.20 1.20 292. 10.0
283.1 2.0

15 01 01 1 13 116.2 0.135 1.542 0.005 1154. 118. -1.9 0.03 0.86 0.20 1.28 26. 10.0 284.9
2.0

15 01 01 1 14 95.7 0.168 1.475 0.005 1225. 166. -4.6 0.03 0.86 0.21 1.82 26. 10.0 284.9
2.0

15 01 01 1 15 59.5 0.144 1.274 0.005 1267. 131. -4.5 0.03 0.86 0.25 1.59 34. 10.0 284.9
2.0

15 01 01 1 16 11.0 0.130 0.728 0.005 1274. 112. -18.0 0.04 0.86 0.35 1.50 156. 10.0
284.2 2.0

15 01 01 1 17 -5.1 0.092 -9.000 -9.000 -999. 67. 13.8 0.02 0.86 0.66 1.57 290. 10.0 283.1
2.0

15 01 01 1 18 -5.2 0.093 -9.000 -9.000 -999. 68. 14.0 0.03 0.86 1.00 1.52 259. 10.0 281.4
2.0

15 01 01 1 19 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0 0.03 0.86 1.00 0.00 0. 10.0
278.8 2.0

15 01 01 1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0 0.03 0.86 1.00 0.00 0. 10.0
277.5 2.0

15 01 01 1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0 0.03 0.86 1.00 0.00 0. 10.0
277.0 2.0

15 01 01 1 22 -7.1 0.108 -9.000 -9.000 -999. 85. 16.2 0.03 0.86 1.00 1.76 132. 10.0 276.4 2.0

15 01 01 1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0 0.03 0.86 1.00 0.00 0. 10.0 275.4 2.0

15 01 01 1 24 -7.1 0.107 -9.000 -9.000 -999. 84. 16.0 0.03 0.86 1.00 1.76 230. 10.0 273.8 2.0

First hour of profile data

YR MO DY HR HEIGHT F WDIR WSPD AMB_TMP sigmaA sigmaW sigmaV

15 01 01 01 10.0 1 326. 1.30 273.2 99.0 -99.00 -99.00

F indicates top of profile (=1) or below (=0)

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,

L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,

L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,

L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
641545.00	3616010.13	36.49264	641546.99	3615987.79	54.16644
641545.00	3615960.99	99.74693	641539.05	3615940.14	163.61866
641546.99	3615902.90	180.09422	641546.99	3615886.03	158.38860
641548.48	3615871.63	122.55271	641541.03	3615852.27	87.79669
641542.52	3615841.84	70.22948	641543.02	3615824.96	51.76561
641544.01	3615796.67	33.69862	641557.41	3615810.57	38.59805
641490.40	3615811.06	45.25364	641502.81	3615829.93	65.65680
641482.95	3615839.36	79.34214	641463.09	3615835.39	65.89664

641440.75	3615840.35	59.73538	641420.40	3615837.38	42.89482
641430.83	3615810.57	30.89466	641423.38	3615823.97	35.36594
641281.90	3615789.72	7.71283	641231.76	3615821.49	6.72295
641230.77	3615842.34	7.30542	641228.78	3615864.68	7.84966
641233.75	3615887.02	8.75982	641235.23	3615946.09	10.20660
641232.75	3615983.32	10.45230	641274.95	3616053.82	12.94952
641299.27	3616053.32	14.88694	641312.18	3616053.32	15.89886
641334.02	3616052.82	17.54198	641344.45	3616055.80	17.76514
641359.34	3616053.82	18.80205	641374.73	3616053.32	19.46118
641409.98	3616055.80	19.46673	641420.90	3616054.81	19.70089
641433.80	3616066.72	17.19807	641456.14	3616053.82	19.86800
641469.55	3616056.30	19.35185	641588.69	3615989.78	48.17911
641584.22	3615937.16	101.17000	641602.59	3615935.67	84.77039
641609.54	3615952.55	70.37876	641609.04	3615969.92	58.64524
641608.55	3615992.26	43.68861	641607.55	3616013.11	32.76926
641582.73	3615901.91	109.26444	641605.57	3615905.88	85.00138
641582.24	3615888.01	100.00745	641604.08	3615839.86	44.46092
641607.55	3615813.55	31.22639	641597.63	3615795.68	26.60452
641563.87	3615792.70	29.68025	641559.90	3615781.28	26.27105
641478.48	3615787.73	29.81437	641433.31	3615793.69	24.68127
641229.28	3616057.79	9.73785			

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,

L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,

L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,

L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
641545.00	3616010.13	540.46202	(18052906)	641546.99	3615987.79	633.99178	(18062606)
641545.00	3615960.99	809.49034	(17053106)	641539.05	3615940.14	909.85577	(15020817)
641546.99	3615902.90	964.94263	(18073019)	641546.99	3615886.03	948.55243	(21101017)
641548.48	3615871.63	1049.72750	(21101017)	641541.03	3615852.27	883.74773	(16041818)

641542.52 3615841.84 822.19788 (16041818) 641543.02 3615824.96 645.83291 (16041818)

641544.01 3615796.67 484.95281 (18011117) 641557.41 3615810.57 521.44805 (16041818)

641490.40 3615811.06 568.20203 (18011418) 641502.81 3615829.93 659.91240 (18011117)

641482.95 3615839.36 723.83203 (21090719) 641463.09 3615835.39 741.67870 (16012917)

641440.75 3615840.35 781.96813 (18121708) 641420.40 3615837.38 758.15242 (15122118)

641430.83 3615810.57 591.98326 (15021923) 641423.38 3615823.97 666.58889 (15020618)

641281.90 3615789.72 288.74533 (17013121) 641231.76 3615821.49 238.51893 (17020118)

641230.77 3615842.34 242.22956 (17020918) 641228.78 3615864.68 243.51007 (16011917)

641233.75 3615887.02 256.07298 (15020421) 641235.23 3615946.09 252.70169 (21022721)

641232.75 3615983.32 236.62113 (15011120) 641274.95 3616053.82 224.98872 (21120317)

641299.27 3616053.32 245.89023 (15011007) 641312.18 3616053.32 259.65529 (15021503)

641334.02 3616052.82 284.40186 (17021018) 641344.45 3616055.80 287.76393 (18020519)

641359.34 3616053.82 300.83080 (15011019) 641374.73 3616053.32 313.43351 (15011019)

641409.98 3616055.80 302.02896 (21122305) 641420.90 3616054.81 306.38375 (17121121)

641433.80 3616066.72 296.13740 (17121318) 641456.14 3616053.82 334.64723 (18020918)

641469.55 3616056.30 354.27662 (18020918) 641588.69 3615989.78 485.57217 (17053106)

641584.22 3615937.16 616.70003 (18042118) 641602.59 3615935.67 521.63704 (18073019)

641609.54	3615952.55	467.02866	(15020817)	641609.04	3615969.92	457.13648	(15020817)
641608.55	3615992.26	406.37913	(21011717)	641607.55	3616013.11	373.04690	(15120218)
641582.73	3615901.91	610.43984	(18073019)	641605.57	3615905.88	503.06344	(18032020)
641582.24	3615888.01	605.49439	(18020118)	641604.08	3615839.86	520.42038	(21101017)
641607.55	3615813.55	398.61762	(16021318)	641597.63	3615795.68	401.25667	(16041818)
641563.87	3615792.70	441.74124	(16012217)	641559.90	3615781.28	417.07711	(15021922)
641478.48	3615787.73	483.88362	(18020221)	641433.31	3615793.69	514.68633	(16012917)
641229.28	3616057.79	189.60040	(15011121)				

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

NETWORK

GROUP ID AVERAGE CONC RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID

- -

GROUP ID	RANK	AVERAGE CONC		XR	YR	ZELEV	ZHILL	ZFLAG	TYPE
ALL	1ST HIGHEST VALUE IS	180.09422	AT (	641546.99,	3615902.90,	1.79,	1.79,	0.00)	DC
	2ND HIGHEST VALUE IS	163.61866	AT (	641539.05,	3615940.14,	1.72,	1.72,	0.00)	DC
	3RD HIGHEST VALUE IS	158.38860	AT (	641546.99,	3615886.03,	1.88,	1.88,	0.00)	DC
	4TH HIGHEST VALUE IS	122.55271	AT (	641548.48,	3615871.63,	1.88,	1.88,	0.00)	DC
	5TH HIGHEST VALUE IS	109.26444	AT (	641582.73,	3615901.91,	1.76,	1.76,	0.00)	DC
	6TH HIGHEST VALUE IS	101.17000	AT (	641584.22,	3615937.16,	1.68,	1.68,	0.00)	DC
	7TH HIGHEST VALUE IS	100.00745	AT (	641582.24,	3615888.01,	1.80,	1.80,	0.00)	DC
	8TH HIGHEST VALUE IS	99.74693	AT (	641545.00,	3615960.99,	1.74,	1.74,	0.00)	DC
	9TH HIGHEST VALUE IS	87.79669	AT (	641541.03,	3615852.27,	1.84,	1.84,	0.00)	DC
	10TH HIGHEST VALUE IS	85.00138	AT (	641605.57,	3615905.88,	1.70,	1.70,	0.00)	DC

*** RECEPTOR TYPES: GC = GRIDCART

GP = GRIDPOLR

DC = DISCCART

DP = DISCPOLR

*** AERMOD - VERSION 23132 *** *** U:\Documents\AQ_GHG\HARP2\SDSU Calexico Con HRA\SDSU Calexico Con HR *** 06/19/24

*** AERMET - VERSION 19191 *** *** *** 16:02:35

PAGE 18

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

DATE NETWORK

GROUP ID AVERAGE CONC (YYMMDDHH) RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID

- -

ALL HIGH 1ST HIGH VALUE IS 1049.72750 ON 21101017: AT (641548.48, 3615871.63, 1.88, 1.88, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART

GP = GRIDPOLR

DC = DISCCART

DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)

A Total of 5 Warning Message(s)

A Total of 1316 Informational Message(s)

A Total of 43824 Hours Were Processed

A Total of 389 Calm Hours Identified

A Total of 927 Missing Hours Identified (2.12 Percent)

******** FATAL ERROR MESSAGES ********

*** NONE ***

******** WARNING MESSAGES ********

ME W340 530 PRBASE: Possible Error in PROFBASE Input: Value is < 0 PROFBASE

ME W186 531 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used 0.50

ME W187 531 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

MX W450 35065 CHKDAT: Record Out of Sequence in Meteorological File at: 21010101

MX W450 35065 CHKDAT: Record Out of Sequence in Meteorological File at: 2 year gap

****

*** AERMOD Finishes Successfully ***

****

HARP2 - HRACalc (dated 22118) 6/19/2024 4:40:04 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 1.69

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 1.69
2<9 Years Bin: 0
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: ON

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.05
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to:
C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_UnMitCancerRisk.csv
Cancer risk total by receptor saved to:
C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_UnMitCancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to:
C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_UnMitNCChronicRisk.csv
Chronic risk total by receptor saved to:
C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_UnMitNCChronicRiskSumByRec.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to:
C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_UnMitNCAcuteRisk.csv
Acute risk total by receptor saved to:
C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_UnMitNCAcuteRiskSumByRec.csv
HRA ran successfully

*HARP - HRACalc v22118 6/19/2024 4:40:04 PM - Cancer Risk - Input File: C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_UnMitHRAInput.hra

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO	INH_RISK	SOIL_RISK	DERMAL_RI	MMILK_RIS	WATER_RIS	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISK	PIG_RISK	CHICKEN_I	EGG_RISK
5	ALL		641547	3615903	5.83E-05	1.69YrCanc	5.83E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	ALL		641539.1	3615940	5.29E-05	1.69YrCanc	5.29E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	ALL		641547	3615886	5.12E-05	1.69YrCanc	5.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	ALL		641548.5	3615872	3.96E-05	1.69YrCanc	3.96E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
47	ALL		641582.7	3615902	3.53E-05	1.69YrCanc	3.53E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
41	ALL		641584.2	3615937	3.27E-05	1.69YrCanc	3.27E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
49	ALL		641582.2	3615888	3.24E-05	1.69YrCanc	3.24E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	ALL		641545	3615961	3.23E-05	1.69YrCanc	3.23E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	ALL		641541	3615852	2.84E-05	1.69YrCanc	2.84E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
48	ALL		641605.6	3615906	2.75E-05	1.69YrCanc	2.75E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
42	ALL		641602.6	3615936	2.74E-05	1.69YrCanc	2.74E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
15	ALL		641483	3615839	2.57E-05	1.69YrCanc	2.57E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
43	ALL		641609.5	3615953	2.28E-05	1.69YrCanc	2.28E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	ALL		641542.5	3615842	2.27E-05	1.69YrCanc	2.27E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
16	ALL		641463.1	3615835	2.13E-05	1.69YrCanc	2.13E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
14	ALL		641502.8	3615830	2.12E-05	1.69YrCanc	2.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
17	ALL		641440.8	3615840	1.93E-05	1.69YrCanc	1.93E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
44	ALL		641609	3615970	1.90E-05	1.69YrCanc	1.90E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	ALL		641547	3615988	1.75E-05	1.69YrCanc	1.75E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	ALL		641543	3615825	1.67E-05	1.69YrCanc	1.67E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	ALL		641588.7	3615990	1.56E-05	1.69YrCanc	1.56E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	ALL		641490.4	3615811	1.46E-05	1.69YrCanc	1.46E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	ALL		641604.1	3615840	1.44E-05	1.69YrCanc	1.44E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
45	ALL		641608.6	3615992	1.41E-05	1.69YrCanc	1.41E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
18	ALL		641420.4	3615837	1.39E-05	1.69YrCanc	1.39E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	ALL		641557.4	3615811	1.25E-05	1.69YrCanc	1.25E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1	ALL		641545	3616010	1.18E-05	1.69YrCanc	1.18E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	ALL		641423.4	3615824	1.14E-05	1.69YrCanc	1.14E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	ALL		641544	3615797	1.09E-05	1.69YrCanc	1.09E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
46	ALL		641607.6	3616013	1.06E-05	1.69YrCanc	1.06E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
51	ALL		641607.6	3615814	1.01E-05	1.69YrCanc	1.01E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
19	ALL		641430.8	3615811	9.99E-06	1.69YrCanc	9.99E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55	ALL		641478.5	3615788	9.64E-06	1.69YrCanc	9.64E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
53	ALL		641563.9	3615793	9.60E-06	1.69YrCanc	9.60E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
52	ALL		641597.6	3615796	8.61E-06	1.69YrCanc	8.61E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
54	ALL		641559.9	3615781	8.50E-06	1.69YrCanc	8.50E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
56	ALL		641433.3	3615794	7.98E-06	1.69YrCanc	7.98E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
38	ALL		641456.1	3616054	6.43E-06	1.69YrCanc	6.43E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
36	ALL		641420.9	3616055	6.37E-06	1.69YrCanc	6.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
35	ALL		641410	3616056	6.30E-06	1.69YrCanc	6.30E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
34	ALL		641374.7	3616053	6.30E-06	1.69YrCanc	6.30E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
39	ALL		641469.6	3616056	6.26E-06	1.69YrCanc	6.26E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
33	ALL		641359.3	3616054	6.08E-06	1.69YrCanc	6.08E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	ALL		641344.5	3616056	5.75E-06	1.69YrCanc	5.75E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
31	ALL		641334	3616053	5.67E-06	1.69YrCanc	5.67E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
37	ALL		641433.8	3616067	5.56E-06	1.69YrCanc	5.56E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
30	ALL		641312.2	3616053	5.14E-06	1.69YrCanc	5.14E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
29	ALL		641299.3	3616053	4.82E-06	1.69YrCanc	4.82E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
28	ALL		641275	3616054	4.19E-06	1.69YrCanc	4.19E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
27	ALL		641232.8	3615983	3.38E-06	1.69YrCanc	3.38E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
26	ALL		641235.2	3615946	3.30E-06	1.69YrCanc	3.30E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
57	ALL		641229.3	3616058	3.15E-06	1.69YrCanc	3.15E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	ALL		641233.8	3615887	2.83E-06	1.69YrCanc	2.83E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
24	ALL		641228.8	3615865	2.54E-06	1.69YrCanc	2.54E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
21	ALL		641281.9	3615790	2.50E-06	1.69YrCanc	2.50E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
23	ALL		641230.8	3615842	2.36E-06	1.69YrCanc	2.36E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
22	ALL		641231.8	3615821	2.17E-06	1.69YrCanc	2.17E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*HARP - HRACalc v22118 6/19/2024 4:40:04 PM - Chronic Risk - Input File: C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_UnMitHRAInput.hra

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DE\	RESP	SKIN	EYE	BONE/TEET	ENDO	BLOOD	ODOR	GENERAL	MAXHI
5	ALL		641547	3615903	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-02
4	ALL		641539.1	3615940	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.64E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.64E-02
6	ALL		641547	3615886	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.52E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.52E-02
7	ALL		641548.5	3615872	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.72E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.72E-02
47	ALL		641582.7	3615902	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.43E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.43E-02
41	ALL		641584.2	3615937	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.25E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.25E-02
49	ALL		641582.2	3615888	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-02
3	ALL		641545	3615961	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-02
8	ALL		641541	3615852	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.95E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.95E-02
48	ALL		641605.6	3615906	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.89E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.89E-02
42	ALL		641602.6	3615936	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.88E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.88E-02
15	ALL		641483	3615839	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.76E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.76E-02
43	ALL		641609.5	3615953	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.56E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.56E-02
9	ALL		641542.5	3615842	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.56E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.56E-02
16	ALL		641463.1	3615835	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.46E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.46E-02
14	ALL		641502.8	3615830	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.46E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.46E-02
17	ALL		641440.8	3615840	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.33E-02
44	ALL		641609	3615970	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E-02
2	ALL		641547	3615988	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-02
10	ALL		641543	3615825	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.15E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.15E-02
40	ALL		641588.7	3615990	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-02
13	ALL		641490.4	3615811	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-02
50	ALL		641604.1	3615840	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.88E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.88E-03
45	ALL		641608.6	3615992	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.71E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.71E-03
18	ALL		641420.4	3615837	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.53E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.53E-03
12	ALL		641557.4	3615811	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.58E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.58E-03
1	ALL		641545	3616010	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.11E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.11E-03
20	ALL		641423.4	3615824	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.86E-03
11	ALL		641544	3615797	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.49E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.49E-03
46	ALL		641607.6	3616013	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.28E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.28E-03
51	ALL		641607.6	3615814	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.94E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.94E-03
19	ALL		641430.8	3615811	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.86E-03
55	ALL		641478.5	3615788	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.62E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.62E-03
53	ALL		641563.9	3615793	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.59E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.59E-03
52	ALL		641597.6	3615796	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.91E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.91E-03
54	ALL		641559.9	3615781	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.84E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.84E-03
56	ALL		641433.3	3615794	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.48E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.48E-03
38	ALL		641456.1	3616054	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.41E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.41E-03
36	ALL		641420.9	3616055	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.38E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.38E-03
35	ALL		641410	3616056	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.33E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.33E-03
34	ALL		641374.7	3616053	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.32E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.32E-03
39	ALL		641469.6	3616056	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.30E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.30E-03
33	ALL		641359.3	3616054	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.18E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.18E-03
32	ALL		641344.5	3616056	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.95E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.95E-03
31	ALL		641334	3616053	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.90E-03
37	ALL		641433.8	3616067	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.82E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.82E-03
30	ALL		641312.2	3616053	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.53E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.53E-03
29	ALL		641299.3	3616053	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.31E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.31E-03
28	ALL		641275	3616054	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.88E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.88E-03
27	ALL		641232.8	3615983	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.32E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.32E-03
26	ALL		641235.2	3615946	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.27E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.27E-03
57	ALL		641229.3	3616058	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.16E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.16E-03
25	ALL		641233.8	3615887	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.95E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.95E-03
24	ALL		641228.8	3615865	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.74E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.74E-03
21	ALL		641281.9	3615790	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.71E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.71E-03
23	ALL		641230.8	3615842	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.62E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.62E-03
22	ALL		641231.8	3615821	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.49E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.49E-03

HARP2 - HRACalc (dated 22118) 6/25/2024 3:59:17 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 1.69

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 1.69
2<9 Years Bin: 0
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: ON

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.05
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to:
C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_MitCancerRisk.csv
Cancer risk total by receptor saved to:
C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_MitCancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to:
C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_MitNCChronicRisk.csv
Chronic risk total by receptor saved to:
C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_MitNCChronicRiskSumByRec.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to:
C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_MitNCAcuteRisk.csv
Acute risk total by receptor saved to:
C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_MitNCAcuteRiskSumByRec.csv
HRA ran successfully

*HARP - HRACalc v22118 6/25/2024 3:59:17 PM - Cancer Risk - Input File: C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_MitHRAInput.hra

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO	INH_RISK	SOIL_RISK	DERMAL_R	MMILK_RIS	WATER_RIS	FISH_RISK	CROP_RISI	BEEF_RISK	DAIRY_RISI	PIG_RISK	CHICKEN_I	EGG_RISK
56	ALL		641433.3	3615794	1.135e-06	1.69YrCanc	1.135e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
54	ALL		641559.9	3615781	1.2081e-06	1.69YrCanc	1.2081e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
52	ALL		641597.6	3615796	1.2234e-06	1.69YrCanc	1.2234e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
53	ALL		641563.9	3615793	1.3648e-06	1.69YrCanc	1.3648e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
55	ALL		641478.5	3615788	1.371e-06	1.69YrCanc	1.371e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
19	ALL		641430.8	3615811	1.4207e-06	1.69YrCanc	1.4207e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
51	ALL		641607.6	3615814	1.4359e-06	1.69YrCanc	1.4359e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
46	ALL		641607.6	3616013	1.5069e-06	1.69YrCanc	1.5069e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
11	ALL		641544	3615797	1.5496e-06	1.69YrCanc	1.5496e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
20	ALL		641423.4	3615824	1.6263e-06	1.69YrCanc	1.6263e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
1	ALL		641545	3616010	1.6781e-06	1.69YrCanc	1.6781e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
12	ALL		641557.4	3615811	1.7749e-06	1.69YrCanc	1.7749e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
18	ALL		641420.4	3615837	1.9725e-06	1.69YrCanc	1.9725e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
45	ALL		641608.6	3615992	2.009e-06	1.69YrCanc	2.009e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
50	ALL		641604.1	3615840	2.0445e-06	1.69YrCanc	2.0445e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
13	ALL		641490.4	3615811	2.081e-06	1.69YrCanc	2.081e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
40	ALL		641588.7	3615990	2.2155e-06	1.69YrCanc	2.2155e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
10	ALL		641543	3615825	2.3804e-06	1.69YrCanc	2.3804e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
2	ALL		641547	3615988	2.4908e-06	1.69YrCanc	2.4908e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
44	ALL		641609	3615970	2.6968e-06	1.69YrCanc	2.6968e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
17	ALL		641440.8	3615840	2.7469e-06	1.69YrCanc	2.7469e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
14	ALL		641502.8	3615830	3.0192e-06	1.69YrCanc	3.0192e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
16	ALL		641463.1	3615835	3.0302e-06	1.69YrCanc	3.0302e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
22	ALL		641231.8	3615821	3.0915e-07	1.69YrCanc	3.0915e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
9	ALL		641542.5	3615842	3.2295e-06	1.69YrCanc	3.2295e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
43	ALL		641609.5	3615953	3.2364e-06	1.69YrCanc	3.2364e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
23	ALL		641230.8	3615842	3.3594e-07	1.69YrCanc	3.3594e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
21	ALL		641281.9	3615790	3.5467e-07	1.69YrCanc	3.5467e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
24	ALL		641228.8	3615865	3.6097e-07	1.69YrCanc	3.6097e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
15	ALL		641483	3615839	3.6485e-06	1.69YrCanc	3.6485e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
42	ALL		641602.6	3615936	3.8982e-06	1.69YrCanc	3.8982e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
48	ALL		641605.6	3615906	3.9088e-06	1.69YrCanc	3.9088e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
25	ALL		641233.8	3615887	4.0282e-07	1.69YrCanc	4.0282e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
8	ALL		641541	3615852	4.0373e-06	1.69YrCanc	4.0373e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
57	ALL		641229.3	3616058	4.4779e-07	1.69YrCanc	4.4779e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
3	ALL		641545	3615961	4.5868e-06	1.69YrCanc	4.5868e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
49	ALL		641582.2	3615888	4.5988e-06	1.69YrCanc	4.5988e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
41	ALL		641584.2	3615937	4.6523e-06	1.69YrCanc	4.6523e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
26	ALL		641235.2	3615946	4.6935e-07	1.69YrCanc	4.6935e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
27	ALL		641232.8	3615983	4.8065e-07	1.69YrCanc	4.8065e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
47	ALL		641582.7	3615902	5.0245e-06	1.69YrCanc	5.0245e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
7	ALL		641548.5	3615872	5.6356e-06	1.69YrCanc	5.6356e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
28	ALL		641275	3616054	5.9548e-07	1.69YrCanc	5.9548e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
29	ALL		641299.3	3616053	6.8457e-07	1.69YrCanc	6.8457e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
6	ALL		641547	3615886	7.2835e-06	1.69YrCanc	7.2835e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
30	ALL		641312.2	3616053	7.3111e-07	1.69YrCanc	7.3111e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
4	ALL		641539.1	3615940	7.524e-06	1.69YrCanc	7.524e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
37	ALL		641433.8	3616067	7.9085e-07	1.69YrCanc	7.9085e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
31	ALL		641334	3616053	8.0667e-07	1.69YrCanc	8.0667e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
32	ALL		641344.5	3616056	8.1693e-07	1.69YrCanc	8.1693e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
5	ALL		641547	3615903	8.2816e-06	1.69YrCanc	8.2816e-06	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
33	ALL		641359.3	3616054	8.6461e-07	1.69YrCanc	8.6461e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
39	ALL		641469.6	3616056	8.8989e-07	1.69YrCanc	8.8989e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
34	ALL		641374.7	3616053	8.9492e-07	1.69YrCanc	8.9492e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
35	ALL		641410	3616056	8.9517e-07	1.69YrCanc	8.9517e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
36	ALL		641420.9	3616055	9.0594e-07	1.69YrCanc	9.0594e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00
38	ALL		641456.1	3616054	9.1363e-07	1.69YrCanc	9.1363e-07	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00	0.0e+00

*HARP - HRACalc v22118 6/25/2024 3:59:17 PM - Chronic Risk - Input File: C:\Users\nlorenzen\Desktop\HARP2\SDSU Calexico CON HRA\SDSU CALEXICO CON HRA\hra\SDSU Calexico Con_MitHRAInput.hra

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEV	RESP	SKIN	EYE	BONE/TEET	ENDO	BLOOD	ODOR	GENERAL	MAXHI
5	ALL		641547	3615903	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.69E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.69E-03
4	ALL		641539.1	3615940	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.17E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.17E-03
6	ALL		641547	3615886	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.00E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.00E-03
7	ALL		641548.5	3615872	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03
47	ALL		641582.7	3615902	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.45E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.45E-03
41	ALL		641584.2	3615937	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.20E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.20E-03
49	ALL		641582.2	3615888	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.16E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.16E-03
3	ALL		641545	3615961	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.15E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.15E-03
8	ALL		641541	3615852	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.77E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.77E-03
48	ALL		641605.6	3615906	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.68E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.68E-03
42	ALL		641602.6	3615936	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.68E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.68E-03
15	ALL		641483	3615839	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.51E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.51E-03
43	ALL		641609.5	3615953	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-03
9	ALL		641542.5	3615842	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-03
16	ALL		641463.1	3615835	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-03
14	ALL		641502.8	3615830	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.07E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.07E-03
17	ALL		641440.8	3615840	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.89E-03
44	ALL		641609	3615970	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.85E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.85E-03
2	ALL		641547	3615988	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.71E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.71E-03
10	ALL		641543	3615825	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.64E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.64E-03
40	ALL		641588.7	3615990	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-03
13	ALL		641490.4	3615811	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E-03
50	ALL		641604.1	3615840	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-03
45	ALL		641608.6	3615992	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.38E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.38E-03
18	ALL		641420.4	3615837	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-03
12	ALL		641557.4	3615811	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-03
1	ALL		641545	3616010	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.15E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.15E-03
20	ALL		641423.4	3615824	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-03
11	ALL		641544	3615797	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-03
46	ALL		641607.6	3616013	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.04E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.04E-03
51	ALL		641607.6	3615814	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.86E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.86E-04
19	ALL		641430.8	3615811	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.76E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.76E-04
55	ALL		641478.5	3615788	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.42E-04
53	ALL		641563.9	3615793	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.37E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.37E-04
52	ALL		641597.6	3615796	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.40E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.40E-04
54	ALL		641559.9	3615781	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.30E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.30E-04
56	ALL		641433.3	3615794	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.80E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.80E-04
38	ALL		641456.1	3616054	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.28E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.28E-04
36	ALL		641420.9	3616055	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.22E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.22E-04
35	ALL		641410	3616056	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.15E-04
34	ALL		641374.7	3616053	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.15E-04
39	ALL		641469.6	3616056	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.11E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.11E-04
33	ALL		641359.3	3616054	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.94E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.94E-04
32	ALL		641344.5	3616056	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.61E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.61E-04
31	ALL		641334	3616053	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.54E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.54E-04
37	ALL		641433.8	3616067	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.43E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.43E-04
30	ALL		641312.2	3616053	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.02E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.02E-04
29	ALL		641299.3	3616053	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.70E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.70E-04
28	ALL		641275	3616054	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.09E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.09E-04
27	ALL		641232.8	3615983	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.30E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.30E-04
26	ALL		641235.2	3615946	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.22E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.22E-04
57	ALL		641229.3	3616058	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.08E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.08E-04
25	ALL		641233.8	3615887	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.77E-04
24	ALL		641228.8	3615865	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.48E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.48E-04
21	ALL		641281.9	3615790	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.44E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.44E-04
23	ALL		641230.8	3615842	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.31E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.31E-04
22	ALL		641231.8	3615821	NonCancer	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.12E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.12E-04

Appendix C

Biological Resources Technical Memorandum

MEMORANDUM

To:	Kara Peterson, San Diego State University
From:	Kimberly Narel, Biologist, Dudek
Subject:	SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project – Biological Resources Technical Memorandum
Date:	December 12, 2024
cc:	Dylan Ayers, Callie Amoaku, Mollie Brogdon, Sarah Lozano, Dudek; Michael Haberkorn, Gatzke Dillon & Ballance
Attachments:	A – Figures B – Site Photographs C – Species Compendium D – Special-Status Plant Species Potential to Occur E – Special-Status Wildlife Species Potential to Occur

Dudek has conducted an evaluation pursuant to the requirements of the California Environmental Quality Act (CEQA), California Public Resources Code 21000, et seq., to determine the presence and potential impacts related to biological resources associated with the proposed San Diego State University (SDSU) Calexico Affordable Student Housing Project (Project or proposed Project), to be located at the SDSU Imperial Valley Off-Campus Center located in Calexico, California. This technical memorandum provides the methods and results of the biological resources investigation, discussion of special-status biological resources, if present, an analysis of project impacts, and a discussion of proposed mitigation, if required.

1 Project Overview and Background

In September 2003, the California State University (CSU) certified an environmental impact report for the SDSU Imperial Valley Master Plan Project (State Clearinghouse No. 2002051010) and approved a Campus Master Plan for the expansion and improvement of the SDSU Imperial Valley Off-Campus Center, which includes locations in Calexico and Brawley, both located in Imperial County (SDSU 2003). The Off-Campus Center is an extension of SDSU's main campus in San Diego and furthers the University's regional educational mission to provide additional educational opportunities to the outlying communities of Imperial County. The previously certified and approved Campus Master Plan and EIR provided the authorization necessary for enrollment of 850 full-time equivalent (FTE)[1] students at the Off-Campus Center, corresponding associated faculty and staff, and a framework for development of the facilities necessary to serve this projected enrollment and campus population.

The Off-Campus Center - Calexico is approximately 8.3 acres in size and is located in the City of Calexico (City). Most of the Calexico location is built out, consisting of several educational and support facilities. The environmental impacts associated with development of the Off-Campus Center – Calexico were evaluated at a program level of review in the 2003 EIR. In the CSU's continuing effort to build out the Imperial Valley Off-Campus Center and provide

1 A full-time equivalent (FTE) student is one full-time student taking 15 course credits, or 3 part-time students each taking 5 course credits.

additional educational opportunities, SDSU presently proposes construction and operation of a four-building complex that would provide affordable student housing at the Calexico location for 80 students and a resident manager. Additional details regarding the proposed housing is provided below.

2 Project Location and Existing Conditions

The Off-Campus Center – Calexico is located at 720 Heber Avenue in downtown Calexico, approximately 0.5 miles north of the United States–Mexico border (see Figure 1, Regional Map). Regional access to the Off-Campus Center is provided via SR-111 and SR-98 to the north. The Calexico location is bordered by four streets: Heber Avenue to the west, Sherman Street to the north, Blair Avenue to the east, and 7th Street to the south. Residential uses bound the Calexico complex to the north, east, south, and west. Other surrounding uses include Calexico High School, located northeast, and Calexico City Hall, located immediately south. The Off-Campus Center - Calexico currently consists of 17 buildings and an associated surface parking lot (see Figure 2, Vicinity Map, and Figure 3A, Existing Campus Master Plan).

As a state entity, the CSU/SDSU is not subject to local government plans, regulations, and guidelines, such as those contained in the City's General Plan. The above notwithstanding, for information purposes, the Off-Campus Center - Calexico is zoned as Open Space and is designated as Public Facilities in the City's General Plan (City of Calexico 2015a).

The proposed Project site is approximately 0.58 acres in size (25,320 square feet) and is located at the southeast corner of the campus, at the northwest corner of East 7th Street and Blair Avenue (see Figure 2). The entirety of the Project site has previously been graded and is relatively flat in nature, with an average elevation of 3.5 feet above mean sea level. The Project site encompasses the locations identified in the Campus Master Plan as future Building 21 (see Figure 3A and Figure 3B, Proposed Campus Master Plan). The Project site consists of vacant and undeveloped land with two trees located along the northern boundary of the site. A chain-link fence separates the Project site from the recently removed temporary Campus Buildings 201, which were located immediately west of the Project site.

3 Project Description

3.1 Affordable Student Housing Complex

The proposed Project would involve the construction of a single-story, four-building complex approximately 12,840 square feet in size that would provide for affordable student housing. The complex would include three student housing buildings, including one smaller live-in unit building, and a community building. Two of the three proposed residential buildings would each be approximately 5,500 square feet in size and would include five four-bedroom, two-bathroom apartment units, totaling 40 student beds per building (two student beds per bedroom, 80 student beds in total). The third proposed residential building would be a live-in manager unit that would consist of a single two-bedroom, one-bathroom apartment. The proposed live-in unit would also include approximately 100 square feet of office space that is intended to provide a space for tenant meetings, social services, or counseling. All apartment units would also be equipped with a living area and kitchen. The proposed community building program would be approximately 840 square feet and include laundry, mail, restroom, electrical, and maintenance facilities. The mail room would be located outside, under the shaded amenity patio of the community building (see Table 1).

Table 1. Affordable Student Housing Complex Area Calculations

	Quantity	Area (Square Feet)	Beds
Residential Buildings (3)			
4-Bedroom, 8-Bed Unit	5	5,150	40
4-Bedroom, 8-Bed Unit	5	5,150	40
Live-In Unit	1	1,000	2
Office (Included in Live-In Unit)	N/A	N/A	N/A
Subtotal	*11*	*11,300*	*82*
Community Building (1)			
Laundry Room	1	300	N/A
Service Rooms	4	450	N/A
Restroom	2	100	N/A
Mail/Package (Outside)	1	270	N/A
Subtotal	*N/A*	*1,150*	*N/A*
Other			
Trash/Recycling Enclosure	1	850	N/A
Open Space	N/A	2,300	N/A
Landscaping/hardscaping	N/A	12,500	N/A
Subtotal	*N/A*	*13,650*	*N/A*
Combined Total	**N/A**	**26,100**	**82**

Note: N/A = not applicable.
All square foot amounts presented in the table are approximate amounts only and may not add to the site plan area totals described in this document due to rounding.

Other on-site proposed amenities include a courtyard, bike racks, and a community waste enclosure. The courtyard would be approximately 1,600 square feet and would be centrally located in the proposed complex (see Figure 4, Site Plan). Approximately 15 bike racks would be provided throughout the Project site. A community waste enclosure at the northeast corner of the Project site would allow residents a convenient place to dispose of waste and recyclables.

3.1.1 Operation

The Off-Campus Center - Calexico, including the Project site, is owned and operated by the CSU/SDSU. The CSU Board of Trustees, on behalf of SDSU, is the lead agency responsible for certifying the adequacy and completeness of this document and approval of the proposed Project. SDSU and the IVCCD have received joint funding under the State of California Higher Education Student Housing Grant Program to construct the proposed Project.

To support basic housing needs for students in the Imperial Valley, SDSU and IVCCD have executed a 30-year master lease agreement that details operation of the Project. This agreement dictates that 40 of the 82 proposed student beds would be reserved for IVCCD students who attend the Imperial Valley College in Imperial. Likewise, 40 of the proposed 82 beds, would be reserved for SDSU Off-Campus Center - Calexico students. A 2-bedroom unit would also provide living space for on-site management. SDSU would be responsible for operating, managing, and maintaining the proposed Project once operational.

Student beds made available under the proposed Project would be leased/rented to eligible low-income students. Eligible low-income students are defined as having 30% of 50% of the Annual Median Income for Imperial County. In the event, after a good faith outreach effort, there is not sufficient demand from students meeting the eligibility requirements within 90 days of the start of the fall semester, unassigned beds may be leased at market rates to SDSU and IVCCD students not meeting the low-income eligibility requirements. In addition to meeting the low-income criteria, eligible students would be required to be enrolled students and take a minimum average of 12 degree-applicable units per semester term, or the quarterly equivalent (with exceptions permitted), to facilitate timely degree completion.

3.1.2 Other Project Elements

Building and Site Design

The proposed buildings have been designed to reflect the character and massing of the existing Off-Campus Center - Calexico, as well as the surrounding neighborhood. Building design is centered around a courtyard-style housing complex and would consist of smooth stucco walls with downspouts and rafters, punctuated by composite terra cotta–colored roof tile accents and windows. Maximum building heights would range from 14 feet to 18 feet.

Landscaping, Other Site Improvements, and Lighting

The Project would include approximately 16,000 square feet of on-site landscaping and hardscape improvements (i.e., pedestrian walkways). All proposed landscaping would consist of drought-tolerant, indigenous plants. The landscape scheme would include shrubs, hedges, and a variety of trees. A total of 39 trees would be added to the Project site including five fan palms, eight mesquite trees, six evergreen elms, and 20 yucca trees.

All exterior on-site lighting would be hooded or shielded, directed downward, and would be compliant with applicable standards for lighting control and light pollution reduction (i.e., Title 24, American National Standards Institute/Illuminating Engineering Society).

The proposed complex would be secured via an iron security fence that would measure 6 feet in height and run approximately 64 linear feet, connecting to the proposed buildings. Access to the complex would only be available to residents and their guests via two pedestrian gates located at the northwestern corner and southern portion of the proposed complex. The gates would be equipped with security card access for residents.

Utilities and Public Services

New points of connection for domestic water, fire supply water, sewer, storm drainage and electrical connections from existing utility lines would be required to serve the proposed Project. Potable water service, as well as sewer collection services at the Project site, would be provided by the City. The Project would connect to an existing sanitary sewer maintenance access line located in Blair Avenue via new 6-inch mains. Connections for water (including domestic, fire, and irrigation) would be from an existing water main located in Blair Avenue. Distribution water pipes would be extended underground to serve each proposed building. A new water meter would be located in the proposed maintenance room in the community building. Adequate water treatment capacity and supply and sewer treatment capacity exists within the City's water and sewer system to accommodate the Project; therefore, no capacity upgrades to infrastructure would be necessary.

Stormwater drainage includes two stormwater catch basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated immediately east of the existing chain-link fence at the western boundary of the Project site. The proposed catch basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to stormwater discharge into the City's stormwater system via one new storm drain located in the southeast corner of the Project site.

Electrical services within the Project area are provided by Imperial Irrigation District, which provides electric power to over 158,000 customers in the Imperial Valley in addition to areas of Riverside and San Diego counties (IID 2024). New utility connections and infrastructure would be required to support electrical services on site. The Project would connect to on-site electrical power infrastructure via an existing 12kV, three phase, three wire, 60 Hertz overhead line routed along East 7th Street. No natural gas usage is proposed for the Project.

The Project would require a new point of connection for on-site telecommunications and would connect to the existing AT&T communications via the on-campus minimum point of entry.

Access, Circulation, and Parking

Regional access to the Project site is provided via SR-111 and SR-98 to the north. Local access is provided via Blair Avenue and East 7th Street. Parking to the Project site is available in the existing campus parking lot, immediately north of the Project site, which has sufficient capacity to serve the proposed Project. On-site circulation improvements would consist of additional paved pathway/pedestrian walkway features throughout the proposed complex and along the northern boundary of the Project site (see Figure 4). Emergency access would be provided directly adjacent to the Project site on East 7th Street and Blair Avenue.

3.1.3 Design Standards and Energy Efficiency

In May 2014, the CSU Board of Trustees broadened the application of sustainable practices to all areas of the university by adopting the first systemwide sustainability policy, which applies sustainable principles across all areas of university operations, including facility operations and utility management. In May 2024, the CSU Sustainability Policy was updated to expand on existing sustainability goals (CSU 2024). The CSU Sustainability Policy seeks to integrate sustainability into all facets of the CSU, including academics, facility operations, the built environment, and student life (CSU 2018). Relatedly, the state has also strengthened energy-efficiency requirements in the California Green Building Standards Code (Title 24 of the California Code of Regulations).

As a result, all CSU new construction, remodeling, renovation, and repair projects, including the proposed Project, would be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable state energy codes and regulations. Progress submittals during design are monitored for individual envelope, indoor lighting, and mechanical system performances. In compliance with these goals, the proposed Project would be equipped with solar ready design features that would facilitate and optimize the future installation of a solar photovoltaic (PV) system.

3.1.4 Off-Site Improvements

Off-site improvements would include the resurfacing of a portion of Blair Avenue adjacent to the eastern boundary of the Project site that would be disturbed as a result of trenching to make necessary connections to the existing

water main and sanitary sewer maintenance access. Any area disturbed as a result of this connection within Blair Avenue would be resurfaced to existing conditions. All off-site improvements would occur within the Blair Avenue right-of-way.

3.1.5 Construction

Construction would be performed by qualified contractors. Plans and specifications would incorporate stipulations regarding standard CSU/SDSU requirements and acceptable construction practices, such as those set forth in the SDSU Stormwater Management Plan, CSU Seismic Policy, The CSU Office of the Chancellor Guidelines, and the CSU Sustainability Policy, regarding grading and demolition, safety measures, vehicle operation and maintenance, excavation stability, erosion control, drainage alteration, groundwater disposal, public safety, and dust control.

Construction Timeline

Construction of the proposed Project would take approximately 17 months to complete and is estimated to begin as early as January 2025 and be completed by May 2026, with occupancy planned for fall 2026. Construction activities would generally occur Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m., with the potential for weekend construction on Saturday between 9:00 a.m. and 5:00 p.m. No construction would occur on Sundays or holidays or at night.

Construction Activities

A construction mobilization or staging area would be located immediately northeast of the proposed Project site and would occupy approximately 8,000 square feet. The area would be located east of existing Campus Building 6, west of Blair Avenue, and south of the existing parking lot (see Figure 2 and Figure 3A). To accommodate use of this area, four trees would be removed.

Construction would include site preparation, grading and excavation, utility installation/trenching, building foundation pouring, building construction, and landscaping. Excavation depths are anticipated to be 3 feet below grade. The majority of waste (i.e., excavated gravel/soil) generated during Project construction would be balanced/used within the site. Approximately 2,600 cubic yards of soil would be removed from the site and exported to Republic Services Allied Imperial Landfill, approximately 12 miles north. The entire Project site, including construction mobilization area (approximately 34,000 square feet in total) would be disturbed as a result of Project construction. Two trees would be removed from the Project site to accommodate the proposed Project.

Table 2 displays the construction equipment anticipated to be used during construction.

Table 2. Anticipated Construction Equipment

Aerial Lifts	Pressure Washers
Air Compressors	Pumps
Cement and Mortar Mixers	Rollers
Concrete/Industrial Saws	Rough Terrain Forklifts
Dumpers/Tenders	Rubber-Tired Dozers
Excavators	Rubber-Tired Loaders
Forklifts	Scrapers

Table 2. Anticipated Construction Equipment

Generator Sets	Signal Boards
Graders	Skid Steer Loaders
Off-Highway Tractors	Surfacing Equipment
Off-Highway Trucks	Sweepers/Scrubbers
Other Construction Equipment	Tractors/Loaders/Backhoes
Other General Industrial Equipment	Trenchers
Other Material Handling Equipment	Welders
Plate Compactors	

Source: Dorsey and Nielson Construction Inc, pers. comm., 2024

Construction Waste

The Project would generate construction debris during on-site clearing activities. In accordance with Section 5.408 of the California Green Building Standards Code, the Project would implement a construction waste management plan for recycling and/or salvaging for reuse of at least 65% of nonhazardous construction/demolition debris. Additionally, the Project would be required to meet Leadership in Energy and Environmental Design v4 requirements for waste reduction during construction. Solid waste generated during construction would be hauled off site to the Republic Services Allied Imperial Landfill at 104 East Robinson Road in Imperial, California.

4 Analysis Methodology

The analysis presented here considers the potential environmental impacts of the proposed project relative to existing conditions. Establishment of the project site's existing biological resource conditions has been prepared using information contained in the previously certified 2003 SDSU Imperial Valley Master Plan EIR (SDSU 2003), in addition to the following methods, described below.

4.1 Literature Review

For this biological resources assessment, "special-status" species are those that are (1) listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act; (2) listed or candidates for listing as threatened or endangered under the California Endangered Species Act; (3) a state fully protected species; (4) a California Department of Fish and Wildlife (CDFW) Species of Special Concern; (5) a United States Fish and Wildlife Service Bird of Conservation Concern; or (6) a species listed on the California Native Plant Society Inventory of Rare and Endangered Plants with a California Rare Plant Rank of 1B or 2B.

Other special-status biological resources considered include sensitive vegetation communities. Sensitive vegetation communities are those communities identified as high priority for inventory in the List of Vegetation Alliances and Associations (CDFW 2024a) by a state rarity rank of S1, S2, or S3.

Special-status biological resources potentially present in the work area were identified through a literature search using CDFW's California Natural Diversity Database (CDFW 2024b), the California Native Plant Society Rare Plant Inventory (CNPS 2024), and the CDFW Information for Planning and Consultation (USFWS 2024a). The National

Wetlands Inventory (USFWS 2024b), the National Hydrology Database (USGS 2024), and the U.S. Department of Agriculture's Natural Resource Conservation Service Web Soil Survey databases (USDA 2024) were also referenced to determine the presence of potential wetlands or other aquatic features on site. Searches were completed for the Calexico U.S. Geological Survey 7.5-minute quadrangle, within which the project is located, and the five surrounding quadrangles.

4.2 Field Reconnaissance

Dudek Biologist Dylan Ayers conducted a general biological reconnaissance survey and examined the project site and surrounding 100-foot study area buffer on June 14, 2024, from 12:15 p.m. to 2:15 p.m. (see Attachment B, Site Photographs). The survey was conducted with clear skies, wind ranging between 1 mph and 3 mph, and temperatures ranged from 108°F to 110°F. The biological survey was conducted on foot and covered 100% of the study area.

All native and naturalized plant species encountered within the survey area were identified and recorded. The potential for special-status plant and wildlife species to occur within the project was evaluated based on the observed vegetation communities, soils present, elevation, and surrounding landscape features. Vegetation communities and land covers were mapped directly in the field. An informal evaluation of potential jurisdictional waters regulated under the federal Clean Water Act, California Fish and Game Code, and Porter-Cologne Water Quality Act was also conducted concurrently with the biological reconnaissance.

Latin and common names for plant species with a California Rare Plant Rank follow the California Native Plant Society's Inventory of Rare and Endangered Plants (CNPS 2024). For plant species without a California Rare Plant Rank, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2024), and common names follow the U.S. Department of Agriculture's Natural Resources Conservation Service Plants Database (USDA 2024). Vegetation mapping was conducted in accordance with the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) or the Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008). Latin and common names of animals follow Crother (2017) for reptiles and amphibians, the American Ornithologists' Union (AOU 2021) for birds, the Mammal Diversity Database (ASM 2021) for mammals, the North American Butterfly Association (NABA 2020) for butterflies, and Moyle (2002) for fish.

Dudek used geographic information system (ArcGIS) software to map biological resources and prepare associated illustrative figures.

4.3 Survey Limitations

Vegetation mapping was conducted during the day and during months of the year when most perennials would have been evident or identifiable. Notes were taken for incidental wildlife observations made during the survey to establish a general baseline of wildlife diversity within the study area. The current survey effort provides an accurate representation of the potential for special-status species to occur in the study area. The on-site investigation was thorough and comprehensive, and the results of the study contained herein provide a reasonable, accurate assessment of the study area.

5. Biological Resources

5.1 Existing Conditions

The study area consists of previously graded, vacant relatively flat land at an elevation range between approximately 4 feet to 10 feet above mean sea level. Two ornamental trees are located along the northern boundary of the project site, and a chain-link fence separates the project site from an existing temporary campus building immediately west. The project site consists of developed land characterized by maintained grass with scattered ornamental trees and shrubs. The surrounding study area is developed with the Off-Campus Center - Calexico.

5.2 Soils

Based on a review of the U.S. Department of Agriculture Web Soil Survey database, Imperial-Glenbar silty clay loam, wet, 0% to 2% slopes is the only soil present on the study area (USDA 2024). The Imperial and Glenbar soil series are described in detail below. No hydric soils are present on the study area.

Imperial soils are found on nearly level to gently sloping flood plains and in old lakebeds at elevations of 235 feet below sea level to 300 feet above mean sea level. These soils formed in calcareous alluvium from mixed sources. Imperial soils are well and moderately drained with slow or very slow runoff and very slow permeability.

Glenbar soils consists of very deep, well drained soils with moderately slow permeability that formed in stratified stream alluvium from mixed sources. Glenbar soils range from 230 feet below sea level to 2,500 feet above mean sea level.

5.3 Vegetation Communities and Land Covers

The entire study area consists of urban/developed land. Maintained grass and ornamental vegetation in the project site was identified and mapped within the study area as urban/developed land based on general characteristics of mowed, planted grasses and manicured ornamental plantings associated with human activities from the adjacent Off-Campus Center - Calexico. Figure 5, Biological Resources Map, illustrates the distribution of vegetation communities and land covers on the study area.

5.3.1 Urban/Developed Land

Urban/developed land refers to areas that have been constructed on or disturbed so severely that native vegetation is no longer supported. Urban/developed lands includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with a large amount of debris or other materials. Urban/developed land encompasses the entire project site and surrounding study area buffer. The project site consists of landscaped grasses and ornamental plantings, while the surrounding study area buffer consists of paved public roads and college buildings.

5.4 Floral Diversity

A total of 11 species of vascular plants (1 [9%] native and 10 [91%] non-native) were recorded within the study area. The low plant diversity reflects the study area's small size and its proximity to surrounding urban development. Plant species observed included ornamental trees, ruderal herbaceous species associated with disturbed areas, and maintained grass. A list of plant species observed within the study area is included in Attachment C, Species Compendium.

5.5 Wildlife Diversity

A total of 5 bird species, (1 [20%] native and 4 [80%] non-native), were detected within the study area. No bird nests were observed within the study area. No reptile, mammal, invertebrate, or amphibian species were observed during the field reconnaissance. The low wildlife diversity reflects the study areas lack of native habitat and location within an urban setting. Wildlife species observed within the study area are listed in Attachment C.

5.6 Special-Status Plants

No plant species listed or proposed for listing as rare, threatened, or endangered by either CDFW or the U.S. Fish and Wildlife Service were detected within the study area. The study area is not within any designated federally designated Critical Habitat for any special-status plant species (USFWS 2024c).

Based on the results of the literature review and database searches, 9 special-status plant species have been documented within the region. All these species were evaluated for potential to occur within the study area (Attachment D, Special-Status Plant Species Potential to Occur). Criteria used include soils, current disturbance levels, vegetation communities present, elevation ranges, and previous known locations based on the California Natural Diversity Database (CDFW 2024b), California Native Plant Society (CNPS 2024), and Consortium of California Herbaria (Calflora 2024) records.

None of the 9 special-status plant species known to occur in the region are expected to occur on the study area due to the prevalence of urban/developed habitat and absence of suitable soils or native vegetation communities.

5.7 Special-Status Wildlife

No wildlife species listed or proposed for listing as rare, threatened, or endangered by either CDFW or the U.S. Fish and Wildlife Service were detected within the study area. The study area is not within any federally designated Critical Habitat for any special-status wildlife species (USFWS 2024c).

Based on the results of the literature review and database searches, 15 special-status species have been documented within the region (Attachment E, Special-Status Wildlife Species Potential to Occur). For each species listed, a determination was made regarding potential use of the study area based on information gathered during the field reconnaissance, known habitat preferences, and range of the species' relative distributions in the area.

Due to the limited size of the study area, location in an urban/developed setting, and absence of native habitat, none of the 15 special-status wildlife species documented in the region have a moderate or high potential to occur.

However, one CDFW Species of Special Concern, western mastiff bat (*Eumops perotis californicus*), has a low potential to roost and forage within the ornamental trees on the study area. In addition, one native raptor species, American kestrel (*Falco sparverius*), was detected foraging in the study area. Other bird species detected were non-native and are associated with urban areas. Due to the presence of ornamental trees and avian species detected during the field reconnaissance, the study area has the potential to support nesting bird species which are protected under the Migratory Bird Treaty Act. Potential impacts to special-status species from project implementation are discussed in Section 6.2 below.

5.8 Jurisdictional Aquatic Resources

Based on a preliminary evaluation of potentially jurisdictional waters on the study area conducted during the field reconnaissance, no areas potentially supporting vernal pools, ephemeral ponds, or wetlands were observed during the survey. No riparian habitat was observed on the study area, and as such, no potentially jurisdictional aquatic resources are present on the project.

6 Impact Analysis and Conclusions

6.1 Thresholds of Significance

The thresholds of significance used to evaluate the impacts of the proposed project related to biological resources are based on Section IV Biological Resources of Appendix G of the CEQA Guidelines (Cal. Code Regs., Title 14, Chapter. 3, sections 15000-15387). A significant impact under CEQA would occur if the proposed project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

6.2 Impact Analysis

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

Potential impacts of the Campus Master Plan related to species listed as candidate, sensitive, or special status were evaluated in Section 3.4, Biological Resources, of the certified 2003 EIR. Based on the current analysis, the study area contains ornamental trees, shrubs, and maintained grass that would potentially be used by migratory birds for breeding and nesting. Direct impacts to migratory nesting birds must be avoided to comply with the MBTA and California Fish and Game Code. Indirect impacts to nesting birds from short-term, construction-related noise could result in decreased reproductive success or abandonment of an area as nesting habitat if construction were conducted during the breeding/nesting season (i.e., February through September). In general, due to the developed and disturbed conditions of the site and surrounding areas (i.e., no natural habitat areas or preserves), the potential for biological resources to occur is low. However, direct and indirect impacts to nesting birds would be significant absent mitigation. Implementation of recommended **Mitigation Measure (MM) BIO-1** (see below) would ensure nesting birds would not be impacted by project construction activities during nesting season.

In addition, ornamental trees on the study area have a limited potential to support nesting and foraging for western mastiff bat, a CDFW Species of Special Concern. Potential impacts of the Campus Master Plan related to species listed as candidate, sensitive, or special status were evaluated in Section 3.4, Biological Resources, of the certified 2003 EIR. In general, due to the developed and disturbed conditions of the site and surrounding areas (i.e., no natural habitat areas or preserves), the potential for western mastiff bat to roost is extremely low, but it may still use ornamental trees or buildings in the study area; the limited amount of ornamental trees forage is low. However, direct impacts to special-status species are considered significant absent mitigation. The western mastiff bat reproduces in California from April through September, which coincides with the avian nesting season. It forages at night throughout the year. As such, implementation of **MM-BIO**-1 would also ensure western mastiff bat would not be impacted by project construction activities as any potential bat roosts in trees or buildings would also be surveyed for potential avian nests during the pre-construction survey.

Therefore, potential impacts to biological resources would be **less than significant with mitigation incorporated.**

MM-BIO-1: Pre-Construction Nesting Bird and Special-Status Bat Survey. If ground disturbance and/or vegetation clearance activities are scheduled to occur during the avian nesting season (February 1—September-30) and bat reproduction season (April-September), CSU/SDSU, or its designee, shall retain a biologist to conduct a pre-construction nesting bird survey within the area to be disturbed and a 500-foot buffer. Surveys shall be conducted within 3 days prior to initiation of ground-disturbing activity between dawn and noon.

If construction begins outside the nesting bird season (i.e., between October 1 and January 31), work may procced without a nesting bird survey. If construction begins outside the nesting season, but crosses into the nesting season (i.e., start in January but work does not start until March), construction activities may proceed without a nesting bird survey. However, anytime construction activities pause for more than 72 hours during the nesting season, an updated nesting bird survey by a biologist shall be conducted prior to the resumption of construction activities.

If an active nest or western mastiff bat roost is detected during the pre-construction survey, avoidance buffers shall be implemented as determined by a biologist retained by CSU/SDSU. The buffer shall be of sufficient distance to ensure avoidance of adverse effects to the nesting bird or bat by accounting for topography, ambient conditions, species, nest/roost location, and activity type. All nests shall be monitored as determined by the biologist until nestlings have fledged and dispersed, or it is confirmed that the nest has been unsuccessful or abandoned. Any trees observed supporting roosting bats during the pre-construction survey shall not be removed during the bat reproduction period of April-September. Avoidance buffers shall be implemented as determined by a biologist retained by CSU/SDSU.

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

The 2003 Initial Study (IS) prepared for the Campus Master Plan EIR determined that no impact related to adverse effects on riparian habitat or other sensitive natural communities would occur.

The study area does not contain riparian vegetation communities or any native vegetation communities including those identified as sensitive according to CDFW. As a result, **no impacts** to sensitive communities are expected to occur.

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

The IS prepared for the Campus Master Plan 2003 EIR determined that no impact related to adverse effects on wetlands would occur.

The project site does not contain wetland waters of the United States or state. As such, **no impacts** to protected wetlands are expected to occur.

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

The IS prepared for the Campus Master Plan 2003 EIR determined that no impact related to wildlife movement or migration would occur.

The project is not located within an area that functions as a wildlife movement or migration corridor, and occurs in an urban setting that lacks native habitat. As such, the proposed project would not constrain natural wildlife movement in its vicinity and **no impacts** would occur.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The IS prepared for the Campus Master Plan 2003 EIR determined that no impact related to conflicts with local biological resources policies or ordinances would occur.

As a state entity, CSU/SDSU is not subject to local government plans, policies, regulations, and guidelines, such as those contained in the city of Calexico General Plan. As such, the project would not conflict with any local policies or ordinances protecting biological resources. Therefore, no impacts would occur to any biological resources protected by a local ordinance.

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

The IS prepared for the Campus Master Plan 2003 EIR determined that no impact related to conflicts with local habitat conservation plans.

There are no habitat conservation or natural community plans that have been implemented for the project area. The Imperial Irrigation District developed a planning agreement in 2006 for a regional HCP, however that plan is still in development and has not been implemented (CDFW 2006). As such, the project would not conflict with any applicable plans and no impacts would occur.

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Attachment A
Figures

SOURCE: ESRI

DUDEK

0 4 8 Miles

FIGURE 1

Regional Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

SOURCE: AERIAL-ESRI MAPPING SERVICE 2023; DEVELOPMENT-SDSU 2024

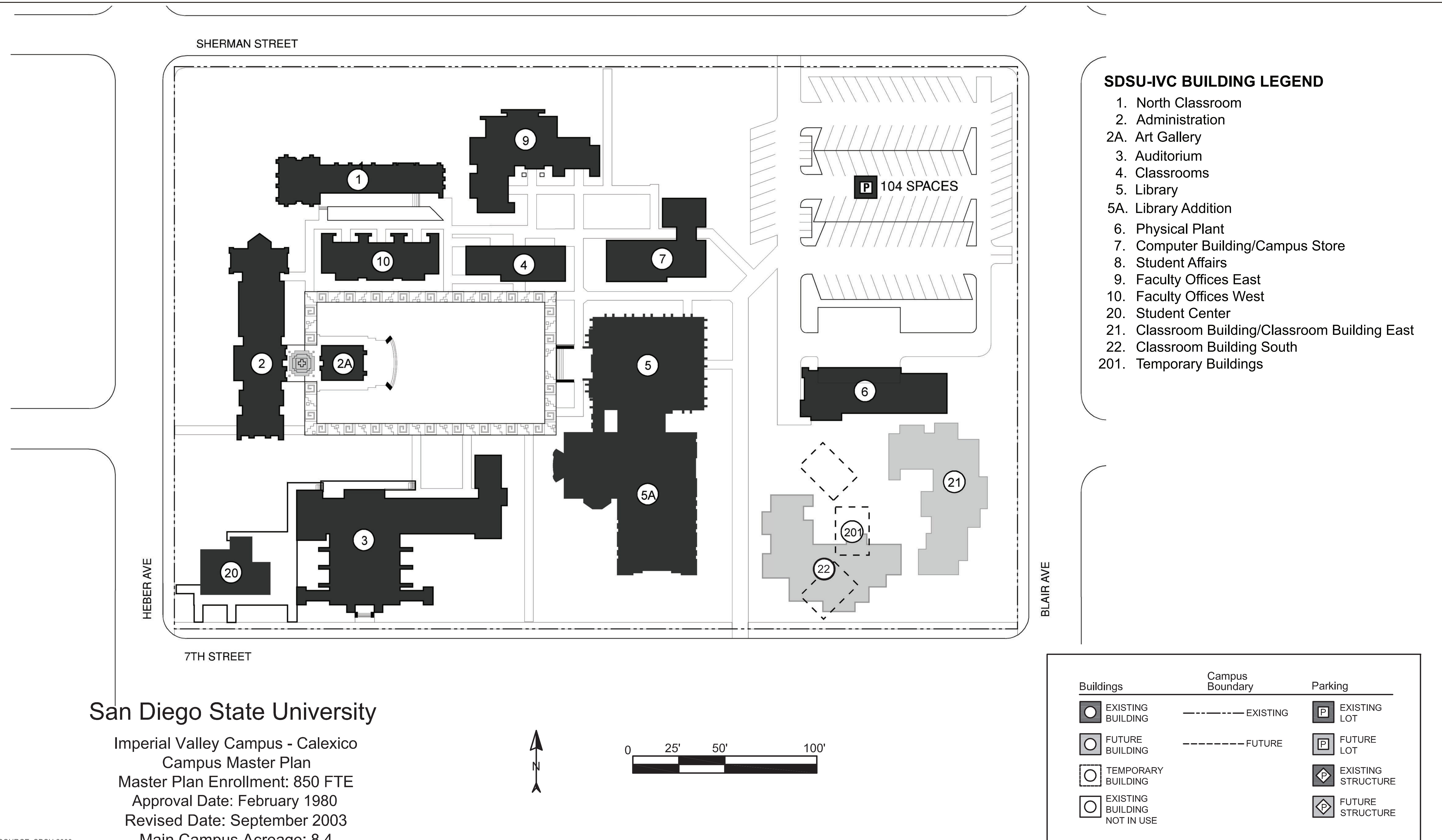
DUDEK

0 100 200 Feet

FIGURE 2

Vicinity Map

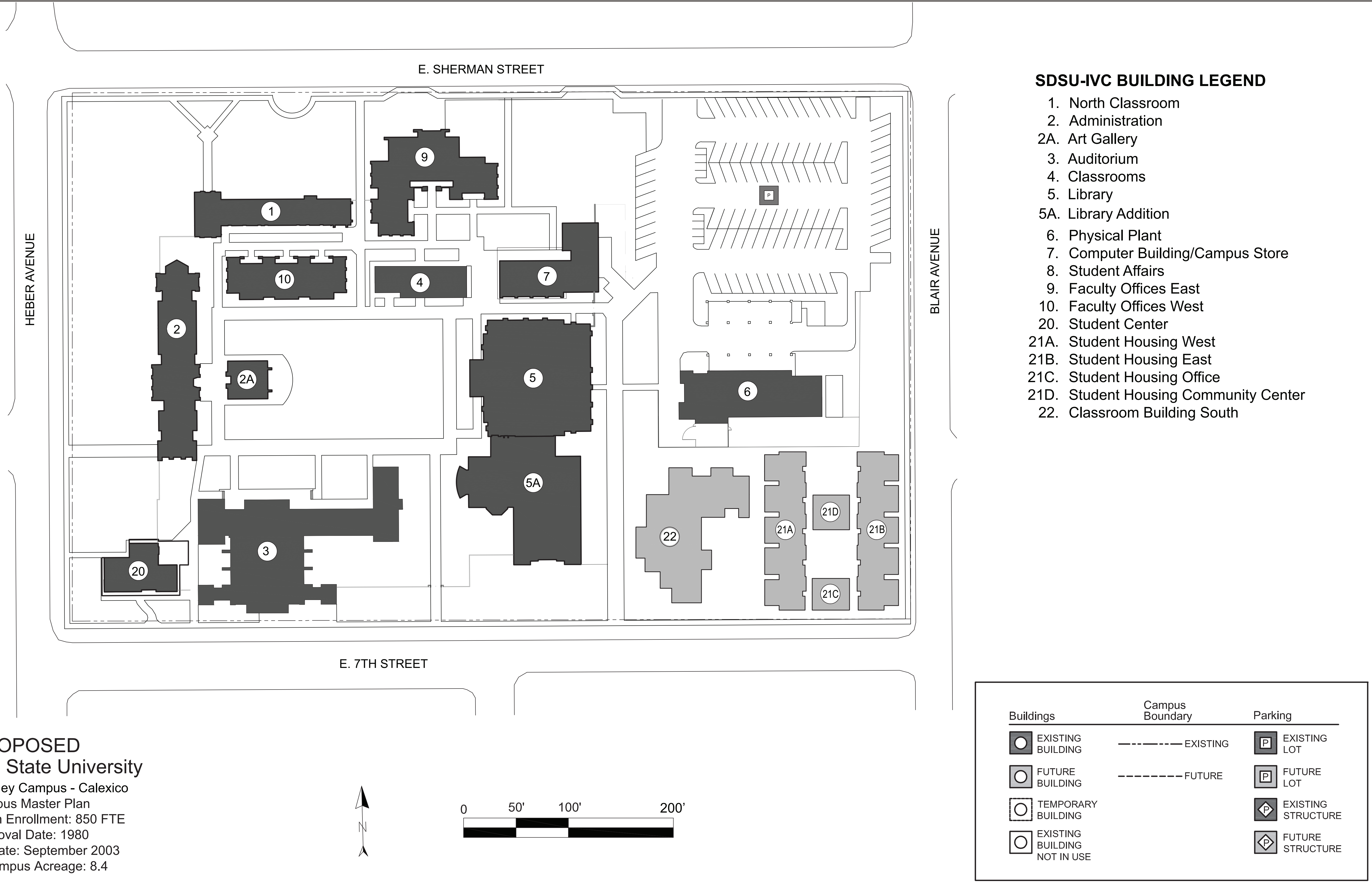
Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project



SOURCE: SDSU 2003

FIGURE 3A

Existing Campus Master Plan

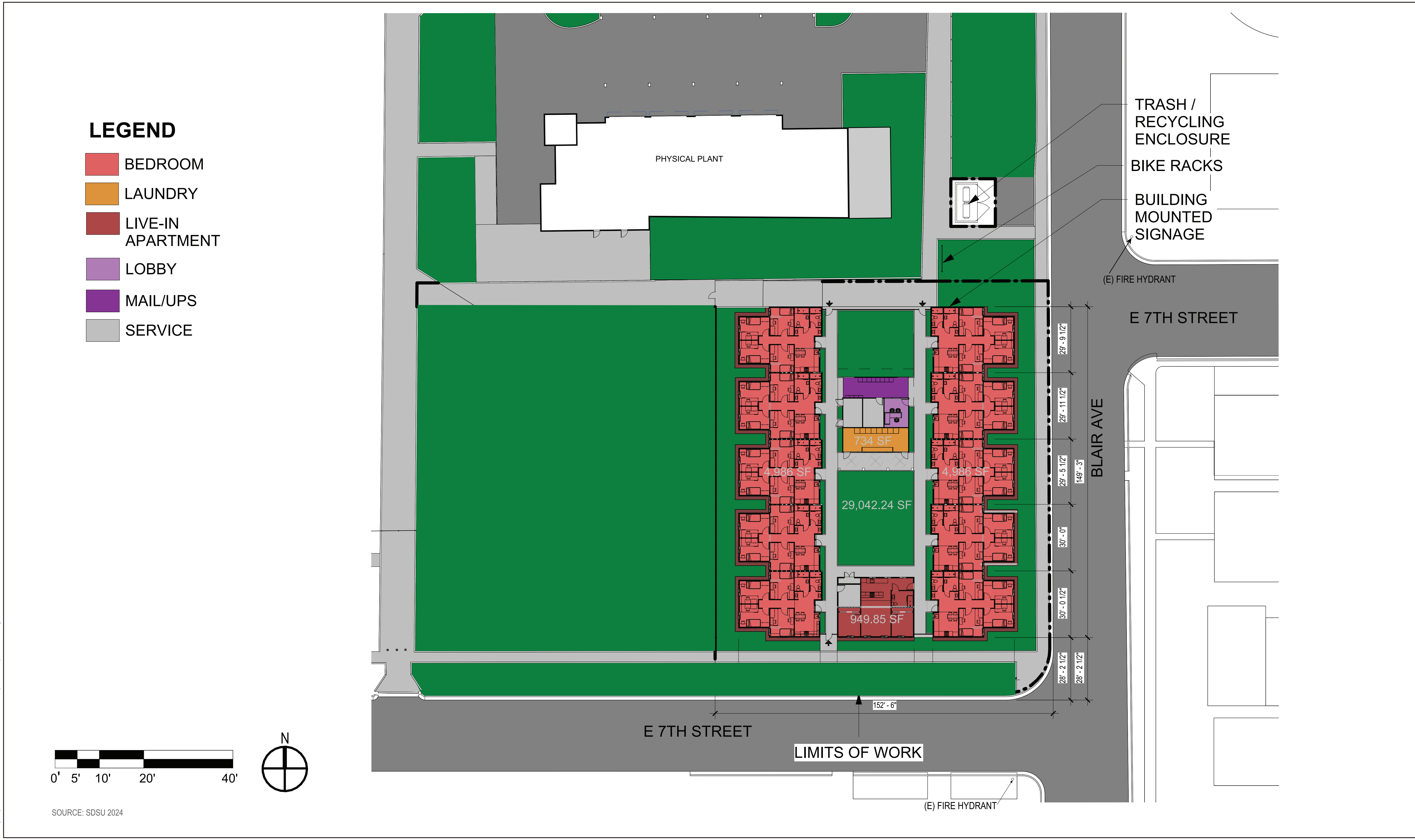


PROPOSED
San Diego State University
Imperial Valley Campus - Calexico
Campus Master Plan
Master Plan Enrollment: 850 FTE
Approval Date: 1980
Revised Date: September 2003
Main Campus Acreage: 8.4

SOURCE: SDSU 2024

FIGURE 3B

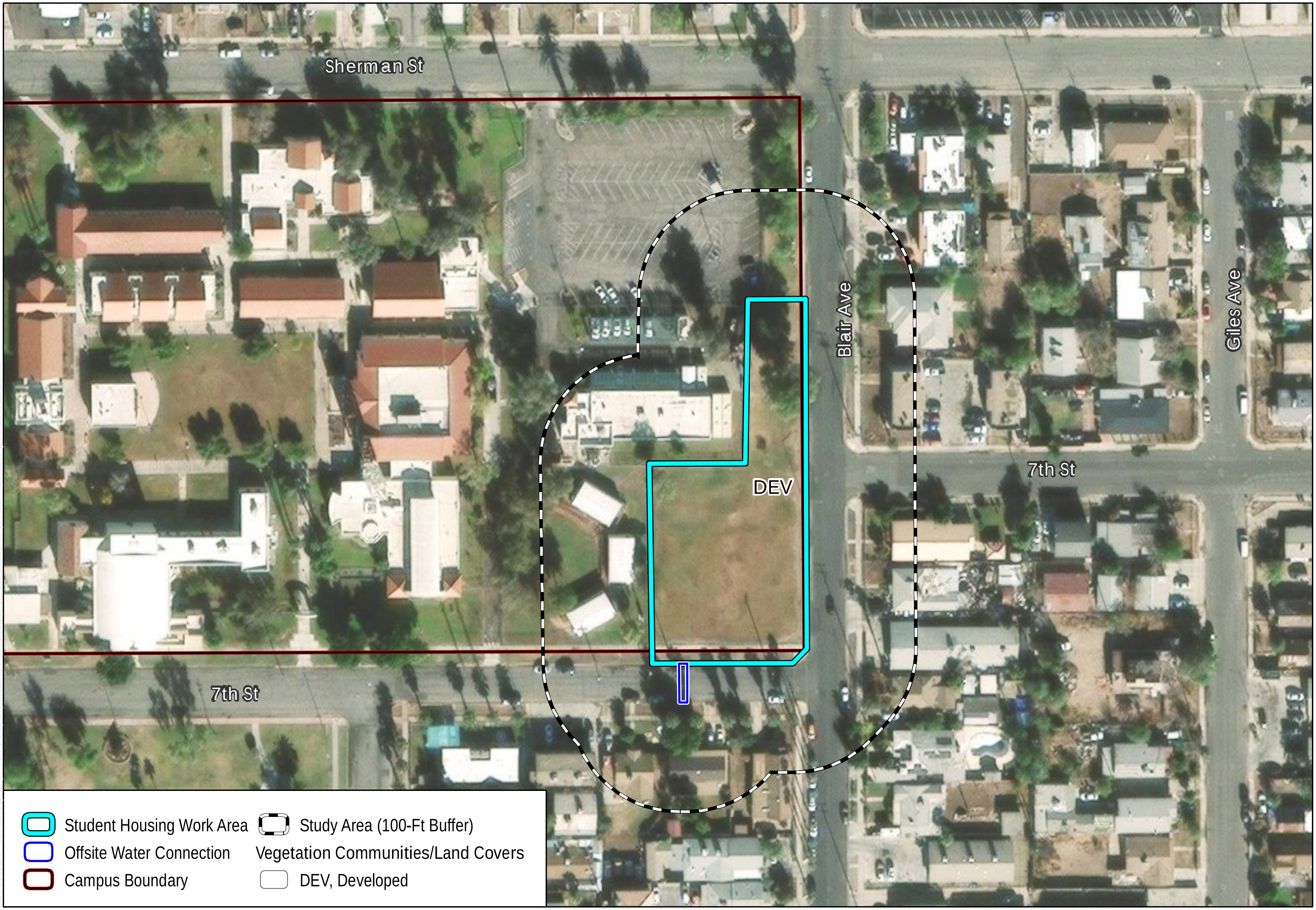
Proposed Campus Master Plan



SOURCE: SDSU 2024

FIGURE 4
Site Plan

DUDEK



SOURCE: AERIAL-ESRI MAPPING SERVICE 2023; DEVELOPMENT-SDSU 2024

DUDEK

0 60 120 Feet

FIGURE 5

Biological Resources Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

Attachment B
Site Photographs

1. View of the center of the study area, facing north

2. View of the study area, facing west

3. Northern portion of the study area, facing south along Blair Avenue

4. Northern portion of the study area, along Blair Avenue

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Attachment C
Species Compendium

Plant Species

Angiosperms (Dicots)

AMARANTHACEAE – AMARANTH FAMILY

* *Salsola tragus* – prickly Russian thistle

ASTERACEAE – SUNFLOWER FAMILY

* *Erigeron bonariensis* – asthma weed, flax-leaved horseweed

EUPHORBIACEAE – SPURGE FAMILY

* *Euphorbia serpyllifolia* – thymeleaf sandmat

FABACEAE – LEGUME FAMILY

* *Parkinsonia aculeata* – Jerusalem thorn

MORACEAE – FIG FAMILY

* *Ficus macrocarpa* – curtain fig

MYRTACEAE – MYRTLE FAMILY

* *Eucalyptus camaldulensis* – river red gum

* *Eucalyptus globulus* – Tasmanian blue gum

OLEACEAE – OLIVE FAMILY

* *Olea europaea* – European olive

Gymnosperms (Monocots)

ARECACEAE – PALM FAMILY

Washingtonia filifera – California fan palm

PINACEAE – PINE FAMILY

* *Pinus* spp. – ornamental pine species

POACEAE – GRASS FAMILY

* *Schismus barbatus* – Mediterranean grass

Wildlife Species – Vertebrates

Birds

COLUMBIDAE – PIGEONS AND DOVES

* *Columba livia* – rock pigeon
* *Streptopelia decaocto* – Eurasian collared-dove

FALCONIDAE – FALCONS

Falco sparverius – American kestrel

PSITTACIDAE – PARROTS

* *Myiopsitta monachus* – monk parakeet

STURNIDAE – STARLINGS

* *Sturnus vulgaris* – European starling

* signifies introduced (non-native) species

Attachment D

Special-Status Plant Species Potential to Occur

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Abronia villosa var. *aurita*	chaparral sand-verbena	None/None/1B.1	Chaparral, coastal scrub, desert dunes; sandy/annual herb/(Jan) Mar–Sep/ 245–5,250	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Amaranthus watsonii	Watson's amaranth	None/None/4.3	Mojavean desert scrub, Sonoran desert scrub/annual herb/Apr–Sep/65–5,580	Not expected to occur. No suitable vegetation present.
Astragalus sabulonum	gravel milk-vetch	None/None/2B.2	Desert dunes, Mojavean desert scrub, Sonoran desert scrub; flats, gravelly (sometimes), roadsides, sandy (usually), washes/annual/perennial herb/ Feb–June/95–3,050	Not expected to occur. No suitable vegetation present.
Euphorbia abramsiana	Abrams' spurge	None/None/2B.2	Mojavean desert scrub, Sonoran desert scrub; sandy/annual herb/(Aug)Sep–Nov/-15–4,300	Not expected to occur. No suitable vegetation present.
Imperata brevifolia	California satintail	None/None/2B.1	Chaparral, coastal scrub, meadows, and seeps (often alkali), Mojavean desert scrub, riparian scrub; mesic/perennial rhizomatous herb/Sep–May/0–3,985	Not expected to occur. No suitable vegetation present.
Johnstonella costata	ribbed cryptantha	None/None/4.3	Desert dunes, Mojavean desert scrub, Sonoran desert scrub; Sandy/annual herb/Feb–May/195–1,640	Not expected to occur. No suitable vegetation present.
Johnstonella holoptera	winged cryptantha	None/None/4.3	Mojavean desert scrub, Sonoran desert scrub/annual herb/Mar–Apr/330–5,545	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Mentzelia hirsutissima	hairy stickleaf	None/None/2B.3	Sonoran desert scrub (rocky)/annual herb/Mar–May/0–2,295	Not expected to occur. No suitable vegetation present.
Pholisma sonorae	sand food	None/None/1B.2	Desert dunes, Sonoran desert scrub (sandy)/perennial herb (parasitic)/ (Mar) Apr–June/0–655	Not expected to occur. No suitable vegetation present.

Status Legend:
CRPR: California Rare Plant Rank
1B: Plants rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California but more common elsewhere
4: Watch List: Plants of limited distribution

Threat Rank

.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 Moderately threatened in California (20–80% occurrences threatened / moderate degree and immediacy of threat)

.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Attachment E

Special-Status Wildlife Species Potential to Occur

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Amphibians				
Incilius alvarius	Sonoran desert toad	None/SSC	Desert and semi-arid habitats including desert scrub, semi-arid grasslands and woodlands; usually associated with large permanent streams	Not expected to occur. No suitable vegetation present.
Lithobates pipiens (native populations only)	northern leopard frog	None/SSC	Adjacent to permanent and semi-permanent water in a range of habitats	Not expected to occur. No suitable vegetation present.
Reptiles				
Kinosternon sonoriense	Sonoran mud turtle	None/SSC	Desert ponds, slow-moving shaded streams and rivers, and cattle tanks; usually in woodlands and occasionally grasslands	Not expected to occur. No suitable vegetation present.
Phrynosoma mcallii	flat-tailed horned lizard	None/SSC	Desert washes and flats with sparse low-diversity vegetation cover and sandy soils	Not expected to occur. No suitable vegetation present.
Birds				
Athene cunicularia (burrow sites and some wintering sites)	burrowing owl	BCC/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Not expected to occur. No suitable vegetation present.
Buteo regalis (wintering)	ferruginous hawk	None/WL	Winters and forages in open, dry country, grasslands, open fields, agriculture	Not expected to occur. No suitable vegetation present. Grassland on site is maintained and site is in an urban area.
Pyrocephalus rubinus (nesting)	vermilion flycatcher	None/SSC	Nests in riparian woodlands, riparian scrub, and freshwater marshes; typical desert riparian with cottonwood, willow, mesquite adjacent to irrigated fields, ditches, or pastures	Not expected to occur. No suitable vegetation present.
Rallus obsoletus yumanensis	Yuma Ridgway's rail	FE/FP, ST	Freshwater marsh dominated by *Typha* spp., *Scirpus* spp., *Schoenoplectus* spp., and *Bolboschoenus* spp.; mix of riparian tree and	Not expected to occur. No suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			shrub species along the marsh edge; many occupied areas are now man-made, such as managed ponds or effluent-supported marshes	
Setophaga petechia (nesting)	yellow warbler	None/SSC	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Not expected to occur. No suitable vegetation present.
Mammals				
Dasypterus xanthinus	western yellow bat	None/SSC	Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms	Not expected to occur. No suitable vegetation present.
Eumops perotis californicus	western mastiff bat	None/SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	Low potential to occur. Limited ornamental trees on site can provide roosting and foraging habitat.
Nyctinomops femorosaccus	pocketed free-tailed bat	None/SSC	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with drop-offs, caverns, and buildings	Not expected to occur. No suitable foraging or roosting habitat present.
Nyctinomops macrotis	big free-tailed bat	None/SSC	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water	Not expected to occur. No suitable foraging or roosting habitat present.
Sigmodon hispidus eremicus	Yuma hispid cotton rat	None/SSC	Backwater sloughs, marshy areas adjacent to Colorado River	Not expected to occur. No suitable vegetation present.
Taxidea taxus	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Not expected to occur. No suitable vegetation present. Grassland on site is maintained and site is in an urban area.

Status Legend
Federal
BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern

FE: Federally listed as endangered
State
FP: California Fully Protected Species
SSC: California Species of Special Concern
ST: State listed as threatened
WL: California Watch List Species

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Appendix D

Cultural Resources and Tribal Cultural Resources Technical Memorandum

MEMORANDUM

To:	Kara Peterson, San Diego State University
From:	Makayla Murillo, Archaeologist Dudek
Subject:	SDSU Imperial Valley Off-Campus Center – Calexico Affordable Student Housing Project - Cultural Resources and Tribal Cultural Resources Technical Memorandum
Date:	December 20, 2024
cc:	Sarah Lozano, Mollie Brogdon, Matthew DeCarlo, Dudek
Attachments:	A – Figures B – Confidential SCIC Records Search Results C – NAHC Sacred Lands Search Results D – Assembly Bill 52 Outreach Letter Example

Dudek has conducted an inventory pursuant to the requirements of the California Environmental Quality Act (CEQA), California Public Resources Code 21000, et seq., and related CEQA Guidelines to determine the presence and potential impacts related to cultural resources and tribal cultural resources associated with the proposed San Diego State University (SDSU) Calexico Affordable Student Housing Project (Project or proposed Project), to be located at the SDSU Imperial Valley Off-Campus Center, located in Calexico, California. This technical memorandum provides the results of the analysis of the proposed Project's potential impacts relative to cultural and tribal resources.

1 Project Overview and Background

In September 2003, the California State University (CSU) certified an environmental impact report for the SDSU Imperial Valley Master Plan Project (State Clearinghouse No. 2002051010) and approved a Campus Master Plan for the expansion and improvement of the SDSU Imperial Valley Off-Campus Center, which includes locations in Calexico and Brawley, both located in Imperial County (SDSU 2003). The Off-Campus Center is an extension of SDSU's main campus in San Diego and furthers the University's regional educational mission to provide additional educational opportunities to the outlying communities of Imperial County. The previously certified and approved Campus Master Plan and EIR provided the authorization necessary for enrollment of 850 full-time equivalent (FTE)[1] students at the Off-Campus Center, corresponding associated faculty and staff, and a framework for development of the facilities necessary to serve this projected enrollment and campus population.

The Off-Campus Center - Calexico is approximately 8.3 acres in size and is located in the City of Calexico (City). Most of the Calexico location is built out, consisting of several educational and support facilities. The environmental impacts associated with development of the Off-Campus Center – Calexico were evaluated at a program level of review in the 2003 EIR. In the CSU's continuing effort to build out the Imperial Valley Off-Campus Center and provide additional educational opportunities, SDSU presently proposes construction and operation of a four-building complex that would provide affordable student housing at the Calexico location for 80 students and a resident manager. Additional details regarding the proposed housing is provided below.

1 A full-time equivalent (FTE) student is one full-time student taking 15 course credits, or 3 part-time students each taking 5 course credits.

2 Project Location and Existing Conditions

The Off-Campus Center – Calexico is located at 720 Heber Avenue in downtown Calexico, approximately 0.5 miles north of the United States–Mexico border (see Figure 1, Regional Map). Regional access to the Off-Campus Center is provided via SR-111 and SR-98 to the north. The Calexico location is bordered by four streets: Heber Avenue to the west, Sherman Street to the north, Blair Avenue to the east, and 7th Street to the south. Residential uses bound the Calexico complex to the north, east, south, and west. Other surrounding uses include Calexico High School, located northeast, and Calexico City Hall, located immediately south. The Off-Campus Center - Calexico currently consists of 17 buildings and an associated surface parking lot (see Figure 2, Vicinity Map, and Figure 3A, Existing Campus Master Plan).

As a state entity, the CSU/SDSU is not subject to local government plans, regulations, and guidelines, such as those contained in the City's General Plan. The above notwithstanding, for information purposes, the Off-Campus Center - Calexico is zoned as Open Space and is designated as Public Facilities in the City's General Plan (City of Calexico 2015a).

The proposed Project site is approximately 0.58 acres in size (25,320 square feet) and is located at the southeast corner of the campus, at the northwest corner of East 7th Street and Blair Avenue (see Figure 2). The entirety of the Project site has previously been graded and is relatively flat in nature, with an average elevation of 3.5 feet above mean sea level. The Project site encompasses the locations identified in the Campus Master Plan as future Building 21 (see Figure 3A and Figure 3B, Proposed Campus Master Plan). The Project site consists of vacant and undeveloped land with two trees located along the northern boundary of the site. A chain-link fence separates the Project site from the recently removed temporary Campus Buildings 201, which were located immediately west of the Project site.

3 Project Description

3.1 Affordable Student Housing Complex

The proposed Project would involve the construction of a single-story, four-building complex approximately 12,840 square feet in size that would provide for affordable student housing. The complex would include three student housing buildings, including one smaller live-in unit building, and a community building. Two of the three proposed residential buildings would each be approximately 5,500 square feet in size and would include five four-bedroom, two-bathroom apartment units, totaling 40 student beds per building (two student beds per bedroom, 80 student beds in total). The third proposed residential building would be a live-in manager unit that would consist of a single two-bedroom, one-bathroom apartment. The proposed live-in unit would also include approximately 100 square feet of office space that is intended to provide a space for tenant meetings, social services, or counseling. All apartment units would also be equipped with a living area and kitchen. The proposed community building program would be approximately 840 square feet and include laundry, mail, restroom, electrical, and maintenance facilities. The mail room would be located outside, under the shaded amenity patio of the community building (see Table 1).

Table 1. Affordable Student Housing Complex Area Calculations

	Quantity	Area (Square Feet)	Beds
Residential Buildings (3)			
4-Bedroom, 8-Bed Unit	5	5,150	40
4-Bedroom, 8-Bed Unit	5	5,150	40
Live-In Unit	1	1,000	2
Office (Included in Live-In Unit)	N/A	N/A	N/A
Subtotal	*11*	*11,300*	*82*
Community Building (1)			
Laundry Room	1	300	N/A
Service Rooms	4	450	N/A
Restroom	2	100	N/A
Mail/Package (Outside)	1	270	N/A
Subtotal	*N/A*	*1,150*	*N/A*
Other			
Trash/Recycling Enclosure	1	850	N/A
Open Space	N/A	2,300	N/A
Landscaping/hardscaping	N/A	12,500	N/A
Subtotal	*N/A*	*13,650*	*N/A*
Combined Total	**N/A**	**26,100**	**82**

Note: N/A = not applicable.
All square foot amounts presented in the table are approximate amounts only and may not add to the site plan area totals described in this document due to rounding.

Other on-site proposed amenities include a courtyard, bike racks, and a community waste enclosure. The courtyard would be approximately 1,600 square feet and would be centrally located in the proposed complex (see Figure 4, Site Plan). Approximately 15 bike racks would be provided throughout the Project site. A community waste enclosure at the northeast corner of the Project site would allow residents a convenient place to dispose of waste and recyclables.

3.1.1 Operation

The Off-Campus Center - Calexico, including the Project site, is owned and operated by the CSU/SDSU. The CSU Board of Trustees, on behalf of SDSU, is the lead agency responsible for certifying the adequacy and completeness of this document and approval of the proposed Project. SDSU and the IVCCD have received joint funding under the State of California Higher Education Student Housing Grant Program to construct the proposed Project.

To support basic housing needs for students in the Imperial Valley, SDSU and IVCCD have executed a 30-year master lease agreement that details operation of the Project. This agreement dictates that 40 of the 82 proposed student beds would be reserved for IVCCD students who attend the Imperial Valley College in Imperial. Likewise, 40 of the proposed 82 beds, would be reserved for SDSU Off-Campus Center - Calexico students. A 2-bedroom unit would also provide living space for on-site management. SDSU would be responsible for operating, managing, and maintaining the proposed Project once operational.

Student beds made available under the proposed Project would be leased/rented to eligible low-income students. Eligible low-income students are defined as having 30% of 50% of the Annual Median Income for Imperial County. In the event, after a good faith outreach effort, there is not sufficient demand from students meeting the eligibility requirements within 90 days of the start of the fall semester, unassigned beds may be leased at market rates to SDSU and IVCCD students not meeting the low-income eligibility requirements. In addition to meeting the low-income criteria, eligible students would be required to be enrolled students and take a minimum average of 12 degree-applicable units per semester term, or the quarterly equivalent (with exceptions permitted), to facilitate timely degree completion.

3.1.2 Other Project Elements

Building and Site Design

The proposed buildings have been designed to reflect the character and massing of the existing Off-Campus Center - Calexico, as well as the surrounding neighborhood. Building design is centered around a courtyard-style housing complex and would consist of smooth stucco walls with downspouts and rafters, punctuated by composite terra cotta–colored roof tile accents and windows. Maximum building heights would range from 14 feet to 18 feet.

Landscaping, Other Site Improvements, and Lighting

The Project would include approximately 16,000 square feet of on-site landscaping and hardscape improvements (i.e., pedestrian walkways). All proposed landscaping would consist of drought-tolerant, indigenous plants. The landscape scheme would include shrubs, hedges, and a variety of trees. A total of 39 trees would be added to the Project site including five fan palms, eight mesquite trees, six evergreen elms, and 20 yucca trees.

All exterior on-site lighting would be hooded or shielded, directed downward, and would be compliant with applicable standards for lighting control and light pollution reduction (i.e., Title 24, American National Standards Institute/Illuminating Engineering Society).

The proposed complex would be secured via an iron security fence that would measure 6 feet in height and run approximately 64 linear feet, connecting to the proposed buildings. Access to the complex would only be available to residents and their guests via two pedestrian gates located at the northwestern corner and southern portion of the proposed complex. The gates would be equipped with security card access for residents.

Utilities and Public Services

New points of connection for domestic water, fire supply water, sewer, storm drainage and electrical connections from existing utility lines would be required to serve the proposed Project. Potable water service, as well as sewer collection services at the Project site, would be provided by the City. The Project would connect to an existing sanitary sewer maintenance access line located in Blair Avenue via new 6-inch mains. Connections for water (including domestic, fire, and irrigation) would be from an existing water main located in Blair Avenue. Distribution water pipes would be extended underground to serve each proposed building. A new water meter would be located in the proposed maintenance room in the community building. Adequate water treatment capacity and supply and sewer treatment capacity exists within the City's water and sewer system to accommodate the Project; therefore, no capacity upgrades to infrastructure would be necessary.

Stormwater drainage includes two stormwater catch basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated immediately east of the existing chain-link fence at the western boundary of the Project site. The proposed catch basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to stormwater discharge into the City's stormwater system via one new storm drain located in the southeast corner of the Project site.

Electrical services within the Project area are provided by Imperial Irrigation District, which provides electric power to over 158,000 customers in the Imperial Valley in addition to areas of Riverside and San Diego counties (IID 2024). New utility connections and infrastructure would be required to support electrical services on site. The Project would connect to on-site electrical power infrastructure via an existing 12kV, three phase, three wire, 60 Hertz overhead line routed along East 7th Street. No natural gas usage is proposed for the Project.

The Project would require a new point of connection for on-site telecommunications and would connect to the existing AT&T communications via the on-campus minimum point of entry.

Access, Circulation, and Parking

Regional access to the Project site is provided via SR-111 and SR-98 to the north. Local access is provided via Blair Avenue and East 7th Street. Parking to the Project site is available in the existing campus parking lot, immediately north of the Project site, which has sufficient capacity to serve the proposed Project. On-site circulation improvements would consist of additional paved pathway/pedestrian walkway features throughout the proposed complex and along the northern boundary of the Project site (see Figure 4). Emergency access would be provided directly adjacent to the Project site on East 7th Street and Blair Avenue.

3.1.3 Design Standards and Energy Efficiency

In May 2014, the CSU Board of Trustees broadened the application of sustainable practices to all areas of the university by adopting the first systemwide sustainability policy, which applies sustainable principles across all areas of university operations, including facility operations and utility management. In May 2024, the CSU Sustainability Policy was updated to expand on existing sustainability goals (CSU 2024). The CSU Sustainability Policy seeks to integrate sustainability into all facets of the CSU, including academics, facility operations, the built environment, and student life (CSU 2018). Relatedly, the state has also strengthened energy-efficiency requirements in the California Green Building Standards Code (Title 24 of the California Code of Regulations).

As a result, all CSU new construction, remodeling, renovation, and repair projects, including the proposed Project, would be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable state energy codes and regulations. Progress submittals during design are monitored for individual envelope, indoor lighting, and mechanical system performances. In compliance with these goals, the proposed Project would be equipped with solar ready design features that would facilitate and optimize the future installation of a solar photovoltaic (PV) system.

3.1.4 Off-Site Improvements

Off-site improvements would include the resurfacing of a portion of Blair Avenue adjacent to the eastern boundary of the Project site that would be disturbed as a result of trenching to make necessary connections to the existing water main and sanitary sewer maintenance access. Any area disturbed as a result of this connection within Blair Avenue would be resurfaced to existing conditions. All off-site improvements would occur within the Blair Avenue right-of-way.

3.1.5 Construction

Construction would be performed by qualified contractors. Plans and specifications would incorporate stipulations regarding standard CSU/SDSU requirements and acceptable construction practices, such as those set forth in the SDSU Stormwater Management Plan, CSU Seismic Policy, The CSU Office of the Chancellor Guidelines, and the CSU Sustainability Policy, regarding grading and demolition, safety measures, vehicle operation and maintenance, excavation stability, erosion control, drainage alteration, groundwater disposal, public safety, and dust control.

Construction Timeline

Construction of the proposed Project would take approximately 17 months to complete and is estimated to begin as early as January 2025 and be completed by May 2026, with occupancy planned for fall 2026. Construction activities would generally occur Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m., with the potential for weekend construction on Saturday between 9:00 a.m. and 5:00 p.m. No construction would occur on Sundays or holidays or at night.

Construction Activities

A construction mobilization or staging area would be located immediately northeast of the proposed Project site and would occupy approximately 8,000 square feet. The area would be located east of existing Campus Building 6, west of Blair Avenue, and south of the existing parking lot (see Figure 2 and Figure 3A). To accommodate use of this area, four trees would be removed.

Construction would include site preparation, grading and excavation, utility installation/trenching, building foundation pouring, building construction, and landscaping. Excavation depths are anticipated to be 3 feet below grade. The majority of waste (i.e., excavated gravel/soil) generated during Project construction would be balanced/used within the site. Approximately 2,600 cubic yards of soil would be removed from the site and exported to Republic Services Allied Imperial Landfill, approximately 12 miles north. The entire Project site, including construction mobilization area (approximately 34,000 square feet in total) would be disturbed as a result of Project construction. Two trees would be removed from the Project site to accommodate the proposed Project.

Table 2 displays the construction equipment anticipated to be used during construction.

Table 2. Anticipated Construction Equipment

Aerial Lifts	Pressure Washers
Air Compressors	Pumps
Cement and Mortar Mixers	Rollers
Concrete/Industrial Saws	Rough Terrain Forklifts

Table 2. Anticipated Construction Equipment

Dumpers/Tenders	Rubber-Tired Dozers
Excavators	Rubber-Tired Loaders
Forklifts	Scrapers
Generator Sets	Signal Boards
Graders	Skid Steer Loaders
Off-Highway Tractors	Surfacing Equipment
Off-Highway Trucks	Sweepers/Scrubbers
Other Construction Equipment	Tractors/Loaders/Backhoes
Other General Industrial Equipment	Trenchers
Other Material Handling Equipment	Welders
Plate Compactors	

Source: Dorsey and Nielson Construction Inc, pers. comm., 2024

Construction Waste

The Project would generate construction debris during on-site clearing activities. In accordance with Section 5.408 of the California Green Building Standards Code, the Project would implement a construction waste management plan for recycling and/or salvaging for reuse of at least 65% of nonhazardous construction/demolition debris. Additionally, the Project would be required to meet Leadership in Energy and Environmental Design v4 requirements for waste reduction during construction. Solid waste generated during construction would be hauled off site to the Republic Services Allied Imperial Landfill at 104 East Robinson Road in Imperial, California.

4 Regulatory Framework

The California Register of Historic Resources (Public Resources Code section 5020 et seq.)

Under CEQA, the term "historical resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code section 5020.1(j)). In 1992, the California legislature established the California Register of Historic Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (California Public Resources Code section 5024.1(a)). A resource is eligible for listing in the CRHR if the State Historical Resources Commission determines that it is a significant resource and that it meets any of the following National Register of Historic Places (NRHP) criteria:

- Associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- Associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Has yielded, or may be likely to yield, information important in prehistory or history.

(California Public Resources Code section 5024.1(c).) Resources less than 50 years old are not considered for listing in the CRHR but may be considered if it can be demonstrated that sufficient time has passed to understand the historical importance of the resource (see 14 CCR, section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing on the NRHP are automatically listed on the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys. The State Historic Preservation Officer maintains the CRHR.

Native American Historic Cultural Sites (California Public Resources Code section 5097 et seq.)

State law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the NAHC (Native American Heritage Commission) to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to 1 year in jail to deface or destroy an Indian historic or cultural site that is listed or may be eligible for listing in the CRHR.

California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act (California Repatriation Act), enacted in 2001, required all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The California Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate tribes.

California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological and historic resources:

1. California Public Resources Code section 21083.2(g): Defines "unique archaeological resource."
2. California Public Resources Code section 21084.1 and CEQA Guidelines section 15064.5(a): Define historical resources. In addition, CEQA Guidelines section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource;" it also defines the circumstances when a project would materially impair the significance of a historical resource.
3. California Public Resources Code section 5097.98 and CEQA Guidelines section 15064.5(e): Set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
4. California Public Resources Code sections 21083.2(b)-(c) and CEQA Guidelines section 15126.4: Provide information regarding the mitigation framework for archaeological and historic resources, including options of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the

archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (California Public Resources Code section 21084.1; CEQA Guidelines section 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of California Public Resources Code section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (California Public Resources Code section 21084.1; CEQA Guidelines section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (California Public Resources Code section 21084.1; CEQA Guidelines section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines section 15064.5(b)(1); California Public Resources Code section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

See Section 7.1, below for a discussion of the CEQA guidelines for determining significance and mitigating impacts to unique archaeological resources.

Assembly Bill 52

California AB 52, which took effect July 1, 2015, establishes a consultation process between California Native American Tribes and lead agencies, to be conducted as part of the CEQA process, to address tribal concerns regarding project impacts and mitigation to "tribal cultural resources" (TCR). Public Resources Code section 21074(a) defines TCRs and states that a project that has the potential to cause a substantial adverse change to a TCR is a project that may have an adverse effect on the environment. A TCR is defined as a site, feature, place, cultural landscape, sacred place, and object with cultural value to a California Native American tribe that is either:

1. listed or eligible for listing in the CRHR or a local register of historical resources, or
2. determined by a lead agency to be a TCR.

Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98.

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (California Health and Safety Code Section 7050.5[b]). If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (California Health and Safety Code Section 7050.5[c]). In accordance with California Public Resources Code Section 5097.98(a), the NAHC will notify the Most Likely Descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. Within 48 hours of being granted access to the site, the MLD may recommend means of treatment or disposition, with appropriate dignity, of the human remains and associated grave goods.

5 Analysis Methodology

The analysis considers the potential environmental impacts of the proposed Project on historic, cultural and tribal cultural resources relative to existing conditions. The Project site is an undeveloped site that does not contain any buildings or structures and has previously been graded. Establishment of the Project site’s existing cultural resource conditions has been prepared using information contained in the previously certified 2003 SDSU Imperial Valley Campus Master Plan Project EIR (SDSU 2003), with the information updated, as applicable, with recent California Historical Resources Information System (CHRIS) records search results, NAHC sacred lands file (SLF) search results, pedestrian survey results, archival research, and information provided by culturally affiliated Tribal groups.

6 Cultural Resources Inventory

6.1 Methods and Results

6.1.1 Records Search

Dudek conducted a CHRIS records search for the Project area and a 1-mile radius buffer around the Project area at the South Coastal Information Center (SCIC) on June 26, 2024. The SCIC records search revealed that 32 previous cultural resources studies have been completed within 1-mile of the Project area; these 32 previous studies are listed in Table 3, Previous Cultural Studies Within 1-Mile of the Project Area, below. None of the previously recorded cultural studies intersect the Project area; however, one previously recorded cultural resource study (IM-0441) is located adjacent to the Project area. These studies include 23 archaeological evaluations, eight archaeological field studies, and one archaeological and historical evaluation. Based on the previous studies, the Project area has not been previously studied nor have any cultural resources been identified within the Project area boundaries as part of the studies of the proximate areas. The results of the records search are included in Confidential Attachment B.

Table 3. Previous Cultural Studies Within 1-Mile of the Project Area

Report Number	Year	Title	Author	Proximity
IM-00002	1974	ENVIRONMENTAL IMPACT REPORT - PROPOSED LAGO DEL SOL RECREATION LAKE, CITY OF CALEXICO, IMPERIAL COUNTY	VON WERLHOF, JAY	Outside
IM-00238	1981	ARCHAEOLOGICAL EXAMINATION OF THE BRAVO PROPERTIES DEVELOPMENT PROJECT	IMPERIAL VALLEY COLLEGE MUSEUM	Outside
IM-00266	1982	DRAFT ENVIRONMENTAL IMPACT REPORT AIRPORT LAND USE PLAN	IMPERIAL COUNTY PLANNING DEPARTMENT	Outside
IM-00268	1982	DRAFT ENVIRONMENTAL IMPACT REPORT - CALEXICO CENTRAL BUSINESS DISTRICT REDEVELOPMENT PROJECT	URBAN FUTURES, INC.	Outside
IM-00441	1990	ENVIRONMENTAL ASSESSMENT/INITIAL STUDY FOR THE PLACEMENT OF FIBER OPTIC FACILITIES BETWEEN SALTON MICROWAVE STATION AND CALEXICO CALIFORNIA	ENSR CONSULTING AND ENGINEERING	Outside
IM-00506	1994	CULTURAL RESOURCE OVERVIEW, ALL-AMERICAN CANAL LINING PROJECT, FINAL REPORT	BUREAU OF RECLAMATION	Outside
IM-00549	1997	ARCAHEOLOGICAL EXAMINATIONS OF APN #58-792-03 IN CALEXICO, CALFIORNIA	IMPERIAL VALLEY COUNTY DESERT MUSEUM	Outside
IM-00600	1997	CULTURAL RESOURCES ASSESSMENT OF A PROPSOED APARTMENT COMPLEX IN CALEXICO, IMPERIAL COUNTY, CALIFORNIA	PEAK & ASSOCIATES, INC.	Outside
IM-00604	1997	NEGATIVE ARCHAEOLOGICAL SURVEY REPORT - CULTURAL RESOURCES REPORT ON THE CALEXICO WATER TREATMENT PLANT SYSTEMS IMPROVEMENT, STAGES 1, 2, AND 3	IMPERIAL VALLEY COLLEGE DESERT MUSEUM	Outside
IM-00616	1984	ARCHAEOLOGICAL EXAMINATIONS FOR CBM RANCHO FRONTERA PROJECT, CALEXICO	IMPERIAL VALLEY COLLEGE	Outside
IM-00652	1999	ARCHAEOLOGICAL EXAMINATIONS OF CITY OF CALEXICO WATER TREATMENT DISTRIBUTION MAIN LINE	IMPERIAL VALLEY COLLEGE DESERT MUSEUM	Outside
IM-00662	1992	EXPANDED INITIAL STUDY EL DORADO SUBDIVISION	TEMPLETON PLANNING GROUP, INC	Outside

Table 3. Previous Cultural Studies Within 1-Mile of the Project Area

Report Number	Year	Title	Author	Proximity
IM-00829	2001	THE ALL-AMERICAN CANAL: AN HISTORIC PROPERTIES INVENTORY AND EVALUATION	ASM AFFILIATES	Outside
IM-00986	2005	ENVIRONMENTAL ASSESSMENT FOR GAMMA IMAGING INSPECTION SYSTEM, PORT OF ENTRY (WEST) CALEXICO, IMPERIAL COUNTY, CALIFORNIA	DEPARTMENT OF HOMELAND SECURITY	Outside
IM-01060	1990	60 UNIT SENIOR CITIZENS COMPLES ON 3.0 ACRES IN CALEXICO, CALIFORNIA	IMPERIAL VALLEY COLLEGE MUSEUM	Outside
IM-01435	2011	CONSULTATION FOR PROPOSED COLLOCATION CALEXICO, 352 FIRST ST, CALEXICO, CA	TETRA TECH	Outside
IM-01459	2011	CITY OF CALEXICO, REPLACE NEW RIVER SEWER CROSSING, FEMA-1911-DR-CA-PW#71	U.S. DEPARTMENT OF HOMELAND SECURITY	Outside
IM-01475	2011	FINAL ENVIRONMENTAL IMPACT STATEMENT FOR EXPANSION AND RECONFIGURATION OF THE LAND PORT OF ENTRY IN DOWNTOWN CALEXICO, CALIFORNIA	GSA	Outside
IM-01482	2011	SECTION 106 CONSULTATION FOR U.S. CUSTOMS AND BORDER PROTECTION IMPLEMENTATION OF TIER 3 OUTBOUND ELEMENTS AT LAND PORTS OF ENTRY ALONG THE U.S.-MEXICO BORDER	DEPARTMENT OF HOMELAND SECURITY	Outside
IM-01501	2012	SECTION 106 CONSULTATION FOR INSTALLATION OF NEW TECHNOLOGIES AND SECURITY ELEMENTS AT CALEXICO EAST, ANDRADE AND OTAY MESA LAND PORTS OF ENTRY, IMPERIAL AND SAN DIEGO COUNTIES	U.S. CUSTOMS AND BORDER PROTECTION	Outside
IM-01504	2012	JEFFERSON ELEMENTARY SCHOOL, CALEXICO, FEMA-DR-1911-CA	FEMA	Outside
IM-01507	2009	EVALUATION OF BUILDINGS AND STRUCTURES AT THE LAND PORTS OF ENTRY IN CALIFORNIA	MICHAEL BAKER JR., INC.	Outside
IM-01523	2011	CALEXICO GRAN PLAZA FINAL ENVIRONMENTAL IMPACT REPORT	ESA	Outside
IM-01581	2014	CULTURAL RESOURCES RECORDS SEARCH AND SITE VISIT RESULTS FOR T-MOBILE WEST, LLC CANDIDATE SD06348A (SD348 CALEXICO WATER TANK) 352 EAST 1ST STREET,	ENVIRONMENTAL ASSESSMENT SPECIALISTS, INC.	Outside

Table 3. Previous Cultural Studies Within 1-Mile of the Project Area

Report Number	Year	Title	Author	Proximity
		CALEXICO, IMPERIAL COUNTY, CALIFORNIA		
IM-01584	2015	FIRST SUPPLEMENTAL HISTORIC PROPERTY SURVEY REPORT FOR THE STATE ROUTE 98 WIDENING, PHASE 1-B, CITY OF CALEXICO, IMPERIAL COUNTY	CALTRANS	Outside
IM-01682	2017	SECOND SUPPLEMENTAL HISTORIC PROPERTY SURVEY REPORT FOR THE STATE ROUTE 98 WIDENING PROJECT PHASE 1-C IN CALEXICO, IMPERIAL COUNTY	CALTRANS	Outside
IM-01712	2018	CULTURAL RESOURCES STUDY FOR THE NEW RIVER IMPROVEMENT PROJECT STRATEGIC PLAN, CITY OF CALEVICO, IMPERIAL COUNTY, CALIFORNIA	MICHAEL BAKER INTERNATIONAL	Outside
IM-01724	2019	CLASS III CULTURAL RESOURCES INVENTORIES IN SUPPORT OF THE FY18 FENCE REPLACEMENT PROJECTS IN THE SAN DIEGO, EL CENTRO, AND YUMA SECTORS, U.S. CUSTOMS AND BORDER PROTECTION, SAN DIEGO AND IMPERIAL COUNTIES, CALIFORNIA	ENVIROSYSTEMS MANAGEMENT, INC.	Outside
IM-01730	2017	PROPOSED GEOTECHNICAL SURVEY ALONG 2.2 MILES OF PRIMARY PEDESTRIAN BORDER FENCE IN CALEXICO, IMPERIAL COUNTY, CALIFORNIA	U.S. CUSTOMS AND BORDER PROTECTION	Outside
IM-01751	2018	CULTURAL RESOURCES RECORDS SEARCH AND SITE VISIT RESULTS FOR T-MOBILE WEST, LLC CANDIDATE SD07255A (CALEXICO HIGH SCHOOL), 1030 ENCINAS AVENUE, CALEXICO, IMPERIAL COUNTY, CALIFORNIA	ENVIRONMENTAL ASSESSMENT SPECIALISTS, INC.	Outside
IM-01752	2018	CULTURAL RESOURCE RECORDS SEARCH AND SITE VISIT RESULTS FOR VERIZON WIRELESS CANDIDATE 'ANDRADE', 843 EAST BELCHER STREET, CALEXICO, IMPERIAL COUNTY, CALIFORNIA	HELIX ENVIRONMENTAL PLANNING	Outside
SD-17890	2019	CLASS III CULTURAL RESOURCES INVENTORIES IN SUPPORT OF THE FY18 FENCE REPLACEMENT PROJECTS IN THE SAN DIEGO, EL CENTRO, AND YUMA SECTORS, U.S. CUSTOMS AND	ENVIROSYSTEMS MANAGEMENT, INC.	Outside

Table 3. Previous Cultural Studies Within 1-Mile of the Project Area

Report Number	Year	Title	Author	Proximity
		BORDER PROTECTION, SAN DIEGO AND IMPERIAL COUNTIES, CALIFORNIA		

Previously Recorded Resources

The SCIC records search revealed that no cultural resources have been recorded within the proposed Project area. However, the SCIC records search results identify 13 cultural resources within 1-mile of the Project area (Table 4, Previously Recorded Cultural Resources Within 1-Mile of the Project Area). All of the resources identified in the 1-mile search radius are historic. The results of the records search and all Department of Parks and Recreation (DPR) forms are included in Confidential Attachment B.

Table 4. Previously Recorded Cultural Resources Within 1-Mile of the Project Area

Primary Number	Trinomial	Age	Description	Proximity
P-13-003499	CA-IMP-003499	Historic	Cross U.S. military telegraph	Outside
P-13-007130	CA-IMP-007130	Historic	Canal/aqueduct	Outside
P-13-008015		Historic	California Historical Landmark for Camp Salvation	Outside
P-13-008016		Historic	Calexico Public Library	Outside
P-13-008017		Historic	Calexico Union High School Auditorium/Music Room/Library	Outside
P-13-008018		Historic	Calexico Union High School Arts and Science Building	Outside
P-13-008019		Historic	U.S. Border Station	Outside
P-13-008020		Historic	Chinese American Community	Outside
P-13-008682	CA-IMP-008166	Historic	Southern Pacific Railroad	Outside
P-13-011425		Historic	Commercial building	Outside
P-13-012367		Historic	Multiple family property	Outside
P-13-014744		Historic	Government building	Outside
P-13-014745	CA-IMP-003499	Historic	Bridge	Outside

6.1.2 Archival Research

Dudek consulted historic maps and aerial photographs to understand the development history of the Project site. Historic aerial photographs of the Project site were available from 1953 to 2020 (see NETR 2024). The 1953 historic photograph shows the Project site as vacant land that had been graded. By 1953, it appears 7th Street had been developed to the south and Blair Avenue had been developed east of the Project. Additionally, the 1953 aerial imagery reveals residential properties and institutional buildings (currently SDSU Imperial Valley Off- Campus Center, Calexico) were developed within the surrounding area. While there are no substantial changes to the Project site in the 1959 aerial photograph, there was development of one building west of the site. The 1985 photograph shows that an additional building was developed to the northwest and a parking lot was developed immediately north of the Project site. The 1996 aerial imagery reveals an additional building was developed to the northwest and the parking lot was expanded. By 2002, the aerial imagery reveals three structures were developed immediately west of the Project site. The 2005 aerial imagery conditions look similar to present day conditions. Review of the historic aerial images demonstrates that areas surrounding the Project site have undergone substantial earth movement from the construction of the current SDSU Off-Campus Center – Calexico and residential development and the site has not been developed. There are no historic-age structures present on the Project site.

Historic topographic maps were also reviewed (earliest available is 1957). The topographic map from 1957 reveals an institutional development (former educational building) is located adjacent to the Project site (see USGS 1957).

6.1.3 Review of Geomorphological Context

According to the U.S. Department of Agriculture Natural Resources Conservation Services (USDA 2024), one soil type is mapped in the Project area, including Imperial-Glenbar silty clay loams. The Imperial-Glenbar soil series generally occur in settings with basin floors at elevations ranging from -230 to 200 feet and are composed of clayey alluvium derived from mixed and/or clayey lacustrine deposits (USDA 2024). Reoccurring alluvial action and flooding serve to support the development and presence of cultural deposits in the area. Since there are alluvial soils present throughout the Project area, there would be low to moderate potential for subsurface cultural resources, however, historic aerial photographs illustrate that the Project area has been highly disturbed.

6.1.4 NAHC and Tribal Correspondence

Native American Heritage Commission Sacred Lands File Search

Dudek requested a NAHC search of the SLF on June 10, 2024, for the Project area. The SLF consists of a database of known Native American resources. These resources may not be included in the SCIC database. The NAHC responded via email on June 28, 2024, with results indicating the potential presence of relevant resources within the geographic area. The NAHC provided a list of Native American Tribes and individuals/organizations with traditional geographic associations that might have knowledge of cultural resources in this area. Dudek sent outreach letters to all Native American group representatives included on the NAHC contact list on July 19, 2024. These letters requested additional information relating to tribal cultural resources or other Native American resources that may be impacted by construction or operation of the Project. To date, no responses have been received. The NAHC correspondence is included in Attachment C.

Assembly Bill (AB) 52 Consultation

The Project is subject to compliance with AB 52 (California Public Resources Code [PRC], Section 21074), which requires consideration of impacts to tribal cultural resources as part of the CEQA process, and that the lead agency notify California Native American Tribal representatives (that have requested notification) who are traditionally or culturally affiliated with the geographic area of the proposed Project. Although no tribes previously requested such notice, The CSU Board of Trustees, as lead agency, sent letters to all tribes included on the previously referenced NAHC list on July 26, 2024. The letters contained the following information: a project description and location description; a request for input relative to tribal cultural resources in the area; an outline of timing relative to the AB 52 process; an opportunity for consultation; and contact information for the appropriate tribal representative. A copy of the AB 52 letter provided to the tribes is included in Attachment D.

SDSU received responses from the Campo Band of Mission Indians and the Viejas Band of Kumeyaay Indians. Viejas Band of Kumeyaay Indians responded, stating that should a Kumeyaay tribe in closer proximity to the Project site request to provide Kumeyaay Cultural Monitoring Services, Viejas Band of Kumeyaay Indians would defer to them. Campo Band of Mission Indians responded to the AB 52 notification and requested consultation. Because Campo Band of Mission Indians are in closer proximity to the Project site, Viejas Band of Kumeyaay Indians deferred to Campo Band of Mission Indians.

A virtual meeting between representatives of CSU/SDSU and the Campo Band of Mission Indians was held on August 26, 2024. During the AB 52 consultation meeting, Campo Band of Mission Indians did not identify any tribal cultural resources within the Project area. However, Campo Band of Mission Indians requested that tribal monitoring be required to mitigate any potential significant impacts related to tribal cultural resources. Below, mitigation measure TCR-1 is recommended to reduce potential impacts to tribal cultural resources to less than significant. Campo Band of Mission Indians and Viejas Band of Kumeyaay Indians reviewed and approved of mitigation measure TCR-1.

Consultation between SDSU and Campo Band of Mission Indians and Viejas Band of Kumeyaay Indians pursuant to AB 52 was considered closed on December 17, 2024, and December 18, 2024, respectively.

6.1.5 Intensive Pedestrian Survey

Dudek archaeologist Javier Hernandez conducted an intensive-level pedestrian survey of the Project area on June 27, 2024. Red Tail Environmental Inc., Native American monitor Keadon Graham participated in the pedestrian survey. All survey work was conducted employing standard archaeological procedures and techniques consistent with the Secretary of the Interior Standards. The ground surface was examined for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of the current or former presence of structures or buildings (e.g., standing exterior walls, post holes, foundations), and historic artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials.

The Project area is flat and has been previously graded and disturbed from the development of the adjacent campus structures, parking lot, and roadways. Ground visibility was poor (10%) throughout the entire Project area due to landscaped grass and trees (Exhibit 1). Evidence of disturbance can be observed throughout the entire Project area evidenced by planted trees and buried irritation pipes (Exhibit 2). No artifacts or features were identified during the survey.

6.1.6 2003 Campus Master Plan EIR

The previously certified 2003 Campus Master Plan EIR evaluated possible impacts to archaeological and historical resources pursuant to §15064.5 of the CEQA Guidelines in Section 3.5, Cultural Resources, of the 2003 Campus Master Plan EIR. The EIR stated that “based on the records and literature research and site survey,” there would be no significant impacts to cultural resources as a result of development of the proposed SDSU Off-Campus Center Master Plan - Calexico. The EIR included a mitigation measure that outlines response protocol and requirements in the event that potential resources are discovered during excavation and/or construction associated with buildout of the Off-Campus Center – Calexico (See MMP page 11-2 through 11-3 of the 2003 Campus Master Plan EIR reprinted below). With implementation of the mitigation measure, impacts were determined to be less than significant.

The following mitigation measure from the 2003 Campus Master Plan EIR would still apply to this Project.

> It is recommended that if an initial finding within the Project area where no known resources have been recorded is made, appropriate contact with the local Native American group per the Native American Heritage Commission will ensue, in accordance with the SDSU construction contract conditions, which state that: "*If the Contractor discovers any artifacts during excavation and/or construction, the Contractor shall stop all affected work and notify the Trustees, who -will call in a qualified archaeologist designated by the California Archaeological Inventory to assess the discovery and suggest further mitigation, as necessary*. If the Contractor discovers human remains, the Contractor shall notify the Trustees, who will be responsible for contacting the county corner and a qualified archaeologist. If the remains are determined to be Native American, the Trustees shall contact the appropriate tribal representatives to oversee removal of the remains." If any buried cultural deposits are discovered during construction, development should be suspended, and the discovery protected and evaluated for its potential eligibility for listing on the National Register of Historic Places or the California Register of Historical Resources.

Exhibit 1: Overview of landscaped grass and trees, facing north.

Exhibit 2: Overview of disturbances within the Project area, facing southeast.

6.1.7 Summary of Research

The cultural resources inventory of the Project site presented in this report was completed consistent with the requirements of CEQA. The inventory indicates that there is low probability of identifying intact subsurface cultural resource deposits during Project construction. The SCIC records search did not identify any cultural resources within the Project area. Additionally, an intensive pedestrian survey did not identify any cultural resources within the Project area. The review of aerial photographs reveals that the Project area has been previously graded due to construction of nearby campus structures, parking lot, and the adjacent roadways. As such, there is a low probability that the Project would encounter intact subsurface archaeological deposits since any that may have been present would have been disturbed by previous grading and would no longer remain intact. These findings are similar to the finding of the 2003 Campus Master Plan EIR which determined that there would be no significant impacts to cultural resources as a result of development of the proposed SDSU Off-Campus Center Master Plan - Calexico.

In compliance with AB 52, the Board of Trustees is responsible for conducting government to government consultation with pertinent tribal entities relative to tribal cultural resources under AB 52. Consultation may reveal the presence of tribal cultural resources within the Project area and mitigation may be required. This report may be updated to include the results of Native American consultation, if required.

7 Impact Analysis and Conclusions for Cultural Resources

7.1 Thresholds of Significance

The significance criteria used to evaluate the Project impacts to cultural resources pursuant to CEQA are based on Appendix G of the CEQA Guidelines (Cal. Code Regs., Title 14, Chptr. 3, sections 15000-15387). Based on Appendix G, a significant impact under CEQA would occur if the Project would:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?
c) Disturb any human remains, including those interred outside of dedicated cemeteries?

7.2 Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Impacts to historical resources pursuant to §15064.5 were evaluated in the Initial Study (IS) prepared for the 2003 Campus Master Plan EIR, which concluded that no significant impacts to historical resources would occur.

Dudek's current cultural resources inventory of the Project site did not identify any historical resources within the Project area. A SCIC records search did not identify any historical resources present within the Project area. Additionally, an intensive pedestrian survey did not identify any historical resources within the Project area. There are no historic-era (greater than 45 years old) buildings or structures present within the Project area. Therefore, the Project would not result in an adverse change in the significance of a historical resource pursuant to §15064.5 and potential impacts to historic resources as a result of Project implementation would have **no impact.**

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Impacts to archaeological resources pursuant to §15064.5 were evaluated in Section 3.5 Cultural Resources of the 2003 Campus Master Plan EIR. The EIR concluded that there would be no significant impacts to cultural resources as a result of development of the proposed SDSU Off-Campus Center Master Plan - Calexico. The EIR included a mitigation measure that outlines response protocol and requirements in the event that potential resources are discovered during excavation and/or construction associated with buildout of the SDSU Off-Campus Center - Calexico (See MMP page 11-2 through 11-3 of the 2003 Campus Master Plan EIR reprinted above). With implementation of the mitigation measure, impacts were determined to be less than significant. All applicable mitigation measures from the 2003 Campus Master Plan EIR will be included in the Mitigation Monitoring and Reporting Program (MMRP) for this Project.

Dudek's current cultural resources inventory of the Project site indicates that there is low sensitivity, or low likelihood, for identifying intact subsurface archaeological resource deposits during Project construction. The records search did not identify any archaeological resources within the Project area. Additionally, an intensive pedestrian survey did not identify any archaeological resources pursuant to §15064.5 within the Project area. The review of aerial photographs reveals that a majority of the Project area had been previously graded during construction of the adjacent campus structures, parking lot, and roadways. Any intact archaeological subsurface deposits that were present would have been disturbed by previous grading and would no longer remain intact. These findings are similar to the finding of the 2003 Campus Master Plan EIR which determined that there would be no significant impacts to cultural resources as a result of development of the proposed SDSU Off-Campus Center Master Plan - Calexico.

However, because the Project includes ground disturbance associated with construction of the new building, the low potential to encounter and/or destroy previously undiscovered archaeological materials or features during earth-moving activities does exist. Any substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 would be a potentially significant impact. Continued/ongoing implementation of the Cultural Resources mitigation measure included in the 2003 EIR MMP and previously adopted by the Board of Trustees, would reduce potentially significant impacts to a **less-than-significant** level by requiring construction to halt in the event of an archaeological discovery during construction activities, and evaluation of the find by a qualified archaeologist.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

The IS prepared for the 2003 EIR determined that no impacts to human remains would occur within the campus boundaries. However, the mitigation measure included in the 2003 EIR notes that SDSU construction contracts address the discovery of human remains and require notification of the County Coroner and a qualified archaeologist in the event of such discovery, and if the remains are determined to be Native American, require contact of the appropriate tribal representatives to oversee removal of the remains (see Section 6.1.6 for the 2003 EIR mitigation measure or MMRP pages 11-2 through 11-3 of the 2003 Campus Master Plan EIR).

The Project area is not used as a cemetery and is not otherwise known to contain human remains. The pedestrian field survey did not identify any human remains or find any indications that human remains would be expected to be found within the Project area. However, although unlikely, there is the possibility of human remains being discovered during Project-related ground disturbing activities. If remains are discovered during Project construction activities, SDSU and its construction contractor, consistent with the previously adopted mitigation measure, would comply with procedures set forth in the California Public Resources Code (Section 5097.98) and State Health and Safety Code (Section 7050.5).

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code Section 5097.98, the NAHC must immediately notify the person or persons it believes to be the most likely descendant (MLD) from the deceased Native American. The MLD shall complete inspection within 48 hours of being granted access to the site and make recommendations for the treatment and disposition, in consultation with the property owner, of the human remains.

Compliance with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097, in combination with the previously adopted mitigation measure would ensure appropriate treatment of any human remains if discovered during construction. Impacts would be **less than significant.**

7.3 Impact Summary

Dudek's assessment found no evidence of cultural resources within the Project area and determined that no historical resources, as defined under CEQA, would be impacted by the Project. This includes no direct, indirect, or cumulative impacts. In consideration of the negative results of the intensive-level survey and archival research, Dudek recommends no further archaeological efforts including cultural construction monitoring, to be necessary in support of implementation of the Project. The Project would implement the cultural resources mitigation measure from the 2003 Campus Master Plan EIR, provided above under Section 6.16, to ensure in the event of an archaeological discovery during construction activities, construction would be stopped and the find evaluated by a qualified archaeologist. This would ensure any potential impact would be reduced to a less-than-significant level.

8 Impact Analysis and Conclusions for Tribal Cultural Resources

8.1 Thresholds of Significance

The significance criteria used to evaluate the Project impacts to tribal cultural resources are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact to tribal cultural resources under CEQA would occur if the Project would:

1. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
   a. Listed or eligible for listing in the California Register of Historical Resources, or in the local register of historical resources as defined in Public Resources Code section 5020.1(k); or
   b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

8.2 Impact Analysis

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

and

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

The IS prepared for the 2003 EIR did not analyze impacts to tribal cultural resources as AB 52 was not effective at the time and did not go into effect until July 1, 2015.

Dudek's cultural resources inventory of the Project site included a records search, archival research, a search of the NAHC SLF, and a pedestrian survey. The SCIC records search and pedestrian survey did not identify any cultural resources within the Project area.

A search of the NAHC SLF was conducted and the NAHC responded with results indicating the potential presence of relevant resources within the geographic area. The NAHC additionally provided a list of Native American Tribes and individuals/organizations with traditional geographic associations that might have knowledge of cultural resources in this area. Dudek sent outreach letters to all Native American group representatives included on the NAHC contact list on July 19, 2024. These letters are requesting additional information relating to tribal cultural resources or other Native American resources that may be impacted by construction or operation of the Project. To date, no responses have been received.

In compliance with AB 52, the lead agency is responsible for conducting government to government consultation with pertinent tribal entities. In accordance with the law's requirements, SDSU mailed AB 52 notification letters to all NAHC recommended tribes on July 26, 2024. SDSU received responses from the Campo Band of Mission Indians and the Viejas Band of Kumeyaay Indians. The Viejas Band of Kumeyaay Indians responded via email on August 1, 2024 and stated that should a Kumeyaay tribe in closer proximity to the Project site request to provide Kumeyaay Cultural Monitoring Services, Viejas Band of Kumeyaay Indians would defer to them. Campo Band of Mission Indians responded to the AB 52 notification and requested consultation. Because Campo Band of Mission Indians are in closer proximity to the Project site, Viejas Band of Kumeyaay Indians deferred to Campo Band of Mission Indians.

A virtual meeting between representatives of the CSU/SDSU and the Campo Band of Mission Indians was held on August 26, 2024. During the AB 52 consultation meeting, Campo Band of Mission Indians did not identify any tribal cultural resources within the Project area. Although consultations with the Campo Band of Mission Indians did not uncover the presence of tribal cultural resources in the Project area, the potential exists that such resources may be uncovered during Project construction.

To mitigate any potential significant impacts related to tribal cultural resources, the following mitigation measure TCR-1 is recommended to reduce potential impacts to tribal cultural resources to **less than significant.** Campo Band of Mission Indians and Viejas Band of Kumeyaay Indians reviewed and approved of mitigation measure TCR-1.

Mitigation Measure

Mitigation measure TCR-1, presented below, would reduce potentially significant impacts to tribal cultural resources if identified as being present on the Project site to a **less-than-significant level** by requiring cultural resources monitoring during construction.

TCR-1:

Although the potential for discovery of tribal cultural resources on the Project site is considered low, in response to requests made during AB 52 consultation meetings, the California State University/San Diego State University (CSU/SDSU) shall authorize tribal monitoring during Project construction grading activities and shall provide appropriate remuneration for such monitoring consistent with standard practices. The CSU/SDSU retains the authority to select the monitor, which shall be provided by the Campo Band of Mission Indians. Such monitoring by a single tribal monitor shall be authorized on a daily basis during Project construction grading activities; however, in the event a monitor is not available on any given day, Project construction activities may continue uninterrupted.

In the event tribal cultural resources are inadvertently encountered during construction activities, work in the immediate area shall stop and a qualified archaeologist meeting the Secretary of the Interior’s Professional Standards shall assess the discovery in consultation with the Campo Band of Mission Indians to evaluate the resource and develop a plan for treatment and disposition of the resource. If avoidance is not feasible, additional work such as data recovery may be warranted. Following evaluation by a qualified archaeologist, in consultation with the Campo Band of Mission Indians and CSU/SDSU, construction shall be permitted to resume.

If the CSU/SDSU, or its designee, discovers, human remains during construction of the Project, the CSU/SDSU, or its designee, shall contact the County Corner and a qualified archaeologist in compliance with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097. If the remains are determined to be Native American, the CSU/SDSU shall contact the appropriate tribal representatives to oversee removal of the remains.

The CSU/SDSU shall relinquish ownership of all tribal cultural resources unearthed during the tribal monitoring conducted during ground disturbing activities to the appropriate representative of the Campo Band of Mission Indians, as determined through the appropriate process, for respectful and dignified treatment and disposition, including reburial at a protected location on-site. All cultural materials that are associated with burial and/or funerary goods shall be repatriated to the Most Likely Descendant as determined by the Native American Heritage Commission, per California Public Resources Code Section 5097.98.

9 References

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USDA (U.S. Department of Agriculture). 2024. Web Soil Survey. USDA, Natural Resources Conservation Service, Soil Survey Staff. Accessed June 21, 2024. http://websoilsurvey.nrcs.usda.gov.

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Attachment A
Figures

SOURCE: ESRI

DUDEK

0 4 8 Miles

FIGURE 1

Regional Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

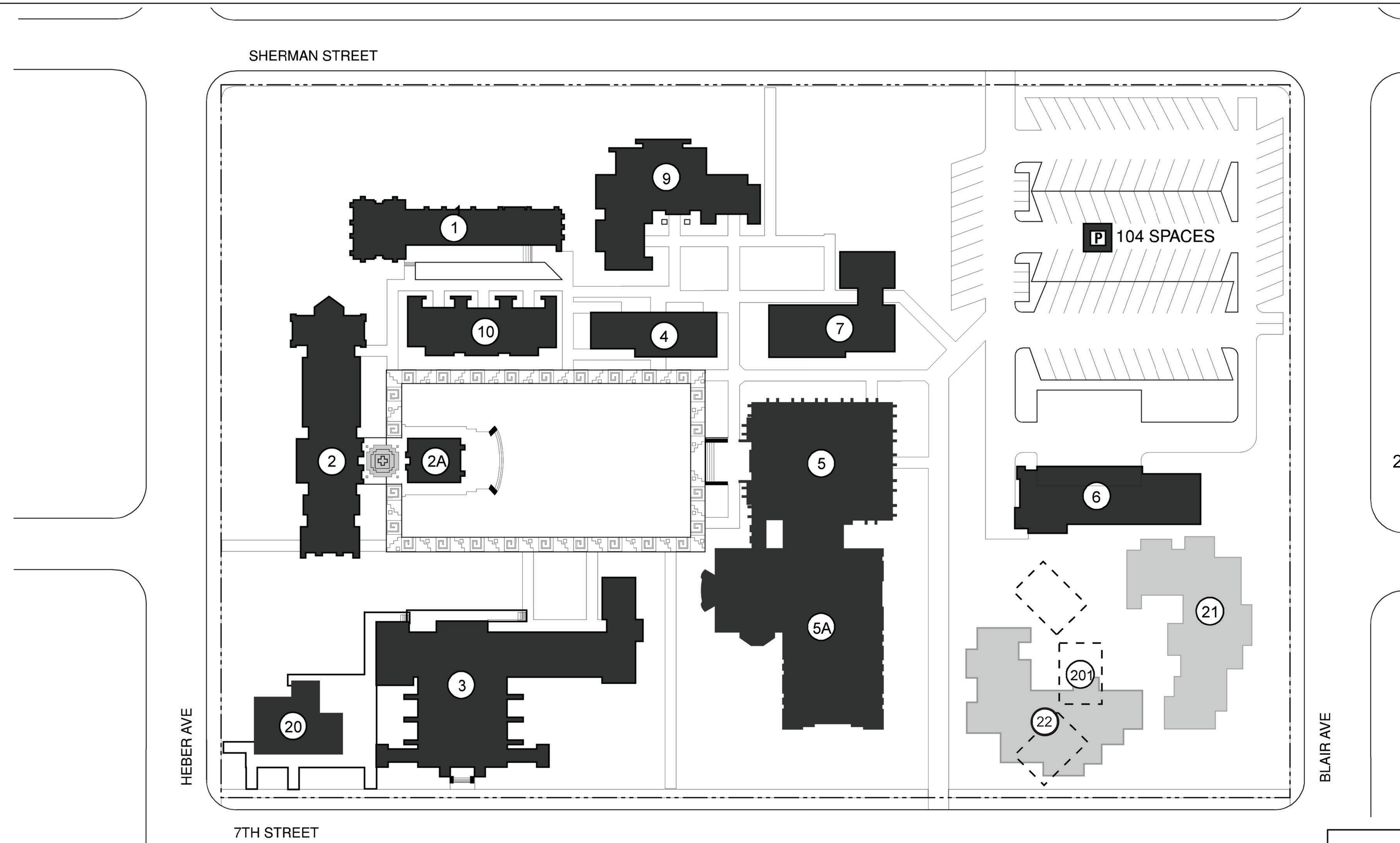
SOURCE: AERIAL-ESRI MAPPING SERVICE 2023; DEVELOPMENT-SDSU 2024

DUDEK

0 100 200 Feet

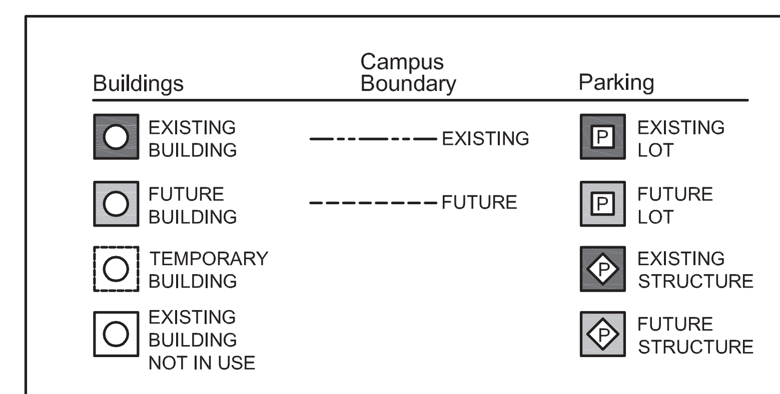
FIGURE 2
Vicinity Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project



SDSU-IVC BUILDING LEGEND

1. North Classroom
2. Administration
2A. Art Gallery
3. Auditorium
4. Classrooms
5. Library
5A. Library Addition
6. Physical Plant
7. Computer Building/Campus Store
8. Student Affairs
9. Faculty Offices East
10. Faculty Offices West
20. Student Center
21. Classroom Building/Classroom Building East
22. Classroom Building South
201. Temporary Buildings



San Diego State University

Imperial Valley Campus - Calexico
Campus Master Plan
Master Plan Enrollment: 850 FTE
Approval Date: February 1980
Revised Date: September 2003
Main Campus Acreage: 8.4

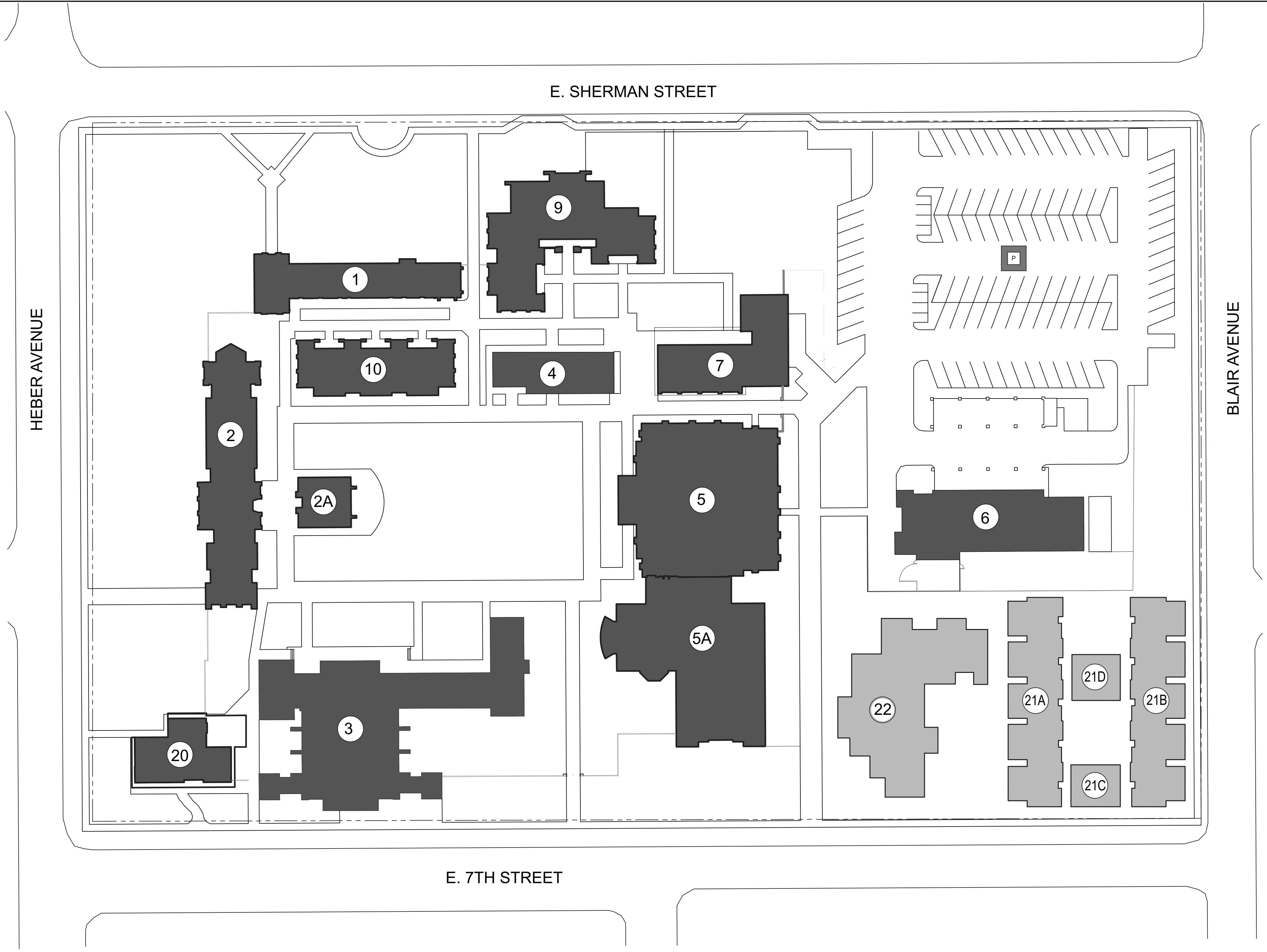
SOURCE: SDSU 2003

N

0 25' 50' 100'

FIGURE 3A

Existing Campus Master Plan



SDSU-IVC BUILDING LEGEND

1. North Classroom
2. Administration
2A. Art Gallery
3. Auditorium
4. Classrooms
5. Library
5A. Library Addition
6. Physical Plant
7. Computer Building/Campus Store
8. Student Affairs
9. Faculty Offices East
10. Faculty Offices West
20. Student Center
21A. Student Housing West
21B. Student Housing East
21C. Student Housing Office
21D. Student Housing Community Center
22. Classroom Building South

Buildings	Campus Boundary	Parking
EXISTING BUILDING	EXISTING	EXISTING LOT
FUTURE BUILDING	FUTURE	FUTURE LOT
TEMPORARY BUILDING		EXISTING STRUCTURE
EXISTING BUILDING NOT IN USE		FUTURE STRUCTURE

N

0 50' 100' 200'

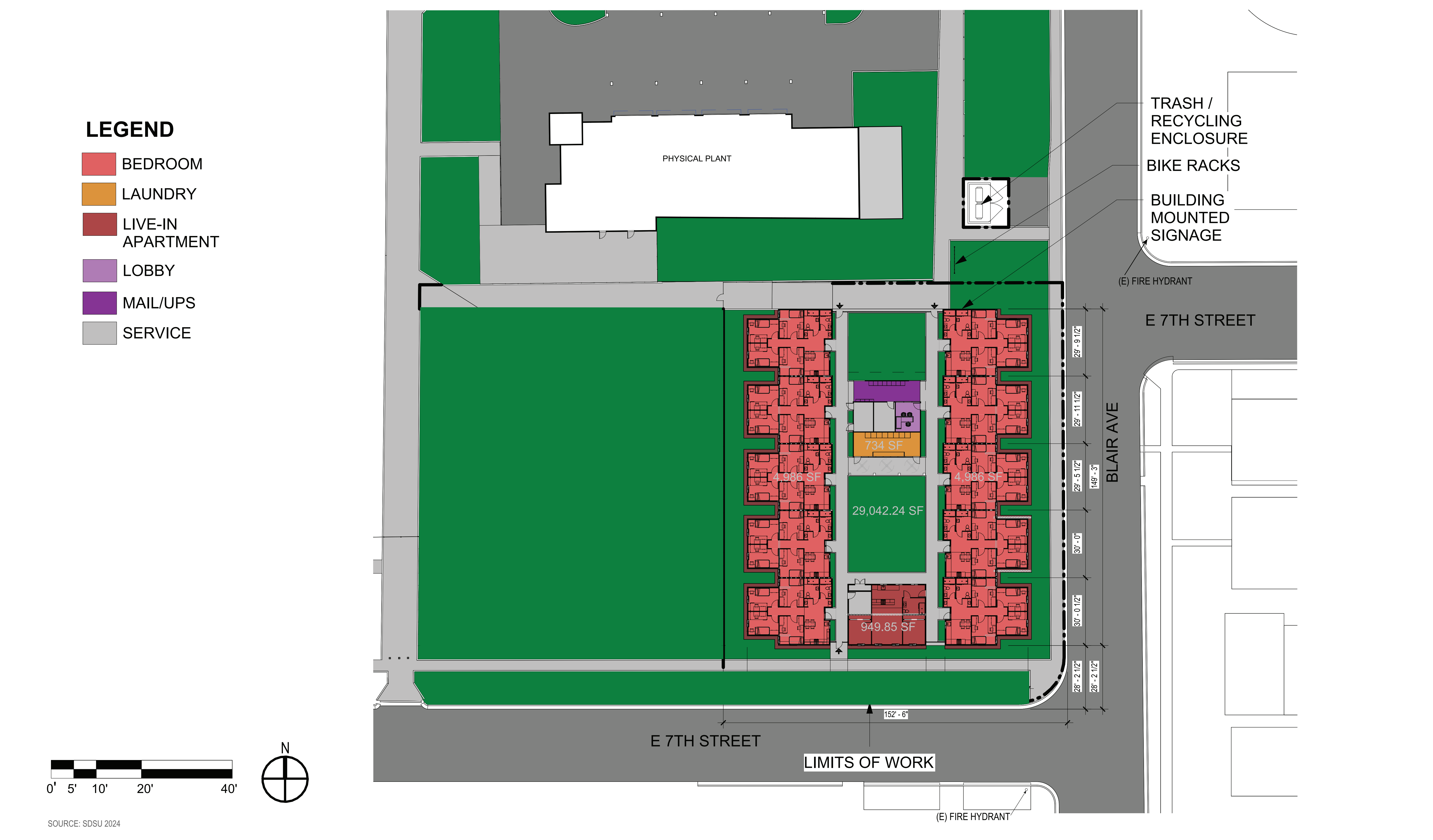
PROPOSED
San Diego State University
Imperial Valley Campus - Calexico
Campus Master Plan
Master Plan Enrollment: 850 FTE
Approval Date: 1980
Revised Date: September 2003
Main Campus Acreage: 8.4

SOURCE: SDSU 2024

FIGURE 3B

Proposed Campus Master Plan

DUDEK



SOURCE: SDSU 2024

FIGURE 4
Site Plan

Confidential Attachment B

SCIC Records Search Results

Attachment C

NAHC Sacred Lands Search Results

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: San Diego State University Calexico Student Housing Project (PN # 15464)

County: Imperial County

USGS Quadrangle Name: 7.5-Minute Series Calexico and Heber Quadrangle

Township: 17S **Range:** 14E **Section(s):** 13

Company/Firm/Agency: Dudek

Street Address: 605 Third Street

City: Encinitas **Zip:** 92024

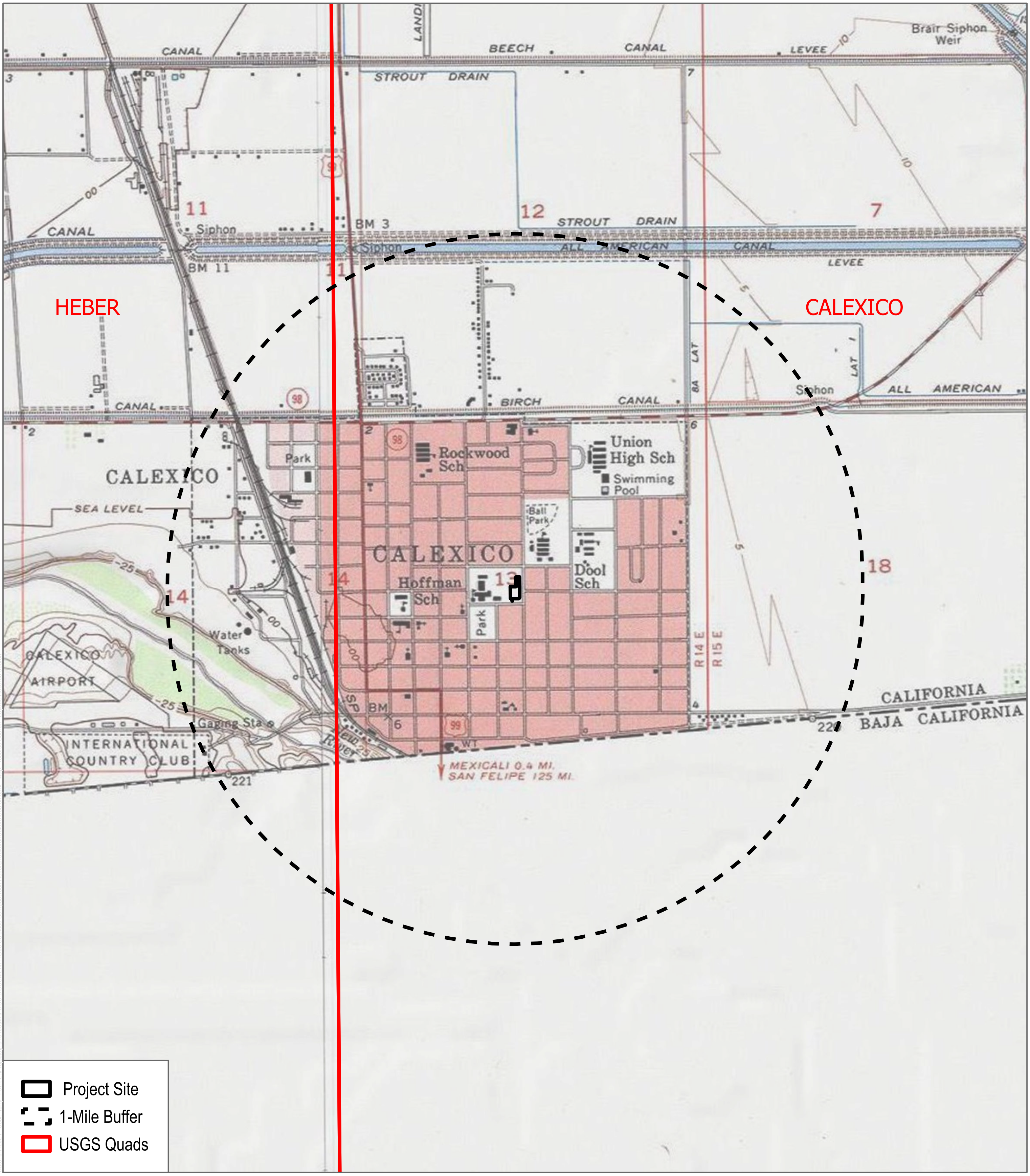
Phone: 760.479.4827

Fax: 760.632.0164

Email: mmurillo@dudek.com & apham@dudek.com

Project Description:

The Project includes the expansion and improvement of the San Diego State University (SDSU) Imperial Valley Campus (IVC), which includes the Off-Campus Center at Calexico and the Brawley Off-Campius Center. SDSU proposes construction and operation of a four-building complex that would support affordable student housing on the Calexico Campus. The proposed complex would be approximately 12,000 gross square feet.



SOURCE: USGS 7.5-Minute Series Calexico & Heber Quadrangles
Township 17S; Range 15E, 14E; Sections 7, 11, 12, 13, 14, 18, 23

DUDEK 1:24,000

0 1,000 2,000 Feet
0 250 500 Meters

Records Search

SDSU Imperial Valley-Calexico Campus Affordable Student Housing

STATE OF CALIFORNIA **Gavin Newsom, *Governor***

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

June 28, 2024

Makayla Murillo
Dudek

Via Email to: mmurillo@dudek.com

Re: San Diego State University Calexico Student Housing (PN # 15464) Project, Imperial County

To Whom It May Concern:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the Torres-Martinez Desert Cahuilla Indians on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. Please contact all of those listed; if they cannot supply information, they may recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Murphy.Donahue@NAHC.ca.gov

Sincerely,

Murphy Donahue

Murphy Donahue
Cultural Resources Analyst

Attachment

Attachment D

Assembly Bill 52 Outreach Letter Example

Planning, Design and Construction
Business and Financial Affairs
5500 Campanile Drive
San Diego CA 92182 · 1624
Tel: 619 · 594 · 5224
Fax: 619 · 594 · 4500

SAN DIEGO STATE UNIVERSITY

July «XX», 2024

«COMPANYORGANIZATION»
«ADDRESS»
«CITY» «STATE» «ZIP»

Re: Notification of the Proposed SDSU Calexico Off-Campus Center Affordable Student Housing Project Pursuant to California Assembly Bill 52.

Dear «COMPANYORGANIZATION»

Pursuant to California Assembly Bill (AB) 52, San Diego State University (SDSU), as a representative of the Board of Trustees of the California State University, is providing you with notification of the SDSU Calexico Off-Campus Center Affordable Student Housing Project (proposed project), located in the City of Calexico (city), Imperial County, California. SDSU is reaching out to all groups listed on the California Native American Heritage Commission's Sacred Lands File consultation list in a good faith effort to provide notification of the proposed project to groups that are traditionally or culturally affiliated with the geographic area of the proposed project.

Project Location
The proposed project is located within the SDSU Imperial Valley Off-Campus Center – Calexico at 720 Herber Avenue in downtown Calexico, approximately 0.5 miles north of United States-Mexico border (Figure 1, Records Search Map). The Off-Campus Center is bordered by four City of Calexico Streets: Heber Avenue to the west; Sherman Street to the north; Blair Avenue to the east; and Seventh Street to the south. Residential uses bound the Off-Campus Center to the north, east, south, and west. Other surrounding uses include Calexico High School, located northeast of the Off-Campus Center, and Calexico City Hall, located immediately south of the Off-Campus Center. The proposed project falls within Section 13 of Township 17 South, Range 14 East of the Calexico and Herber, California 7.5-minute Quadrangles, as mapped by the U.S. Geological Survey. The project is located at the southeast corner of the Off-Campus Center and consists of vacant land that has been previously graded and is relatively flat.

Project Description
The proposed project is the construction and operation of a four-building housing complex that would provide affordable housing for approximately 80 students attending the SDSU Calexico Off-Campus Center and the nearby Imperial Valley College. The building complex would include three student housing buildings, including one smaller live-in unit building, and a community building.

If you have any comments or concerns regarding tribal cultural resources (as defined in California Public Resources Code section 21074) in relation to the proposed project, please provide a written request for consultation to Kara Peterson, Director of Planning, SDSU Planning, Design & Construction via email at kara.peterson@sdsu.edu or via hard copy mail to Ms. Peterson at San Diego State University, 5500 Campanile Drive, San Diego, California 92182-1624. The California Native American tribe has **30 days** of receipt of this notice to request consultation pursuant to California Public Resources Code section 21080.3.1. Please include the name of a designated lead contact person. If you have any questions, please don't hesitate to contact Ms. Peterson.

Planning, Design and Construction
Business and Financial Affairs
5500 Campanile Drive
San Diego CA 92182 · 1624
Tel: 619 · 594 · 5224
Fax: 619 · 594 · 4500

Sincerely,

Kara Peterson
Director of Planning
Planning, Design & Construction

Att: Figure 1. Records Search Map

Appendix E

Geology and Soils Technical Memorandum

MEMORANDUM

To:	Kara Peterson; San Diego State University
From:	Perry Russell, Dudek
Subject:	SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project – Geology and Soils Technical Memorandum
Date:	December 12, 2024
cc:	Sarah Lozano, Mollie Brogdon; Dudek, Michael Haberkorn; Gatzke Dillon & Ballance
Attachments:	A – Figures B – Geotechnical Report

Dudek has conducted an evaluation pursuant to the requirements of the California Environmental Quality Act (CEQA), California Public Resources Code 21000 et seq., to analyze the potential impacts related to geology and soils associated with construction and operation of the proposed San Diego State University (SDSU) Calexico Affordable Student Housing Project (Project or proposed Project), to be located at the SDSU Imperial Valley Off-Campus Center, located in Calexico, California. This technical memorandum provides the results of the geology and soil analysis.

1 Project Overview and Background

In September 2003, the California State University (CSU) certified an environmental impact report for the SDSU Imperial Valley Master Plan Project (State Clearinghouse No. 2002051010) and approved a Campus Master Plan for the expansion and improvement of the SDSU Imperial Valley Off-Campus Center, which includes locations in Calexico and Brawley, both located in Imperial County (SDSU 2003). The Off-Campus Center is an extension of SDSU's main campus in San Diego and furthers the University's regional educational mission to provide additional educational opportunities to the outlying communities of Imperial County. The previously certified and approved Campus Master Plan and EIR provided the authorization necessary for enrollment of 850 full-time equivalent (FTE)[1] students at the Off-Campus Center, corresponding associated faculty and staff, and a framework for development of the facilities necessary to serve this projected enrollment and campus population.

The Off-Campus Center - Calexico is approximately 8.3 acres in size and is located in the City of Calexico (City). Most of the Calexico location is built out, consisting of several educational and support facilities. The environmental impacts associated with development of the Off-Campus Center – Calexico were evaluated at a program level of review in the 2003 EIR. In the CSU's continuing effort to build out the Imperial Valley Off-Campus Center and provide additional educational opportunities, SDSU presently proposes construction and operation of a four-building complex that would provide affordable student housing at the Calexico location for 80 students and a resident manager. Additional details regarding the proposed housing is provided below.

1 A full-time equivalent (FTE) student is one full-time student taking 15 course credits, or 3 part-time students each taking 5 course credits.

2 Project Location and Existing Conditions

The Off-Campus Center – Calexico is located at 720 Heber Avenue in downtown Calexico, approximately 0.5 miles north of the United States–Mexico border (see Figure 1, Regional Map). Regional access to the Off-Campus Center is provided via SR-111 and SR-98 to the north. The Calexico location is bordered by four streets: Heber Avenue to the west, Sherman Street to the north, Blair Avenue to the east, and 7th Street to the south. Residential uses bound the Calexico complex to the north, east, south, and west. Other surrounding uses include Calexico High School, located northeast, and Calexico City Hall, located immediately south. The Off-Campus Center - Calexico currently consists of 17 buildings and an associated surface parking lot (see Figure 2, Vicinity Map, and Figure 3A, Existing Campus Master Plan).

As a state entity, the CSU/SDSU is not subject to local government plans, regulations, and guidelines, such as those contained in the City's General Plan. The above notwithstanding, for information purposes, the Off-Campus Center -Calexico is zoned as Open Space and is designated as Public Facilities in the City's General Plan (City of Calexico 2015a).

The proposed Project site is approximately 0.58 acres in size (25,320 square feet) and is located at the southeast corner of the campus, at the northwest corner of East 7th Street and Blair Avenue (see Figure 2). The entirety of the Project site has previously been graded and is relatively flat in nature, with an average elevation of 3.5 feet above mean sea level. The Project site encompasses the locations identified in the Campus Master Plan as future Building 21 (see Figure 3A and Figure 3B, Proposed Campus Master Plan). The Project site consists of vacant and undeveloped land with two trees located along the northern boundary of the site. A chain-link fence separates the Project site from the recently removed temporary Campus Buildings 201, which were located immediately west of the Project site.

3 Project Description

3.1 Affordable Student Housing Complex

The proposed Project would involve the construction of a single-story, four-building complex approximately 12,840 square feet in size that would provide for affordable student housing. The complex would include three student housing buildings, including one smaller live-in unit building, and a community building. Two of the three proposed residential buildings would each be approximately 5,500 square feet in size and would include five four-bedroom, two-bathroom apartment units, totaling 40 student beds per building (two student beds per bedroom, 80 student beds in total). The third proposed residential building would be a live-in manager unit that would consist of a single two-bedroom, one-bathroom apartment. The proposed live-in unit would also include approximately 100 square feet of office space that is intended to provide a space for tenant meetings, social services, or counseling. All apartment units would also be equipped with a living area and kitchen. The proposed community building program would be approximately 840 square feet and include laundry, mail, restroom, electrical, and maintenance facilities. The mail room would be located outside, under the shaded amenity patio of the community building (see Table 1).

Table 1. Affordable Student Housing Complex Area Calculations

	Quantity	Area (Square Feet)	Beds
Residential Buildings (3)			
4-Bedroom, 8-Bed Unit	5	5,150	40
4-Bedroom, 8-Bed Unit	5	5,150	40
Live-In Unit	1	1,000	2
Office (Included in Live-In Unit)	N/A	N/A	N/A
Subtotal	*11*	*11,300*	*82*
Community Building (1)			
Laundry Room	1	300	N/A
Service Rooms	4	450	N/A
Restroom	2	100	N/A
Mail/Package (Outside)	1	270	N/A
Subtotal	*N/A*	*1,150*	*N/A*
Other			
Trash/Recycling Enclosure	1	850	N/A
Open Space	N/A	2,300	N/A
Landscaping/hardscaping	N/A	12,500	N/A
Subtotal	*N/A*	*13,650*	*N/A*
Combined Total	**N/A**	**26,100**	**82**

Note: N/A = not applicable.
All square foot amounts presented in the table are approximate amounts only and may not add to the site plan area totals described in this document due to rounding.

Other on-site proposed amenities include a courtyard, bike racks, and a community waste enclosure. The courtyard would be approximately 1,600 square feet and would be centrally located in the proposed complex (see Figure 4, Site Plan). Approximately 15 bike racks would be provided throughout the Project site. A community waste enclosure at the northeast corner of the Project site would allow residents a convenient place to dispose of waste and recyclables.

3.1.1 Operation

The Off-Campus Center - Calexico, including the Project site, is owned and operated by the CSU/SDSU. The CSU Board of Trustees, on behalf of SDSU, is the lead agency responsible for certifying the adequacy and completeness of this document and approval of the proposed Project. SDSU and the IVCCD have received joint funding under the State of California Higher Education Student Housing Grant Program to construct the proposed Project.

To support basic housing needs for students in the Imperial Valley, SDSU and IVCCD have executed a 30-year master lease agreement that details operation of the Project. This agreement dictates that 40 of the 82 proposed student beds would be reserved for IVCCD students who attend the Imperial Valley College in Imperial. Likewise, 40 of the proposed 82 beds, would be reserved for SDSU Off-Campus Center - Calexico students. A 2-bedroom unit would also provide living space for on-site management. SDSU would be responsible for operating, managing, and maintaining the proposed Project once operational.

Student beds made available under the proposed Project would be leased/rented to eligible low-income students. Eligible low-income students are defined as having 30% of 50% of the Annual Median Income for Imperial County. In the event, after a good faith outreach effort, there is not sufficient demand from students meeting the eligibility requirements within 90 days of the start of the fall semester, unassigned beds may be leased at market rates to SDSU and IVCCD students not meeting the low-income eligibility requirements. In addition to meeting the low-income criteria, eligible students would be required to be enrolled students and take a minimum average of 12 degree-applicable units per semester term, or the quarterly equivalent (with exceptions permitted), to facilitate timely degree completion.

3.1.2 Other Project Elements

Building and Site Design

The proposed buildings have been designed to reflect the character and massing of the existing Off-Campus Center - Calexico, as well as the surrounding neighborhood. Building design is centered around a courtyard-style housing complex and would consist of smooth stucco walls with downspouts and rafters, punctuated by composite terra cotta–colored roof tile accents and windows. Maximum building heights would range from 14 feet to 18 feet.

Landscaping, Other Site Improvements, and Lighting

The Project would include approximately 16,000 square feet of on-site landscaping and hardscape improvements (i.e., pedestrian walkways). All proposed landscaping would consist of drought-tolerant, indigenous plants. The landscape scheme would include shrubs, hedges, and a variety of trees. A total of 39 trees would be added to the Project site including five fan palms, eight mesquite trees, six evergreen elms, and 20 yucca trees.

All exterior on-site lighting would be hooded or shielded, directed downward, and would be compliant with applicable standards for lighting control and light pollution reduction (i.e., Title 24, American National Standards Institute/Illuminating Engineering Society).

The proposed complex would be secured via an iron security fence that would measure 6 feet in height and run approximately 64 linear feet, connecting to the proposed buildings. Access to the complex would only be available to residents and their guests via two pedestrian gates located at the northwestern corner and southern portion of the proposed complex. The gates would be equipped with security card access for residents.

Utilities and Public Services

New points of connection for domestic water, fire supply water, sewer, storm drainage and electrical connections from existing utility lines would be required to serve the proposed Project. Potable water service, as well as sewer collection services at the Project site, would be provided by the City. The Project would connect to an existing sanitary sewer maintenance access line located in Blair Avenue via new 6-inch mains. Connections for water (including domestic, fire, and irrigation) would be from an existing water main located in Blair Avenue. Distribution water pipes would be extended underground to serve each proposed building. A new water meter would be located in the proposed maintenance room in the community building. Adequate water treatment capacity and supply and sewer treatment capacity exists within the City’s water and sewer system to accommodate the Project; therefore, no capacity upgrades to infrastructure would be necessary.

Stormwater drainage includes two stormwater catch basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated immediately east of the existing chain-link fence at the western boundary of the Project site. The proposed catch basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to stormwater discharge into the City's stormwater system via one new storm drain located in the southeast corner of the Project site.

Electrical services within the Project area are provided by Imperial Irrigation District, which provides electric power to over 158,000 customers in the Imperial Valley in addition to areas of Riverside and San Diego counties (IID 2024). New utility connections and infrastructure would be required to support electrical services on site. The Project would connect to on-site electrical power infrastructure via an existing 12kV, three phase, three wire, 60 Hertz overhead line routed along East 7th Street. No natural gas usage is proposed for the Project.

The Project would require a new point of connection for on-site telecommunications and would connect to the existing AT&T communications via the on-campus minimum point of entry.

Access, Circulation, and Parking

Regional access to the Project site is provided via SR-111 and SR-98 to the north. Local access is provided via Blair Avenue and East 7th Street. Parking to the Project site is available in the existing campus parking lot, immediately north of the Project site, which has sufficient capacity to serve the proposed Project. On-site circulation improvements would consist of additional paved pathway/pedestrian walkway features throughout the proposed complex and along the northern boundary of the Project site (see Figure 4). Emergency access would be provided directly adjacent to the Project site on East 7th Street and Blair Avenue.

3.1.3 Design Standards and Energy Efficiency

In May 2014, the CSU Board of Trustees broadened the application of sustainable practices to all areas of the university by adopting the first systemwide sustainability policy, which applies sustainable principles across all areas of university operations, including facility operations and utility management. In May 2024, the CSU Sustainability Policy was updated to expand on existing sustainability goals (CSU 2024a). The CSU Sustainability Policy seeks to integrate sustainability into all facets of the CSU, including academics, facility operations, the built environment, and student life (CSU 2018). Relatedly, the state has also strengthened energy-efficiency requirements in the California Green Building Standards Code (Title 24 of the California Code of Regulations).

As a result, all CSU new construction, remodeling, renovation, and repair projects, including the proposed Project, would be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable state energy codes and regulations. Progress submittals during design are monitored for individual envelope, indoor lighting, and mechanical system performances. In compliance with these goals, the proposed Project would be equipped with solar ready design features that would facilitate and optimize the future installation of a solar photovoltaic (PV) system.

3.1.4 Off-Site Improvements

Off-site improvements would include the resurfacing of a portion of Blair Avenue adjacent to the eastern boundary of the Project site that would be disturbed as a result of trenching to make necessary connections to the existing

water main and sanitary sewer maintenance access. Any area disturbed as a result of this connection within Blair Avenue would be resurfaced to existing conditions. All off-site improvements would occur within the Blair Avenue right-of-way.

3.1.5 Construction

Construction would be performed by qualified contractors. Plans and specifications would incorporate stipulations regarding standard CSU/SDSU requirements and acceptable construction practices, such as those set forth in the SDSU Stormwater Management Plan, CSU Seismic Policy, The CSU Office of the Chancellor Guidelines, and the CSU Sustainability Policy, regarding grading and demolition, safety measures, vehicle operation and maintenance, excavation stability, erosion control, drainage alteration, groundwater disposal, public safety, and dust control.

Construction Timeline

Construction of the proposed Project would take approximately 17 months to complete and is estimated to begin as early as January 2025 and be completed by May 2026, with occupancy planned for fall 2026. Construction activities would generally occur Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m., with the potential for weekend construction on Saturday between 9:00 a.m. and 5:00 p.m. No construction would occur on Sundays or holidays or at night.

Construction Activities

A construction mobilization or staging area would be located immediately northeast of the proposed Project site and would occupy approximately 8,000 square feet. The area would be located east of existing Campus Building 6, west of Blair Avenue, and south of the existing parking lot (see Figure 2 and Figure 3A). To accommodate use of this area, four trees would be removed.

Construction would include site preparation, grading and excavation, utility installation/trenching, building foundation pouring, building construction, and landscaping. Excavation depths are anticipated to be 3 feet below grade. The majority of waste (i.e., excavated gravel/soil) generated during Project construction would be balanced/used within the site. Approximately 2,600 cubic yards of soil would be removed from the site and exported to Republic Services Allied Imperial Landfill, approximately 12 miles north. The entire Project site, including construction mobilization area (approximately 34,000 square feet in total) would be disturbed as a result of Project construction. Two trees would be removed from the Project site to accommodate the proposed Project.

Table 2 displays the construction equipment anticipated to be used during construction.

Table 2. Anticipated Construction Equipment

Aerial Lifts	Pressure Washers
Air Compressors	Pumps
Cement and Mortar Mixers	Rollers
Concrete/Industrial Saws	Rough Terrain Forklifts
Dumpers/Tenders	Rubber-Tired Dozers
Excavators	Rubber-Tired Loaders
Forklifts	Scrapers

Table 2. Anticipated Construction Equipment

Generator Sets	Signal Boards
Graders	Skid Steer Loaders
Off-Highway Tractors	Surfacing Equipment
Off-Highway Trucks	Sweepers/Scrubbers
Other Construction Equipment	Tractors/Loaders/Backhoes
Other General Industrial Equipment	Trenchers
Other Material Handling Equipment	Welders
Plate Compactors	

Source: Dorsey and Nielson Construction Inc, pers. comm., 2024

Construction Waste

The Project would generate construction debris during on-site clearing activities. In accordance with Section 5.408 of the California Green Building Standards Code, the Project would implement a construction waste management plan for recycling and/or salvaging for reuse of at least 65% of nonhazardous construction/demolition debris. Additionally, the Project would be required to meet Leadership in Energy and Environmental Design v4 requirements for waste reduction during construction. Solid waste generated during construction would be hauled off site to the Republic Services Allied Imperial Landfill at 104 East Robinson Road in Imperial, California.

4 Analysis Methodology

The analysis presented here considers the potential geology and soil impacts of the proposed Project relative to existing conditions. Establishment of the Project site's existing geology and soil conditions has been prepared using information contained in the previously certified 2003 SDSU Imperial Valley Campus Master Plan Project EIR (SDSU 2003), combined with updated information, as applicable, from the California Geological Survey (CGS), Southern California Earthquake Data Center, U.S. Geological Survey (USGS), Imperial County General Plan (Seismic and Public Safety Element) (Imperial County Planning and Development Services 1997), and Imperial County General Plan EIR (Imperial County Planning and Development Services 1993). In addition, the results of an August 2022 Project-specific geotechnical report by Group Delta (Attachment B, Geotechnical Report) have been incorporated into the existing conditions section and impact analysis.

5 Geology and Soils

5.1 Existing Conditions

Regional Geology

The SDSU Off-Campus Center - Calexico lies within the Salton Trough, the dominant landform within Imperial County. The Salton Trough encompasses the Coachella, Imperial, and Mexicali Valleys and extends north from the Gulf of California. The lowest part of the basin is the bed of the prehistoric Lake Cahuilla, with its ancient beach line at about 35 feet above mean sea level. The deepest portion is covered by the Salton Sea with a water surface level measured at 226 feet below mean sea level at its highest level in April 1986. The geologic structure of the trough is a result of an evolving "rift" in the earth's crustal plates. As the crust thins due to the "spreading" of the trough, magma rises closer to the surface, heating deep groundwater. Nonmarine and alluvium sediments cover large portions of the area. An unexposed succession of Tertiary- and Quaternary-age sedimentary rocks lies below the alluvial and lake bottom sediments, ranging in depth from 11,000 feet or greater at the margins to over 20,000 feet in the central portions of the Salton Trough. The valley is drained by an 8,360-square-mile watershed, which eventually empties into the Salton Sea (SDSU 2003).

Soils

Surficial soils beneath the Project site consist of Imperial-Glenbar silty clay loams, on 0% to 2% slopes. The upper 60 inches of this soil type typically consist of silty clay loam and clay loam. These soils are moderately well-drained, have low runoff potential, and are not prone to flooding (USDA 2023). Underlying sediments in the Off-Campus Center - Calexico area consist of over 100 feet of late Pleistocene to Holocene lacustrine (i.e., lake) deposits associated with ancient Lake Cahuilla. These sediments are typically unconsolidated to poorly consolidated and porous, consisting generally of clay, silt, and occasional beds of medium dense silty sand. Clay and silt soils typically exhibit medium to high expansion potential and range in consistency from medium stiff to hard (SDSU 2003; Attachment B).

A Project-specific geotechnical report indicated that the upper 3 to 4 feet of soils consist of undocumented fill consisting of clay with varying amounts of sand and organic material. Laboratory tests of samples collected at the site indicate the near-surface soils have a moderate expansion potential, are medium stiff to hard in consistency, and are considered corrosive to severely corrosive. Geotechnical borings drilled on site encountered several 2- to 4-foot-thick beds of silty sand and nonplastic silt within the lacustrine deposits, at depths ranging between approximately 13 to 20 feet, 28 to 30 feet, and 48 to 50 feet below existing ground surface. These silty sand and silt layers consisted of loose to medium dense material, which are potentially liquefiable under a high seismic demand, as described in the Liquefaction and Lateral Spreading section below (Attachment B).

Faulting and Seismicity

Surface fault rupture is the displacement of ground surface that occurs along a fault line during an earthquake event. Based on criteria established by CGS, faults are classified as either Holocene-active, pre-Holocene, or age-undetermined. Faults are considered active when they have shown evidence of movement within the past 11,700 years (i.e., Holocene epoch). Pre-Holocene faults, also known as potentially active faults, are those that have shown evidence of movement more than 11,700 years ago and generally before 1.6 million years (Quaternary age). Faults whose age of most recent movement is not known or is unconstrained by dating methods or by limitations in stratigraphic resolution are considered age-undetermined and inactive (CGS 2018).

The Alquist-Priolo Earthquake Fault Zoning Act (formerly known as the Alquist-Priolo Special Studies Zones Act) established state policy to identify active faults and determine a boundary zone on either side of a known fault trace, called the Alquist-Priolo Earthquake Fault Zone. The delineated width of an Alquist-Priolo Earthquake Fault is based on the location, precision, complexity, or regional significance of the fault and can be between 200 and 500 feet in width on either side of the fault trace. If a site lies within a designated Alquist-Priolo Earthquake Fault Zone, a geologic fault rupture investigation must be performed to demonstrate that a proposed building site is not threatened by surface displacement from the fault before development permits may be issued (CGS 2018).

The Imperial Valley area is subjected to frequent seismic events, with related concerns of ground shaking and liquefaction. The most noteworthy of the numerous faults traversing the Salton Trough is the Holocene-active Coachella section of the San Andreas Fault. Two other major northwest-trending Holocene-active fault zones bounding the Salton Trough include the San Jacinto Fault to the northwest and the Elsinore Fault to the southwest (see Figure 5, Regional Faulting). The potential for future large earthquakes on the San Andreas and San Jacinto Fault Zones is based on potential rupture scenarios associated with both fault zones, as movement on the San Jacinto Fault is dependent on movement of the southern San Andreas Fault Zone. Based on historic and pre-historic fault ruptures, the maximum worst-case earthquake on these two interrelated fault zones would be moment magnitude (M_w) 8.0. However, the probable maximum magnitude is M_w 6.5 to M_w 7.5 for the San Jacinto Fault and M_w 6.8 to M_w 8.0 for the San Andreas Fault (Sanders 1993; USGS 2002; Scharer and Yule 2020; SCEDC 2024).

The Holocene-active Imperial Fault is the closest fault to the Off-Campus Center - Calexico, located approximately 7 miles northeast of the Calexico Off-Campus Center (CGS 2024a) (see Figure 5). However, the Off-Campus Center - Calexico is not located in an Alquist-Priolo Earthquake Fault Zone associated with the Imperial Fault (CDMG 1990), and no known active faults are present in the immediate site vicinity (Attachment B). The Imperial Fault Zone is the principal element of the San Andreas Fault System within the Salton Trough. Ground surface rupture has occurred twice during historic times, including 1940 and 1979 (and possibly in 1915), as evidence by offset of historic alluvium, lacustrine deposits, and cultural features. The 1940 earthquake produced surface rupture offsets up to 23 feet near the United States–Mexico border. Data from these earthquake events suggest a slip rate of 15 to 20 millimeters per year for the Holocene epoch (past 11,700 years). As discussed below, slip is transferred north through the Brawley Seismic Zone, and some slip may be transferred to the San Jacinto Fault Zone. The recurrence interval is 30 to 40 years for a 1979-style earthquake event and 270 to 700 years for a 1940-style earthquake. Others have postulated recurrence intervals of 40 years, 137 years, and 37 years, respectively, for the northern, central, and southern segments of the fault. In addition, the maximum probable earthquake magnitude for the Imperial Fault is M_w 6.5 to M_w 7.0 (Treiman 1999; SCEDC 2024; USGS 2022).

The largest recorded earthquake in Imperial County occurred on the Imperial Fault in May 1940. This Richter magnitude 7.0 earthquake was centered on the international border, east of Calexico, and could be traced for approximately 50 miles, from the Volcano Lake in Mexico, north through the Imperial Valley, just north of Brawley. The newly completed All-American Canal was offset approximately 14 feet by movement on the fault, and nine people died from the earthquake. In addition, a magnitude 6.6 earthquake occurred along the Imperial Fault in October 1979. The epicenter was 7 miles east of Calexico. No lives were lost, but numerous structures and canals were damaged, including settlement of the All-American Canal up to 4 feet. Earthquake damage was estimated at $30 million. In addition, a magnitude 7.2 earthquake occurred near Calexico in April 2010 (CGS 2024b; Imperial County Planning and Development Services 1993; USGS and CGS 2011).

Other substantial earthquakes in Imperial County include those occurring in 1892 (M7.1), 1915 (M6.3 and 7.1), 1930 (M5.7), 1950 (M5.4), 1957 (M5.2), 1968 (M6.5), 1980 (M6.1), 1981 (M5.8), 1987 (M6.2 and 6.8), and 2010 (M7.2). In addition to the faults described above, other active faults in the region include the Superstition Hills, Superstition Mountain, Laguna Salada, and Cerro Prieto Faults. Currently, portions of Imperial County are affected by a minor earthquake with a magnitude of 4.5 or less every few months. Imperial County may experience an earthquake with a magnitude of 5.5 or greater every 5 years and dozens of micro-seismic events, with magnitudes of 2.0 or less, on a daily basis (CGS 2024b; Imperial County Planning and Development Services 1993; USGS and CGS 2011).

Fluid injection and geothermal energy extraction in the North Brawley Geothermal Field, located within the Brawley Seismic Zone, located approximately 17 miles north of the Off-Campus Center – Calexico (see Figure 5), have been linked to seismic hazards. After a few years of geothermal operations at the North Brawley Geothermal Field, located within the Brawley Seismic Zone, several magnitude 4 to 5 earthquakes occurred in 2012, followed by a long period of few earthquakes. Ground deformation was analyzed in the area, combining radar images, GPS, and leveling to reveal how the ground moved before, during, and after the 2012 events, with centimeter-scale accuracy. Another potential source of concern in geothermal fields is faults that slip without generating seismic waves. Silent slip, or fault creep, may play a role in controlling the location and duration of earthquake swarms. The processes behind silent or aseismic slip at geothermal fields are not well understood, largely because they are difficult to measure (Materna et al. 2022).

Liquefaction and Lateral Spreading

Liquefaction involves a sudden loss in strength of saturated, cohesionless soils that are subject to ground shaking during an earthquake and results in temporary transformation of the soil to behave more like a fluid mass. For liquefaction to occur, three conditions are required: (1) ground shaking of sufficient magnitude and duration; (2) a groundwater level at or above the level of susceptible soils during the ground shaking (i.e., generally at depths less than 40 feet); and (3) soils that are susceptible to liquefaction.

The Off-Campus Center – Calexico has not been included in regional liquefaction analyses by CGS (2024c). However, the unconsolidated sediments of the Salton Trough, especially in saturated areas such as irrigated lands, are subject to failure during earthquakes as a result of liquefaction (Imperial County Planning and Development Services 1993). Liquefaction caused by the M7.2 El Mayor-Cucapah earthquake was widespread throughout the southern Imperial Valley. Ground motions of 0.3 g to 0.6 g (percent of gravity) were recorded in most liquefaction areas (USGS and CGS 2011).

As described above, geotechnical borings drilled on-site encountered several 2- to 4-foot-thick beds of silty sand and nonplastic silt, at depths ranging between approximately 13 to 20 feet, 28 to 30 feet, and 48 to 50 feet below existing ground surface. These silty sand and silt layers consisted of loose to medium dense material, which are potentially liquefiable under a high seismic demand. Groundwater was encountered at the Project site at a depth of approximately 28 feet below ground surface. Secondary effects of liquefaction include sand boils, settlement and instabilities within sloping ground that occur as lateral spreading, seismic deformation, and flow sliding. Lateral spreading is the horizontal deformation of gently sloping ground (slope less than 6%), and seismic deformation is the horizontal movement of more steeply sloping ground, both of which can occur during strong ground shaking. Flow sliding is an overall instability of more steeply sloping ground that can occur following or near the end of strong ground shaking, depending on its duration. Also associated with liquefaction is seismic compaction, which is the densification of loose to medium dense granular soils that are above groundwater. Of these, liquefaction-induced settlement and seismic compaction are considered more likely to occur at the Project site given the site surface and subsurface conditions (Attachment B).

Liquefaction-triggering calculations completed for the Project site indicated that liquefaction would likely occur as a result of a M_W 7.1 earthquake, a peak ground acceleration of 0.59 g (percent of gravity), and a depth to groundwater of 20 feet. Based on the results of the triggering analyses, there are several potentially liquefiable zones within the subsurface profile. In general, the potentially liquefiable soils consist of thin beds that are generally less than 2 feet thick each, but some up to 4 feet thick locally. The estimated liquefaction-induced volumetric settlement is approximately 1 inch or less at each exploration location. The estimated liquefaction-induced differential settlement is approximately 0.5 inch or less over a horizontal distance of 30 feet. Since the site is essentially level, the potential for significant liquefaction-induced lateral displacement should be low (Attachment B).

Subsidence

Subsidence is the permanent collapse of the pore space within a soil or rock and downward settling of the earth's surface relative to its surrounding area. Subsidence can result from the extraction of water, oil, or geothermal resources and the addition of water to the land surface—a condition called "hydrocompaction," or peat loss. The compaction of subsurface sediment caused by the withdrawal or addition of fluids can cause subsidence. Land subsidence can disrupt surface drainage; reduce aquifer storage; cause earth fissures; damage buildings and structures; and damage wells, roads, and utility infrastructure.

According to the U.S. Geological Survey Areas of Land Subsidence in California map, there have been no recorded instances of subsidence in the Off-Campus Center – Calexico area associated with groundwater pumping, peat loss, or oil extraction (USGS 2024). Natural subsidence has been occurring within the Salton Trough, averaging nearly 2 inches per year at the center of the Salton Sea but decreasing to zero near the Mexican border (Imperial County Planning and Development Services 1997).

In addition, subsidence in geothermal fields can occur when large fluid volume production leads to the decrease of pore pressure inside reservoirs. This decline disturbs the pressure stability, and overburden pressure compresses the pores, resulting in a drop in the ground surface. The decrease in ground surface elevation can not only result in damage to buildings, pipelines, and canals, but also may interrupt the balance in the nearby ecosystem (Sektiawan et al. 2016). Significant ground movement, in the form of ground subsidence and horizontal movement, may accompany geothermal development in the Imperial Valley. Regional and local survey nets are being monitored to detect and measure possible ground movement caused by future geothermal developments. Precise measurement of surface and subsurface changes is required to differentiate human-induced changes from natural processes (USGS 2013). Two geothermal facilities are located approximately 3.0 miles and 3.5 miles northwest of the Calexico SDSU Off-Campus Center – Calexico (Imperial County Planning and Development 2013).

Satellite radar interferometry (InSAR) was applied to detect surface deformation associated with geothermal development and concluded that distinct areas of subsidence are present in three geothermal fields in the Imperial Valley, including the Salton Sea, Heber, and East Mesa geothermal fields. In addition, ground uplift was observed at the Heber geothermal field (Eneva et al. 2012). These geothermal fields are located approximately 34 miles northwest, 3 miles northwest, and 15 miles northeast of the Off-Campus Center - Calexico, respectively (Imperial County Planning and Development 2013).

Land subsidence can be avoided by re-injecting all production water back into the aquifer it was withdrawn from so that pressure changes are minimized. Subsidence can be reduced through monitoring combined with aquifer management. Aquifers must be managed to balance groundwater recharge and groundwater discharge at both local and basin-wide scales. Management tools include: (1) ensuring all water used for geothermal heat extraction is pumped back into the aquifer, (2) replacing water lost from the aquifer by increasing groundwater recharge to the basin-fill aquifer through conjunctive management of groundwater and surface water resources and importation of water from other basins, (3) dispersing high-discharge wells to reduce localized land subsidence, and (4) reducing overall groundwater withdrawals in the basin (USGS 2012). In addition, well field programs covering production and injection plans in Imperial County are required by the Bureau of Land Management and California Geologic Energy Management Division (CalGEM) for each major geothermal project and are subject to review by CalGEM and Imperial County (Imperial County Planning and Development Services 1997).

Slope Stability

The topography of the SDSU Off-Campus Center – Calexico is relatively flat to gently sloping, and no evidence of ancient landslides or slope stabilities are present (Attachment B).

6 Impact Analysis and Conclusions

6.1 Thresholds of Significance

The significance criteria used to evaluate the impacts of the proposed Project related to geology and soils are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). A significant impact under CEQA would occur if the proposed Project would:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
   i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault.
   ii. Strong seismic ground shaking.
   iii. Seismic-related ground failure, including liquefaction.
   iv. Landslides.
b) Result in substantial soil erosion or the loss of topsoil.
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
d) Be located on expansive soil, as defined in the 2022 California Building Code, creating substantial direct or indirect risks to life or property.
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

6.2 Impact Analysis

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Impacts related to rupture of a known earthquake fault were evaluated in Section 3.2, Geology/Soils, of the 2003 EIR, which concluded that the Off-Campus Center – Calexico is not within the limits of the Alquist-Priolo Special Studies Zones of the Imperial and Brawley Faults (SDSU 2003). Accordingly, the 2003 EIR did not provide an impact conclusion regarding potential rupture of a known earthquake fault.

As discussed above, the Holocene-active Imperial Fault is the closest fault to the SDSU Off-Campus Center - Calexico, located approximately 7 miles to the northeast. The Off-Campus Center - Calexico is not located in an Alquist-Priolo Earthquake Fault Zone, and no known active faults are present in the immediate site vicinity. No new information or substantial changes in circumstances have occurred requiring new or additional analysis regarding rupture of a known earthquake fault at the Project site. As a result, surface fault rupture is not anticipated at the Project site, and the Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving the rupture of a known earthquake fault. No impact would occur.

ii. Strong seismic ground shaking, or

iii. Seismic-related ground failure, including liquefaction?

Impacts related to seismic ground shaking, seismic-related ground failure, and liquefaction were evaluated in Section 3.2, Geology/Soils, of the 2003 EIR, which concluded that although no geotechnical conditions have been identified to preclude development of the Imperial Valley Campus Calexico projects as planned, geology and soil impacts would be significant because of the hazards from seismic activity if proper construction techniques are not observed at the detailed design and construction stages (SDSU 2003). Mitigation measures were provided that require SDSU to (1) avoid adverse discontinuities in strength between major structural elements, (2) prior to detailed site planning, conduct a subsurface geotechnical and soil study to ensure structural integrity, and (3) adhere to recommendations of the geotechnical and soil study in developing grading and construction plans (SDSU 2003, pp. 3.2-4, 3.2-5, and 11-1).[2] With implementation of the mitigation measures, impacts were determined to be less than significant.

2 Section 3.2, Geology/Soils, Mitigation Measures 1 and 2: (1) Adverse discontinuities in strength between major structural elements shall be avoided. (2) Prior to detailed site planning, a subsurface geotechnical and soils study shall be conducted to determine the shrink-swell potential and to develop design specific measures to ensure structural integrity. Grading and construction plans shall conform to recommendations of the study (SDSU 2003, pp. 3.2-4, 3.2-5, and 11-1).

Updated information since completion of the 2003 EIR related to seismicity, including liquefaction and fluid injection, are summarized below, as well as in Section 5.1, Existing Conditions. The Imperial Valley area is subjected to frequent seismic events, with related concerns of ground shaking and liquefaction. The most noteworthy of the numerous faults traversing the Salton Trough is the Holocene-active Coachella section of the San Andreas Fault. As described above in Section 5.1, two other major northwest-trending Holocene-active fault zones bounding the Salton Trough include the San Jacinto Fault to the northwest and the Elsinore Fault to the southwest (see Figure 5). In addition, the Holocene-active Imperial Fault is located 7 miles northeast of the Off-Campus Center - Calexico, and the Brawley Seismic Zone is located approximately 17 miles to the north. Fluid injection and geothermal energy extraction in the North Brawley Geothermal Field, located within the Brawley Seismic Zone, have been linked to seismic hazards.

Geotechnical borings drilled on site encountered several loose to medium dense, 2- to 4-foot-thick beds of silty sand and nonplastic silt, which are potentially liquefiable under a high seismic demand. Liquefaction-induced settlement and seismic compaction are considered likely to occur given the site surface and subsurface conditions. The estimated liquefaction-induced differential settlement is approximately 0.5 inches or less over a horizontal distance of 30 feet. Since the site is essentially level, the potential for significant liquefaction-induced lateral displacement should be low.

Since certification of the 2003 EIR, the CEQA significance criteria have been revised (per Appendix G of the 2022 CEQA Statute and Guidelines). Seismic impacts on any given project are no longer considered potentially significant. Rather, impacts would only be considered significant in the event the project directly or indirectly caused seismic impacts to occur. Because construction and operation of the proposed buildings would not induce seismicity, the Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking and **no impacts** would occur.

Regardless, the following is an updated discussion of protocol that would be followed with respect to seismic engineering of the proposed buildings. As required by the 2022 California Building Code (CBC), the proposed SDSU Off-Campus Center – Calexico buildings and associated infrastructure improvements would be constructed in accordance with the recommendations of the Project-specific geotechnical report (Attachment B), which includes recommendations for remedial grading and foundation design to address strong seismic ground shaking, liquefaction, differential settlement, and seismic densification. Accordingly, while referred to as “recommendations” in geotechnical reports, each recommendation is, in fact, required by law to be implemented. More specifically, the geotechnical report recommends the use of thickened and heavily reinforced conventional building foundations or post-tensioned slabs to reduce the potential for distress to the proposed buildings associated with post-liquefaction settlement. The geotechnical recommendations are consistent with CGS Note 48, Design and construction in accordance with these recommendations would provide, to the extent feasible, an acceptable level of earthquake safety for students, employees, and the public who occupy the buildings.

In addition, the Project would be designed in accordance with the CSU Seismic Requirements document (CSU 2024b), which includes specific requirements for the construction of new buildings, to ensure that all CSU buildings provide an acceptable level of earthquake safety for students, employees, and the public. The CSU Seismic Policy applies to all structures within the bounds of a CSU campus Master Plan. These seismic requirements set forth procedures to follow to manage current construction programs and limit future seismic risk to acceptable levels. The CSU has established campus-specific seismic ground motion parameters that supersede CBC values and implement a conservative evaluation on CBC Structural Risk Category assignments.

The CSU Seismic Requirements document (CSU 2024b) states that all building projects and all engineered structures, such as the proposed Project, are to be peer reviewed. This process starts at project inception and continues until construction completion. Peer review concurrence letters are typically issued at completion of the Schematic Preliminary Design and Construction Documents Phases, and during the course of construction on deferred submittals that have a seismic component. Resolution of outstanding Seismic Review Board peer review comments is required before start of construction, and resolution of Seismic Review Board construction phase submittals is required prior to occupancy. John A. Martin and Associates, Inc. maintains a Seismic Peer Review Master Enabling Agreement with the CSU, under which each campus and the administrative office of the CSU may engage them for peer review services (CSU 2024c). John A. Martin and Associates, Inc. would provide a conformance letter to the Seismic Review Board prior to start of construction.

In addition, the Project would be submitted to the CSU Architecture and Engineering, Building Code Plan Check Review process. All approved plans for construction would include a stamp that verifies the design would be completed in compliance with appropriate CSU Seismic Requirements. The stamp would also indicate that the Project has been reviewed consistent with Chapter 16 of the California Building Code and the State Earthquake Protection Law.

The proposed buildings and infrastructure improvements would be constructed under the supervision of a California Geotechnical Engineer and/or California Certified Engineering Geologist. In addition, construction and operation of proposed Project facilities would not increase the potential for earthquakes or seismically induced ground failure to occur. As a result, the Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking or seismic-related ground failure, including liquefaction. For these reasons, **no impacts** would occur.

iv. Landslides?

The initial study (IS) prepared for the 2003 EIR determined that no impact would occur with regard to landslides (SDSU 2003). The topography of the Off-Campus Center – Calexico and surrounding area is relatively flat to gently sloping, and no evidence of ancient landslides or slope instabilities are present. With implementation of the required recommendations provided in the Project-specific geotechnical report (Attachment B), as required by the CBC, grading and construction would not cause slope instability to occur. The geotechnical report recommends that temporary excavations be inclined no steeper than 1:1 for heights up to 5 feet. Vertical excavations should be shored. As a result, the Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. As such, impacts would be **less than significant**.

b) Would the project result in substantial soil erosion or the loss of topsoil?

The 2003 EIR and IS prepared for the 2003 EIR did not specifically address soil erosion and loss of topsoil. Therefore, a discussion regarding the proposed Project's potential to result in substantial soil erosion or the loss of topsoil is provided below.

The proposed Project site is approximately 0.60 acres in size (approximately 25,400 square feet), and the construction laydown area would occupy approximately 8,200 square feet, immediately northeast of the Project site. The construction laydown area would be located east of existing Campus Building 6, west of Blair Avenue, and south of the existing parking lot (see Figure 2 and Figure 3a). The entirety of the Project site has previously been graded and is relatively flat. The Project would involve site preparation, grading, and excavation associated with Project construction. Excavation depths are anticipated to be 2 to 5 feet, followed by soil backfill and compaction. Approximately 2,600 cubic yards of soil would be removed from the site and trucked off-site.

Project grading and construction would temporarily expose on-site soils to wind and water erosion, which in turn could result in sedimentation of downstream drainages. However, stormwater best management practices (BMPs) would be installed during grading and construction to minimize the potential for soil erosion. BMPs would be consistent with construction site runoff controls detailed in the SDSU Stormwater Management Plan (SDSU 2022), including erosion controls, sediment controls, and run-on/runoff controls. Typical construction BMPs would include straw wattles, sediment basins, sediment fences, covering stockpiled soil, vehicle track-out controls at entrance/exit points, and limitations on work periods during storm events. Based on the SDSU Stormwater Management Plan, construction sites less than 1 acre (such as the Project site) would be inspected weekly by the Environmental Health and Safety staff for proper BMP implementation. If the Environmental Health and Safety staff deems a project is not in compliance with minimum BMPs set forth in the construction contract language, they would provide the contractor with a copy of their site inspection/audit report and include a list of actions required to bring the site into compliance. Staff would re-inspect the site within 72 hours after notifying the contractor of the deficiencies. After construction, the Project site would be developed with impermeable surfaces and approximately 16,000 square feet of on-site landscaping, thus eliminating the potential for soil erosion. As a result, the Project would not result in substantial soil erosion or the loss of topsoil, and impacts would be **less than significant.**

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

The IS completed for the 2003 EIR concluded that no impacts would occur with respect to potentially unstable geologic units, including landslides, lateral spreading, subsidence, liquefaction, and collapse (SDSU 2003). Since certification of the 2003 EIR, the CEQA significance criteria have been revised (per Appendix G of the 2022 CEQA Statute and Guidelines). Geologic hazard impacts on any given project are no longer considered potentially significant. Rather, impacts would only be considered significant in the event the project directly or indirectly caused geologic hazard impacts to occur. Therefore, the following is an updated discussion of potential impacts related to geologic hazards, as well as an updated discussion of protocol that would be followed with respect to geotechnical engineering of the proposed buildings. In addition, updated information since completion of the 2003 EIR related to liquefaction and subsidence are summarized below. New information pertaining to liquefaction and subsidence is also presented in Section 5.1.

As described in the analysis of Thresholds a-ii and a-iii, although the Project would be susceptible to potentially strong seismically induced ground shaking and liquefaction, Project design and construction would be completed in compliance with the 2022 CBC, the recommendations of the Project-specific geotechnical report (Attachment B), and the CSU Seismic Requirements document (CSU 2024b). CSU Architecture and Engineering review would further assist to offset potential risks to structures and people associated with liquefaction and collapsible soils. In addition, constructing the proposed buildings within a liquefaction-prone area would not, in and of itself, increase liquefaction risks to surrounding uses. Although the Project site is potentially susceptible to liquefaction, no slopes are present on the site, thus eliminating the potential for lateral spreading to occur. As described in the analysis of Threshold a-iv, the Project would not be susceptible to landslides.

On-site clay rich soils are compressible and should experience some time-dependent consolidation settlement (i.e., long-term settlement). Silty sand and silt beds should also settle with initial fill and structural loading (i.e., short-term settlement). Provided minimal fill placement is needed at the site to achieve the proposed finish grades and foundation loading is limited to the bearing pressures provided in the recommendations of the geotechnical report (Attachment B), most of the long-term settlement should occur in a relatively short time following initial loading. Zones of thick clay could experience some time-dependent consolidation settlement if significant loading from fill or foundation loads are proposed for the Project. However, Project design and construction would be completed in accordance with the recommendations of the Project-specific geotechnical report, which include estimating the settlement magnitude and duration associated with the proposed fill placements and foundation loads. As a result, potential impacts related to compressible soils would be minimized.

Clayey surficial soils present a severe risk of sulfate attack and are also corrosive to very corrosive to buried metals. The geotechnical report (Attachment B) recommends placement of 2 to 5 feet of imported sand beneath sidewalks and building slabs-on-grade to reduce the potential for sulfate attack and corrosion. Sulfate-resistant Type V cement is also recommended for use on site. As a result, potential impacts related to sulfate attack and corrosive soils would be minimized.

Natural subsidence has been occurring within the Salton Trough, averaging nearly 2 inches per year at the center of the Salton Sea, and decreasing to zero near the Mexican border and the Project site. This natural subsidence is relatively uniform over large areas. In addition, subsidence in geothermal fields can result in damage to buildings and related infrastructure. Two geothermal facilities are located approximately 3.0 miles and 3.5 miles northwest of the SDSU Off-Campus Center - Calexico. Satellite radar interferometry (InSAR) was applied to detect surface deformation associated with geothermal development and concluded that distinct areas of subsidence are present in three geothermal fields in the Imperial Valley, including the Salton Sea, Heber, and East Mesa geothermal fields. In addition, ground uplift was observed at the Heber geothermal field. These geothermal fields are located approximately 34 miles northwest, 3 miles northwest, and 15 miles northeast of the Off-Campus Center - Calexico, respectively.

Therefore, subsidence as a result of geothermal activity does not appear to be occurring at the Project site. Well field programs covering production and injection plans in Imperial County are required by the Bureau of Land Management and CalGEM for each major geothermal project and are subject to review by CalGEM and Imperial County, thus minimizing the potential for subsidence to occur. In addition, construction and operation of the proposed SDSU Off-Campus Center - Calexico buildings would not result in substantial adverse impacts such that collapse would occur. As a result, the Project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Impacts would be **less than significant.**

d) ***Would the project be located on expansive soil, as defined in the 2022 California Building Code, creating substantial direct or indirect risks to life or property?***

Impacts related to expansive soils were evaluated in Section 3.2, Geology/Soils, of the 2003 EIR, which concluded that although no geotechnical conditions have been identified to preclude development of the Imperial Valley Campus Calexico projects as planned, geology and soil impacts are significant because of the hazards from expansive soils if proper construction techniques are not observed at the detailed design and construction stages (SDSU 2003). Mitigation measures were provided that would require SDSU to (1) prior to detailed site planning, conduct a subsurface geotechnical and soil study to determine the shrink-swell potential, and (2) adhere to recommendations of the geotechnical and soil study in developing grading and construction plans (SDSU 2003, pp. 3.2-4, 3.2-5, and 11-1).[3] With implementation of the mitigation measures, impacts were determined to be less than significant.

Soil sampling completed on site indicated that moderately expansive soils are present in near surface soils, to a depth of 5 feet. Project design and construction would occur in compliance with recommendations of the Project-specific geotechnical report (Attachment B) and the provisions of the 2022 CBC, which requires that grading, structural design, and construction be completed such that potentially expansive soils would not adversely affect foundations, piping, and related infrastructure. The geotechnical report recommends that the clay-rich, expansive soil excavated as part of the Project not be re-used as compacted fill. Fill should be imported to replace expansive soil materials underlying the proposed structures, flatwork, and pavements, to depths of 2 to 5 feet. Additional measures include thickened foundations and slabs or post-tensioned slab-on-grade to support the proposed buildings.

Project design would also be completed in accordance with the CSU Architecture and Engineering review process. As a result, construction of the Project on potentially expansive soils would not create substantial direct or indirect risks to life or property. Impacts would be **less than significant**, and no additional mitigation is required.

e) ***Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?***

The IS completed for the 2003 EIR concluded that no impacts would occur with respect to the use of septic tanks or alternative wastewater disposal systems (SDSU 2003). No new information is available regarding

3 **Section 3.2, Geology/Soils, Mitigation Measures 1 and 2**: (1) Adverse discontinuities in strength between major structural elements shall be avoided. (2) Prior to detailed site planning, a subsurface geotechnical and soils study shall be conducted to determine the shrink-swell potential and to develop design specific measures to ensure structural integrity. Grading and construction plans shall conform to recommendations of the study (SDSU 2003, pp. 3.2-4, 3.2-5, and 11-1).

this environmental criteria. The proposed buildings would be connected to existing sewer infrastructure operated by the City. As a result, septic tanks or alternative wastewater disposal systems would not be used in association with the Project. **No impacts** would occur.

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Attachment A

Figures

SOURCE: ESRI

FIGURE 1

Regional Map

DUDEK

0 4 8 Miles

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

SOURCE: AERIAL-ESRI MAPPING SERVICE 2023; DEVELOPMENT-SDSU 2024

DUDEK

0 100 200 Feet

FIGURE 2
Vicinity Map

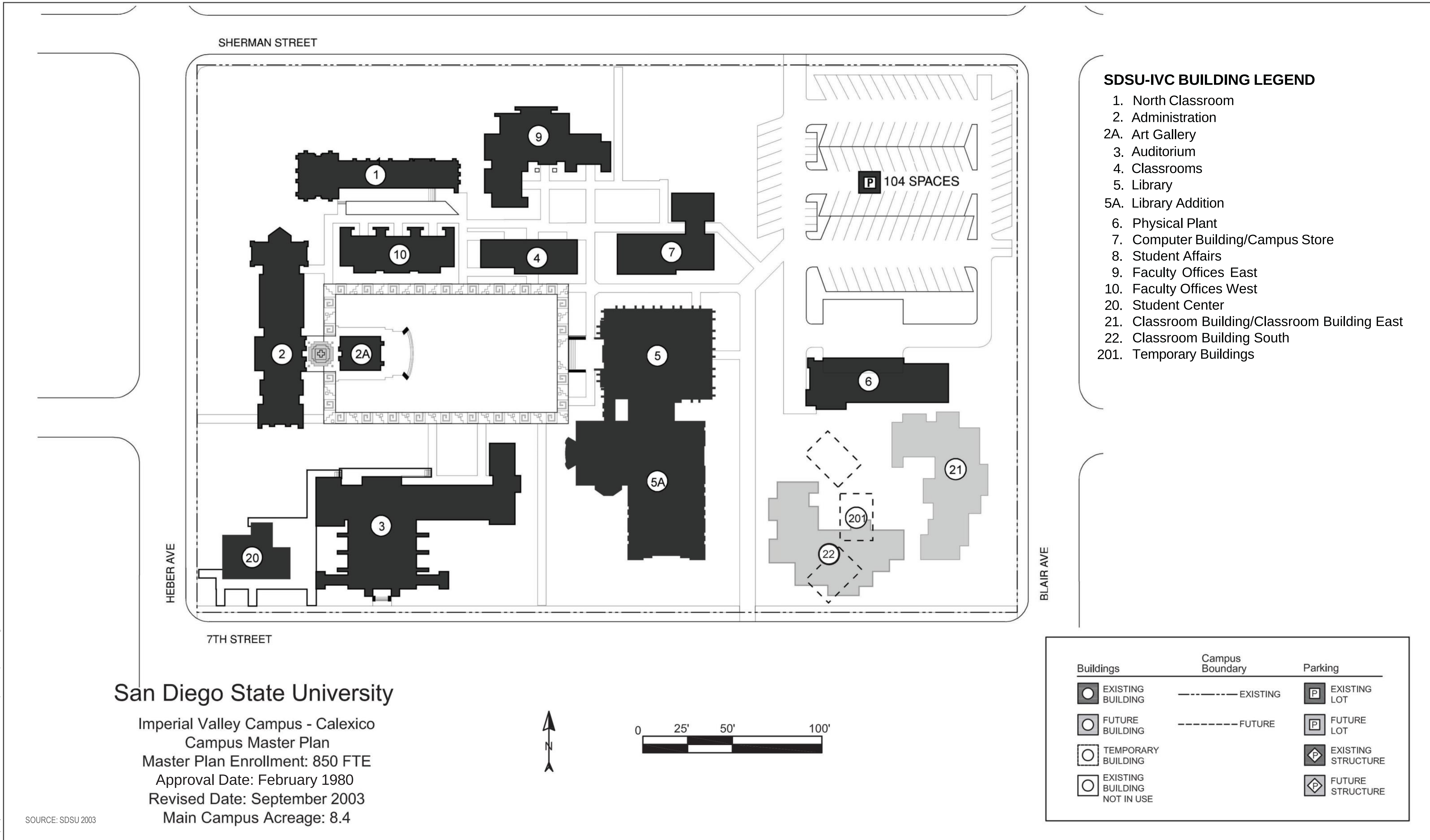
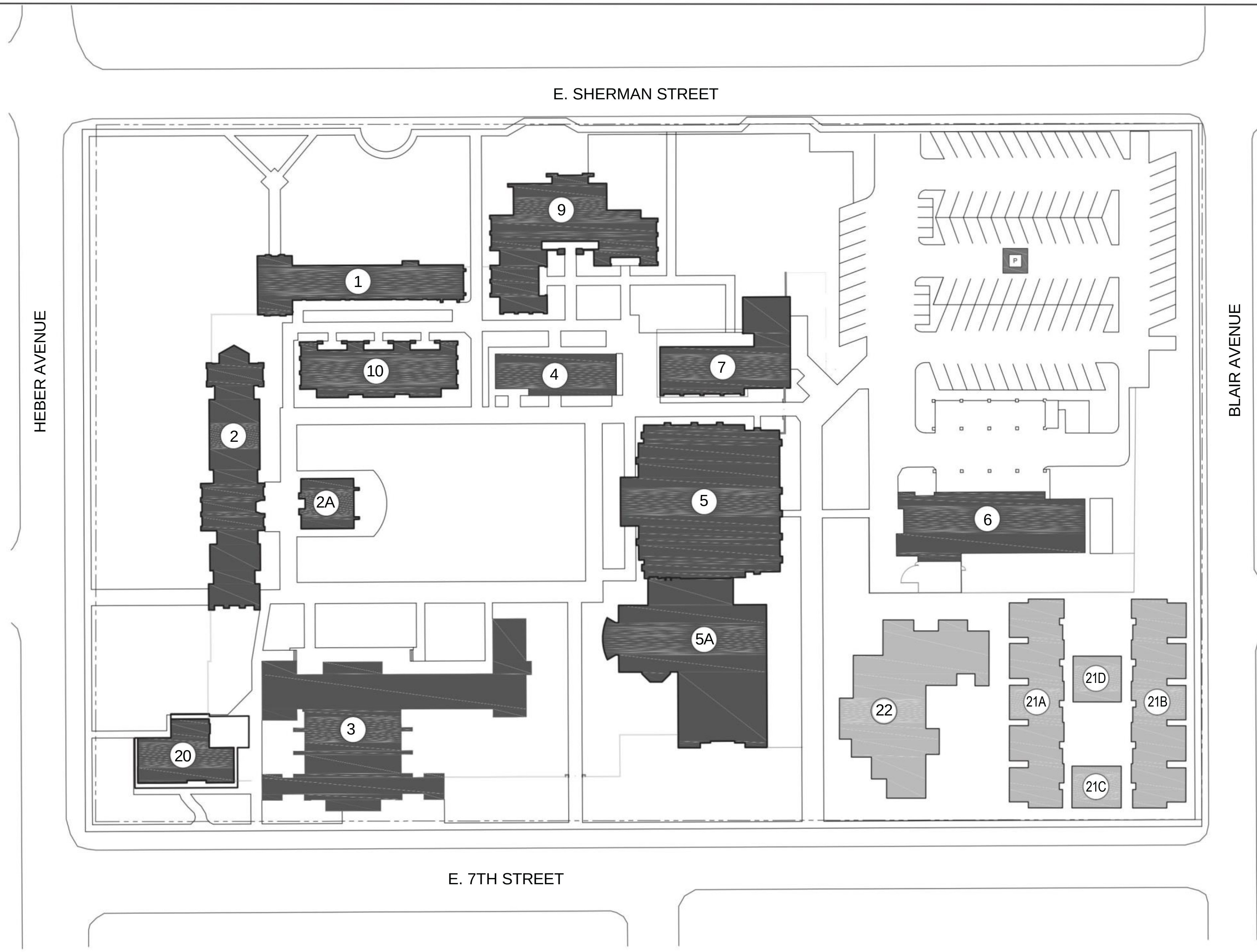


FIGURE 3A

Existing Campus Master Plan



SDSU-IVC BUILDING LEGEND

1. North Classroom
2. Administration
2A. Art Gallery
3. Auditorium
4. Classrooms
5. Library
5A. Library Addition
6. Physical Plant
7. Computer Building/Campus Store
8. Student Affairs
9. Faculty Offices East
10. Faculty Offices West
20. Student Center
21A. Student Housing West
21B. Student Housing East
21C. Student Housing Office
21D. Student Housing Community Center
22. Classroom Building South

Buildings	Campus Boundary	Parking
EXISTING BUILDING	EXISTING	EXISTING LOT
FUTURE BUILDING	FUTURE	FUTURE LOT
TEMPORARY BUILDING		EXISTING STRUCTURE
EXISTING BUILDING NOT IN USE		FUTURE STRUCTURE

PROPOSED
San Diego State University
Imperial Valley Campus - Calexico
Campus Master Plan
Master Plan Enrollment: 850 FTE
Approval Date: 1980
Revised Date: September 2003
Main Campus Acreage: 8.4

N

0 50' 100' 200'

SOURCE: SDSU 2024

Z:\Projects\15464\00MAPDOC\DOCUMENT\T006 Calexico Campus\Tech Reports\All Tech Figs 1-6

DUDEK

FIGURE 3B
Proposed Campus Master Plan

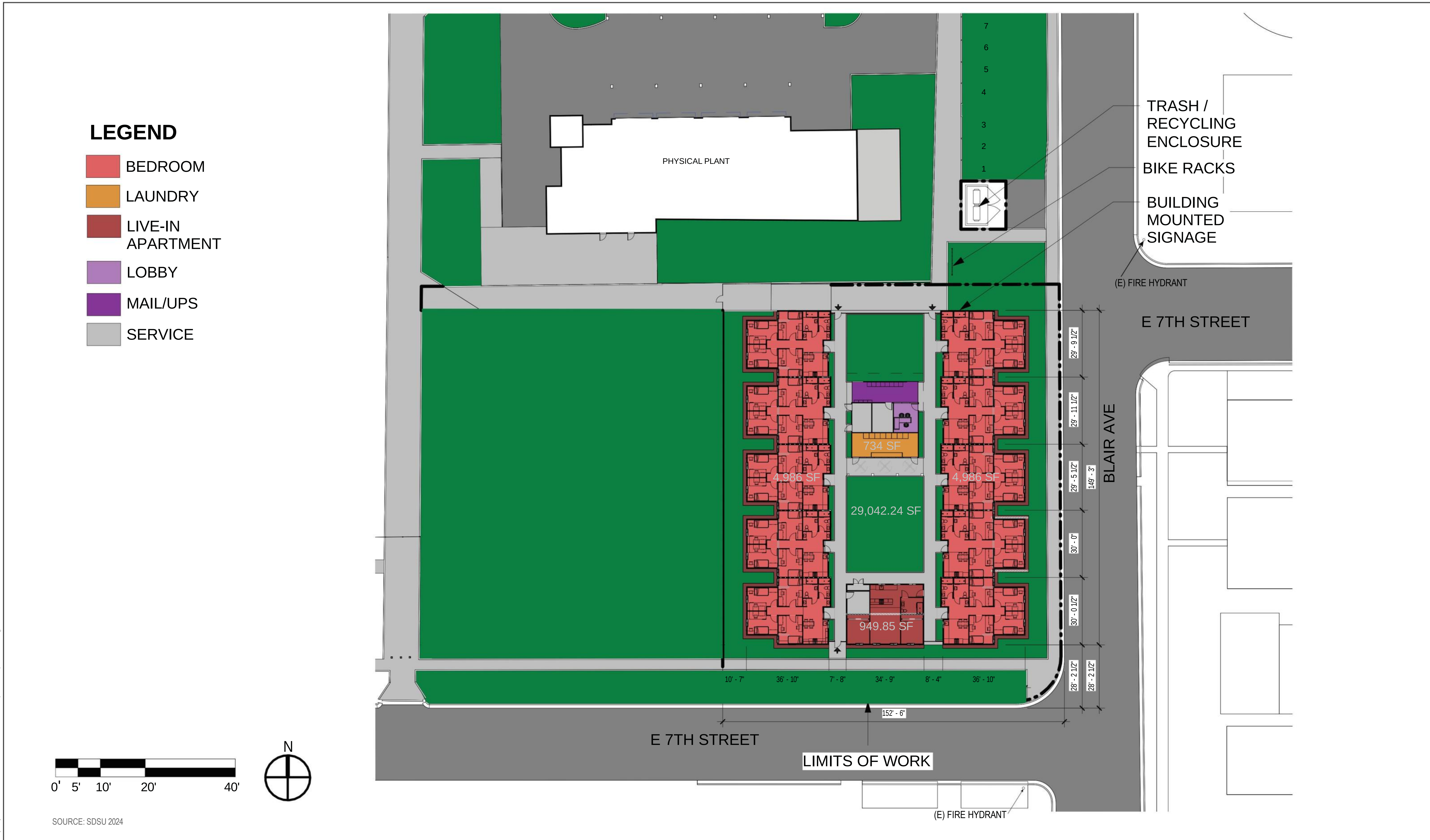
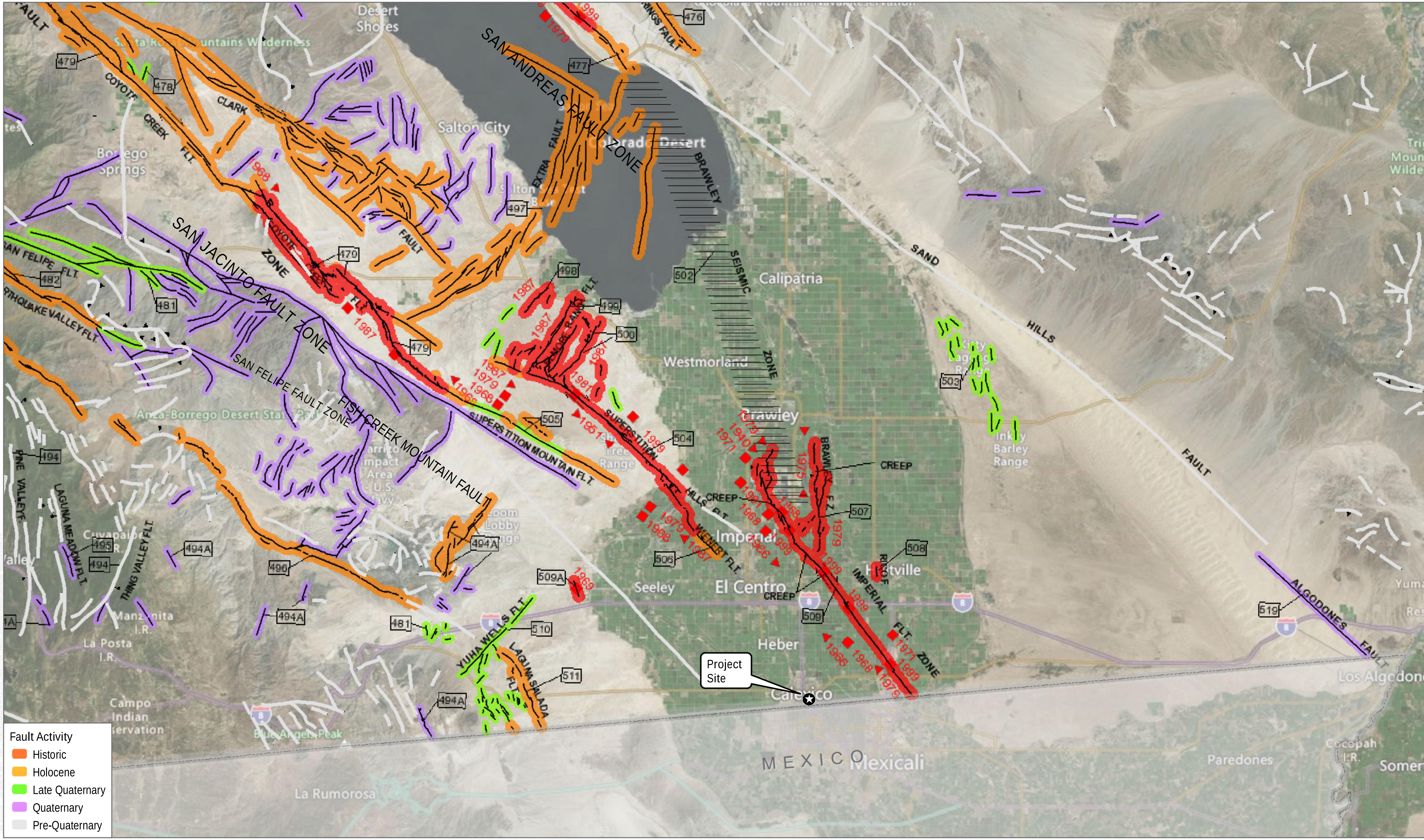


FIGURE 4

Site Plan



SOURCE: USGS 2022; CGS 2022; County of Imperial; Bing Maps

DUDEK

FIGURE 5

Regional Faulting

Technical Memorandum for the SDSU Imperial Valley-Calexico Off-Campus Center Affordable Student Housing

Attachment B

Geotechnical Report

REPORT OF GEOTECHNICAL INVESTIGATION
STUDENT RESIDENCE HALL
SAN DIEGO STATE UNIVERSITY
IMPERIAL VALLEY CAMPUS
CALEXICO, CALIFORNIA

Prepared for

SAN DIEGO STATE UNIVERSITY
Facilities Planning, Design & Construction
5500 Campanile Drive
San Diego, California 92182-1624

Prepared by

GROUP DELTA CONSULTANTS, INC.
9245 Activity Road, Suite 103
San Diego, California 92126

Project No. SD732
August 3, 2022

San Diego State University
Facilities Planning, Design & Construction
5500 Campanile Drive
San Diego, California 92182-1624

Project No. SD732
August 3, 2022

Attention: Ms. Amanda Scheidlinger, Director of Construction

SUBJECT: REPORT OF GEOTECHNICAL INVESTIGATION
Student Residence Hall
San Diego State University – Imperial Valley Campus
Calexico, California

Ms. Scheidlinger:

Group Delta Consultants, Inc. are pleased to submit this report of geotechnical investigation for the proposed Student Residence Hall building at the San Diego State University Imperial Valley Campus in Calexico, California. This report summarizes our conclusions regarding the geologic and geotechnical site constraints, and provides geotechnical recommendations for remedial grading, foundation, slab, utilities, and pavement section design.

We appreciate this opportunity to be of professional service. Please feel free to contact the office with any questions or comments, or if you need anything else.

GROUP DELTA CONSULTANTS

Samuel R. Narveson, P.G. 10060
Project Geologist

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Distribution: (1) Addressee, Ms. Amanda Scheidlinger (ascheidlinger@sdsu.edu)

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FIGURES

APPENDICES

1.0 INTRODUCTION

Group Delta Consultants, Inc. (Group Delta) are pleased to submit the following report of geotechnical investigation that provides geotechnical recommendations for the proposed Student Residence Hall building at the San Diego State University (SDSU) Imperial Valley Campus (IVC) in Calexico, California. The general location of the site is shown on Figure 1, Site Location, and the campus location is shown in more detail on Figure 2, Site Vicinity. The approximate locations of the subsurface explorations that were completed at the site are shown on Figure 3, Exploration Locations, along with the proposed Phase I and Phase II building addition approximate footprint limits (HED, 2022).

1.1 Scope of Services

Our geotechnical services were provided in general accordance with the provisions of the referenced proposal (Group Delta, 2022). The purpose of this work was to characterize the geologic and geotechnical constraints to site development, and to provide recommendations for grading and design of the new foundations, slabs, utilities, and pavements. The recommendations provided herein are based on subsurface investigation, the findings from laboratory tests, our engineering analyses, and our previous experience with similar geologic conditions in the site vicinity. In summary, we provided the following services for this project.

- A visual reconnaissance of the surface characteristics of the site and surrounding areas, and a review of the relevant reports.
- A subsurface exploration of the site including five Cone Penetration Test (CPT) soundings along with three geotechnical borings. The exploratory geotechnical boring and CPT sounding locations are shown on Figure 3, Exploration Locations. The boring records and CPT sounding data are provided in Appendix A.
- Laboratory tests were conducted on soil samples collected from the explorations. Laboratory tests conducted included sieve and hydrometer analyses, percent passing the number 200 sieve, Atterberg limits, Expansion Index (EI), soil corrosivity, in-situ moisture content, undrained shear strength, consolidation, and one-dimensional swell tests. The laboratory test results are summarized in Appendix B.
- Engineering analysis of the field and laboratory data to develop geotechnical recommendations for site preparation, remedial earthwork, foundation and pavement design, soil reactivity, site drainage and moisture protection.
- Preparation of this report summarizing our findings, conclusions and geotechnical recommendations for the proposed Student Residence Hall building.

1.2 Site Description

SDSU IVC is located at 720 Heber Avenue in Calexico, California. The campus in situated near the international border with Mexico within the Imperial Valley. The site is located about 30 miles south of the Salton Sea, as shown on Figure 1, Site Location. The proposed project site is located in the southeast corner of the campus, near the intersection of East 7th Street and Blair Avenue. The site currently contains an empty grass lot, three modular buildings, chain-link fencing, and landscaping consisting of several trees. The site location is relatively flat-lying and located approximately 4 to 6 feet above mean sea level (Google Inc., 2022).

1.3 Proposed Development

Outside of conceptual drawings (HED, 2022), details of the proposed building additions are not yet available. Based on the conceptual drawings, we understand that the project will consist of two development phases, each adding a two-story structure at the approximate locations shown on Figure 3, Exploration Locations. The buildings will likely consist of a relatively light-weight wood-framed or steel structure supported on conventional shallow reinforced concrete foundations or a post-tensioned slab. Other new site improvements may include new sidewalks and pavement areas, as well as various new landscape areas and subsurface utilities. It is assumed that site grades will remain approximately consistent with the current elevations, and that fill placements above existing grades are not needed for the site development.

2.0 FIELD AND LABORATORY INVESTIGATION

Our field investigation included advancing five CPT soundings on May 31st, 2022, and three geotechnical borings on June 1st, 2022. The maximum depth explored was approximately 100 feet below grade. Soil samples were collected at selected intervals within each geotechnical boring for laboratory testing and geotechnical analysis. The exploration locations are shown on Figure 3, Exploration Locations. The boring records and CPT sounding data are provided in Appendix A. Shear wave velocity measurements were collected at CPT-1 at 5-foot depth intervals, and the measurements are also presented in Appendix A.

The laboratory testing program included sieve and hydrometer analyses, percent passing the number 200 sieve, and Atterberg limits to aid in material classification according to the Unified Soil Classification System (USCS). Additional tests were performed to evaluate the in-situ moisture content and dry density, soil expansion characteristics (i.e., EI), compressibility parameters, undrained shear strength, and corrosivity potential. The in-situ moisture content and dry density, sieve and hydrometer analyses, percent passing the number 200 sieve, Atterberg limits, expansion index and unconfined compressive strength results and presented on the boring records in Appendix A. The laboratory test results are also shown in Appendix B.

3.0 GEOLOGY AND SUBSURFACE CONDITIONS

The site is located within the Salton Trough of the Colorado Desert geomorphic province, a topographic and structural depression bound to the north by the Coachella Valley and to the south by the Sea of Cortez. The Salton Trough is a region of transition from the extensional tectonics of the East Pacific Rise to the transform tectonic environment of the San Andreas system. Late Cenozoic extension of the Sea of Cortez formed this deep topographic and structural depression.

The Salton Trough is an actively growing rift valley in which sedimentation has almost kept pace with tectonism (Elders, 1979). Periodically throughout its history, the Colorado River delta has diverted and filled the trough producing cycles of sedimentation from marine, to deltaic, to fluvial and lacustrine. Today, the Salton trough is dominated by the Salton Sea and the Mesozoic-age crystalline basement rocks are covered by about 15,000 feet of Cenozoic sedimentary accumulation (Van De Kamp, 1973).

The site is located in an area that has been covered by lakes during the Quaternary time. The most recent of the lakes that formed in the Salton Trough was known as Lake Cahuilla, which was formed by flooding of the Colorado River and existed until approximately 300 years ago (Elders, 1979). The old shoreline of Lake Cahuilla can be traced along the Santa Rosa Mountains north of the site, and averages about 40 feet above mean sea level. The site is underlain at depth by hundreds of feet of lacustrine deposits, overlain by shallow fill.

The approximate locations of the explorations conducted at the site are shown on Figure 3, Exploration Locations. The general geology in the site vicinity is shown on Figure 4, Regional Geology. Logs interpreting the subsurface conditions we encountered in the explorations are provided in Appendix A. The geologic materials at the site are described below.

3.1 Lacustrine Deposits

The entire site is underlain by deep lacustrine deposits associated with the ancestral Lake Cahuilla. The lacustrine sediments are estimated to be well over 100 feet thick (Kovach et al., 1962). The lake sediments are typically fine grained, and generally consist of interbedded clays (USCS classifications CL and CH), with thin lenses of silt (ML) and occasional beds of silty sand (SM). The granular soils within the lake deposits are typically medium dense in consistency. The clays range from medium to high plasticity, and range in consistency from medium stiff to hard.

Laboratory tests indicate that the surficial clays have a moderate expansion potential and would be considered corrosive to severely corrosive based on the results of our limited corrosion screening tests. The estimated undrained shear strength (Su) of the predominately clayey lacustrine deposits typically ranges from about 1 to greater than 4 kips per square foot (ksf), based on interpretations of pocket penetration (PP) tests, CPT data, and an undrained shear strength test, as shown in Appendices A and B. This indicates the clayey soils are medium stiff to hard in consistency. Shear wave velocity measurements performed at CPT-1 indicated an average shear wave velocity of about 690 feet per second (ft/s), or 210 meters per second (m/s). In our opinion, a 2019 California Building Code (CBC) Site Class D (Stiff Soil) would be most applicable to the general site conditions.

Several roughly 2-foot-thick beds, but some up to 4-feet thick locally, of silty sand (SM) and non-plastic silt (ML) were encountered in the explorations within the Lacustrine deposits at depths ranging between approximately 13 to 20, 28 to 30, and 48 to 50 feet below existing grade. The hammer energy corrected blow counts (N_{60}) within these layers ranged from approximately 11 to 29 and CPT tip resistance ranged from 75 to 175 tons per square foot (tsf), which is indicative of a loose to medium dense material. Our analyses indicate that these zones of material are potentially liquefiable under a high seismic demand, as described in the *Earthquake-Induced Ground Failure* section of this report.

3.2 Fill

Undocumented fill was encountered in all our explorations. The fill is "undocumented" because there are no known records of observation and in-place density testing of the fill placement and compaction by a Geotechnical Engineer. The fill was measured to be approximately three to four feet thick in our explorations. The surficial fill generally consists of lean clay (CL) with varying amounts of sand and organics. The fill soils have a medium potential for expansion (EI between 51 and 90) and are considered to be corrosive to severely corrosive.

3.3 Groundwater

Groundwater was measured at a depth of approximately 28 feet below ground surface (roughly elevation of -24 feet MSL) in boring B-1 after drilling. Note that groundwater levels fluctuate over time due to changes in groundwater extraction, irrigation, or rainfall. It should also be noted that changes in rainfall, irrigation practices, or site drainage may produce seepage or locally perched groundwater conditions at any depth within the fill or lacustrine deposits underlying the site.

4.0 GEOLOGIC HAZARDS

The site is located within the Salton Trough of the Colorado Desert geomorphic province, which is a seismically active area in southern California, as shown on Figure 5A, Regional Fault Locations. The Salton Trough is the zone of transition between the ocean floor spreading regime in the Sea of Cortez and the right-lateral, strike-slip regime of the San Andreas system. Geologic hazards at the site are related to the potential for strong ground shaking due to an earthquake on one of several nearby active faults, as well as the potential for associated soil liquefaction and dynamic settlement. Each of the potential geologic hazards is described in more detail below.

4.1 Strong Ground Motion

The site is in a seismically active area. There are several active faults in the site vicinity that have produced moderate to large earthquakes within the past 100 years. The Imperial Fault Zone ruptured with a magnitude 6.9 earthquake in 1940, and again with a magnitude 6.4 earthquake in 1979 (USGS, 1982). The trace of the ground rupture from the 1940 earthquake was located about 5 miles east of the site (see Figure 4 and Figure 5B for the approximate 1940 ground rupture location). Additionally, there are several other known active faults close to the site, including the Superstition Hills and Superstition Mountain fault zones to the northwest, and the Laguna Salada and Cerro Prieto fault zones to the south (see Figures 4 and 5A). The Superstition Hills fault experienced a magnitude 6.7 earthquake in 1987 (Magistrale, 1989). In 2010, a magnitude 7.2 earthquake occurred on the Laguna Salada fault zone south of the international border (Gonzalez-Ortega, 2014). These earthquakes caused damage to structures throughout Imperial Valley, including soil liquefaction, settlement, and surficial slumps along the Imperial Irrigation District canal and drains (USGS, 1982, Gonzalez-Ortega 2014, Holzer, 1989).

The new building will likely be subjected to numerous small to moderate magnitude earthquakes, as well as occasional larger magnitude earthquakes from nearby active faults over its expected life span. The resulting strong ground motions associated with this hazard may be managed by structural design per the governing edition of the CBC and California State University (CSU) Seismic Requirements (CSU, 2020). Seismic design parameters are provided in the *Recommendations* section of this report.

4.2 Ground Rupture

Ground rupture results from movement on an active fault reaching the ground surface. The site is not located within an Alquist-Priolo Active Fault Zone and no known active faults are present in the immediate site vicinity, as shown on Figure 5B, Local Faults. Potential for ground rupture should therefore be considered low.

4.3 Earthquake-Induced Ground Failure

Potentially liquefiable soils underlie the site. Figure 4, Regional Geology, illustrate that the site is mapped in an area underlain by Quaternary Lake Deposits (i.e., Lacustrine Deposits) that are known to be potentially susceptible to liquefaction and its secondary effects (e.g., earthquake-induced ground failure).

4.3.1 Background

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. Secondary effects of liquefaction are sand boils, settlement and instabilities within sloping ground that occur as lateral spreading, seismic deformation and flow sliding. Lateral spreading is the horizontal deformation of gently sloping ground (slope less than 6 percent), and seismic deformation is the horizontal movement of more steeply sloping ground, both of which can occur during strong ground shaking. Flow sliding is an overall instability of more steeply sloping ground that can occur following or near the end of strong ground shaking, depending on its duration. Associated with liquefaction is seismic compaction, which is the densification of loose to medium dense granular soils that are above groundwater. Of these, liquefaction-induced settlement and seismic compaction are considered more likely to occur given the site surface and subsurface conditions, as discussed below.

4.3.2 Vertical Settlement Analyses

4.3.2.1 Volumetric Settlements

The computer program CLiq (Geologismiki, 2019) was used to perform liquefaction triggering calculations using several CPT-based methods, including those recommended by the NCEER Workshops (Youd et al., 2001) and Boulanger and Idriss (2014). CLiq also calculates the estimated free-field volumetric settlement (below groundwater) and seismic compaction (above groundwater). The analyses adopted the following input parameters:

Peak Ground Acceleration (PGA_M):..0.59g
Earthquake Magnitude (Mw):... 7.1
Groundwater Level: ....20 feet Below Ground Surface

The PGA_M was evaluated using the maximum of the: 1) most recent version of the CSU Seismic Requirements (CSU, 2020), and; 2) maximum considered earthquake geometric mean (MCE_G) peak ground acceleration adjusted for Site Class effects obtained from the OSHPD Seismic Design Maps Tool (SEAOC/OSHPD, 2019) in accordance with the 2019 California Building Code (CBSC, 2019). The controlling magnitude used in the liquefaction evaluation was selected by reviewing deaggregation results obtained from the USGS Unified Hazard Tool (USGS, 2022). A design groundwater level of 20 feet below ground surface was adopted based on our interpretation of the soil saturation in in-situ soil samples and CPT data.

The analyses were performed using data collected from the CPTs performed at the site (CPT-1 through CPT-5). The correlated CPT parameters were compared to the results of our field and laboratory testing collected from Boring B-1. The CPT Soil Behavior Type (SBT) correlated from the CPT data was adjusted to best fit the observations, classifications and material properties of the soils within the borings.

In accordance with Special Publication 117A (CGS, 2008) and general geotechnical engineering practices, a factor of safety against liquefaction of 1.3 was adopted in the analyses, and the liquefaction analyses were limited to a depth of 50 feet.

The liquefaction settlement analyses include depth weighting proposed by Cetin et al. (2009), which consists of a simple linear weighting factor that weights the volumetric strain with depth. This reduces the impact of volumetric strains at large depths. The weighting starts at one at the ground surface and reduces to zero at the weighting limit depth, selected to be the depth of analysis for this project (i.e., 50 feet).

4.3.3 Vertical Settlement Summary

Based on the results of the triggering analyses there are several potentially liquefiable zones within the subsurface profile. In general, the potentially liquefiable soils consist of occasional thin beds that are generally less than 2-foot-thick each, but some up to 4-feet thick locally. The estimated liquefaction-induced volumetric settlement is approximately 1-inch or less at each exploration location. The estimated liquefaction-induced differential settlement is approximately 0.5-inch or less over a horizontal distance of 30 feet.

4.3.4 Instability of Sloping Ground

Since the site is essentially level and the buildings are not located immediately adjacent to sloping ground, the potential for significant liquefaction-induced lateral displacement should be low.

4.4 Landslides

Evidence of ancient landslides or slope instabilities was not observed during our literature review or site reconnaissance and the site is essentially level. Provided that our geotechnical recommendations are properly implemented during construction, it is our opinion that slope instability does not adversely impact the proposed development.

4.5 Tsunamis, Seiches, and Flooding

The distance between the subject site and the Sea of Cortez precludes damage due to seismically induced waves (tsunamis) or seiches within the Pacific Ocean or Sea of Cortez. The Salton Sea is located over 30 miles north of the site at more than 230 feet below mean sea level, which is more than 200 feet below the existing site elevations. The New River is located about three quarters of a mile west of the site, and the Alamo River is located about 7 miles east of the site. However, the normal water surface elevations in these rivers are roughly 20 to 40 feet below site grades. Further, the site is mapped in Federal Emergency Management Agency (FEMA) zone designated “Area of Minimal Flood Hazard” (FEMA, 2008). Consequently, the potential for earthquake induced or other flooding at the site is considered to be low. However, the flooding hazard at the site should be evaluated by the project civil engineer.

5.0 GEOTECHNICAL CONDITIONS

Fill and lacustrine deposits underly the site, as discussed in the *Geology and Subsurface Conditions* section of this report. Geotechnical conditions associated with these units are discussed below.

5.1 Expansive Soils

Laboratory tests indicate the surficial soils at the site should have a “Medium” Potential Expansion. The results of three Expansion Index (EI) tests conducted on bulk soils samples obtained from the ground surface to a depth of about 5 feet below existing grades ranged from 60 to 82, averaging 71 with a median of 70 (i.e., Medium Potential Expansion). Appendix B provides the test results.

5.1 Compressible Soils

Compressible soils underlie the site. Most of these soils are clay that should experience some time dependent consolidation settlement (i.e., long-term settlement). There are also beds of non-plastic silty sand and silt that should settle elastically with the initial fill and structure loading (i.e., short-term settlement). In general, the clay has a medium to high plasticity and we interpret it to be relatively stiff and slightly overconsolidated from consolidation testing, pocket penetrometer tests, undrained shear strength testing, CPT interpretations, and Plasticity Index data. The in-situ moisture contents are generally near the Plastic Limit and the Liquidity Indices are less than 0.7, which indicate relatively stiff and low compressibility soils.

Provided minimal fill placement is needed at the site to achieve the proposed finish grades and foundation loading is limited to the bearing pressures provided in the *Recommendations* section of this report, most of the long-term settlement should occur in a relatively short time following initial loading. However, there are zones of thick clay that could experience some time dependent consolidation settlement if significant loading from fill or foundation loads are proposed for the project. The estimated settlement magnitude and duration associated with the proposed fill placements and foundation loads should be evaluated during the design development phase of the project to evaluate the potential impact to the project.

5.2 Reuse of Onsite Soils

Soils from proposed onsite excavations at the site are anticipated to consist of lean and fat clay (CL and CH) and are generally not considered suitable for re-use as compacted fill without specific recommendations [see the *Post-Tensioned Slabs (Case B – Existing Clay)* section of this report]. Imported fill is anticipated to be needed to replace expansive materials underlying the proposed structures, flatwork, and pavements. Recommendations for imported fill are provided in the *Recommendations* section of this report.

6.0 CONCLUSIONS

The proposed Student Residence Hall building appears to be feasible from a geotechnical perspective, provided that appropriate measures are implemented during construction. Several geotechnical conditions exist on site that should be addressed.

- Laboratory tests indicate that the surficial soils at the site have a moderate potential for expansion (EI between 51 and 90). The use of thickened foundations and slabs underlain by imported non-expansive soil (EI<20) could reduce the potential for future distress to the building associated with soil expansion. Alternatively, a post-tensioned slab-on-grade could be used to support the new building. Alternative post-tension slab design parameters are provided for slabs bearing on either imported select soil or compacted on-site clay.

- The fill is not suitable for reuse as engineered fill without specific recommendations. Laboratory tests indicate the fill soils primarily consist of lean and fat clay (CL and CH) with a medium expansion potential. To reduce the potential for heave related distress, we recommend placing and compacting non-expansive soil (EI<20) beneath structures, pavements, flatwork and other heave-sensitive improvements.

- Groundwater was encountered at the site at a depth of about 28 feet below existing surface grades. The site is also located in an area of high seismic activity, and the potential does exist for relatively minor earthquake-induced liquefaction and settlement of the granular lacustrine deposits beneath the site. We estimate that the proposed building could experience post-liquefaction differential settlement on the order of 0.5-inch over a horizontal distance of 30 feet. In addition to helping reduce the potential for distress associated with expansive soils, the use of thickened and heavily reinforced conventional building foundations or post-tensioned could also help to reduce the potential for distress to the building associated with post-liquefaction settlement.

- The site is underlain by zones of thick clay that could experience some time dependent consolidation settlement if significant loading from fill or foundation loads are proposed for the project. The estimated settlement magnitude and duration associated with the proposed fill placements and foundation loads should be evaluated during the design development phase of the project to evaluate the potential impact to the project

- Laboratory tests indicate that the clayey surficial soils at the site present a *severe* risk of sulfate attack and are also *corrosive* to *very corrosive* to buried metals. The recommended placement of two to five feet of imported sand beneath the sidewalks and building slabs-on-grade could help to reduce the potential for sulfate attack and corrosion. However, sulfate resistant Type V cement is recommended for use at the site. Various corrosion control measures may also be needed for buried metal structures. A corrosion consultant may be contacted.

- Our previous experience indicates that the on-site clayey soils are not suitable for effective storm water infiltration measures. An infiltration rate of less than 0.05 inches per hour is estimated based on previous infiltration tests we have conducted on similar clay soils. The clays typically have a permeability of 10^{-7} to 10^{-9} centimeters per second (essentially impermeable). This suggests that the on-site soils are not suitable for full or partial infiltration measures.

- The potential for active faults or landslides to adversely impact the building is considered remote. However, the site is situated within a zone of high seismic activity. The strong ground shaking hazard may be mitigated by structural design in accordance with the applicable provisions of the governing CBC and minimum CSU Seismic Requirements.

7.0 RECOMMENDATIONS

The remainder of this report presents recommendations for earthwork construction and the design of the proposed improvements. These recommendations are based on empirical and analytical methods typical of the standards of practice in southern California. If these recommendations do not cover a specific feature of the project, please contact our office for revisions or amendments.

7.1 Plan Review

We recommend that grading and foundation plans be reviewed by Group Delta prior to finalization. We anticipate that substantial changes in the development may occur from the preliminary design concepts used for this investigation. Such changes may require additional geotechnical evaluation, which may result in substantial modifications to the remedial grading and foundation recommendations provided in this report.

7.2 Excavation and Grading Observation

Foundation and grading excavations should be observed by the project geotechnical consultant. During grading, the geotechnical engineer's representative should provide observation and testing services continuously. Such observations are considered essential to identify field conditions that differ from those anticipated by this investigation, to adjust designs to the actual field conditions, and to evaluate that the remedial grading is accomplished in general accordance with the recommendations in this report. The recommendations provided in this report are contingent upon Group Delta providing these services. Our personnel should perform sufficient testing of fill and backfill during grading and improvement operations to support our professional opinion as to compliance with the compaction recommendations.

7.3 Earthwork

Grading and earthwork should be conducted in general accordance with the requirements of the current CBC and the earthwork recommendations provided within this report. The following recommendations are provided regarding specific aspects of the proposed earthwork. These recommendations should be considered subject to revision based on the conditions observed by the geotechnical consultant during the grading operations.

7.3.1 Site Preparation

General site preparation should begin with the removal of deleterious materials, including any existing structures, vegetation, turf, contaminated soil, trash, and demolition debris. Existing subsurface utilities or groundwater wells that underly the proposed improvements should be properly abandoned and relocated outside of the proposed building footprint. Excavations associated with abandonment operations should be backfilled and compacted as described in *Fill Compaction* Section of this report. Wells, if present, should be abandoned per local and State guidelines. Alternatively, abandoned utilities may be grouted with a two-sack sand-cement slurry under the observation of the project geotechnical consultant.

7.3.2 Improvement Areas

At least two feet of compacted fill with an Expansion Index of 20 or less is recommended beneath new concrete sidewalks and exterior flatwork areas. To accomplish this objective, the upper 24-inches of soil below slab subgrade (i.e., bottom of the slab) should be excavated and removed from the site. The over-excavation should include the soil within 2-feet of the sidewalk perimeter (measured horizontally). The resulting excavation surface should be scarified, brought to 3-percentage points or more above optimum moisture content and compacted to at least 90 percent of the maximum dry density per ASTM D1557. The excavation bottom should then be backfilled to the planned slab subgrade elevations using a non-expansive (EI<20) granular material and be compacted in accordance with the recommendations in the *Fill Compaction* section below. Subgrade compaction should be conducted immediately prior to placing concrete or base.

7.3.3 Building Areas

The clayey lacustrine deposits beneath the proposed building addition consist of expansive lean clay (CL) and fat clay (CH). We recommend that the upper 5 feet of clayey soil beneath the proposed building finish pad elevations be excavated and removed from the site. The remedial excavations should extend at least 5 feet horizontally beyond the perimeter of the proposed building, wherever possible. However, the excavations should not pass below a 1:1 plane extending down and out from the bottom outside edge of any existing foundations, in order to avoid undermining these footings and causing distress to existing structures. The resulting excavation surface should be scarified, brought to 3-percentage points or more above optimum moisture content and compacted to at least 90 percent of the maximum dry density at per ASTM D1557. The excavation bottom should then be backfilled to the planned slab subgrade elevations using a non-expansive (EI<20) granular material and be compacted in accordance with the recommendations in the Fill Compaction section below.

7.3.4 Fill Compaction

All fill and backfill should be placed and compacted at or slightly above optimum moisture content per ASTM D1557 using equipment capable of producing a uniformly compacted product. The loose lift thickness should be 8 inches, unless performance observed and testing during earthwork indicates a thinner loose lift is needed, or a thicker loose lift is possible, up to a loose lift thickness of 12 inches.

The minimum recommended relative compaction is 90 percent of the maximum dry density per ASTM D1557. Sufficient observation and testing should be performed by the project geotechnical consultant during grading so that an opinion can be rendered as to the compaction achieved. Rocks or concrete fragments greater than 6 inches in maximum dimension should not be used in compacted fill.

A two-sack sand and cement slurry may be used as an alternative to compacted fill soil. It has been our experience that slurry is often useful in confined areas which may be difficult to access with typical compaction equipment. A minimum 28-day compressive strength of 100 psi is recommended for the two-sack sand and cement slurry. Samples of the slurry should be fabricated and tested for compressive strength during construction.

7.3.5 Import Soil

Imported fill sources should be observed and tested by the project geotechnical consultant prior to hauling onto the site to evaluate the suitability for use. In general, imported fill materials should consist of granular soil with more than 70 percent passing the ¾-inch sieve and less than 35 percent passing the No. 200 sieve based on ASTM C136, and an Expansion Index less than 20 based on ASTM D4829. Samples of the import should be tested by the geotechnical consultant in order to evaluate the suitability of these soils for their proposed use.

Additional testing per the guidelines provided by the Department of Toxic Substances Control (DTSC, 2001) is required by the Owner prior to accepting soil for import. Test results should meet most stringent State and Federal residential screening levels including the most up-to-date DTSC Modified Screening Levels (DTSC-SLs) and United States Environmental Protection Agency Regional Screening Level (RSL).

7.3.6 Subgrade Stabilization

All excavation bottoms should be firm and unyielding prior to placing fill. In areas of saturated or "pumping" subgrade, a geogrid such as Tensar BX-1200 or Terragrid RX1200 may be placed directly on the excavation bottom, and then covered with at least 12 inches of minus ¾-inch aggregate base. Once the excavation is firm enough to attain the recommended compaction within the base, the remainder of the excavation may be backfilled using either compacted soil or aggregate base. If wet soil conditions are encountered where further excavations are needed, an additional 12-inches of free draining open graded material (such as minus ¾-inch crushed rock) should be placed between the stabilizing geogrid and the compacted well graded aggregate base. The open graded material should be completely enveloped in filter fabric (such as Mirafi 140N).

7.3.7 Temporary Excavations

Temporary excavations may be needed to construct the planned improvements. Excavations should conform to Cal-OSHA guidelines (2018). In general, we recommended that temporary excavations be inclined no steeper than 1:1 for heights up to 5 feet. Vertical excavations should be shored. Any excavations that encounter groundwater seepage should be evaluated on a case-by-case basis.

The design, construction, maintenance, and monitoring of all temporary slopes is the responsibility of the contractor. The contractor should have a competent person evaluate the geologic conditions encountered during excavation to determine permissible temporary slope inclinations and other measures as required by Cal-OSHA. The below assessment of OSHA Soil Types for temporary slopes is based on preliminary engineering classifications of material encountered in widely spaced explorations.

Based on the findings of our subsurface investigation, the following OSHA Soil Types may be assumed for planning purposes.

PRELIMINARY CAL/OSHA SOIL TYPES

Geologic Unit	Cal/OSHA Soil Type
Fill	Type B[1]
Lacustrine Deposits	Type B[1]

1. This assumes that no groundwater seepage or caving is encountered in the excavations.

7.4 Surface Drainage

Foundation and slab performance depends greatly on how well surface runoff drains from the site. The ground surface should be graded so that water flows rapidly away from structures and top of slopes without ponding. The surface gradient needed to achieve this may depend on the prevailing landscaping. Planters should be designed and built so that water will not seep into the foundation, slab, pavement or other heave/settlement structure areas. If roof drains are used, the drainage should be channeled by pipe to the storm drain system, or discharge at least 10 feet from buildings. Irrigation should be limited to the minimum needed to sustain landscaping, and consideration should be given to utilizing drought tolerant landscape to further minimize water used for irrigation. Excessive irrigation, surface water, water line leaks, or rainfall may cause perched groundwater to develop within the underlying soil.

7.5 Storm Water Management

We anticipate that various bioretention basins, swales or pervious paver block pavements may be proposed to promote on-site infiltration for storm water Best Management Practice (BMP). In order to help evaluate the feasibility of on-site infiltration, the infiltration rate of the on-site soil may be estimated using borehole percolation or double ring infiltrometer tests conducted within the planned BMP areas. However, our experience indicates that infiltration testing in clay soils should result in a "No Infiltration" condition per the applicable BMP Design Manual. An infiltration rate of less than 0.05 inches per hour is estimated based on previous infiltration tests we have conducted in similar clay soils. The clays typically have a permeability of 10^{-7} to 10^{-9} cm/s (essentially impermeable).

7.6 Foundation Recommendations

The foundations for the new buildings should be designed by the project structural engineer using the following geotechnical parameters. These are only minimum criteria, and should not be considered a structural design, or to preclude more restrictive criteria of governing agencies or the structural engineer. The following recommendations should be considered preliminary, and subject to revision based on decisions made during design development and the conditions observed by the geotechnical consultant during grading.

7.6.1 Conventional Foundations

The following recommendations assume that remedial grading will be conducted for the building pad area as recommended in the *Earthwork* Section, and that the building pad grade will be underlain by at least 5-feet of granular non-expansive compacted fill (EI<20). Conventional shallow foundations would be considered appropriate for this condition, as shown in Figure 6.

Allowable Bearing:	*2,000 psf (allow ⅓ increase for short-term wind or seismic loads)*
Minimum Footing Width:	*12 inches*
Minimum Footing Depth:	*24 inches below lowest adjacent soil grade*
Minimum Reinforcement:	*Two No. 5 bars at both top and bottom in continuous footings*

7.6.2 Post-Tensioned Slabs

Two different post-tensioned slab foundation design conditions are summarized below. Case A provides recommendations assuming the building will be underlain by at least 5-feet of non-expansive compacted fill, and Case B assumes that a post-tension slab foundation may be designed to bear directly on recompacted expansive on-site clay. The following recommendations are provided using the Post-Tensioning Institute (PTI) Document *PTI DC10.5-19* (2019).

7.6.2.1 Case A – Select Fill

For Case A, we have assumed that remedial grading will be conducted per our recommendations, and that the proposed building will be underlain by at least 5-feet of imported granular non-expansive compacted fill in accordance with the *Earthwork* Section of this report, overlying the existing expansive clay. The following post-tension slab foundation design parameters are considered applicable to buildings that will be underlain by such conditions. Note that these recommendations should be considered preliminary, and subject to revision based on the as-graded conditions observed by the geotechnical consultant during fine grading of the site.

Post-Tension Slab Design Parameters (Case A):

Moisture Variation Distance, e_m:	*Center Lift:*	*5.5 feet*
	Edge Lift:	*2.5 feet*
Differential Soil Movement, y_m:	*Center Lift:*	*0.5 inches*
	Edge Lift:	*1.0 inches*
Allowable Bearing:	*2,000 psf at slab subgrade*	

7.6.2.2 Post-Tensioned Slabs (Case B – Existing Clay)

As an alternative to remedial grading to replace the highly expansive clays with imported sand as described in Case A above, a post-tension slab foundation may be designed to bear directly on the highly expansive on-site clay. For Case B, the undocumented fill soils underlying the proposed structure should be excavated and replaced as a uniformly compacted fill beneath the building (as a minimum). The undocumented fill depth is anticipated to extend approximately three to four feet below existing grades at the site. The clayey fill soil should be compacted to at least 90 percent relative compaction at 3-percentage points or more above optimum moisture content per ASTM D1557. The following post-tension slab foundation design parameters are considered appropriate for a building underlain by recompacted clayey fill soils.

Post-Tension Slab Design Parameters (Case B):

Moisture Variation Distance, e_m:	*Center Lift:*	*7.0 feet*
	Edge Lift:	*3.5 feet*
Differential Soil Movement, y_m:	*Center Lift:*	*1.5 inches*
	Edge Lift:	*2.5 inches*
Allowable Bearing:	*2,000 psf at slab subgrade*	

7.6.3 Settlement

Total and differential settlements of the proposed structure due to the allowable bearing loads provided above are not expected to exceed 1.5 and 0.75 inches in 30 feet, respectively. In addition to static settlement, the site may experience post-liquefaction total and differential settlements on the order of approximately 1-inch and 0.5 inches in 30 feet, respectively, as discussed in *Earthquake Induced Ground Failure* Section.

7.6.4 Lateral Resistance

Lateral loads against the structure may be resisted by friction between the bottoms of footings and slabs and the underlying soil, as well as passive pressure from the portion of vertical foundation members embedded into compacted fill. A coefficient of friction of 0.25 and a passive pressure of 250 psf per foot of depth may be used for level ground conditions.

7.7 Seismic Design

Structures should be designed in general accordance with the governing seismic provisions of the 2019 CBC, as well as the minimum seismic design requirements of the California State University (CSU, 2020). Field testing consisting of shear wave measurements in CPT-1 resulted in average shear wave velocity in the upper 30 meters ($V_{S,30}$) of approximately 210 m/s. Based on these measurements, the Site Classification using Chapter 20 of ASCE 7-16 would be Site Class D. The following preliminary seismic design parameters are recommended by the California State University Seismic Requirements (CSU, 2020) for the site.

CSU – SDSU IMPERIAL CAMPUS SEISMIC DESIGN PARAMETERS

Hazard Level	Parameter	Site Class D
BSE-1N	PGA_D	0.40
	S_{D0}	0.40
	S_{DS}	1.00
	S_{D1}	0.68
BSE-2N	PGA_M	0.59
	S_{M0}	0.60
	S_{MS}	1.50
	S_{M1}	1.02

7.8 On-Grade Slabs

The following recommendations assume that remedial grading will be conducted for the building pad area as recommended in the *Earthwork* Section, and that the building pad grade will be underlain by at least 5-feet of non-expansive compacted fill (EI<20). Conventional concrete building slabs should be at least 6 inches thick and should be reinforced with at least No. 3 bars on 12-inch centers, each way. Slab thickness, control joints, and reinforcement should be designed by the project structural engineer and should conform to the requirements of the current CBC.

7.8.1 Moisture Protection for 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 project 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 AB or finished subgrade immediately below the slab, provided it is protected from puncture and repaired per the manufacturer’s recommendations if damaged. Note that the CBC specifies that a capillary break such as 4 inches of clean sand be used beneath building slabs (as defined and installed per the California Green Building Standards), along with a Vapor Retarder.

7.9 Exterior Slabs

Exterior slabs and sidewalks subjected to pedestrian traffic and light vehicle loading (e.g., golf carts) should be at least 4 inches thick and underlain by 2-feet of granular non-expansive soil in accordance with the *Improvement Areas* section of this report. 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 reinforcement would consist of 6x6 W2.9/W2.9 welded wire fabric placed securely at mid-height of the slab.

7.10 Preliminary Pavement Design

For all pavement areas, the upper 12 inches of clayey subgrade soil (below the pavement aggregate base section) should be removed. This removal should extend 2 feet or more beyond the outside edge of the pavement perimeter measured horizontally. The resulting excavation surface should be scarified immediately prior to constructing the pavements, brought to optimum moisture, and compacted to at least 90 percent of the maximum dry density at 3-percentage points or more above optimum moisture content per ASTM D1557. The excavation bottom should then be backfilled to the planned pavement subgrade (i.e., bottom of the aggregate base section) using a non-expansive (EI<20) granular material (i.e., subbase). Aggregate base and subbase should be compacted to 95 percent relative compaction at or slightly above optimum moisture content per ASTM D1557. Aggregate base should conform to the Standard Specifications for Public Works Construction (*SSPWC),* Sections 200-2.2, -2.4, or -2.5 (PWSI, 2018). Asphalt concrete should conform to Section 203-6 of the *SSPWC* and should be compacted to 91 and 97 percent of the Rice density per ASTM D2041 (PWSI, 2018).

7.10.1 Asphalt Concrete

Based on our previous experience, we anticipate that the clayey on-site soils have an R-Value of 5 or less. Preliminary asphalt concrete pavement design was conducted using the Caltrans Design Method (2018). We anticipate that a Traffic Index ranging from 5.0 to 6.0 may apply to new pavement areas. The project civil engineer should review the assumed Traffic Indices to determine if and where they may be applicable. Based on the minimum R-Value of 5 and the assumed range of Traffic Indices, the following pavement sections would apply.

SUMMARY OF PRELIMINARY ASPHALT CONCRETE PAVEMENT SECTIONS

PAVEMENT TYPE	TRAFFIC INDEX	ASPHALT SECTION	BASE SECTION	SUBBASE SECTION[1]
Passenger Car Parking	5.0	3 Inches	10 Inches	12 Inches
Light Truck Traffic Areas	6.0	4 Inches	12 Inches	12 Inches

1) <u>NOTE</u>*: One foot of non-expansive subbase should be placed beneath the pavement section to reduce the potential for cracking due to soil heave/shrink behavior.*

7.10.2 Portland Cement Concrete

Concrete pavement design was conducted in general accordance with the simplified design procedure of the Portland Cement Association (1984). 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. The concrete was assumed to have a minimum flexural strength of 600 psi. The flexural strength of the pavement concrete should be confirmed during construction using ASTM C78. For concrete pavement design, the subgrade materials were assumed to provide "low" support, based on our experience with similar materials. Using these assumptions and the same traffic indices presented previously, we recommend that the PCC pavement sections at the site consist of at least 6 inches of concrete placed over 6 inches of compacted aggregate base over 12 inches of compacted non-expansive subbase (i.e., EI < 20).

Crack control joints should be constructed for PCC pavements on a maximum spacing of 10 feet, each way. Concentrated truck traffic areas, such as trash truck aprons and loading docks, should be reinforced with number 4 bars on 18-inch centers, each way.

7.11 Pipelines

The planned addition may include various pipelines such as water, storm drain and sewer systems. Geotechnical aspects of pipeline design include lateral earth pressures for thrust blocks, modulus of soil reaction, and pipe bedding. Each of these parameters is discussed below.

7.11.1 Thrust Blocks

Lateral resistance for thrust blocks may be evaluated using a passive pressure value of 250 lbs/ft^2 per foot of embedment, assuming a triangular distribution and level ground conditions. This value may be used for thrust blocks embedded into compacted fill soils as well as the underlying lacustrine deposits, provided that these soils are located above the groundwater table.

7.11.2 Modulus of Soil Reaction

The modulus of soil reaction (E') is used to characterize the stiffness of soil backfill placed along the sides of buried flexible pipelines. For the purpose of evaluating deflection due to the load associated with trench backfill over the pipe, a value of 1,000 lbs/in^2 is recommended for the general conditions, assuming granular bedding material is placed around the pipe and the soils are located above the groundwater table.

7.11.3 Pipe Bedding

Typical pipe bedding as specified in the *Standard Specifications for Public Works Construction* may be used. As a minimum, we recommend that pipes be supported on at least 4 inches of granular bedding material such as minus ¾-inch crushed rock, disintegrated granite or granular materials with a Sand Equivalent of 20 or more. Where open graded material (e.g., ¾-inch minus crushed rock) is used as bedding and shading around and above the pipe, we recommend that open graded material should be completely enveloped in filter fabric (such as Mirafi 140N).

Where pipeline or trench excavations exceed a 15 percent gradient, we do not recommend that open graded rock be used for bedding or backfill because of the potential for piping and internal erosion. For sloping utilities, we recommend that coarse sand with a Sand Equivalent of 20 or more or sand-cement slurry be used for the bedding and pipe zone. The slurry should consist of a 2-sack mix having a slump no greater than 5 inches.

7.12 Reactive Soils

In order to assess the sulfate exposure of concrete in contact with the site soils, samples were tested for pH, resistivity, water-soluble sulfate and chloride content, as shown in Figure B-5. The sulfate test results indicate that the on-site soils present a *severe* potential for sulfate attack based on commonly accepted criteria (Bentivegna, et al., 2020). A *negligible* sulfate content is recommended for any imported soils and should be confirmed through laboratory testing prior to import.

The saturated resistivity and chloride content of the near surface soils are indicative of a *corrosive* to *very corrosive* soil with respect to buried metals based on commonly accepted criteria (Caltrans, 2021). Typical corrosion control measures should be incorporated into the project design, such as providing minimum clearances between reinforcing steel and soil, and sacrificial anodes for any buried metal structures. A corrosion consultant may be contacted for specific recommendations.

8.0 LIMITATIONS

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.

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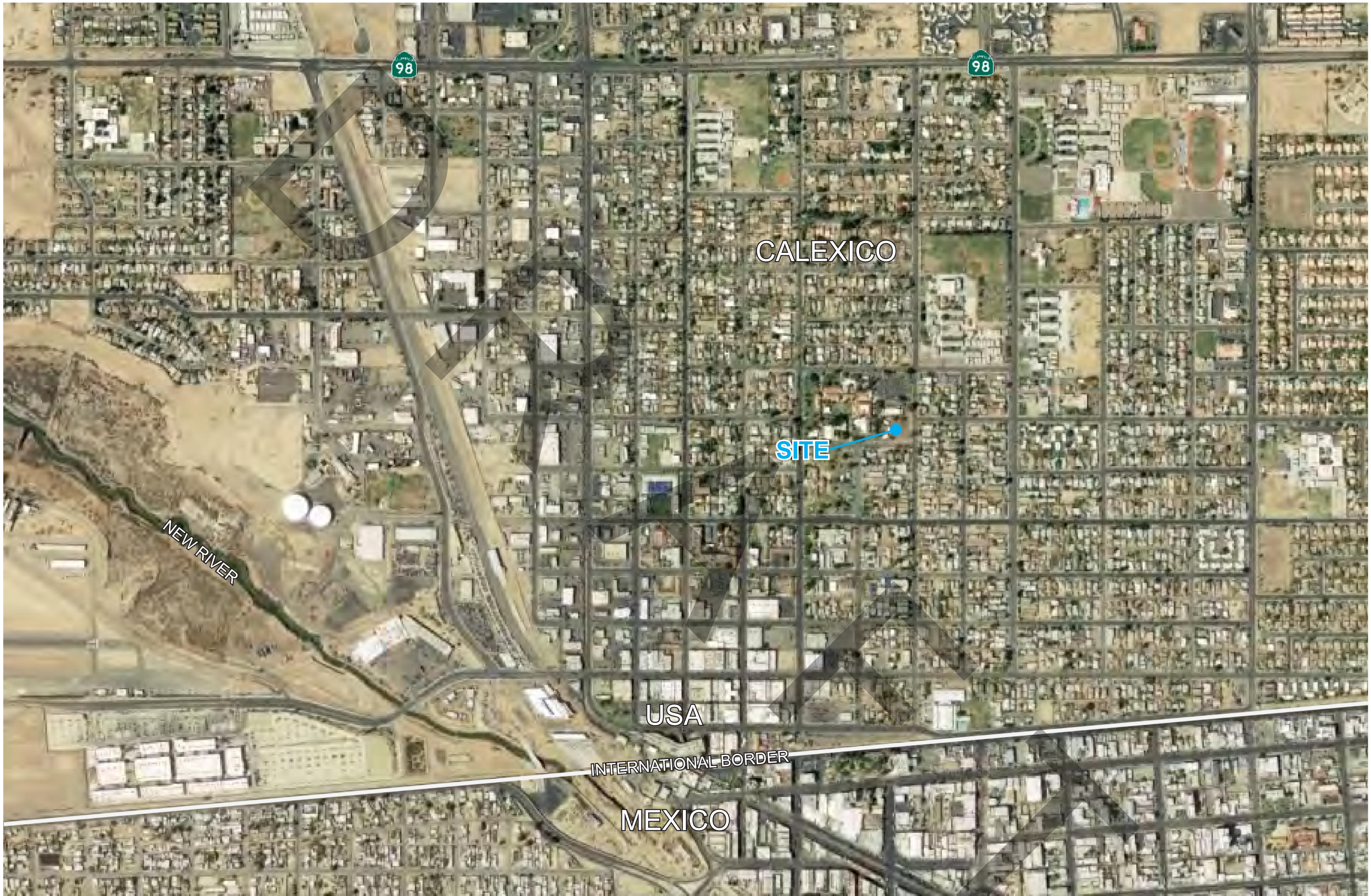

N

NO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	**SITE LOCATION**	PROJECT NUMBER	FIGURE NUMBER
		SD732	1

REFERENCE: GOOGLE EARTH PRO 7.3.4.8248. IMAGERY DATE APRIL 4, 2018.

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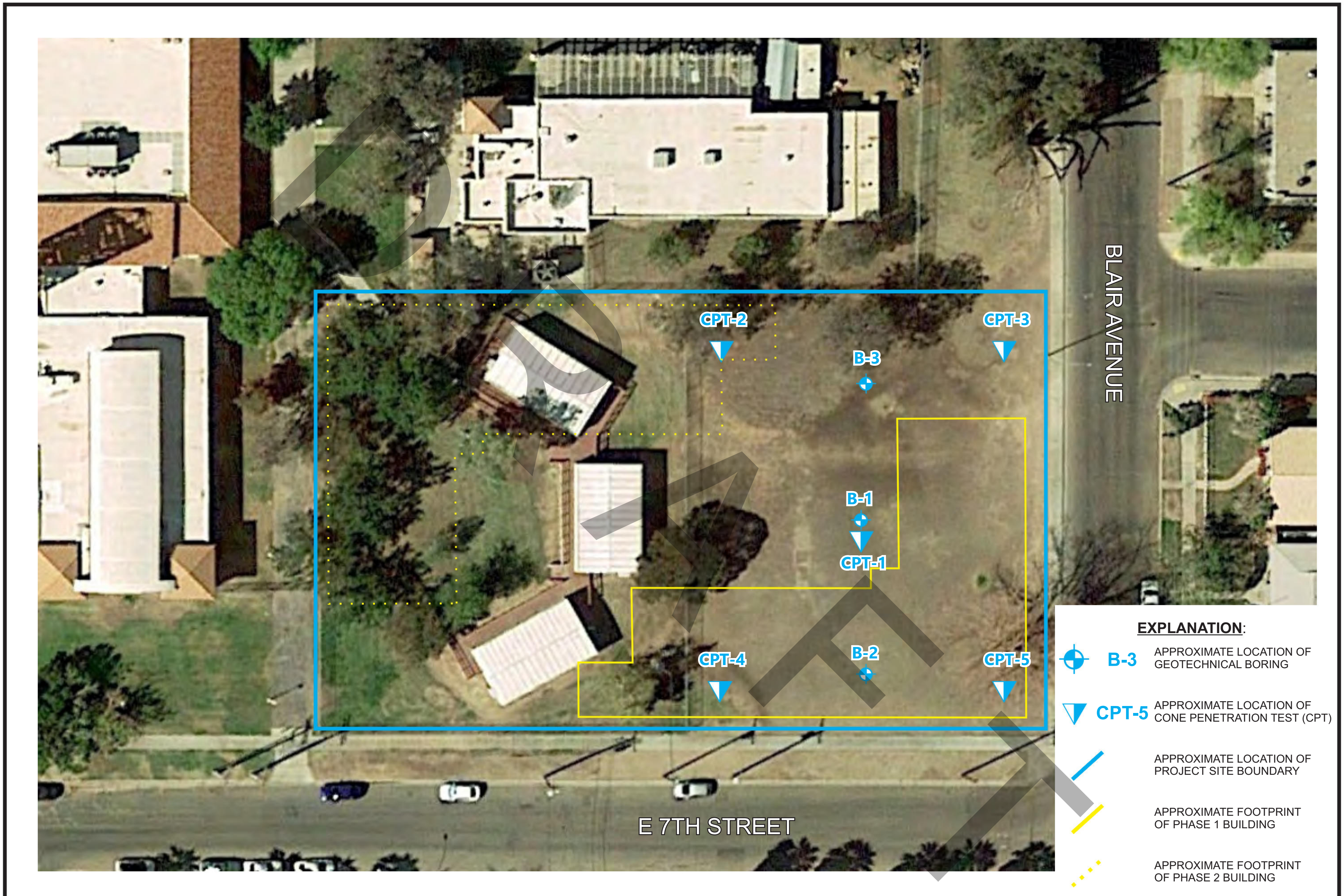
NO SCALE

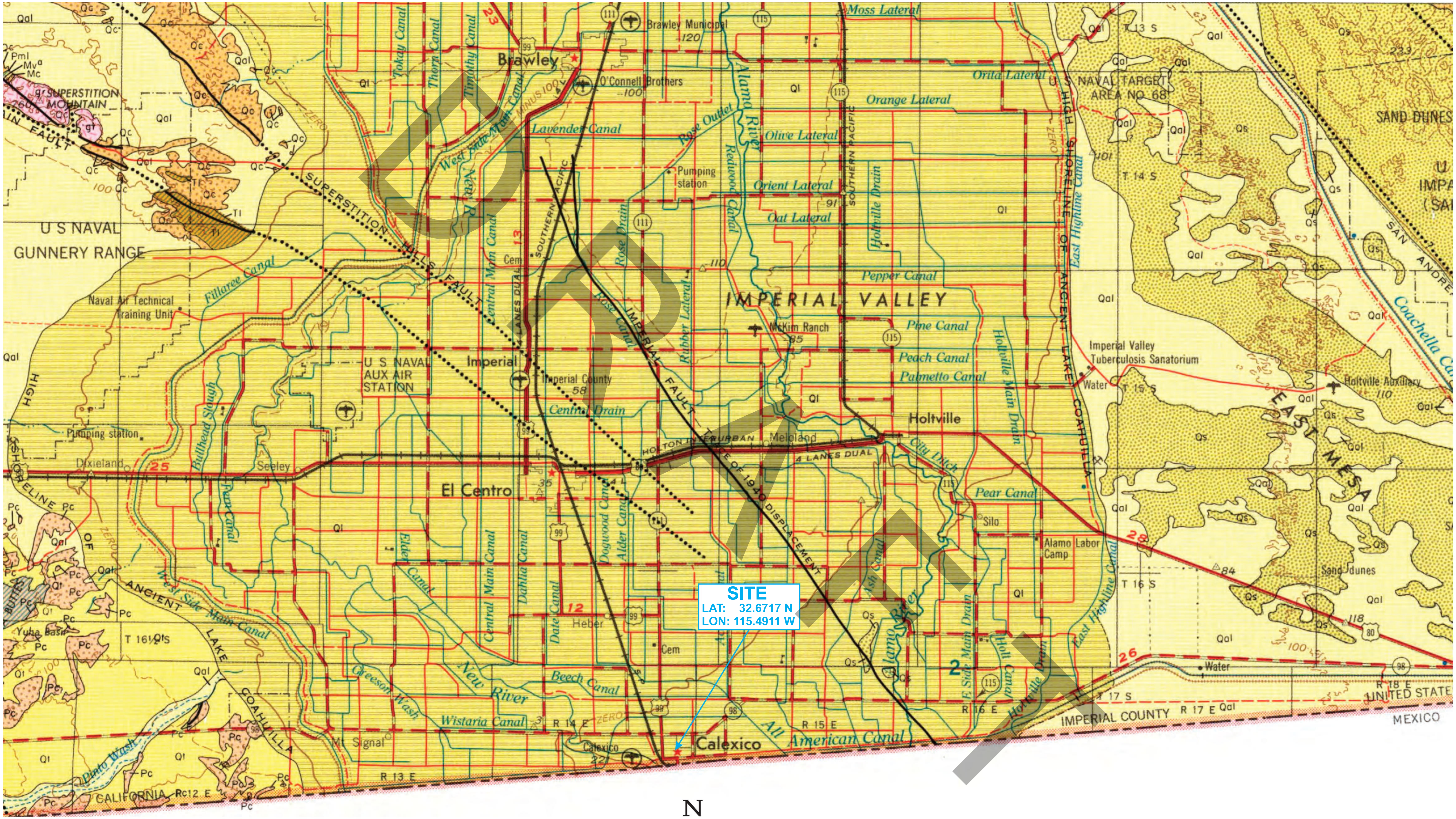
PROJECT NAME	FIGURE NAME	GROUP DELTA	
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	**SITE VICINITY**	PROJECT NUMBER SD732	FIGURE NUMBER **2**

REFERENCE: GOOGLE EARTH PRO 7.3.4.8248. IMAGERY DATE APRIL 4, 2018



PROJECT NAME	FIGURE NAME	GROUP DELTA	
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	EXPLORATION LOCATIONS	PROJECT NUMBER SD732	FIGURE NUMBER 3

REFERENCE: GOOGLE EARTH PRO 7.3.4.8248. IMAGERY DATE AUGUST 1, 2021.



EXPLANATION:

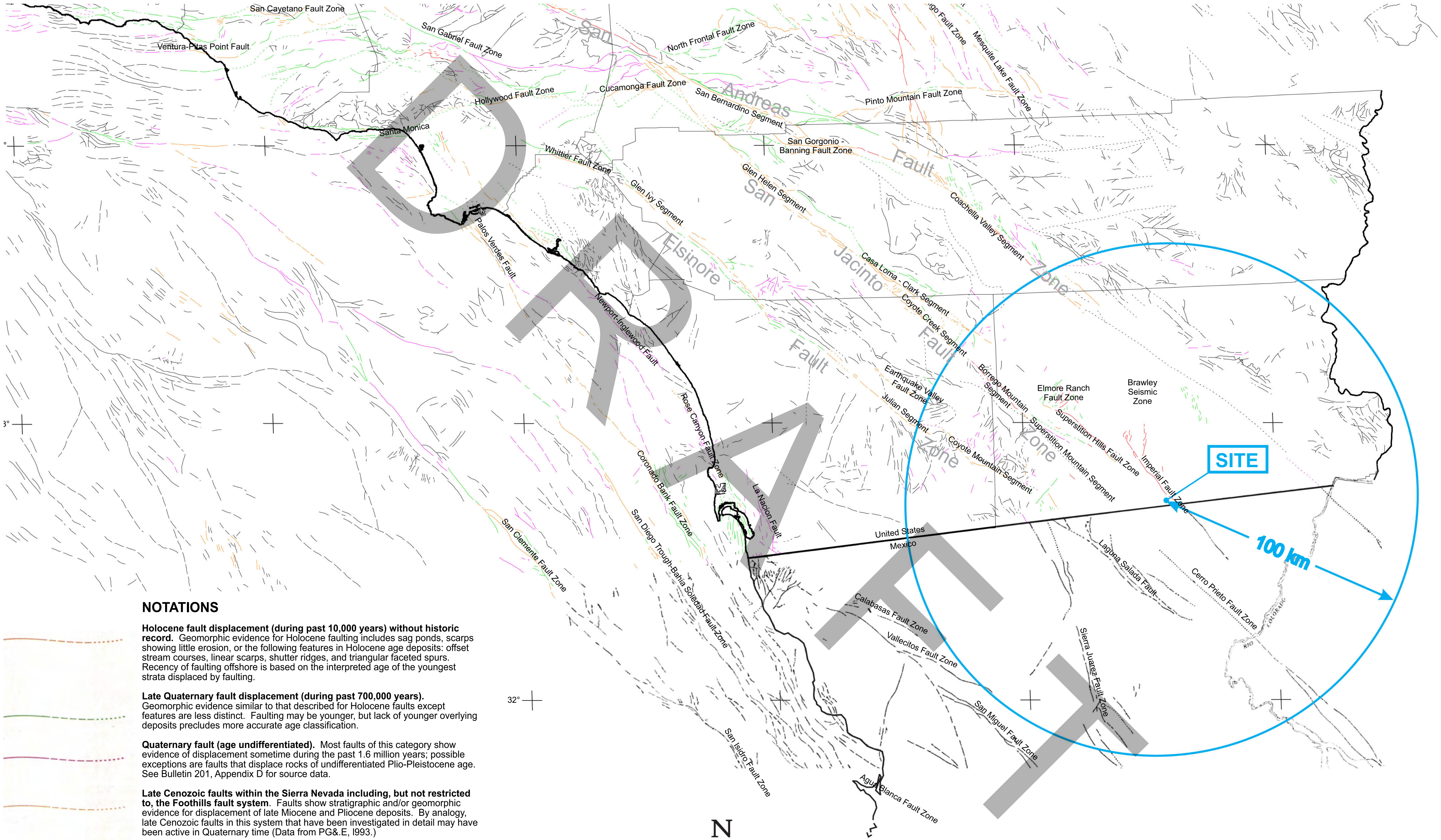
Ql	Quaternary lake deposits
Qal	Alluvium
Qs	Dune sand
Qt	Quaternary nonmarine terrace deposits
Qc	Pleistocene nonmarine

N

NO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	REGIONAL GEOLOGY	PROJECT NUMBER SD732	FIGURE NUMBER 4

Reference: Rudolph Strand (1962). Geologic Map of California, San Diego-El Centro, Scale 1:250,000.



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, l993.)

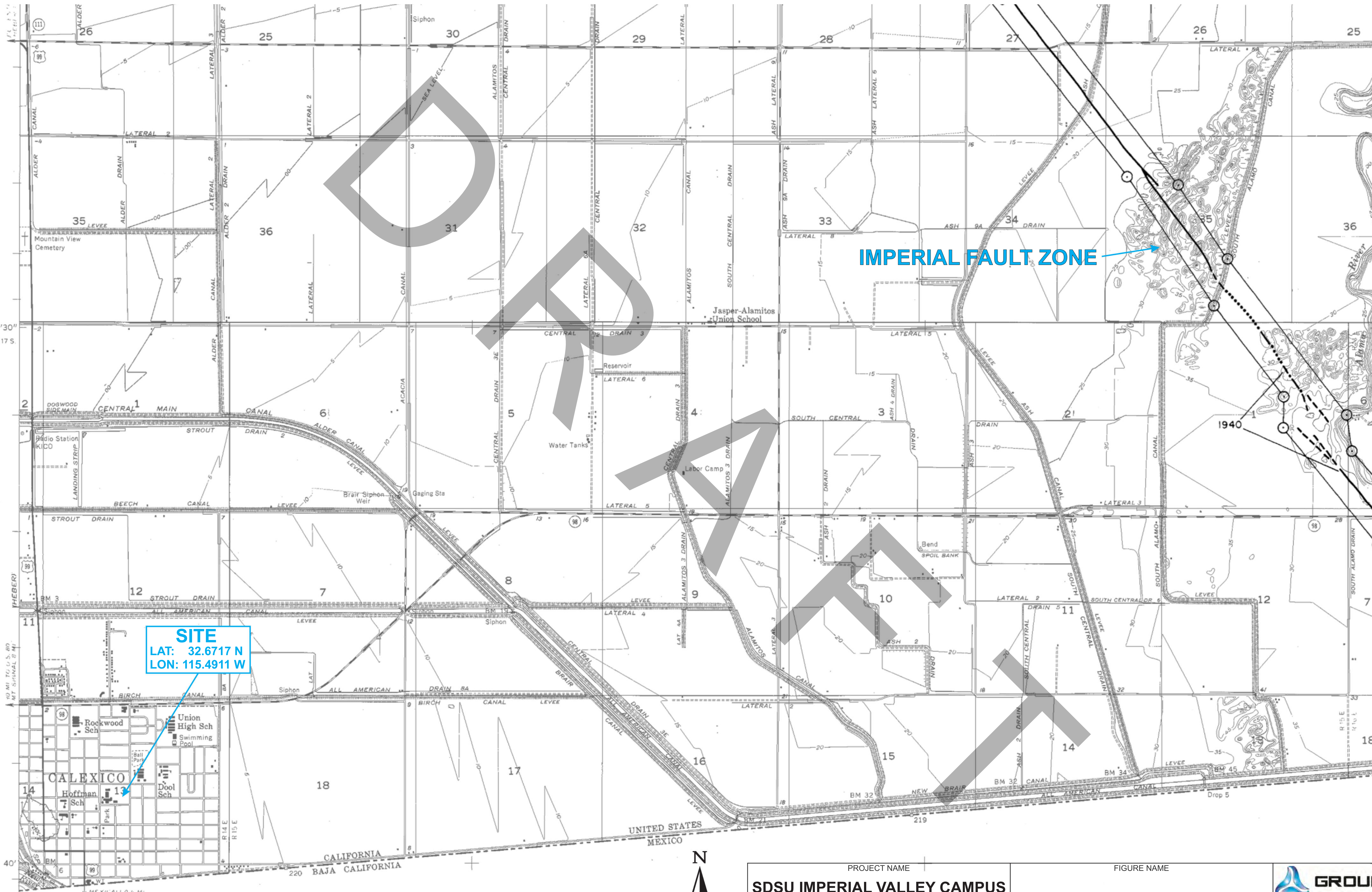
Pre-Quaternary fault (older than 1.6 million years) or fault without recognized Quaternary displacement. Some faults are shown in this category because the source of mapping used was of reconnaissance nature, or was not done with the object of dating fault displacements. Faults in this category are not necessarily inactive.

N

NO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	**REGIONAL FAULT LOCATIONS**	PROJECT NUMBER SD732	FIGURE NUMBER 5A

Reference: Jennings, C.W. (1994). *Fault Activity Map of Callifornia and Adjacent Areas,* CDMG Geologic Data Series, Map No. 6.



PROJECT NAME	FIGURE NAME	GROUP DELTA	
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	**LOCAL FAULT LOCATIONS**	PROJECT NUMBER: SD732	FIGURE NUMBER: 5B

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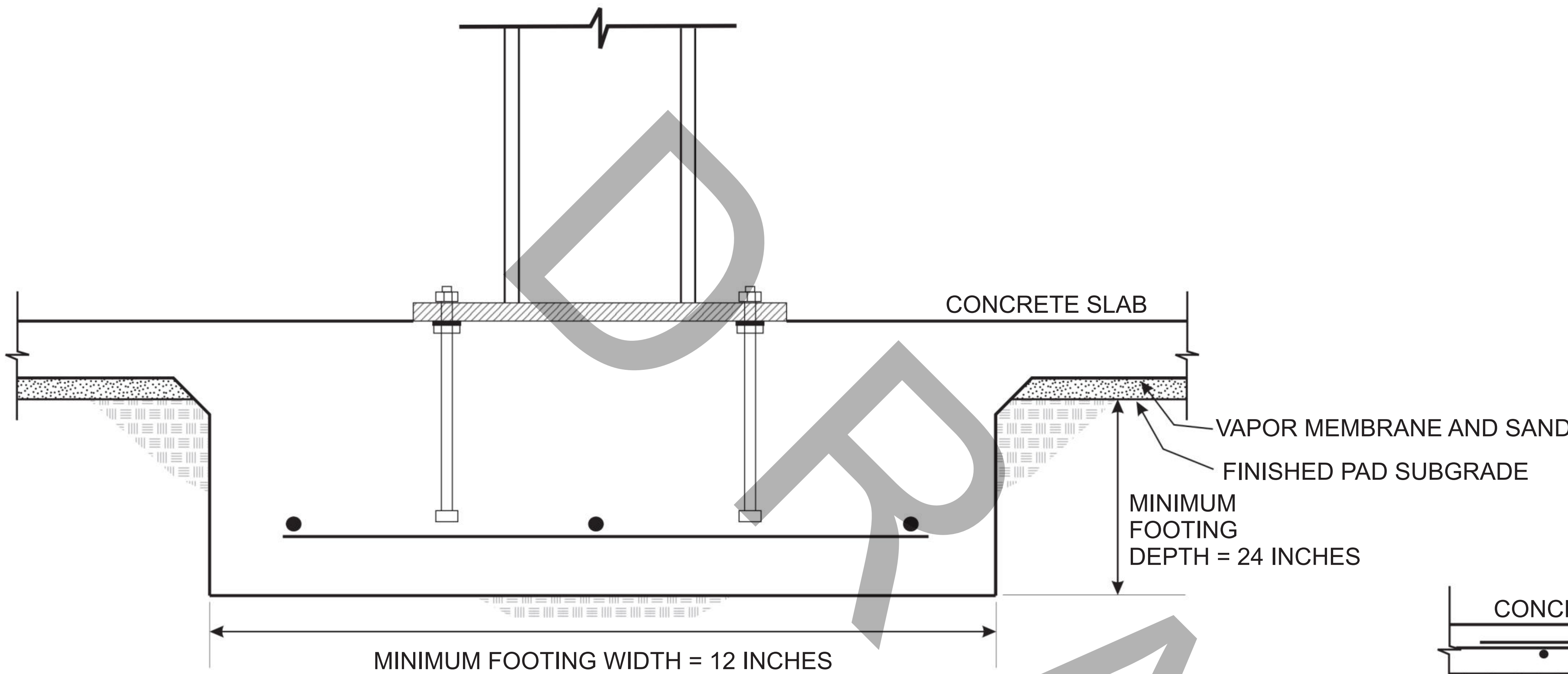
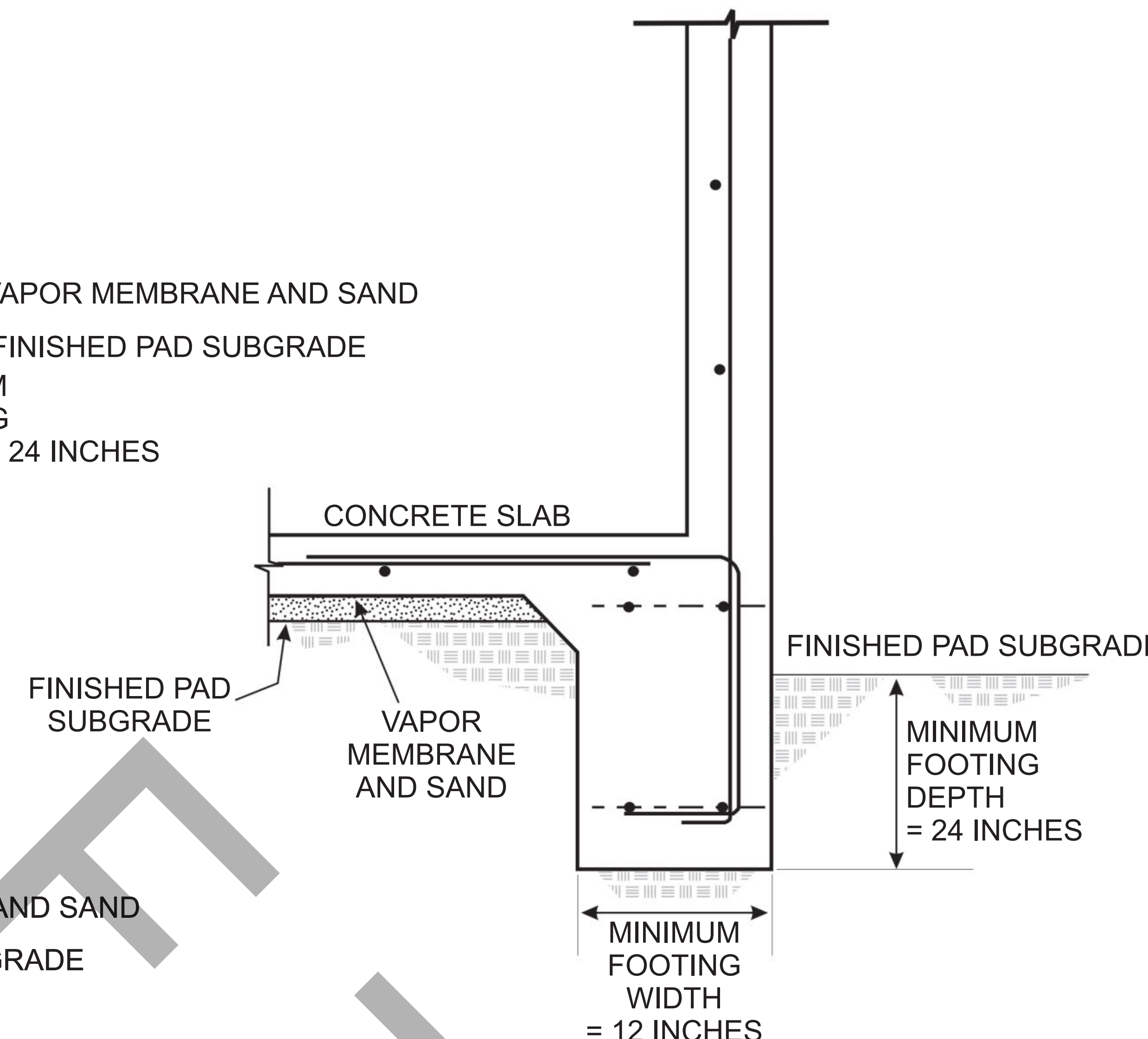
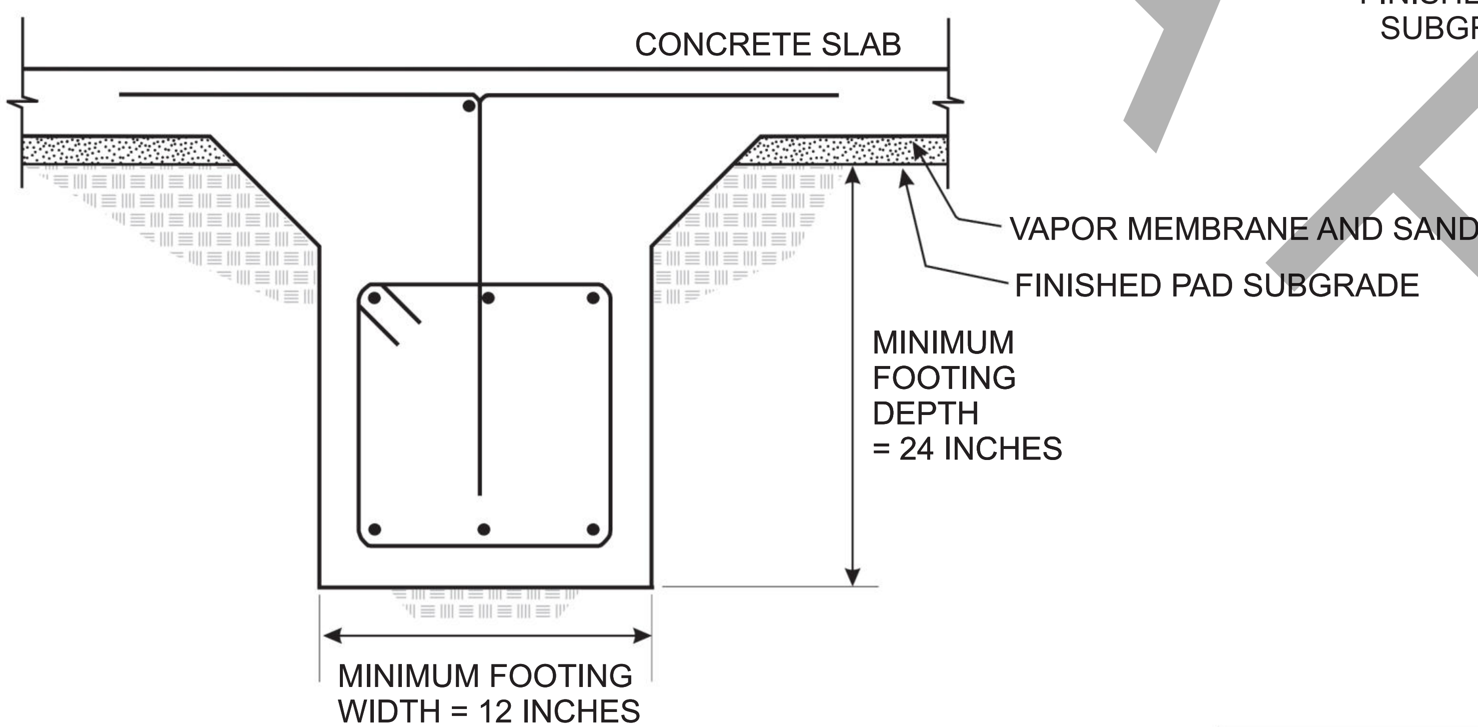


SQUARE FOOTING



EXTERIOR CONTINUOUS FOOTING



INTERIOR CONTINUOUS FOOTING

PROJECT NAME	FIGURE NAME	GROUP DELTA	
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	**SHALLOW FOUNDATION DETAILS**	PROJECT NUMBER	FIGURE NUMBER
		SD732	6

APPENDIX A
EXPLORATION RECORDS

APPENDIX A

EXPLORATION RECORDS

Field exploration included a visual reconnaissance of the site, the drilling of three (3) hollow stem auger geotechnical borings, and the advancement of five (5) cone penetration tests (CPTs) between May 31st and June 1st, 2022. The maximum depth of exploration was approximately 100 feet below ground surface (bgs). The approximate exploration locations are shown on Figure 3. Logs of the explorations are provided in Figures A-1 through A-3, immediately after the Boring Record Legends.

HOLLOW STEM BORINGS

The hollow stem borings were advanced on June 1st, 2022, by Tri-County Drilling using a Diedrich D-120 truck mounted drill rig. Disturbed samples were collected from the borings using a 2-inch outside diameter unlined Standard Penetration Test (SPT) sampler and less disturbed samples were collected using a 3-inch outside diameter ring lined modified California sampler. Bulk samples of surficial soils were also collected from auger cuttings. The samples were sealed in plastic bags, labeled, and returned to the laboratory for testing.

The drive samples were collected from the exploratory borings using an automatic hammer with average Energy Transfer Ratio (ETR) of approximately 86 percent. For each sample, the 6-inch incremental blow-counts were 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}). The modified California ring samples were also corrected for the 3-inch sampler diameter using Burmister's correction factor. The exploratory borings were logged using the Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010) as a guideline.

CONE PENETRATION TESTS

The CPT soundings were advanced by Kehoe Testing and Engineering on May 31st, 2022, in general accordance with ASTM D5778. The CPT soundings were carried out using an integrated electronic cone system manufactured by Vertek. The CPTs were advanced using a 30-ton CPT rig. The cone used during the program was a 15 cm^2 cone and recorded the following parameters at approximately 2.5 cm depth intervals:

- Cone Resistance (q_c);
- Sleeve Friction (f_s);
- Dynamic Pore Pressure (u);
- Inclination; and
- Penetration Speed.

APPENDIX A

EXPLORATION RECORDS

At location CPT-1, shear wave velocity measurements were obtained at five foot intervals to a depth of approximately 100 feet. The shear wave was generated using an air-actuated hammer placed under the CPT rig at a specified offset distance from the rods. The cone was equipped with a triaxial geophone, which recorded the shear wave signal generated by the air hammer. The above parameters were recorded and viewed in real time using a laptop computer. A summary of the collected shear wave measurements is presented in Figure A-9.

The lines designating the interface between differing soil materials on the logs may be abrupt or gradational, and soil conditions at locations between the explorations may be substantially different from those at the specific locations we explored. It should be noted that the passage of time may also result in changes in the soil conditions reported in the logs.

The exploration locations were determined by taping or pacing distances from landmarks shown on Figure 3. The locations shown should not be considered more accurate than is implied by the method of measurement used and the scale of the figure. Approximate existing elevations at the boring locations were estimated using Google Earth Pro 2021.

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. SD732

SDSU IVC NEW RESIDENCE HALL
CALEXICO, CALIFORNIA

BORING RECORD LEGEND #1

GROUP SYMBOLS AND NAMES

Graphic / Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL 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
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
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
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly graded SAND Poorly graded SAND with GRAVEL
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)
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)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic / Symbol	Group Names
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
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
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT 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
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
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
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
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
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
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

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. SD732

SDSU IVC NEW RESIDENCE HALL
CALEXICO, 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. SD732

SDSU IVC NEW RESIDENCE HALL
CALEXICO, CALIFORNIA

BORING RECORD LEGEND #3

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
SDSU IVC Student Residence Hall	SD732	**B-1**

SITE LOCATION	START	FINISH	SHEET NO.
720 Heber Avenue, Calexico, CA	6/1/2022	6/1/2022	1 of 3

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling Inc.	Hollow Stem Auger	C. Vonk	S. Narveson

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D-120	8	51.5	4	▼ 28.0 / *-24.0*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	ETR ~ 86%, N_{60} ~ 1.43*N_{SPT} ~ 0.96*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	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
												Grass and Organics
												FILL: Lean CLAY (CL); brown; moist; mostly fines; few to little SAND; medium plasticity. 13% Sand, 87% Fines LL=46, PL=20, PI=26; EI = 70
			B1				21.7		EI PA PI			
	0											**LACUSTRINE DEPOSITS (Ql):** Fat CLAY (CH); brown; moist; mostly fines; trace SAND; high plasticity. 4% Sand, 96% Fines LL=65, PL=23, PI=42 Hard; minor caliche cementation; trace organics. PP>4.5 tsf
5			S2	3 8 13	21	30			PA PI			
	-5											
10			R3-1 R3-2	8 19 24	43	41	16.1	108	PA PI			No sand. 100% Fines LL=70, PL=25, PI=45 PP>4.5 tsf
	-10											SILTY SAND (SM); medium dense; light grayish brown; moist; mostly fine SAND; some fines; non-plastic. 63% Sand, 37% Fines
15			S4-1 S4-2	3 2 7	9	13	6.0		PA			SILT with SAND (ML); medium dense; brown; moist; mostly fines; little fine SAND; low plasticity.
	-15											Fat CLAY (CH); very stiff; brown; moist; mostly fines; trace fine SAND; high plasticity. PP=2.25 tsf
20			R5	4 7 12	19	18	32.9	89	C			
	-20											

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
SDSU IVC Student Residence Hall	SD732	B-1

SITE LOCATION	START	FINISH	SHEET NO.
720 Heber Avenue, Calexico, CA	6/1/2022	6/1/2022	2 of 3

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling Inc.	Hollow Stem Auger	C. Vonk	S. Narveson

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D-120	8	51.5	4	▼ 28.0 / *-24.0*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	ETR ~ 86%, N_{60} ~ 1.43*N_{SPT} ~ 0.96*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	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
			S6-1 S6-2	2 3 5	8	11	28.7		PI WA			**LACUSTRINE DEPOSITS (Ql): continued** Fat CLAY (CH) *(see previous page for full description):* Stiff to very stiff. PP=1.0 tsf
	-25											SILT (ML); loose to medium dense; brown; moist to wet; mostly fines; few fine SAND; non-plastic. 94% Fines. LL=NP, PL=NP, PI=NP
30			R7-1 R7-2	3 5 8	13	12	31.6	92	C PI			Lean CLAY (CL); stiff; brown; moist; mostly fines; few fine SAND; medium plasticity. LL=40, PL=21, PI=19 PP=1.5 tsf
	-30											
35			R8-1 R8-2	6 16 23	39	37	27.9	97	C PI WA			Fat CLAY (CH); hard; brown; moist; mostly fines; high plasticity. 100% Fines LL=69, PL=22, PI=47 PP>4.5 tsf
	-35											
40			S9	6 11 15	26	37	25.4					PP>4.5 tsf
	-40											
45			R10-1 R10-2	5 7 8	15	14	32.0	91				Very stiff. PP=2.5 tsf
	-45											

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9245 Activity Road, Suite 103
San Diego, California 92126

FIGURE A-1 b

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
SDSU IVC Student Residence Hall	SD732	**B-1**

SITE LOCATION	START	FINISH	SHEET NO.
720 Heber Avenue, Calexico, CA	6/1/2022	6/1/2022	3 of 3

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling Inc.	Hollow Stem Auger	C. Vonk	S. Narveson

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D-120	8	51.5	4	▼ 28.0 / *-24.0*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	ETR ~ 86%, N_{60} ~ 1.43*N_{SPT} ~ 0.96*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	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
			S11	8 4 10	14	20	28.3		WA			**LACUSTRINE DEPOSITS (Ql): continued** SILT (ML); medium dense; brown; wet; mostly fines; few fine SAND; non-plastic; trace mica. 88% Fines
	-50											Total Depth = 51.5 feet (target depth reached). Groundwater measured at 28.0 feet after drilling. Boring backfilled on 6/1/2022 shortly after drilling. This Boring Record is part of a geotechnical report which must be considered in its entirety.
55												
	-55											
60												
	-60											
65												
	-65											
70												
	-70											

DRAFT

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San Diego, California 92126

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 A-1 c

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
SDSU IVC Student Residence Hall	SD732	B-2

SITE LOCATION	START	FINISH	SHEET NO.
720 Heber Avenue, Calexico, CA	6/1/2022	6/1/2022	1 of 1

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling Inc.	Hollow Stem Auger	C. Vonk	S. Narveson

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D-120	8	21.5	5	▼ NE / *na*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	ETR ~ 86%, N_{60} ~ 1.43*N_{SPT} ~ 0.96*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	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
0	5											Grass and Organics
												FILL: Lean CLAY (CL); brown; moist; mostly fines; few fine SAND; medium plasticity; scattered organics (rootlets). EI = 60
		Bulk	B1				18.3		EI CR			**LACUSTRINE DEPOSITS (Ql):** Fat CLAY (CH); hard; brown; moist; mostly fines; few fine SAND; high plasticity; trace organics. PP>4.5 tsf
5	0	Ring	R2-1 R2-2	11 13 22	35	34	20.4	93				
10	-5	Ring	R3	8 19 33	52	50	24.4	101	SW			Brown to dark brown. PP>4.5 tsf
												Lean CLAY (CL); medium stiff; brown; moist; mostly fines; some fine SAND; medium plasticity. LL=31, PL=21, PI=10
15	-10	SPT	S4-1 S4-2	2 2 10	12	17	24.3		PI			
												Silty SAND (SM); medium dense; light grayish brown; moist; mostly fine SAND; little fines; non-plastic.
												Fat CLAY (CH); stiff to very stiff; dark brown; moist; mostly fines; trace fine SAND; high plasticity 1% Sand, 99% Fines PP=2.0 tsf; UC = 2.5 ksf
20	-15	Ring	R5-1 R5-2	4 7 13	20	19	29.2	93	PA UC			

Total Depth = 21.5 feet (target depth reached).
Groundwater not encountered during drilling.
Boring backfilled on 6/1/2022 shortly after drilling.
This Boring Record is part of a geotechnical report which must be considered in its entirety.
Boring caved to 16.5 feet upon extracting augers.

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9245 Activity Road, Suite 103
San Diego, California 92126

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 A-2

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
SDSU IVC Student Residence Hall	SD732	**B-3**

SITE LOCATION	START	FINISH	SHEET NO.
720 Heber Avenue, Calexico, CA	6/1/2022	6/1/2022	1 of 1

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling Inc.	Hollow Stem Auger	C. Vonk	S. Narveson

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D-120	8	21.5	5	▼ NE / *na*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	ETR ~ 86%, N_{60} ~ 1.43*N_{SPT} ~ 0.96*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	5								Grass and Organcis
0–4	5–1	B1				21.5		CR EI PA	**FILL:**Lean CLAY (CL); brown; moist; mostly fines; few fine SAND; low to medium plasticity. 7% Sand, 93% Fines EI = 82
4–14	1 to -9								**LACUSTRINE DEPOSITS (Ql):** Fat CLAY (CH); brown; moist; mostly fines; few fine SAND; high plasticity.
5	0	R2-1 R2-2	7 17 25	42	40	20.9	96	C SW	Hard. PP>4.5 tsf
10	-5	S3	6 14 20	34	49	19.8			PP>4.5 tsf
14	-9								SANDY SILT (ML); medium dense; brown; moist to wet; mostly fines; some fine SAND; low plasticity to non-plastic.
15	-10	R4-1 R4-2	3 11 19	30	29	11.7	99		Silty SAND (SM); medium dense; light grayish brown; moist; mostly fine SAND; little fines; non-plastic.
19	-14								Fat CLAY (CH); very stiff; brown; moist; mostly fines; trace fine SAND; high plasticity.
20	-15	S5	4 6 9	15	21			PI	LL=68, PL=23, PI=45 PP=2.5 tsf

Total Depth = 21.5 feet (target depth reached).
Groundwater not encountered during drilling.
Boring backfilled on 6/1/2022 shortly after drilling.
This Boring Record is part of a geotechnical report which must be considered in its entirety.

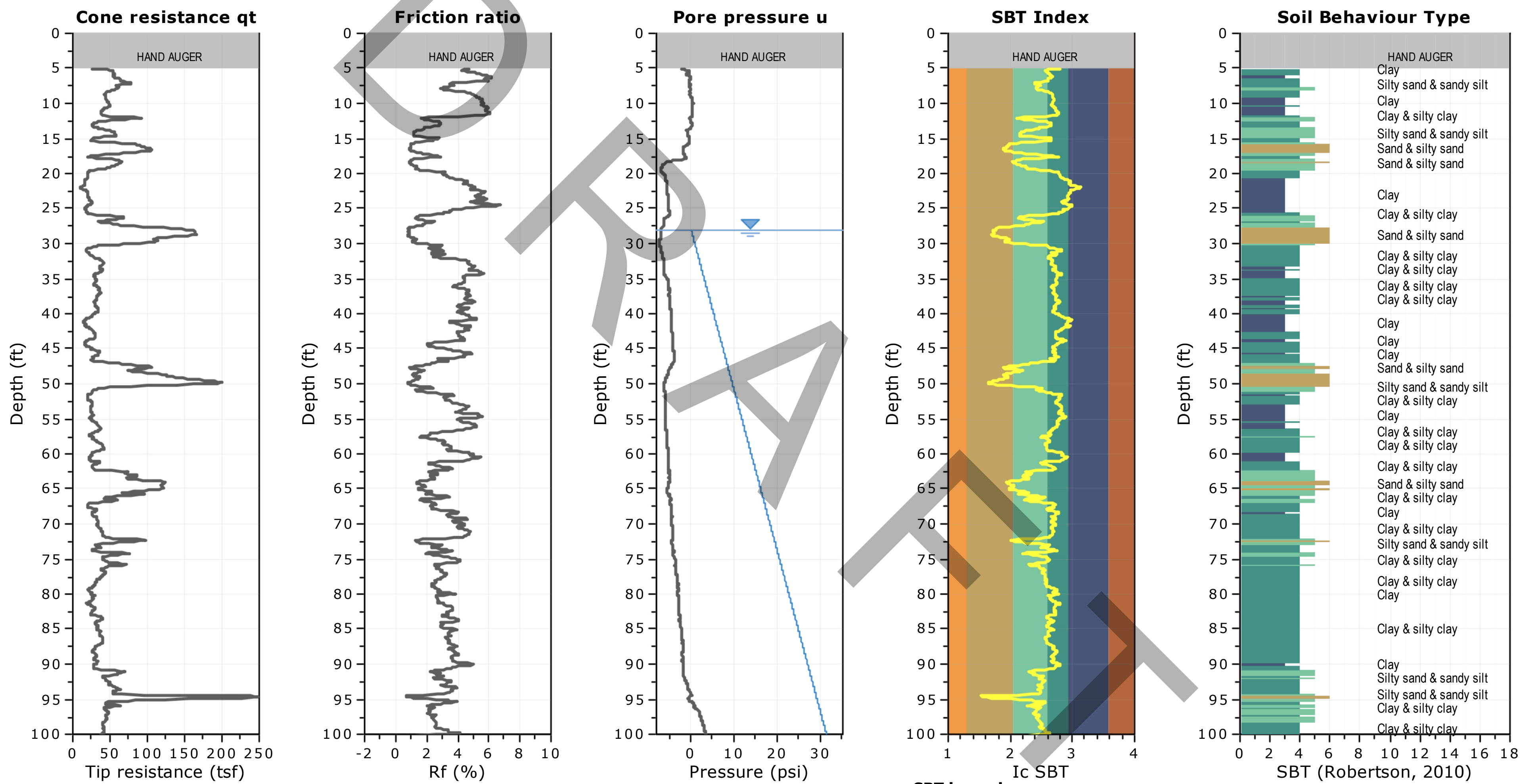
GROUP DELTA CONSULTANTS, INC.
9245 Activity Road, Suite 103
San Diego, California 92126

FIGURE A-3

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA
http://www.groupdelta.com

CPT: CPT-1
Total depth: 100.47 ft, Date: 5/31/2022
Surface Elevation: 4.00 ft

Project: **SD732 SDSU IVC New Residence Hall**
Location: **720 Heber Ave, Calexico, CA**



SBT legend

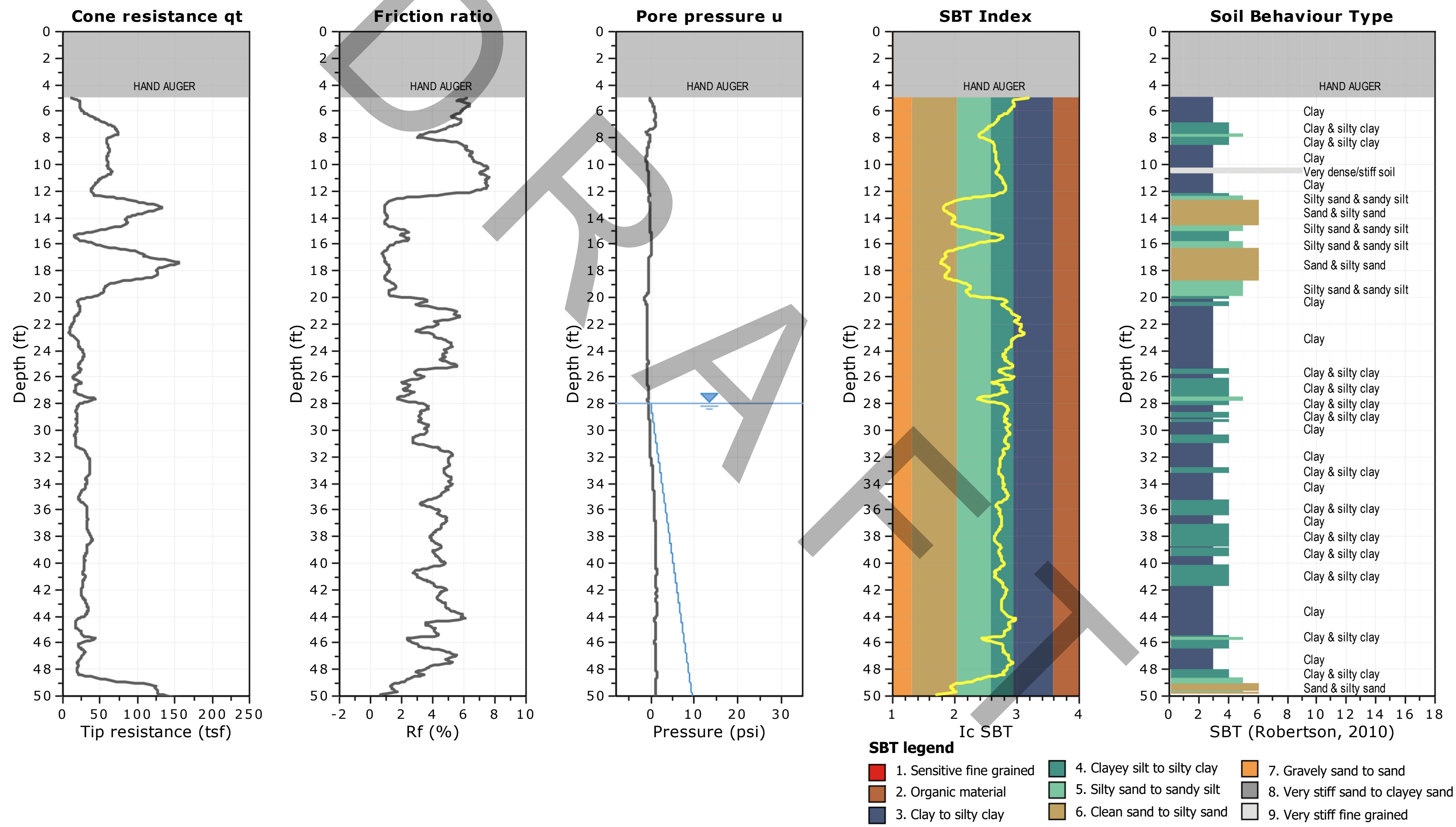
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

FIGURE A-4

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA
http://www.groupdelta.com

CPT: CPT-2
Total depth: 50.14 ft, Date: 5/31/2022
Surface Elevation: 6.00 ft

Project: SD732 SDSU IVC New Residence Hall
Location: 720 Heber Ave, Calexico, CA



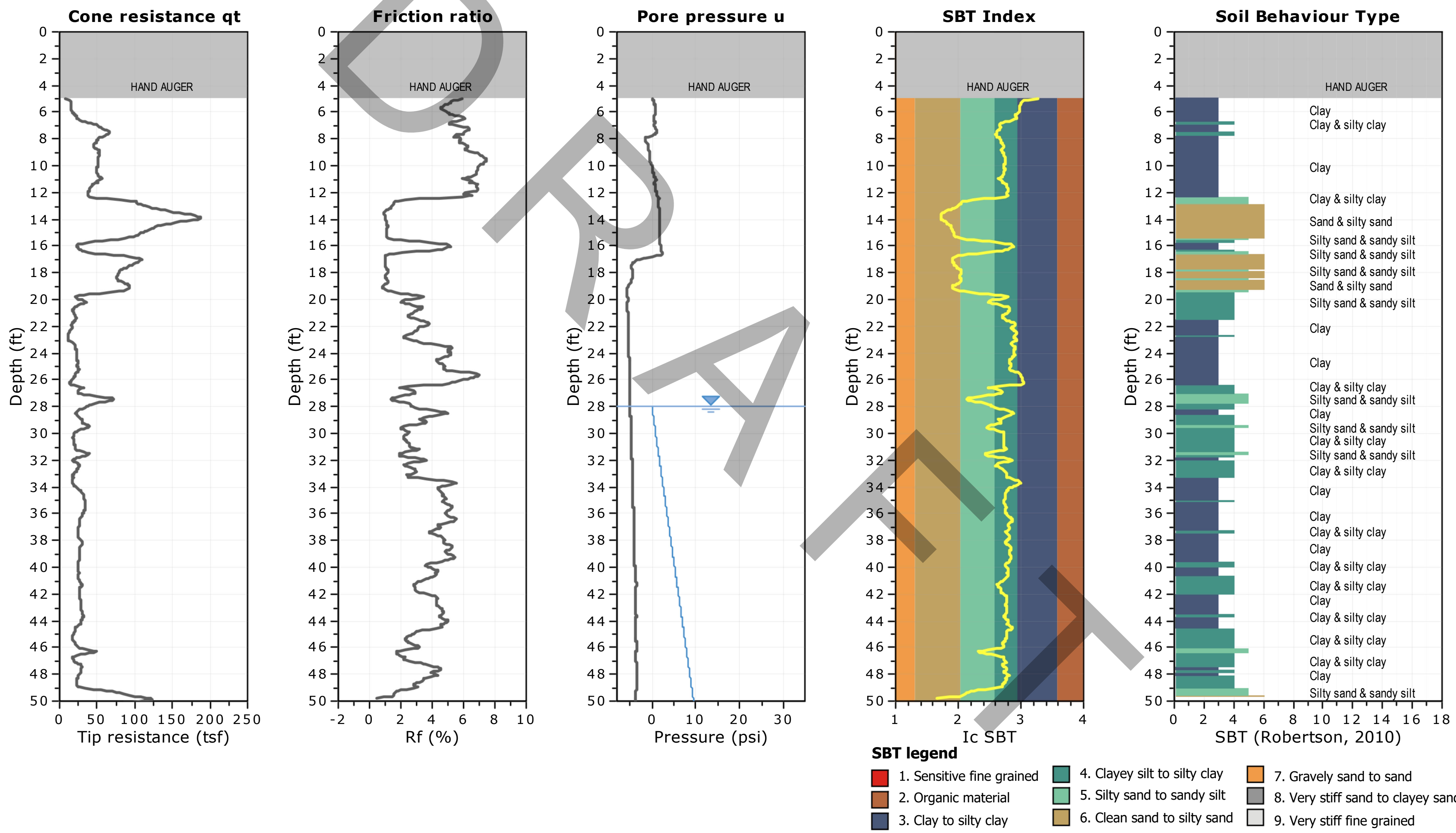
CPeT-IT v.3.5.2.2 - CPTU data presentation & interpretation software - Report created on: 6/10/2022, 10:41:58 AM
Project file: \\192.168.10.4\Files$\Projects\SD\SD700\SD732 SDSU Calexico Campus New Residence Hall\7. Calcs\CPeT-IT\SD732-CPeT-IT.cpt

FIGURE A-5

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA
http://www.groupdelta.com

CPT: CPT-3
Total depth: 50.13 ft, Date: 5/31/2022
Surface Elevation: 6.00 ft

Project: **SD732 SDSU IVC New Residence Hall**
Location: **720 Heber Ave, Calexico, CA**



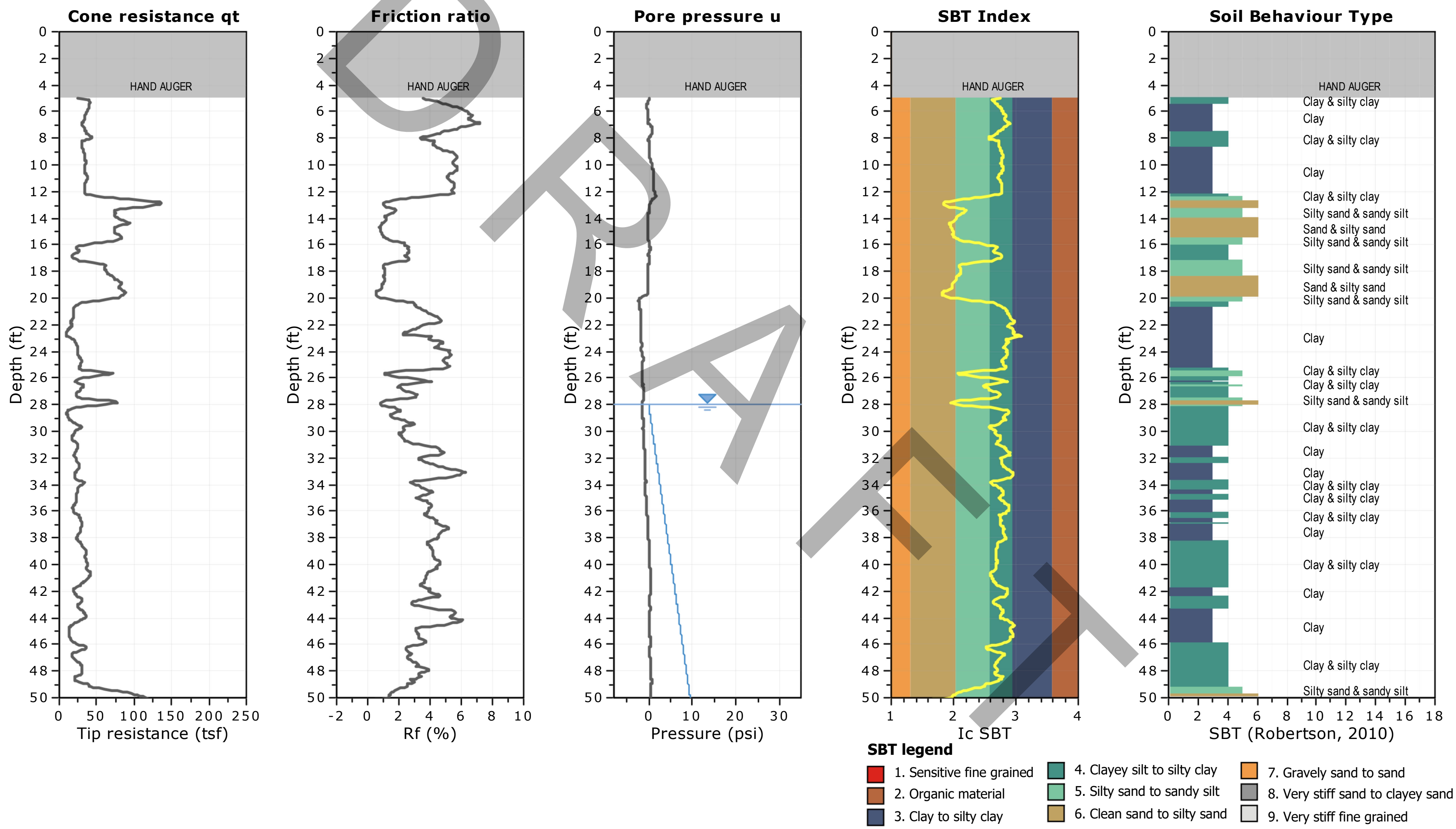
CPeT-IT v.3.5.2.2 - CPTU data presentation & interpretation software - Report created on: 6/10/2022, 10:42:26 AM
Project file: \\192.168.10.4\Files$\Projects\SD\SD700\SD732 SDSU Calexico Campus New Residence Hall\7. Calcs\CPeT-IT\SD732-CPeT-IT.cpt

FIGURE A-6

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA
http://www.groupdelta.com

CPT: CPT-4
Total depth: 50.47 ft, Date: 5/31/2022
Surface Elevation: 5.00 ft

Project: SD732 SDSU IVC New Residence Hall
Location: 720 Heber Ave, Calexico, CA



CPeT-IT v.3.5.2.2 - CPTU data presentation & interpretation software - Report created on: 6/10/2022, 10:45:10 AM
Project file: \\192.168.10.4\Files$\Projects\SD\SD700\SD732 SDSU Calexico Campus New Residence Hall\7. Calcs\CPeT-IT\SD732-CPeT-IT.cpt

FIGURE A-7

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA
http://www.groupdelta.com

CPT: CPT-5
Total depth: 50.09 ft, Date: 5/31/2022
Surface Elevation: 5.00 ft

Project: SD732 SDSU IVC New Residence Hall
Location: 720 Heber Ave, Calexico, CA

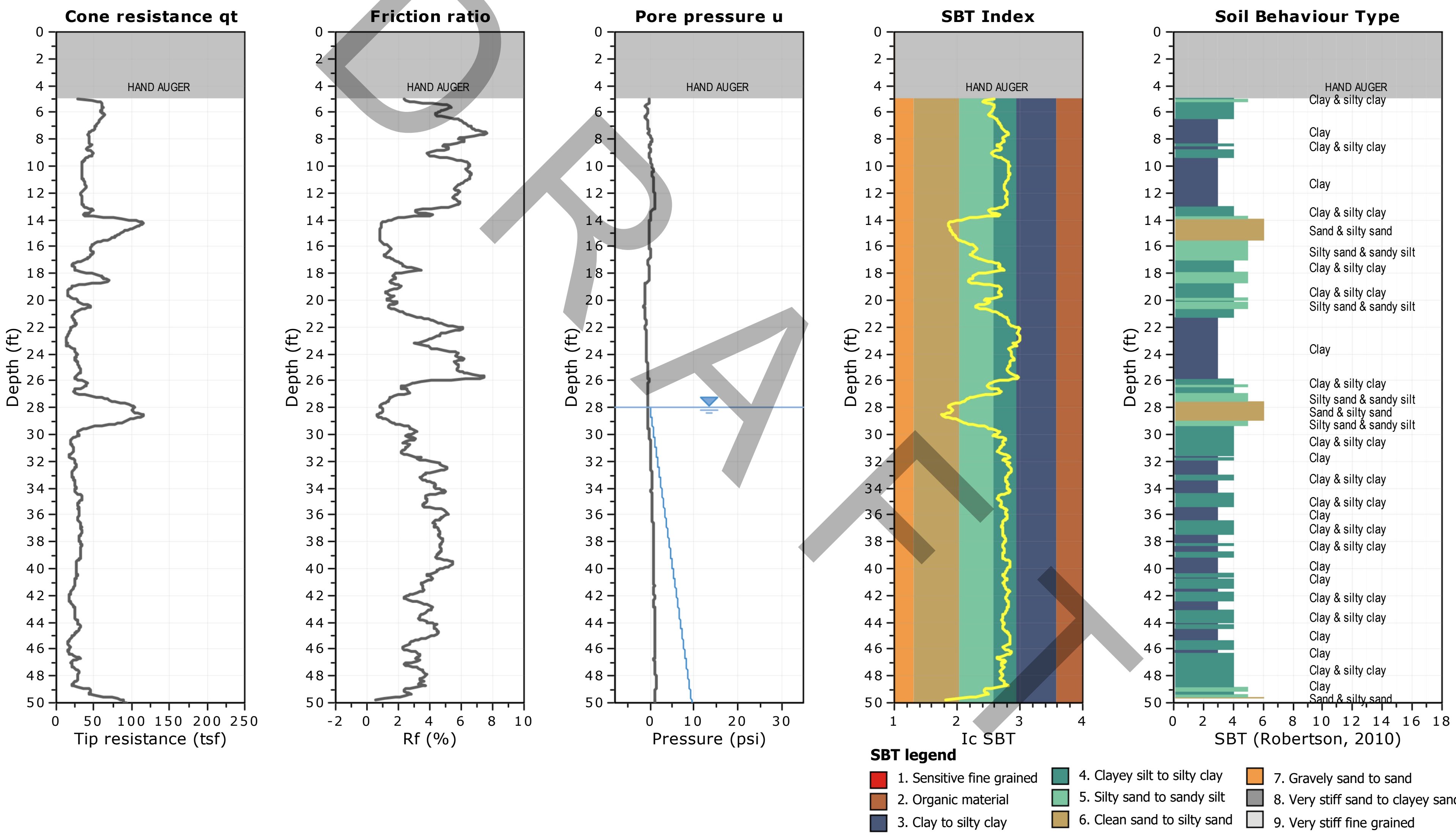


FIGURE A-8

Group Delta Consultants, Inc.
Project No. SD732

SDSU IVC Student Residence Hall
720 Heber Ave
Calexico, CA

CPT Shear Wave Measurements

Location	Tip Depth (ft)	Geophone Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
CPT-1	5.02	4.02	4.49	9.40	478	
	10.04	9.04	9.26	21.62	428	390
	15.06	14.06	14.20	31.16	456	518
	20.08	19.08	19.18	38.32	501	696
	25.03	24.03	24.11	46.68	517	590
	30.02	29.02	29.09	52.78	551	816
	35.04	34.04	34.10	58.76	580	838
	40.06	39.06	39.11	67.42	580	579
	45.08	44.08	44.13	75.14	587	650
	50.03	49.03	49.07	81.44	603	785
	55.18	54.18	54.22	89.08	609	674
	60.10	59.10	59.13	95.92	616	719
	65.06	64.06	64.09	102.36	626	770
	70.01	69.01	69.04	109.00	633	745
	75.10	74.10	74.13	115.20	643	821
	80.05	79.05	79.08	122.38	646	689
	85.07	84.07	84.09	128.04	657	887
	90.03	89.03	89.05	134.48	662	770
	95.01	94.01	94.03	140.04	671	895
	100.03	99.03	99.05	145.16	682	980

Shear Wave Source Offset - 2 ft

S-Wave Velocity from Surface = Travel Distance/S-Wave Arrival
Interval S-Wave Velocity = (Travel Dist2-Travel Dist1)/(Time2-Time1)

FIGURE A-9

APPENDIX B
LABORATORY TESTING

APPENDIX B

LABORATORY TESTING

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 tests 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 Boring Records in Appendix A.

Particle Size Analysis: Particle size analyses were performed in general accordance with ASTM D6913, D7928 and D1140, and were used to supplement visual classifications. The test results are summarized on the Boring Records in Appendix A and are presented in detail in Figures B-1.1 through B-1.6 and B-2.

Atterberg Limits: ASTM D4318 was used to determine the liquid and plastic limits, and plasticity index of selected soil samples. The test results are presented with the associated gradation analyses in Figures B-1.1 through B-1.3 and are also summarized in Figure B-3.

Expansion Index: The expansion potential of selected soil samples was estimated in general accordance with ASTM D4829. The test results are summarized in Figure B-4, along with a summary of previous expansion index tests we conducted at the site. Figure B-4 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 corrosivity test results are summarized in Figure B-5, along with previous corrosion tests we conducted on site.

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 also presented in Figure B-5, along with common criteria for evaluating soluble sulfate content.

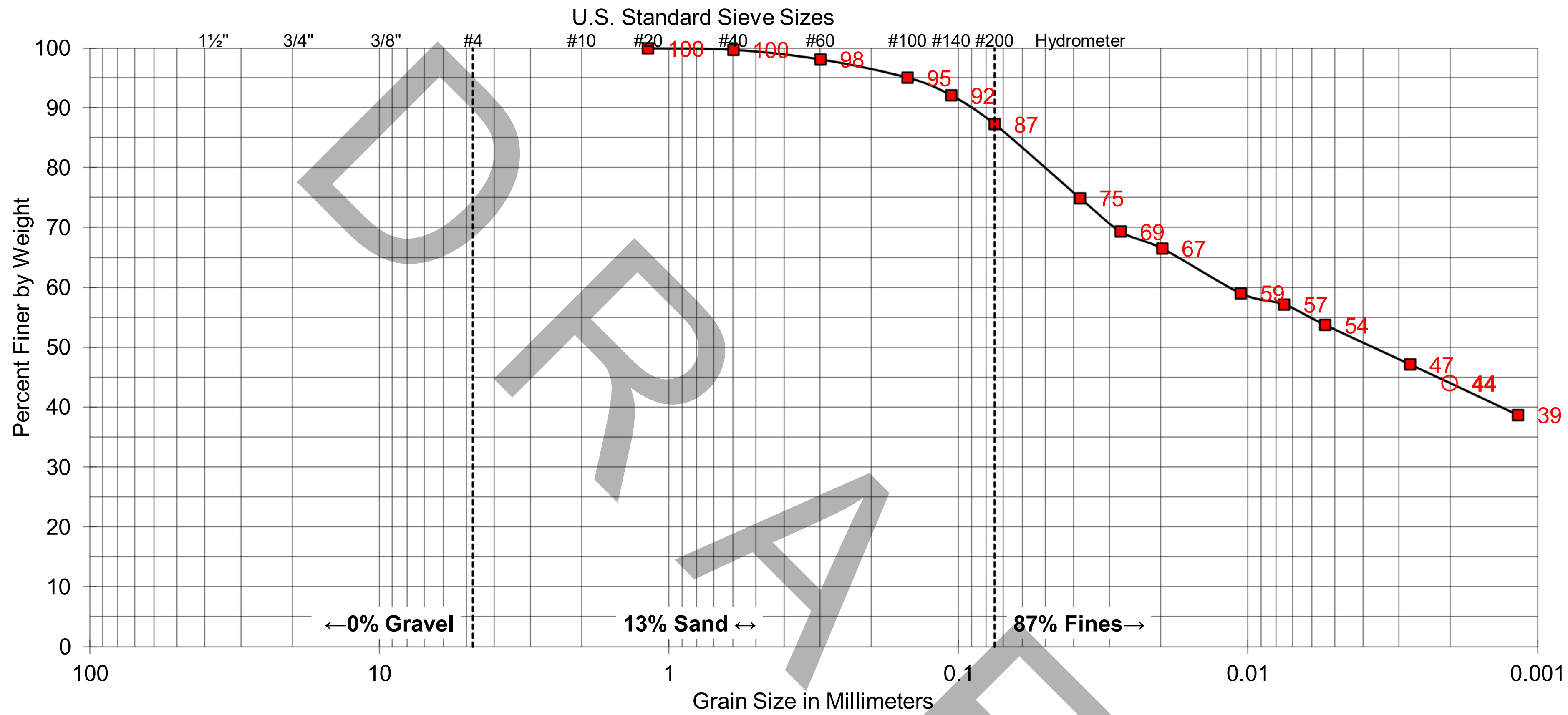
Chloride Content: Soil samples were also tested for water soluble chloride. The chloride was extracted from the soil under vacuum using a 10:1 (water to dry soil) dilution ratio. The extracted solution was then tested for water soluble chloride using a calibrated ion specific electronic probe in general accordance with ASTM D512. The test results are also shown in Figure B-5.

APPENDIX B

LABORATORY TESTING (Continued)

Unconfined Compressive Strength: The undrained shear strength of a selected soil sample was assessed using unconfined compression testing performed in general accordance with ASTM D2166. The test results are presented in Figure B-6. The Pocket Penetration tests conducted on clayey samples during the field investigation are shown in the Boring Records in Appendix A.

Consolidation: The one-dimensional consolidation properties of selected soil samples were evaluated in general accordance with ASTM D2435. With the exception of the sample R-2-2 collected from Boring B-3 from depths of 6 to 6.5 feet as shown on Figure B-7.5, the samples were inundated with water under a nominal seating load, allowed to swell, and then subjected to controlled stress increments while restrained laterally and drained axially. Sample R-2-2 collected from Boring B-3 from depths of 6 to 6.5 feet as shown on Figure B-7.5 was not inundated with water during testing to evaluate the samples strain behavior to the controlled stress increments in an unsaturated state. The test results are presented in Figure B-7.1 through B-7.6.



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

SAMPLE	
EXPLORATION ID:	B-1
SAMPLE DEPTH:	0.5' - 5'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: LEAN CLAY

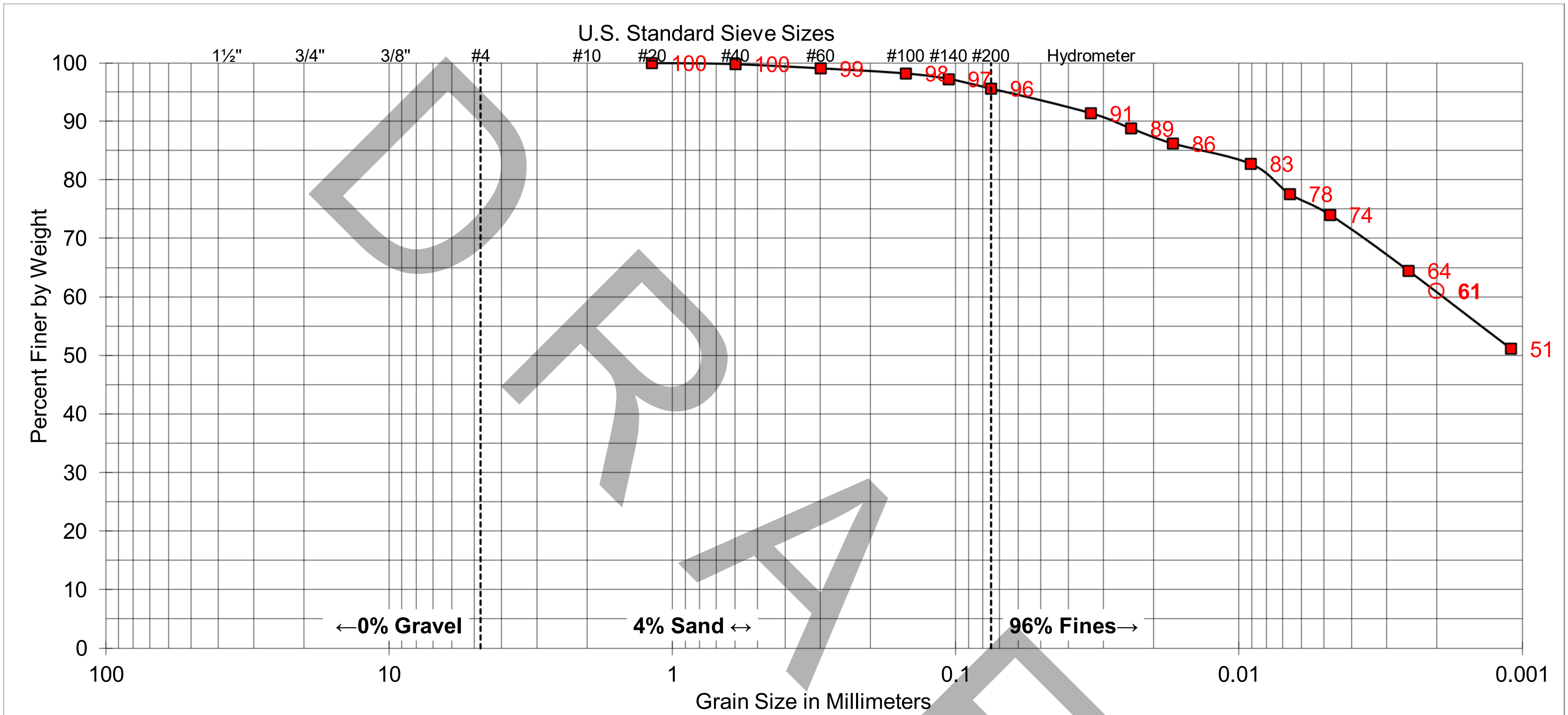
ATTERBERG LIMITS	
LIQUID LIMIT:	46
PLASTIC LIMIT:	20
PLASTICITY INDEX:	26

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD732

FIGURE B-1.1



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY
GRAVEL		SAND			

SAMPLE	
EXPLORATION ID:	B-1
SAMPLE DEPTH:	5' - 6.5'

UNIFIED SOIL CLASSIFICATION: CH

DESCRIPTION: FAT CLAY

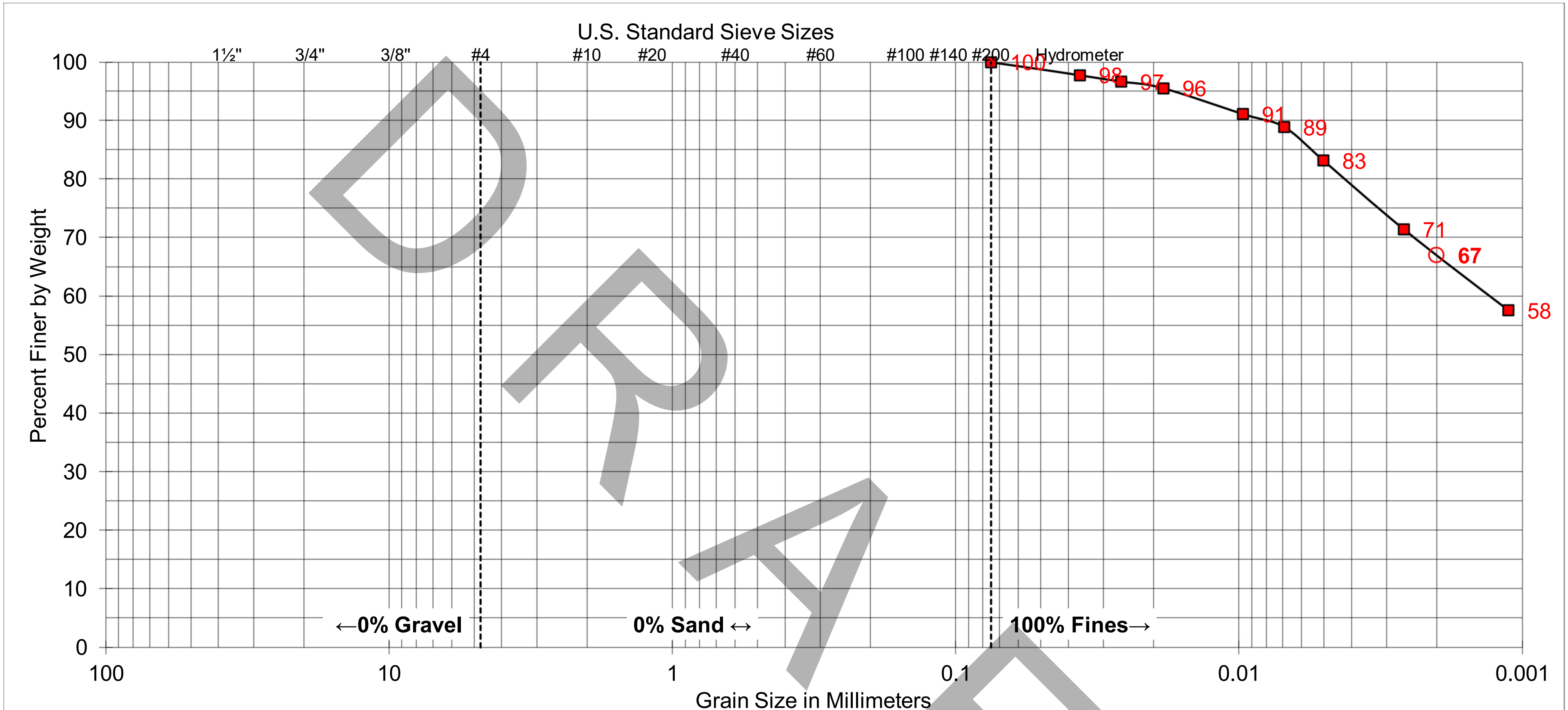
ATTERBERG LIMITS	
LIQUID LIMIT:	65
PLASTIC LIMIT:	23
PLASTICITY INDEX:	42

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD732

FIGURE B-1.2



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

SAMPLE	
EXPLORATION ID:	B-1
SAMPLE DEPTH:	10.5' - 11'

UNIFIED SOIL CLASSIFICATION: CH

DESCRIPTION: FAT CLAY

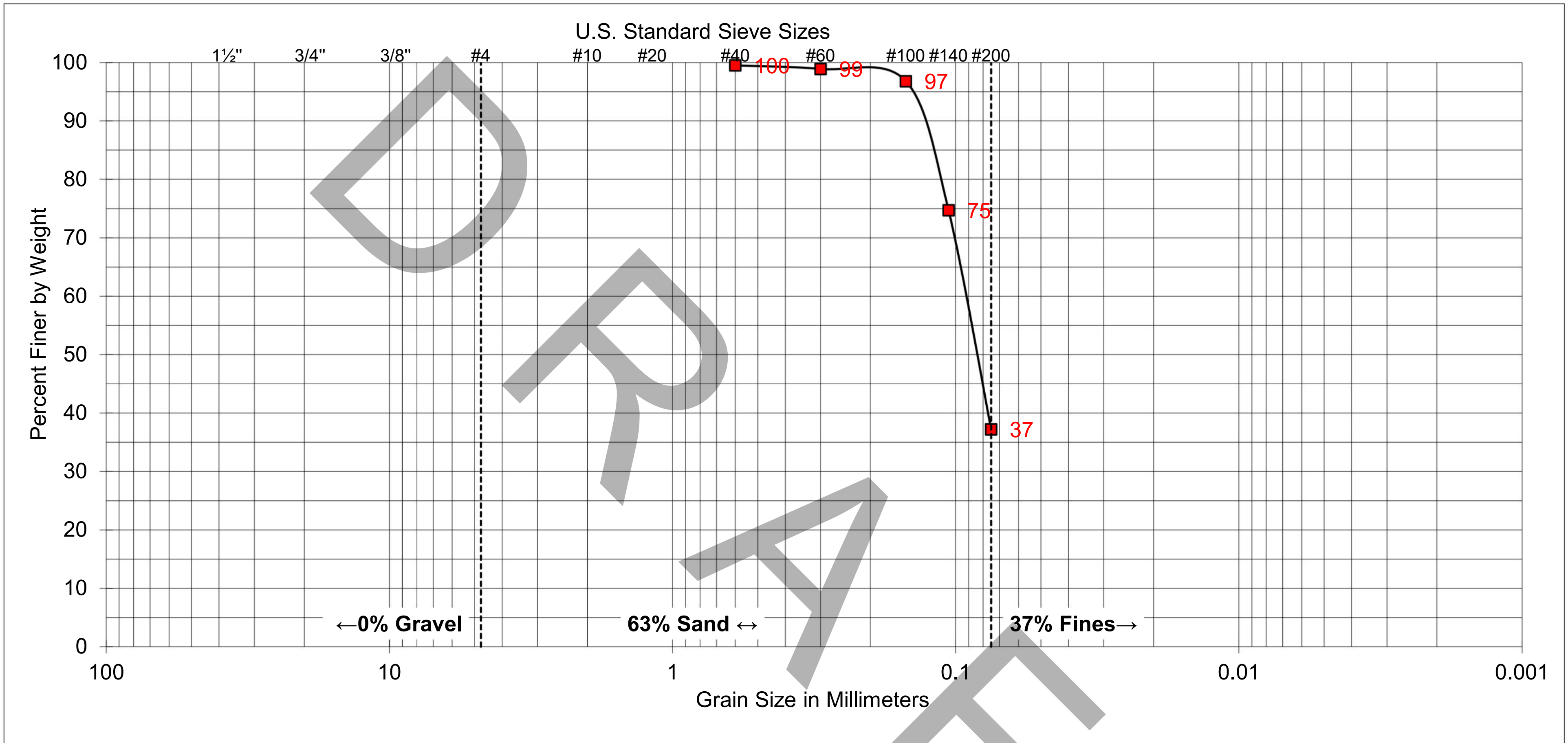
ATTERBERG LIMITS	
LIQUID LIMIT:	70
PLASTIC LIMIT:	25
PLASTICITY INDEX:	45

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD732

FIGURE B-1.3



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

SAMPLE	
EXPLORATION ID:	B-1
SAMPLE DEPTH:	15' - 15.5'

UNIFIED SOIL CLASSIFICATION: SM

DESCRIPTION: SILTY SAND

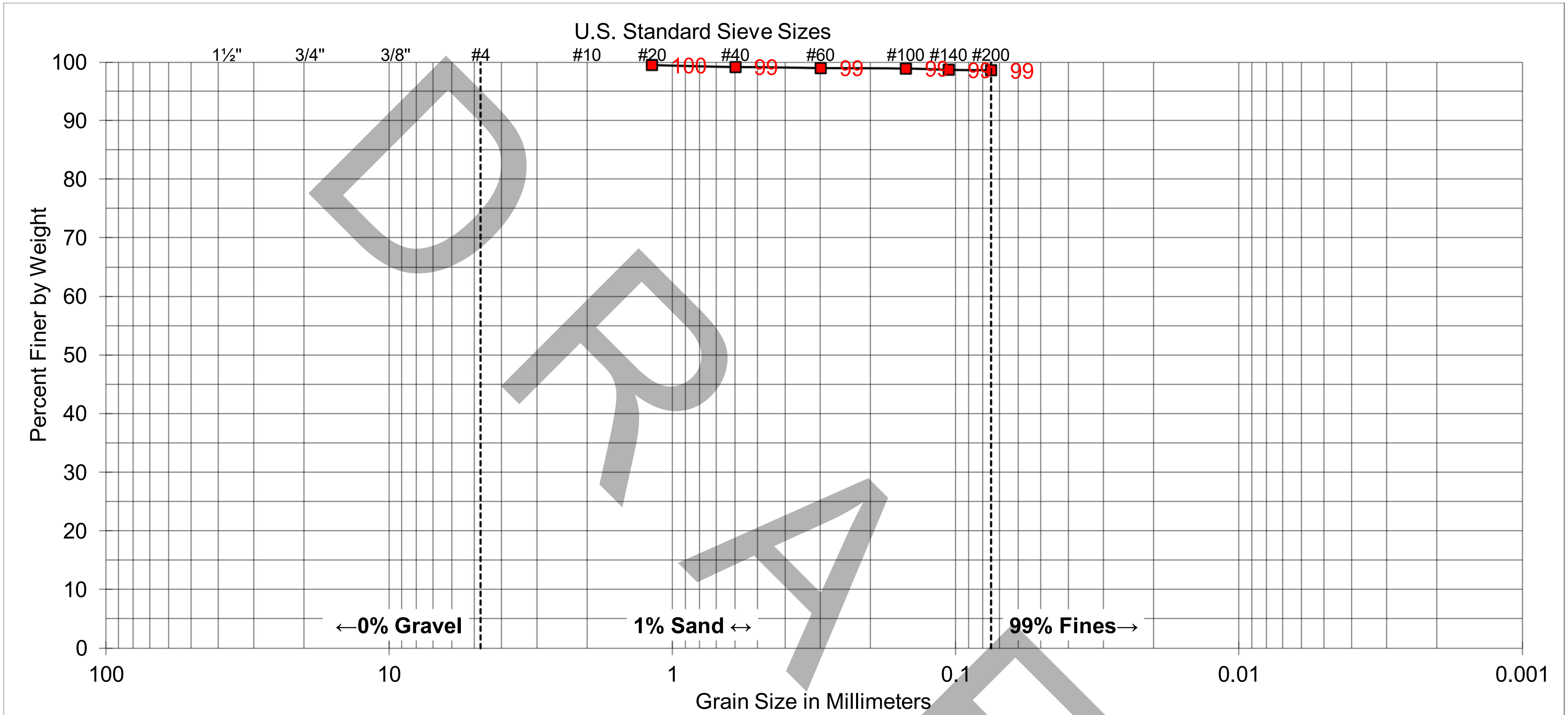
ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD732

FIGURE B-1.4



GRAVEL		SAND			SILT AND CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	

SAMPLE	
EXPLORATION ID:	B-2
SAMPLE DEPTH:	20.5' - 21'

UNIFIED SOIL CLASSIFICATION: CH

DESCRIPTION: FAT CLAY

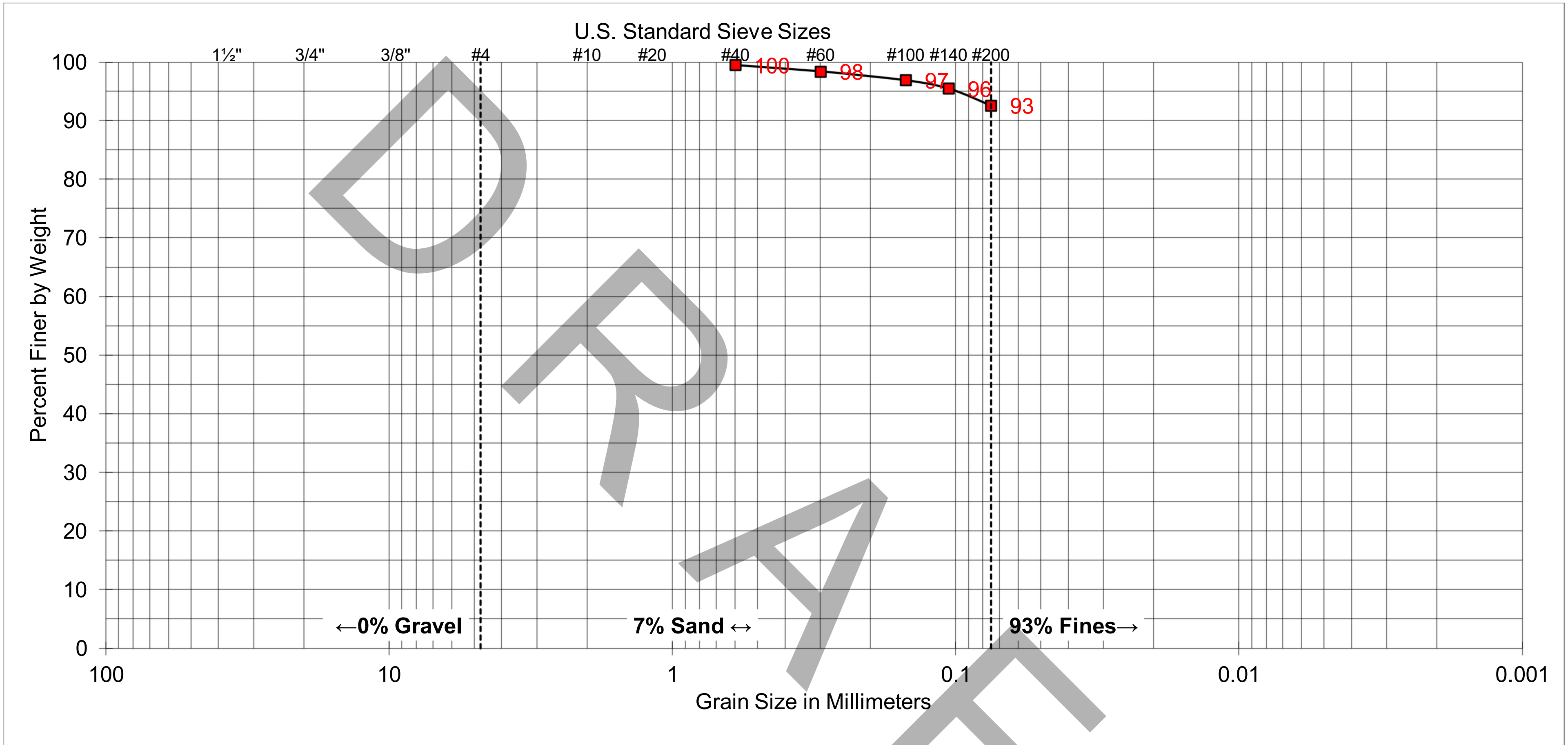
ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD732

FIGURE B-1.5



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY
GRAVEL		SAND			

SAMPLE	
EXPLORATION ID:	B-3
SAMPLE DEPTH:	0.5' - 5'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: LEAN CLAY

ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

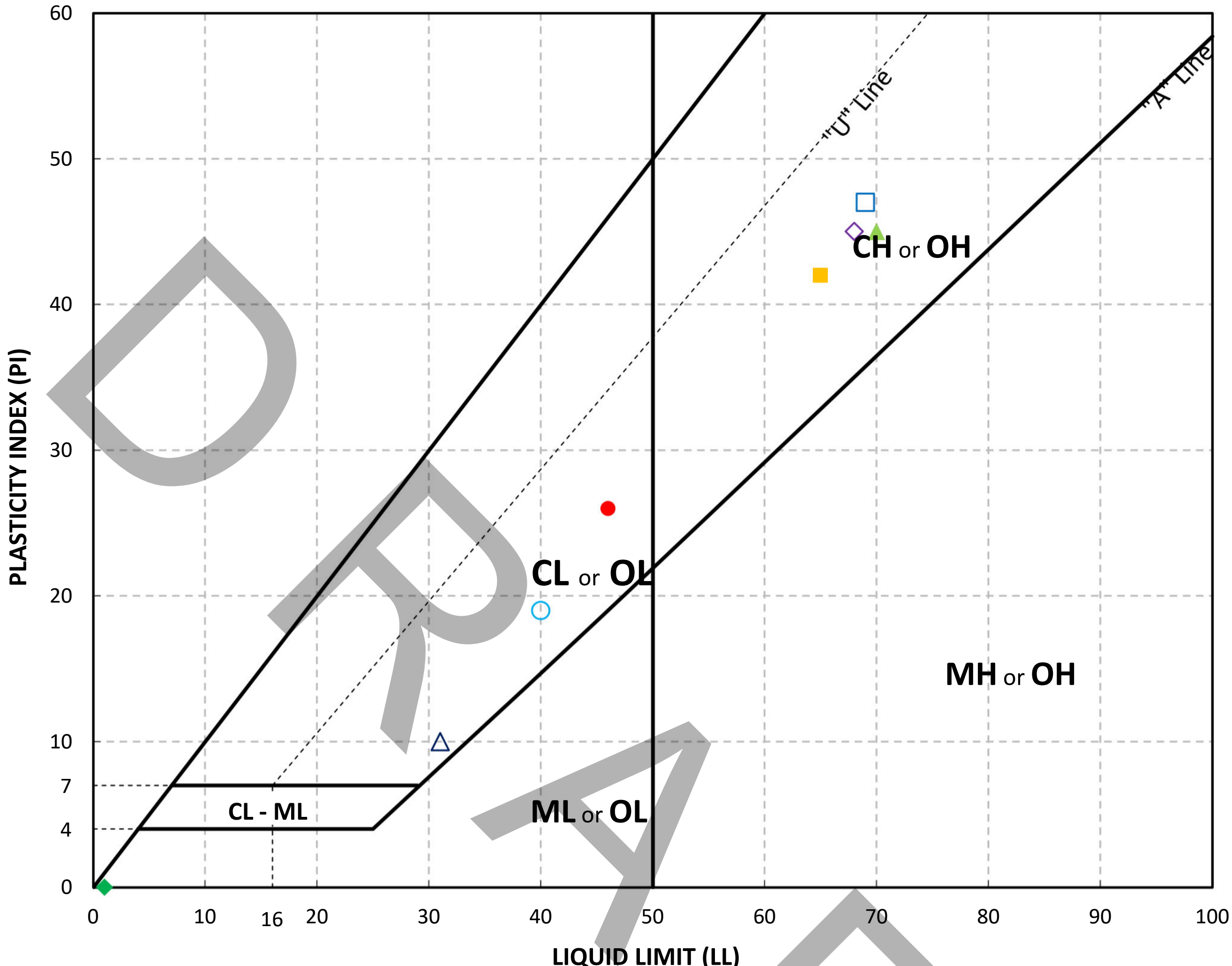
Project No. SD732

FIGURE B-1.6

PERCENT PASSING THE NO. 200 SIEVE TEST RESULTS
(ASTM D1140)

SAMPLE	DESCRIPTION	PERCENT PASSING THE NO. 200 SIEVE
B-1 @ 26’ – 26.5’	SILT (ML)	94
B-1 @ 35.5’ – 36’	Fat CLAY (CL)	100
B-1 @ 50’ – 51.5’	SILT (ML)	88

ATTERBERG LIMITS
(ASTM D4318)



SYMBOL	BORING NO.	SAMPLE NO.	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	SOIL DESCRIPTION (USCS)
●	B-1	B-1 @ 0.5' - 5'	46	20	26	Lean CLAY (CL)
■	B-1	B-1 @ 5' - 6.5'	65	23	42	Fat CLAY (CH)
▲	B-1	B-1 @ 10.5' - 11'	70	25	45	Fat CLAY (CH)
◆	B-1	B-1 @ 26' - 26.5'	NP	NP	NP	SILT (ML)
○	B-1	B-1 @ 30.5' - 31'	40	21	19	Lean CLAY (CL)
□	B-1	B-1 @ 35.5' - 36'	69	22	47	Fat CLAY (CH)
△	B-2	B-2 @ 15' - 16'	31	21	10	Lean CLAY (CL)
◇	B-3	B-3 @ 20' - 21.5'	68	23	45	Fat CLAY (CH)

Notes: (1) Unified Soil Classification System (USCS) per ASTM D2487
(2) NP = Non-Plastic per ASTM D4318

EXPANSION TEST RESULTS
(ASTM D4829)

SAMPLE	DESCRIPTION	EXPANSION INDEX
B-1 @ 0.5' – 5'	Lean CLAY (CL)	70
B-2 @ 0.5' – 5'	Lean CLAY (CL)	60
B-3 @ 0.5' – 5'	Lean CLAY (CL)	82

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 D512, ASTM D516, CTM 643)

SAMPLE	pH	RESISTIVITY [OHM-CM]	SULFATE CONTENT [%]	CHLORIDE CONTENT [%]
B-2 @ 0.5' – 5'	7.67	482	1.08	0.05
B-3 @ 0.5' – 5'	7.88	268	1.08	0.06

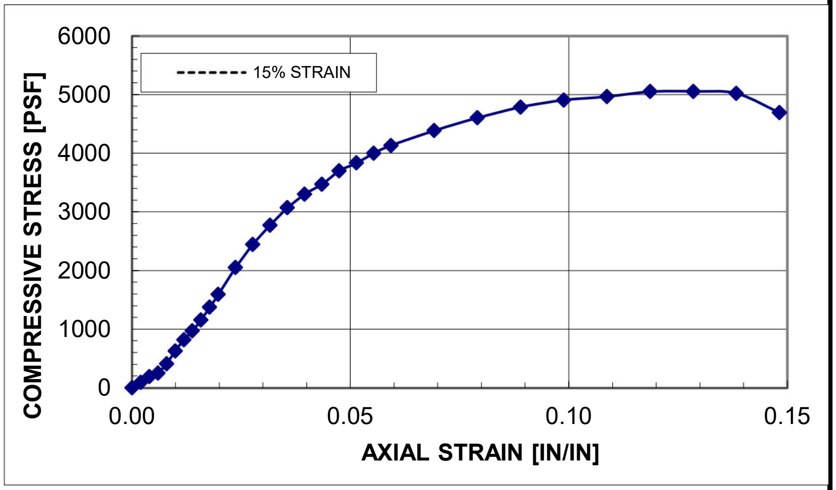
SULFATE CONTENT [%]	SULFATE EXPOSURE	CEMENT TYPE
0.00 to 0.10	Negligible	-
0.10 to 0.20	Moderate	II, IP(MS), IS(MS)
0.20 to 2.00	Severe	V
Above 2.00	Very Severe	V plus pozzolan

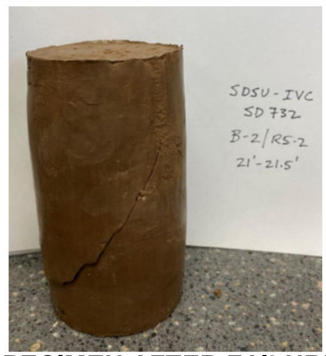
SOIL RESISTIVITY [OHM-CM]	GENERAL DEGREE OF CORROSIVITY TO FERROUS METALS
0 to 1,000	Very Corrosive
1,000 to 2,000	Corrosive
2,000 to 5,000	Moderately Corrosive
5,000 to 10,000	Mildly Corrosive
Above 10,000	Slightly Corrosive

CHLORIDE (Cl) CONTENT [%]	GENERAL DEGREE OF CORROSIVITY TO METALS
0.00 to 0.03	Negligible
0.03 to 0.15	Corrosive
Above 0.15	Severely Corrosive

PROJECT:	**SDSU IVC Student Residence Hall**	TEST METHOD:	**ASTM D2166**
SAMPLE I.D.:	**B-2 @ 21' - 21.5'**	TESTED BY:	**J. Krehbiel**
DESCRIPTION:	**Fat CLAY (CH)**	DATE:	**6/17/22**

TYPE OF SAMPLE	CAL	
WET WT. OF SAMPLE	725.26	[g]
INITIAL DIAM.	2.4	[in]
INITIAL HEIGHT	5.060	[in]
INITIAL AREA	4.524	[in^2]
INITIAL VOLUME	22.89	[in^3]
WET DENSITY	120.7	[pcf]
DRY WT. OF SAMPLE	561.16	[g]
WEIGHT OF WATER	164.1	[g]
INITIAL TOTAL MOISTURE	29.2	[%]
DRY DENSITY	93.4	[pcf]
L-D RATIO	2.1:1	
STRAIN RATE	1.21	[%/min]
STRAIN AT FAILURE	12.85	[%]
STRAIN AT FAILURE	0.650	[in]
15% STRAIN	0.759	[in]
FAILURE CRITERIA:	Yield	
COMP. STRENGTH:	5054	[psf]
SHEAR STRENGTH:	2527	[psf]
SPEC. GRAVITY (Assumed)	2.85	
SATURATION:	92	[%]
FAILURE MODE:	Plastic	





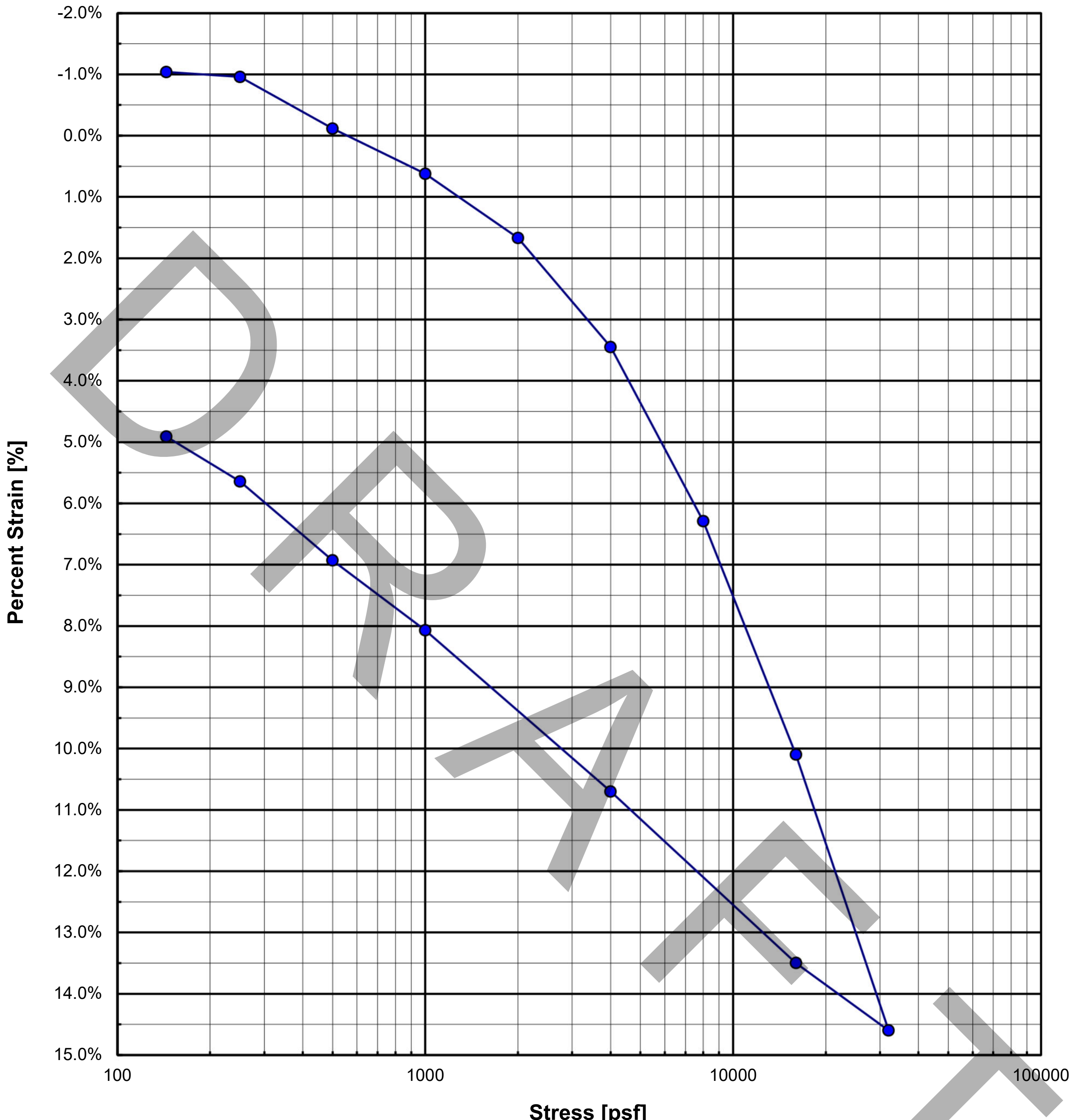
SPECIMEN AFTER FAILURE

Elapsed Time [min]	Axial Load [lb]	Strain Dial [in]	Total Deformation [in]	Axial Strain [in/in]	Corrected Area [in^2]	Stress [psf]
0.0	0.0	1.000	0.000	0.000	4.52	0.0
0.2	3.0	0.990	0.010	0.002	4.53	95.3
0.3	6.0	0.980	0.020	0.004	4.54	190.2
0.6	13.0	0.960	0.040	0.008	4.56	410.5
0.8	20.0	0.950	0.050	0.010	4.57	630.3
1.0	26.0	0.940	0.060	0.012	4.58	817.8
1.5	44.0	0.910	0.090	0.018	4.61	1375.7
1.6	51.0	0.900	0.100	0.020	4.62	1591.3
1.9	66.0	0.880	0.120	0.024	4.63	2051.0
2.3	79.0	0.860	0.140	0.028	4.65	2445.1
2.6	90.0	0.840	0.160	0.032	4.67	2774.2
2.9	100.0	0.820	0.180	0.036	4.69	3069.9
3.3	108.0	0.800	0.200	0.040	4.71	3301.9
3.6	114.0	0.780	0.220	0.043	4.73	3471.0
3.9	122.0	0.760	0.240	0.047	4.75	3699.2
4.2	127.0	0.740	0.260	0.051	4.77	3834.8
4.6	133.0	0.720	0.280	0.055	4.79	3999.3
4.9	138.0	0.700	0.300	0.059	4.81	4132.2
5.7	148.0	0.650	0.350	0.069	4.86	4385.1
6.5	157.0	0.600	0.400	0.079	4.91	4602.4

GROUP DELTA

UNCONFINED COMPRESSIVE STRENGTH

Project No. SD732
FIGURE B-6



B-1, R-5 @ 21 - 21.5'

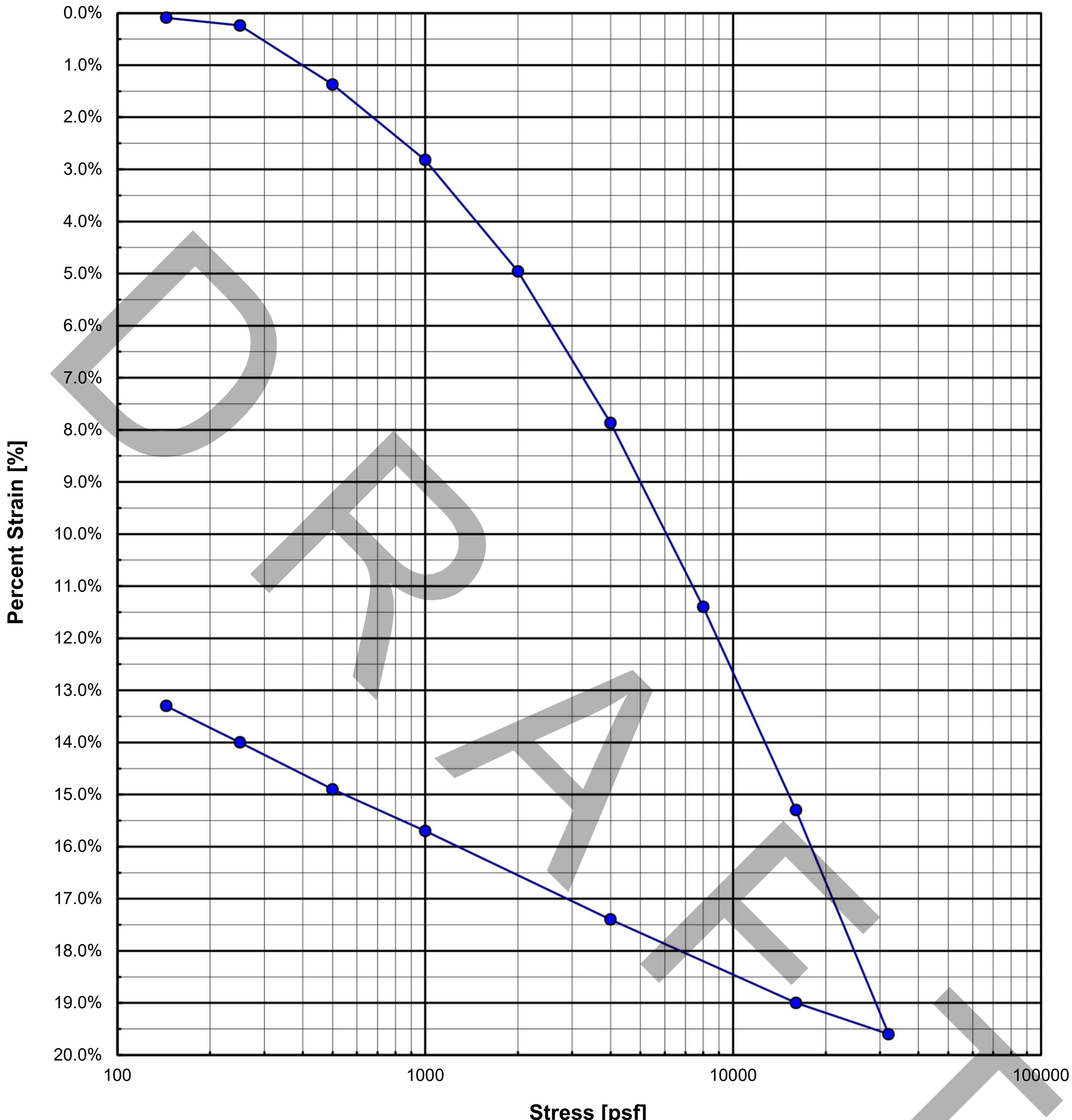
INITIAL	FINAL	
1.0000	0.9509	SAMPLE HEIGHT [IN]
89.0	93.6	DRY DENSITY [PCF]
2.79	2.79	SPECIFIC GRAVITY (ASSUMED)
0.97	0.86	VOID RATIO (e)
32.9	30.8	WATER CONTENT [%]
94.2	100.0	DEGREE OF SATURATION [%]

GROUP DELTA

CONSOLIDATION RESULTS

Project No. SD732

FIGURE B-7.1



B-1, R-7-2 @ 31' - 31.5'

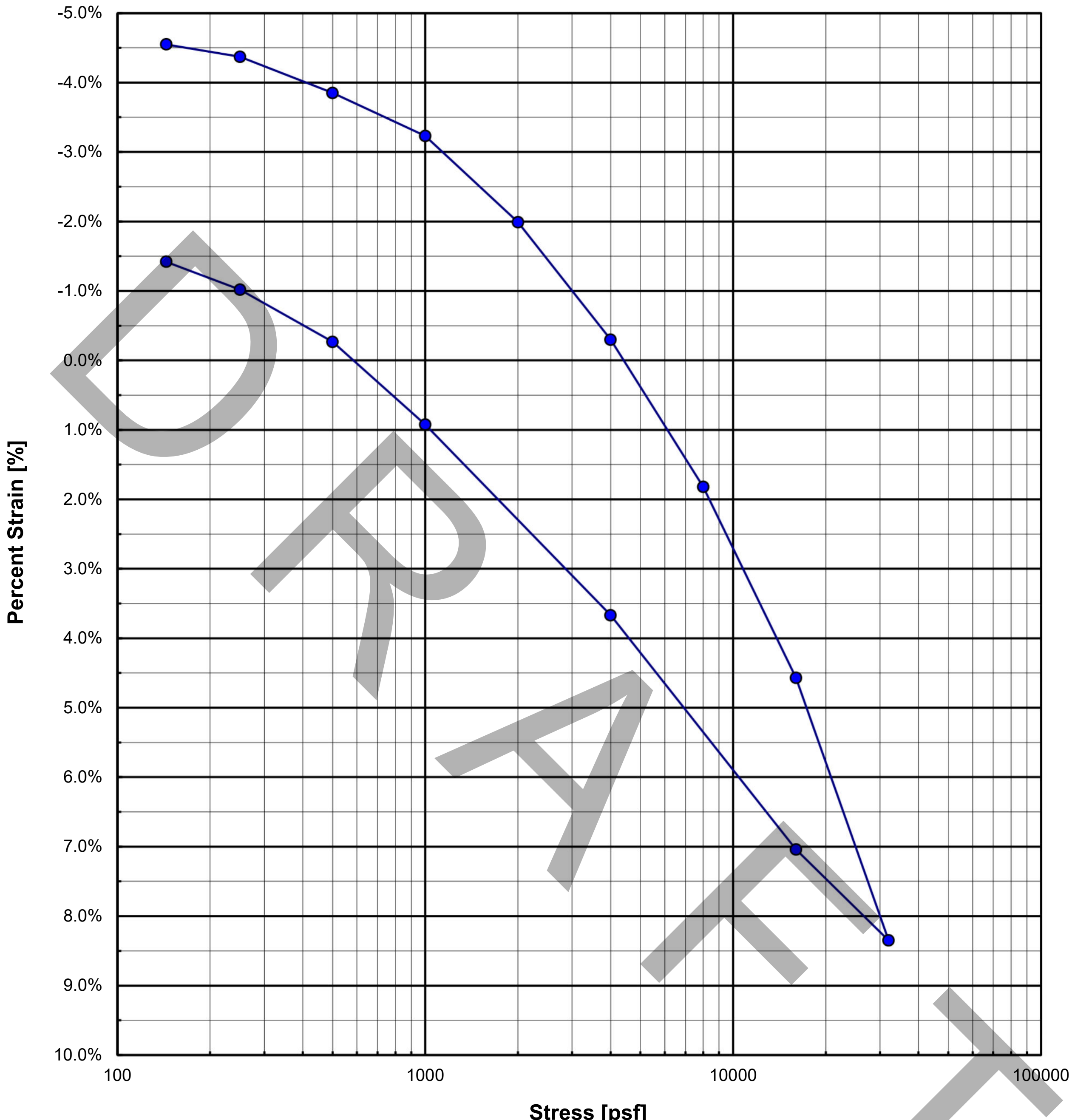
INITIAL	FINAL	
1.0000	0.8670	SAMPLE HEIGHT [IN]
91.8	105.8	DRY DENSITY [PCF]
2.77	2.77	SPECIFIC GRAVITY (ASSUMED)
0.88	0.63	VOID RATIO (e)
31.6	22.9	WATER CONTENT [%]
99.0	100.0	DEGREE OF SATURATION [%]

GROUP DELTA

CONSOLIDATION RESULTS

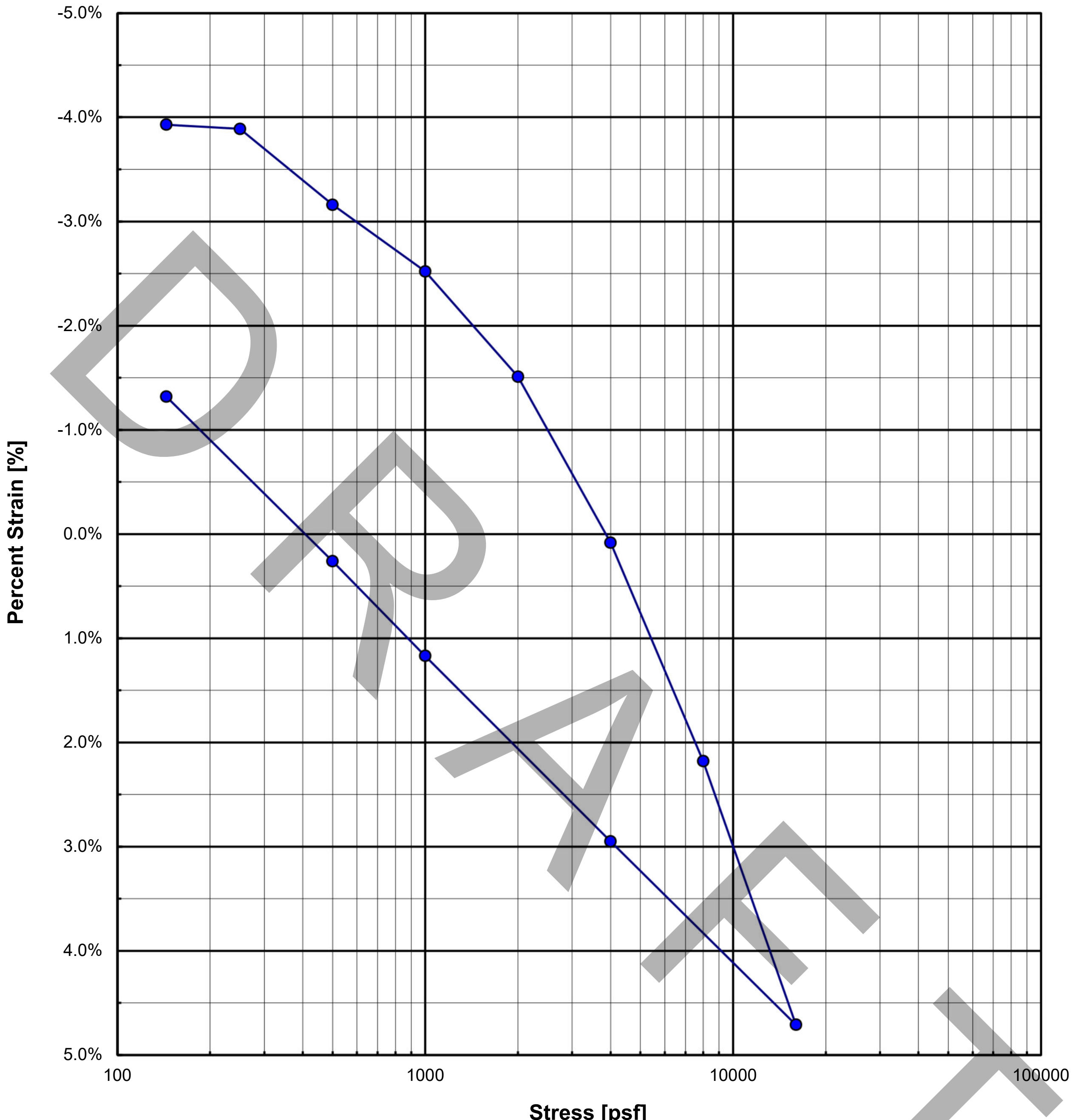
Project No. SD732

FIGURE B-7.2



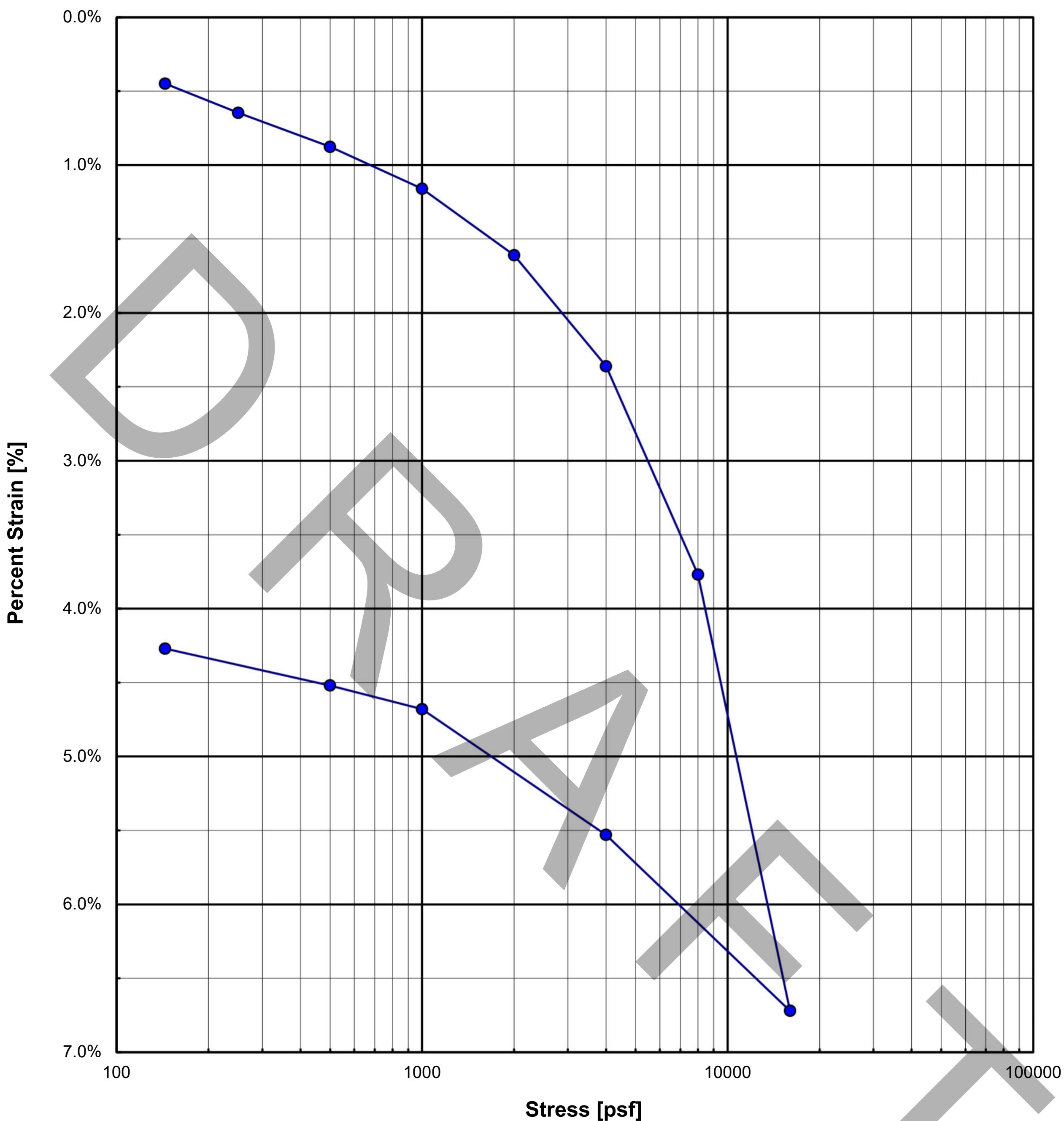
B-1, R-8-2 @ 36 - 36.5'

INITIAL	FINAL	
1.0000	1.0142	SAMPLE HEIGHT [IN]
96.8	95.4	DRY DENSITY [PCF]
2.83	2.83	SPECIFIC GRAVITY (ASSUMED)
0.91	0.85	VOID RATIO (e)
27.9	30.1	WATER CONTENT [%]
86.7	100.0	DEGREE OF SATURATION [%]



B-2, R-3 @ 11 - 11.5'

INITIAL	FINAL	
1.0000	1.0132	SAMPLE HEIGHT [IN]
101.0	99.7	DRY DENSITY [PCF]
2.84	2.84	SPECIFIC GRAVITY (ASSUMED)
0.83	0.78	VOID RATIO (e)
24.4	27.5	WATER CONTENT [%]
83.7	100.0	DEGREE OF SATURATION [%]



B-3, R-2-2 @ 6-6.5'

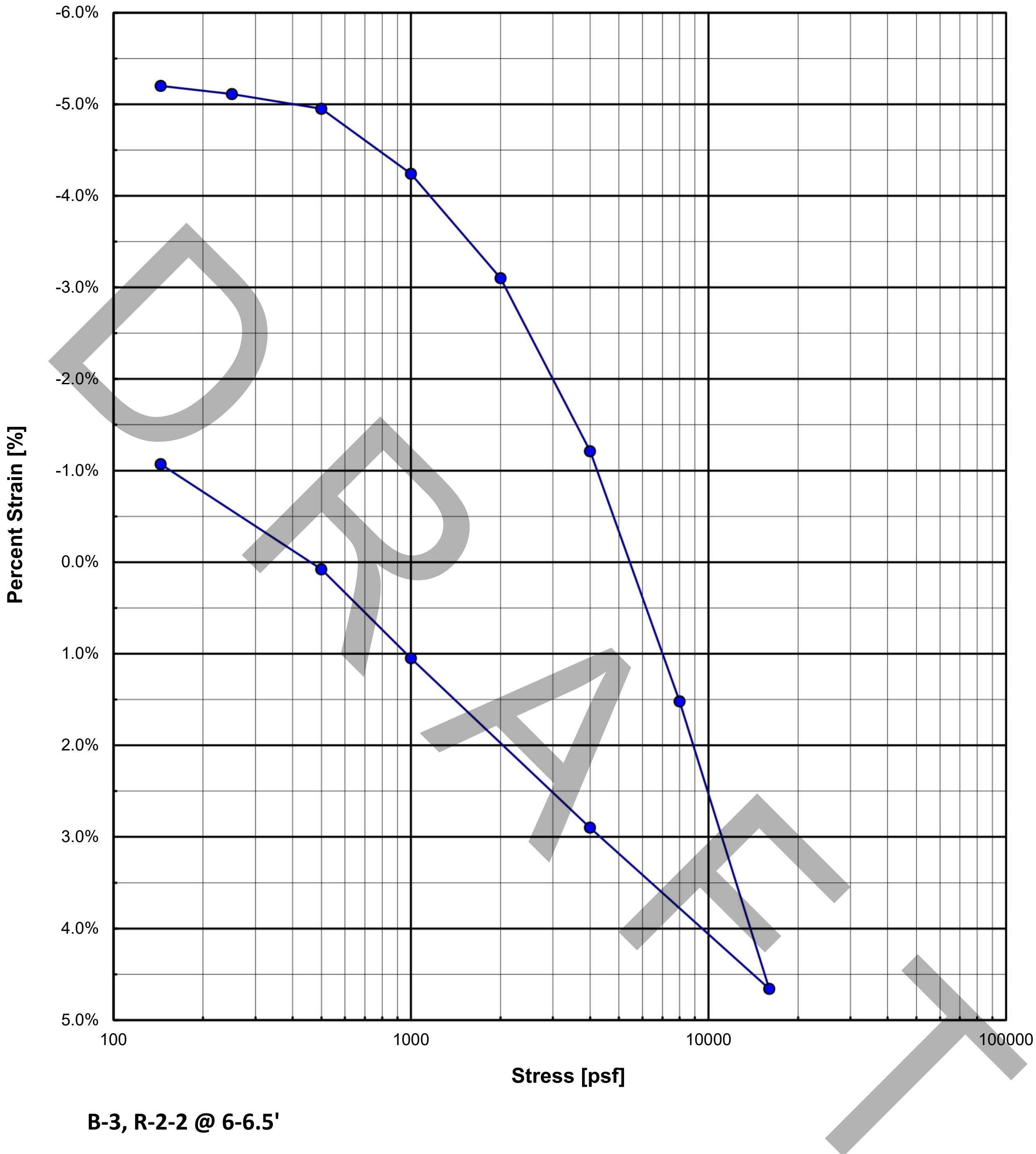
INITIAL	FINAL	
1.0000	0.9573	SAMPLE HEIGHT [IN]
95.6	99.8	DRY DENSITY [PCF]
2.80	2.80	SPECIFIC GRAVITY (ASSUMED)
0.82	0.75	VOID RATIO (e)
19.8	18.9	WATER CONTENT [%]
67.5	70.6	DEGREE OF SATURATION [%]

GROUP DELTA

CONSOLIDATION RESULTS

Project No. SD732

FIGURE B-7.5



B-3, R-2-2 @ 6-6.5'

INITIAL	FINAL	
1.0000	1.0107	SAMPLE HEIGHT [IN]
95.8	94.8	DRY DENSITY [PCF]
2.63	2.63	SPECIFIC GRAVITY (ASSUMED)
0.81	0.73	VOID RATIO (e)
20.9	27.9	WATER CONTENT [%]
68.5	100.0	DEGREE OF SATURATION [%]

GROUP DELTA

CONSOLIDATION RESULTS

Project No. SD732

FIGURE B-7.6

Appendix F

Paleontological Resources Assessment Technical Memorandum

MEMORANDUM

To:	Kara Peterson, San Diego State University
From:	Sarah Siren, MSc, Paleontologist, Dudek
Subject:	SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project–Paleontological Resources Assessment Memorandum
Date:	December 12, 2024
cc:	Mollie Brogdon, Sarah Lozano, Michael Williams, PhD, Dudek
Attachments:	A – Figures B – Geotechnical Report C – Confidential SDNHM Paleontological Records Search Results

Dudek has conducted an evaluation pursuant to the requirements of the California Environmental Quality Act (CEQA) and the current guidelines of the Society of Vertebrate Paleontology (SVP; 2010) to determine the presence of and potential impacts related to paleontological resources associated with construction and operation of the proposed San Diego State University (SDSU) Calexico Affordable Student Housing Project (Project or proposed Project), to be located at the SDSU Imperial Valley Off-Campus Center, located in Calexico, California. This technical memorandum provides the results of the paleontological resources investigation and was prepared by Shawna L. Johnson, MSc, with editorial comments by Sarah Siren, MSc, and Michael Williams, PhD. Ms. Siren and Dr. Williams are qualified paleontological principal investigators.

To determine the paleontological sensitivity of the Project site, Dudek performed a paleontological resources inventory in compliance with the CEQA and SVP guidelines. The inventory consisted of a paleontological records search through the San Diego Natural History Museum (SDNHM) and a review of geological mapping and geological and paleontological literature. The results of the paleontological records search were negative for paleontological resources within the Project site; that is, the records search did not reveal the location of any paleontological resources within the Project site and a one-mile radius buffer.

1 Project Overview and Background

In September 2003, the California State University (CSU) certified an environmental impact report for the SDSU Imperial Valley Master Plan Project (State Clearinghouse No. 2002051010) and approved a Campus Master Plan for the expansion and improvement of the SDSU Imperial Valley Off-Campus Center, which includes locations in Calexico and Brawley, both located in Imperial County (SDSU 2003). The Off-Campus Center is an extension of SDSU's main campus in San Diego and furthers the University's regional educational mission to provide additional educational opportunities to the outlying communities of Imperial County. The previously certified and approved Campus Master Plan and EIR provided the authorization necessary for enrollment of 850 full-time equivalent (FTE)[1] students at the Off-Campus Center, corresponding associated faculty and staff, and a framework for development of the facilities necessary to serve this projected enrollment and campus population.

1 A full-time equivalent (FTE) student is one full-time student taking 15 course credits, or 3 part-time students each taking 5 course credits.

The Off-Campus Center - Calexico is approximately 8.3 acres in size and is located in the City of Calexico (City). Most of the Calexico location is built out, consisting of several educational and support facilities. The environmental impacts associated with development of the Off-Campus Center – Calexico were evaluated at a program level of review in the 2003 EIR. In the CSU's continuing effort to build out the Imperial Valley Off-Campus Center and provide additional educational opportunities, SDSU presently proposes construction and operation of a four-building complex that would provide affordable student housing at the Calexico location for 80 students and a resident manager. Additional details regarding the proposed housing is provided below.

2 Project Location and Existing Conditions

The Off-Campus Center – Calexico is located at 720 Heber Avenue in downtown Calexico, approximately 0.5 miles north of the United States–Mexico border (see Figure 1, Regional Map). Regional access to the Off-Campus Center is provided via SR-111 and SR-98 to the north. The Calexico location is bordered by four streets: Heber Avenue to the west, Sherman Street to the north, Blair Avenue to the east, and 7th Street to the south. Residential uses bound the Calexico complex to the north, east, south, and west. Other surrounding uses include Calexico High School, located northeast, and Calexico City Hall, located immediately south. The Off-Campus Center - Calexico currently consists of 17 buildings and an associated surface parking lot (see Figure 2, Vicinity Map, and Figure 3A, Existing Campus Master Plan).

As a state entity, the CSU/SDSU is not subject to local government plans, regulations, and guidelines, such as those contained in the City's General Plan. The above notwithstanding, for information purposes, the Off-Campus Center - Calexico is zoned as Open Space and is designated as Public Facilities in the City's General Plan (City of Calexico 2015a).

The proposed Project site is approximately 0.58 acres in size (25,320 square feet) and is located at the southeast corner of the campus, at the northwest corner of East 7th Street and Blair Avenue (see Figure 2). The entirety of the Project site has previously been graded and is relatively flat in nature, with an average elevation of 3.5 feet above mean sea level. The Project site encompasses the locations identified in the Campus Master Plan as future Building 21 (see Figure 3A and Figure 3B, Proposed Campus Master Plan). The Project site consists of vacant and undeveloped land with two trees located along the northern boundary of the site. A chain-link fence separates the Project site from the recently removed temporary Campus Buildings 201, which were located immediately west of the Project site.

3 Project Description

3.1 Affordable Student Housing Complex

The proposed Project would involve the construction of a single-story, four-building complex approximately 12,840 square feet in size that would provide for affordable student housing. The complex would include three student housing buildings, including one smaller live-in unit building, and a community building. Two of the three proposed residential buildings would each be approximately 5,500 square feet in size and would include five four-bedroom, two-bathroom apartment units, totaling 40 student beds per building (two student beds per bedroom, 80 student beds in total). The third proposed residential building would be a live-in manager unit that would consist of a single two-bedroom, one-bathroom apartment. The proposed live-in unit would also include approximately 100 square feet of office space that is intended to provide a space for tenant meetings, social services, or counseling. All apartment units would also be equipped with a living area and kitchen. The proposed community building program would be approximately 840 square feet and include laundry, mail, restroom, electrical, and maintenance facilities. The mail room would be located outside, under the shaded amenity patio of the community building (see Table 1).

Table 1. Affordable Student Housing Complex Area Calculations

	Quantity	Area (Square Feet)	Beds
Residential Buildings (3)			
4-Bedroom, 8-Bed Unit	5	5,150	40
4-Bedroom, 8-Bed Unit	5	5,150	40
Live-In Unit	1	1,000	2
Office (Included in Live-In Unit)	N/A	N/A	N/A
Subtotal	*11*	*11,300*	*82*
Community Building (1)			
Laundry Room	1	300	N/A
Service Rooms	4	450	N/A
Restroom	2	100	N/A
Mail/Package (Outside)	1	270	N/A
Subtotal	*N/A*	*1,150*	*N/A*
Other			
Trash/Recycling Enclosure	1	850	N/A
Open Space	N/A	2,300	N/A
Landscaping/hardscaping	N/A	12,500	N/A
Subtotal	*N/A*	*13,650*	*N/A*
Combined Total	**N/A**	**26,100**	**82**

Note: N/A = not applicable.
All square foot amounts presented in the table are approximate amounts only and may not add to the site plan area totals described in this document due to rounding.

Other on-site proposed amenities include a courtyard, bike racks, and a community waste enclosure. The courtyard would be approximately 1,600 square feet and would be centrally located in the proposed complex (see Figure 4, Site Plan). Approximately 15 bike racks would be provided throughout the Project site. A community waste enclosure at the northeast corner of the Project site would allow residents a convenient place to dispose of waste and recyclables.

3.1.1 Operation

The Off-Campus Center - Calexico, including the Project site, is owned and operated by the CSU/SDSU. The CSU Board of Trustees, on behalf of SDSU, is the lead agency responsible for certifying the adequacy and completeness of this document and approval of the proposed Project. SDSU and the IVCCD have received joint funding under the State of California Higher Education Student Housing Grant Program to construct the proposed Project.

To support basic housing needs for students in the Imperial Valley, SDSU and IVCCD have executed a 30-year master lease agreement that details operation of the Project. This agreement dictates that 40 of the 82 proposed student beds would be reserved for IVCCD students who attend the Imperial Valley College in Imperial. Likewise, 40 of the proposed 82 beds, would be reserved for SDSU Off-Campus Center - Calexico students. A 2-bedroom unit would also provide living space for on-site management. SDSU would be responsible for operating, managing, and maintaining the proposed Project once operational.

Student beds made available under the proposed Project would be leased/rented to eligible low-income students. Eligible low-income students are defined as having 30% of 50% of the Annual Median Income for Imperial County. In the event, after a good faith outreach effort, there is not sufficient demand from students meeting the eligibility requirements within 90 days of the start of the fall semester, unassigned beds may be leased at market rates to SDSU and IVCCD students not meeting the low-income eligibility requirements. In addition to meeting the low-income criteria, eligible students would be required to be enrolled students and take a minimum average of 12 degree-applicable units per semester term, or the quarterly equivalent (with exceptions permitted), to facilitate timely degree completion.

3.1.2 Other Project Elements

Building and Site Design

The proposed buildings have been designed to reflect the character and massing of the existing Off-Campus Center - Calexico, as well as the surrounding neighborhood. Building design is centered around a courtyard-style housing complex and would consist of smooth stucco walls with downspouts and rafters, punctuated by composite terra cotta–colored roof tile accents and windows. Maximum building heights would range from 14 feet to 18 feet.

Landscaping, Other Site Improvements, and Lighting

The Project would include approximately 16,000 square feet of on-site landscaping and hardscape improvements (i.e., pedestrian walkways). All proposed landscaping would consist of drought-tolerant, indigenous plants. The landscape scheme would include shrubs, hedges, and a variety of trees. A total of 39 trees would be added to the Project site including five fan palms, eight mesquite trees, six evergreen elms, and 20 yucca trees.

All exterior on-site lighting would be hooded or shielded, directed downward, and would be compliant with applicable standards for lighting control and light pollution reduction (i.e., Title 24, American National Standards Institute/Illuminating Engineering Society).

The proposed complex would be secured via an iron security fence that would measure 6 feet in height and run approximately 64 linear feet, connecting to the proposed buildings. Access to the complex would only be available to residents and their guests via two pedestrian gates located at the northwestern corner and southern portion of the proposed complex. The gates would be equipped with security card access for residents.

Utilities and Public Services

New points of connection for domestic water, fire supply water, sewer, storm drainage and electrical connections from existing utility lines would be required to serve the proposed Project. Potable water service, as well as sewer collection services at the Project site, would be provided by the City. The Project would connect to an existing sanitary sewer maintenance access line located in Blair Avenue via new 6-inch mains. Connections for water (including domestic, fire, and irrigation) would be from an existing water main located in Blair Avenue. Distribution water pipes would be extended underground to serve each proposed building. A new water meter would be located in the proposed maintenance room in the community building. Adequate water treatment capacity and supply and sewer treatment capacity exists within the City's water and sewer system to accommodate the Project; therefore, no capacity upgrades to infrastructure would be necessary.

Stormwater drainage includes two stormwater catch basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated immediately east of the existing chain-link fence at the western boundary of the Project site. The proposed catch basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to stormwater discharge into the City's stormwater system via one new storm drain located in the southeast corner of the Project site.

Electrical services within the Project area are provided by Imperial Irrigation District, which provides electric power to over 158,000 customers in the Imperial Valley in addition to areas of Riverside and San Diego counties (IID 2024). New utility connections and infrastructure would be required to support electrical services on site. The Project would connect to on-site electrical power infrastructure via an existing 12kV, three phase, three wire, 60 Hertz overhead line routed along East 7th Street. No natural gas usage is proposed for the Project.

The Project would require a new point of connection for on-site telecommunications and would connect to the existing AT&T communications via the on-campus minimum point of entry.

Access, Circulation, and Parking

Regional access to the Project site is provided via SR-111 and SR-98 to the north. Local access is provided via Blair Avenue and East 7th Street. Parking to the Project site is available in the existing campus parking lot, immediately north of the Project site, which has sufficient capacity to serve the proposed Project. On-site circulation improvements would consist of additional paved pathway/pedestrian walkway features throughout the proposed complex and along the northern boundary of the Project site (see Figure 4). Emergency access would be provided directly adjacent to the Project site on East 7th Street and Blair Avenue.

3.1.3 Design Standards and Energy Efficiency

In May 2014, the CSU Board of Trustees broadened the application of sustainable practices to all areas of the university by adopting the first systemwide sustainability policy, which applies sustainable principles across all areas of university operations, including facility operations and utility management. In May 2024, the CSU Sustainability Policy was updated to expand on existing sustainability goals (CSU 2024). The CSU Sustainability Policy seeks to integrate sustainability into all facets of the CSU, including academics, facility operations, the built environment, and student life (CSU 2018). Relatedly, the state has also strengthened energy-efficiency requirements in the California Green Building Standards Code (Title 24 of the California Code of Regulations).

As a result, all CSU new construction, remodeling, renovation, and repair projects, including the proposed Project, would be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable state energy codes and regulations. Progress submittals during design are monitored for individual envelope, indoor lighting, and mechanical system performances. In compliance with these goals, the proposed Project would be equipped with solar ready design features that would facilitate and optimize the future installation of a solar photovoltaic (PV) system.

3.1.4 Off-Site Improvements

Off-site improvements would include the resurfacing of a portion of Blair Avenue adjacent to the eastern boundary of the Project site that would be disturbed as a result of trenching to make necessary connections to the existing water main and sanitary sewer maintenance access. Any area disturbed as a result of this connection within Blair Avenue would be resurfaced to existing conditions. All off-site improvements would occur within the Blair Avenue right-of-way.

3.1.5 Construction

Construction would be performed by qualified contractors. Plans and specifications would incorporate stipulations regarding standard CSU/SDSU requirements and acceptable construction practices, such as those set forth in the SDSU Stormwater Management Plan, CSU Seismic Policy, The CSU Office of the Chancellor Guidelines, and the CSU Sustainability Policy, regarding grading and demolition, safety measures, vehicle operation and maintenance, excavation stability, erosion control, drainage alteration, groundwater disposal, public safety, and dust control.

Construction Timeline

Construction of the proposed Project would take approximately 17 months to complete and is estimated to begin as early as January 2025 and be completed by May 2026, with occupancy planned for fall 2026. Construction activities would generally occur Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m., with the potential for weekend construction on Saturday between 9:00 a.m. and 5:00 p.m. No construction would occur on Sundays or holidays or at night.

Construction Activities

A construction mobilization or staging area would be located immediately northeast of the proposed Project site and would occupy approximately 8,000 square feet. The area would be located east of existing Campus Building 6, west of Blair Avenue, and south of the existing parking lot (see Figure 2 and Figure 3A). To accommodate use of this area, four trees would be removed.

Construction would include site preparation, grading and excavation, utility installation/trenching, building foundation pouring, building construction, and landscaping. Excavation depths are anticipated to be 3 feet below grade. The majority of waste (i.e., excavated gravel/soil) generated during Project construction would be balanced/used within the site. Approximately 2,600 cubic yards of soil would be removed from the site and exported to Republic Services Allied Imperial Landfill, approximately 12 miles north. The entire Project site, including construction mobilization area (approximately 34,000 square feet in total) would be disturbed as a result of Project construction. Two trees would be removed from the Project site to accommodate the proposed Project.

Table 2 displays the construction equipment anticipated to be used during construction.

Table 2. Anticipated Construction Equipment

Aerial Lifts	Pressure Washers
Air Compressors	Pumps
Cement and Mortar Mixers	Rollers

Table 2. Anticipated Construction Equipment

Concrete/Industrial Saws	Rough Terrain Forklifts
Dumpers/Tenders	Rubber-Tired Dozers
Excavators	Rubber-Tired Loaders
Forklifts	Scrapers
Generator Sets	Signal Boards
Graders	Skid Steer Loaders
Off-Highway Tractors	Surfacing Equipment
Off-Highway Trucks	Sweepers/Scrubbers
Other Construction Equipment	Tractors/Loaders/Backhoes
Other General Industrial Equipment	Trenchers
Other Material Handling Equipment	Welders
Plate Compactors	

Source: Dorsey and Nielson Construction Inc, pers. comm., 2024

Construction Waste

The Project would generate construction debris during on-site clearing activities. In accordance with Section 5.408 of the California Green Building Standards Code, the Project would implement a construction waste management plan for recycling and/or salvaging for reuse of at least 65% of nonhazardous construction/demolition debris. Additionally, the Project would be required to meet Leadership in Energy and Environmental Design v4 requirements for waste reduction during construction. Solid waste generated during construction would be hauled off site to the Republic Services Allied Imperial Landfill at 104 East Robinson Road in Imperial, California.

4 Analysis Methodology

The analysis presented here considers the potential impacts of the proposed Project on paleontological resources relative to existing conditions. Establishment of the Project site's existing paleontological conditions have been informed by reviewing published geological maps and published and unpublished reports to identify geological units located on the Project site and determine their paleontological sensitivity.

A paleontological records search request was sent to SDNHM on June 10, 2024. The records search area included the Project site and a 1-mile radius buffer. The purpose of the records search was to determine whether there are any known fossil localities in or near the Project site to aide in determining whether a paleontological mitigation program is warranted to avoid or minimize potential adverse effects of construction on paleontological resources.

5 Paleontological Resources

Paleontological resources are the remains or traces of plants and animals that are preserved in Earth's crust and, per SVP guidelines, are older than written history or older than approximately 5,000 years, which approximates the middle Holocene Epoch. (Cohen et al. 2023). They are limited, nonrenewable resources of scientific and educational value and are afforded protection under state laws and regulations. This analysis complies with guidelines and significance criteria specified by CEQA and SVP. Table 3, Paleontological Resource Sensitivity Criteria, provides definitions for high, undetermined, low, and no paleontological resource potential, or sensitivity, as set forth in and by the SVP Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources.

Table 3. Paleontological Resource Sensitivity Criteria

Resource Sensitivity/ Potential	Definition
High Potential	Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rock units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcaniclastic formations (e.g., ashes or tephras), and some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e.g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones, etc.). Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data. Rock units which contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and rock units which may contain new vertebrate deposits, traces, or trackways are also classified as having high potential.
Undetermined Potential	Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist (see “definitions” section in this document) to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.
Low Potential	Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule, e. g. basalt flows or Recent colluvium. Rock units with low potential typically will not require impact mitigation measures to protect fossils.

Table 3. Paleontological Resource Sensitivity Criteria

Resource Sensitivity/ Potential	Definition
No Potential	Some rock units have no potential to contain significant paleontological resources, for instance high- grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection nor impact mitigation measures relative to paleontological resources.

Source: SVP 2010.

5.1 Regulatory Framework

California Environmental Quality Act

This paleontological resources evaluation was completed to satisfy the requirements of CEQA. The CEQA Guidelines require that all private and public activities not specifically exempted be evaluated against the potential for environmental impacts, including effects to paleontological resources. Paleontological resources, which are limited, nonrenewable resources of scientific, cultural, and educational value, are recognized as part of the environment under these state guidelines. This study satisfies project requirements in accordance with CEQA (14 CCR 15000 et seq.).

Paleontological resources are explicitly afforded protection by CEQA, specifically in CEQA Guidelines Appendix G Section VII(f), which addresses the potential for adverse impacts to “unique paleontological resource[s] or site[s] or unique geological feature[s]” (14 CCR 15000 et seq.). This provision covers fossils of significant importance, which include the remains of species or genera new to science, for example, or fossils exhibiting features not previously recognized for a given animal group, as well as localities that yield fossils significant in their abundance, diversity, preservation, and so forth.

California Public Resources Code Section 5097.5

In addition to CEQA’s requirements, Public Resources Code Section 5097.5 regulates removal of paleontological resources from state lands, defines unauthorized removal of fossil resources as a misdemeanor, and requires mitigation of disturbed sites.

5.2 Environmental Setting

Geological Literature, Map, and Geotechnical Report Review

The Project site is located within the Colorado Desert Geomorphic Province, which lies between the Mojave Desert and Peninsular Ranges Geomorphic Provinces. The Colorado Desert Geomorphic Province is the on-land extension of the Gulf of California and is a low-lying, arid basin that contains sediments from ancient Lake Cahuilla. This geomorphic province is also characterized by numerous geothermal areas as a result of the tectonic activity in the region (CGS 2002).

According to surficial geological mapping by Jennings et al. (2010) at a 1:750,000 scale and Morton (1977) at a 1:125,000 scale and the geological time scale of Cohen et al. (2023), the Project site is underlain by late Pleistocene to Holocene (129,000 years ago to recent) lake beds (map unit Ql)/alluvium, lake, playa, and terrace deposits (map Unit Q). These deposits are typically unconsolidated to semi-consolidated, tan and gray fossiliferous clay, silt, sand, and gravel from ancient Lake Cahuilla and playa lakes. The August 2022 geotechnical report prepared for the Project by Group Delta (Attachment B, Geotechnical Report) states that these sediments are up to 100 feet thick. Undocumented fill up to 4 feet thick was found in three boreholes, with the rest of the sediments primarily being clays, sand, and silty sands to a target depth of approximately 51 feet (Attachment B).

Paleontological Literature Review

The SDNHM locality SDNMH 4651, near Holtville, produced a fossil horse specimen, and another fossil horse was recorded from the Glamis sand dunes (Jefferson 2012). The Los Angeles County Museum locality LACM 1719, from the Mountain Signal Gravel pit, yielded a fossil horse specimen (Jefferson 2012). The University of California Museum of Paleontology recorded a locality (UCMP V53003) near Niland, that produced a fossil camel (Jefferson 2012). The Imperial Valley County Museum has several localities (IVCM 188, 192, 194, 228–229, 278, and 238) that have produced a mammoth and an elephantid (mammoths and their relatives), deer, several bison and bovid, horse, and camel from along the Coachella Canal and near Glamis (Jefferson 2012). A project in the City of La Quinta produced the following fossils from the Lake Cahuilla beds: pollen, numerous diatoms (microscopic plants), land dwelling plants, invertebrates (sponges, clams, snails, microscopic crustaceans), fish, lizards, snakes, birds, mammals (rabbits, pikas, squirrels, ground squirrels, mice, kangaroo rats, wood rats) (Whistler et al. 1995).

Paleontological Records Search

SDNHM paleontological records search results were received on June 21, 2024 (Confidential Attachment C, SDNHM Paleontological Records Search Results). SDNHM did not report any fossil localities from within the Project site; however, they did report the nearest SDNHM locality was located 7 miles west of the Project site and produced shells of freshwater gastropods and mussels (Confidential Attachment C).

6 Impact Analysis and Conclusions

6.1 Thresholds of Significance

The thresholds of significance used to evaluate the impacts of the proposed Project related to paleontological resources are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). A significant impact under CEQA would occur if the proposed Project would:

a. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

6.2 Impact Analysis

a) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No paleontological resources were identified within the Project site as a result of the institutional records search or desktop geological and paleontological review. In addition, the Project site is not anticipated to be underlain by unique geologic features. The Project site is underlain by late Pleistocene to Holocene lake deposits, which have high paleontological sensitivity. If intact paleontological resources are located on site, ground-disturbing activities associated with construction of the proposed Project, such as grading during site preparation and trenching for utilities, have the potential to destroy a unique paleontological resource or site. As such, the Project site is considered to be potentially sensitive for paleontological resources, and without mitigation, the potential damage to paleontological resources during construction associated with the Project is considered a potentially significant impact. Given the proximity of past fossil discoveries in the surrounding area within similar Pleistocene deposits, the Project site is highly sensitive for supporting paleontological resources below the depth of fill and weathered lake deposits. However, upon implementation of **Mitigation Measure (MM) GEO-1** (see below), impacts would be reduced to below a level of significance. Impacts of the proposed Project are considered **less than significant with mitigation incorporated** during construction.

MM-GEO-1: Prior to commencement of any grading activity on site, CSU/SDSU, or its designee, shall retain a qualified paleontologist consistent with the Society of Vertebrate Paleontology (SVP) (2010) guidelines, to prepare a Paleontological Resource Impact Mitigation Program (PRIMP) for the Project. The PRIMP shall be consistent with the SVP (2010) guidelines and outline the following requirements: worker attendance and environmental awareness training at preconstruction meeting/s; monitoring within the proposed Project site as necessary based on construction plans and/or geotechnical reports; procedures for discoveries treatment; and methods (including sediment sampling for microvertebrate fossils), for reporting and collections management.

The paleontologist shall attend the preconstruction meeting and shall be on site during the preliminary phase of construction during rough grading and other significant ground-disturbing activities (including augering) to monitor the discovery, if any, of previously undisturbed, fine-grained lake deposits. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the monitor will temporarily halt and/or divert grading activity to allow recovery of any discovered paleontological resources. Once documentation and collection of the find is completed, the monitor will allow grading to recommence in the area of the find. Any costs associated with laboratory processing of sediments and fossils, and curation fees are the responsibility of CSU/SDSU.

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Attachment A

Figures

SOURCE: ESRI

DUDEK

0 4 8 Miles

FIGURE 1

Regional Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

SOURCE: AERIAL-ESRI MAPPING SERVICE 2023; DEVELOPMENT-SDSU 2024

DUDEK

0 100 200 Feet

FIGURE 2
Vicinity Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

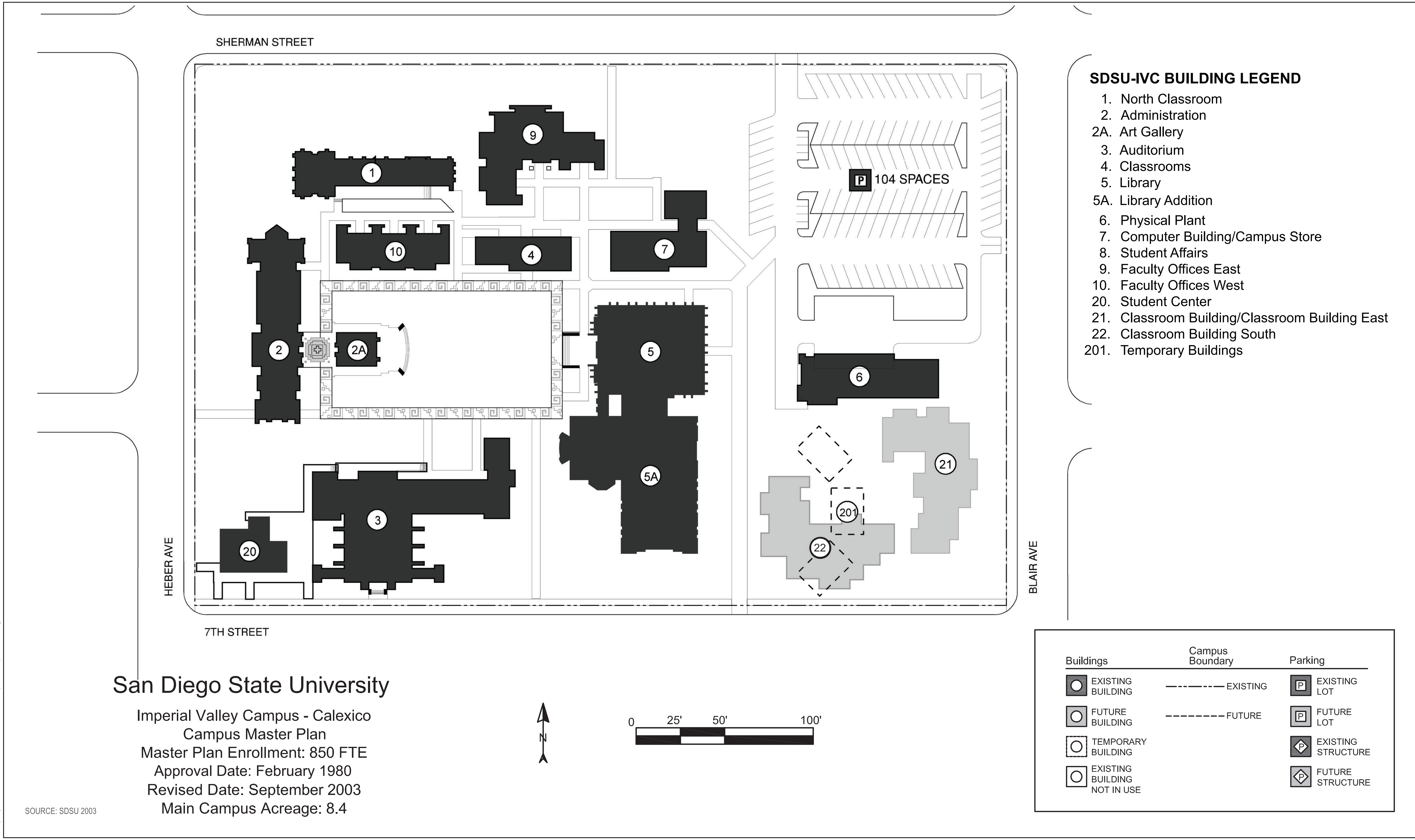

FIGURE 3A

Existing Campus Master Plan

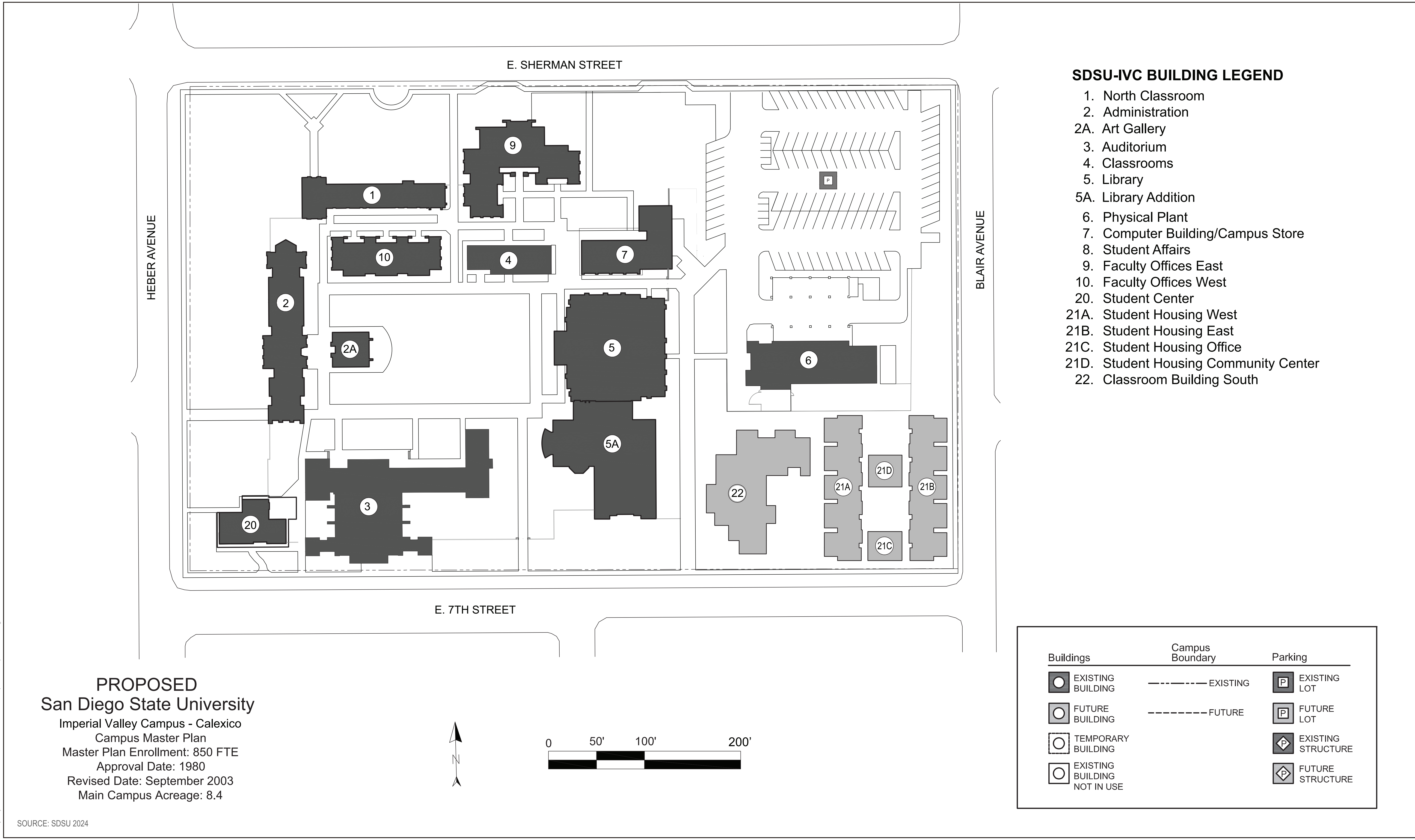

FIGURE 3B

Proposed Campus Master Plan

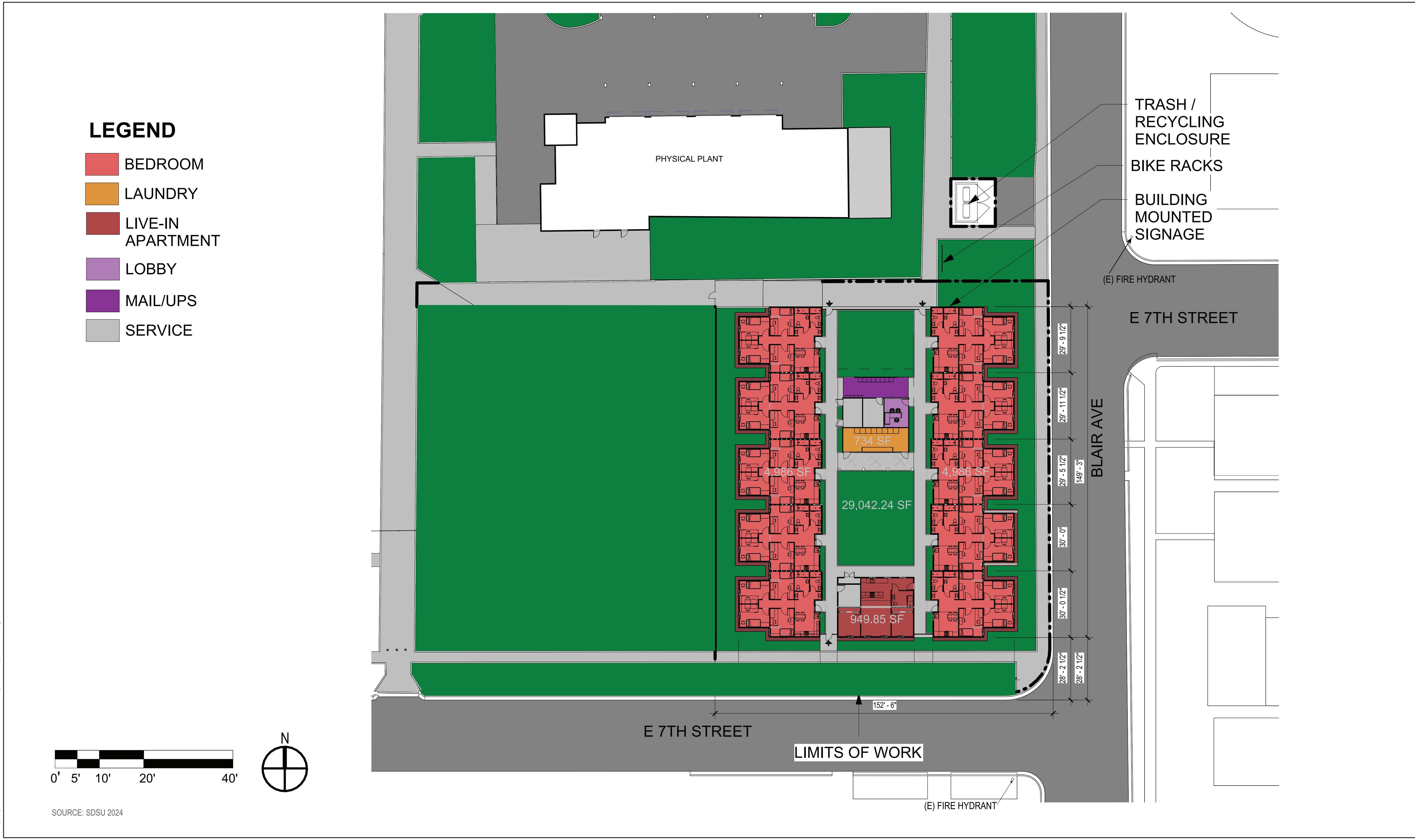

FIGURE 4

Site Plan

DUDEK

Attachment B

Geotechnical Report

REPORT OF GEOTECHNICAL INVESTIGATION
STUDENT RESIDENCE HALL
SAN DIEGO STATE UNIVERSITY
IMPERIAL VALLEY CAMPUS
CALEXICO, CALIFORNIA

Prepared for

SAN DIEGO STATE UNIVERSITY
Facilities Planning, Design & Construction
5500 Campanile Drive
San Diego, California 92182-1624

Prepared by

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Project No. SD732
August 3, 2022

San Diego State University
Facilities Planning, Design & Construction
5500 Campanile Drive
San Diego, California 92182-1624

Project No. SD732
August 3, 2022

Attention: Ms. Amanda Scheidlinger, Director of Construction

SUBJECT: REPORT OF GEOTECHNICAL INVESTIGATION
Student Residence Hall
San Diego State University – Imperial Valley Campus
Calexico, California

Ms. Scheidlinger:

Group Delta Consultants, Inc. are pleased to submit this report of geotechnical investigation for the proposed Student Residence Hall building at the San Diego State University Imperial Valley Campus in Calexico, California. This report summarizes our conclusions regarding the geologic and geotechnical site constraints, and provides geotechnical recommendations for remedial grading, foundation, slab, utilities, and pavement section design.

We appreciate this opportunity to be of professional service. Please feel free to contact the office with any questions or comments, or if you need anything else.

GROUP DELTA CONSULTANTS

Samuel R. Narveson, P.G. 10060
Project Geologist

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Principal Engineering Geologist

Distribution: (1) Addressee, Ms. Amanda Scheidlinger (ascheidlinger@sdsu.edu)

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FIGURES

APPENDICES

1.0 INTRODUCTION

Group Delta Consultants, Inc. (Group Delta) are pleased to submit the following report of geotechnical investigation that provides geotechnical recommendations for the proposed Student Residence Hall building at the San Diego State University (SDSU) Imperial Valley Campus (IVC) in Calexico, California. The general location of the site is shown on Figure 1, Site Location, and the campus location is shown in more detail on Figure 2, Site Vicinity. The approximate locations of the subsurface explorations that were completed at the site are shown on Figure 3, Exploration Locations, along with the proposed Phase I and Phase II building addition approximate footprint limits (HED, 2022).

1.1 Scope of Services

Our geotechnical services were provided in general accordance with the provisions of the referenced proposal (Group Delta, 2022). The purpose of this work was to characterize the geologic and geotechnical constraints to site development, and to provide recommendations for grading and design of the new foundations, slabs, utilities, and pavements. The recommendations provided herein are based on subsurface investigation, the findings from laboratory tests, our engineering analyses, and our previous experience with similar geologic conditions in the site vicinity. In summary, we provided the following services for this project.

- A visual reconnaissance of the surface characteristics of the site and surrounding areas, and a review of the relevant reports.
- A subsurface exploration of the site including five Cone Penetration Test (CPT) soundings along with three geotechnical borings. The exploratory geotechnical boring and CPT sounding locations are shown on Figure 3, Exploration Locations. The boring records and CPT sounding data are provided in Appendix A.
- Laboratory tests were conducted on soil samples collected from the explorations. Laboratory tests conducted included sieve and hydrometer analyses, percent passing the number 200 sieve, Atterberg limits, Expansion Index (EI), soil corrosivity, in-situ moisture content, undrained shear strength, consolidation, and one-dimensional swell tests. The laboratory test results are summarized in Appendix B.
- Engineering analysis of the field and laboratory data to develop geotechnical recommendations for site preparation, remedial earthwork, foundation and pavement design, soil reactivity, site drainage and moisture protection.
- Preparation of this report summarizing our findings, conclusions and geotechnical recommendations for the proposed Student Residence Hall building.

1.2 Site Description

SDSU IVC is located at 720 Heber Avenue in Calexico, California. The campus in situated near the international border with Mexico within the Imperial Valley. The site is located about 30 miles south of the Salton Sea, as shown on Figure 1, Site Location. The proposed project site is located in the southeast corner of the campus, near the intersection of East 7th Street and Blair Avenue. The site currently contains an empty grass lot, three modular buildings, chain-link fencing, and landscaping consisting of several trees. The site location is relatively flat-lying and located approximately 4 to 6 feet above mean sea level (Google Inc., 2022).

1.3 Proposed Development

Outside of conceptual drawings (HED, 2022), details of the proposed building additions are not yet available. Based on the conceptual drawings, we understand that the project will consist of two development phases, each adding a two-story structure at the approximate locations shown on Figure 3, Exploration Locations. The buildings will likely consist of a relatively light-weight wood-framed or steel structure supported on conventional shallow reinforced concrete foundations or a post-tensioned slab. Other new site improvements may include new sidewalks and pavement areas, as well as various new landscape areas and subsurface utilities. It is assumed that site grades will remain approximately consistent with the current elevations, and that fill placements above existing grades are not needed for the site development.

2.0 FIELD AND LABORATORY INVESTIGATION

Our field investigation included advancing five CPT soundings on May 31st, 2022, and three geotechnical borings on June 1st, 2022. The maximum depth explored was approximately 100 feet below grade. Soil samples were collected at selected intervals within each geotechnical boring for laboratory testing and geotechnical analysis. The exploration locations are shown on Figure 3, Exploration Locations. The boring records and CPT sounding data are provided in Appendix A. Shear wave velocity measurements were collected at CPT-1 at 5-foot depth intervals, and the measurements are also presented in Appendix A.

The laboratory testing program included sieve and hydrometer analyses, percent passing the number 200 sieve, and Atterberg limits to aid in material classification according to the Unified Soil Classification System (USCS). Additional tests were performed to evaluate the in-situ moisture content and dry density, soil expansion characteristics (i.e., EI), compressibility parameters, undrained shear strength, and corrosivity potential. The in-situ moisture content and dry density, sieve and hydrometer analyses, percent passing the number 200 sieve, Atterberg limits, expansion index and unconfined compressive strength results and presented on the boring records in Appendix A. The laboratory test results are also shown in Appendix B.

3.0 GEOLOGY AND SUBSURFACE CONDITIONS

The site is located within the Salton Trough of the Colorado Desert geomorphic province, a topographic and structural depression bound to the north by the Coachella Valley and to the south by the Sea of Cortez. The Salton Trough is a region of transition from the extensional tectonics of the East Pacific Rise to the transform tectonic environment of the San Andreas system. Late Cenozoic extension of the Sea of Cortez formed this deep topographic and structural depression.

The Salton Trough is an actively growing rift valley in which sedimentation has almost kept pace with tectonism (Elders, 1979). Periodically throughout its history, the Colorado River delta has diverted and filled the trough producing cycles of sedimentation from marine, to deltaic, to fluvial and lacustrine. Today, the Salton trough is dominated by the Salton Sea and the Mesozoic-age crystalline basement rocks are covered by about 15,000 feet of Cenozoic sedimentary accumulation (Van De Kamp, 1973).

The site is located in an area that has been covered by lakes during the Quaternary time. The most recent of the lakes that formed in the Salton Trough was known as Lake Cahuilla, which was formed by flooding of the Colorado River and existed until approximately 300 years ago (Elders, 1979). The old shoreline of Lake Cahuilla can be traced along the Santa Rosa Mountains north of the site, and averages about 40 feet above mean sea level. The site is underlain at depth by hundreds of feet of lacustrine deposits, overlain by shallow fill.

The approximate locations of the explorations conducted at the site are shown on Figure 3, Exploration Locations. The general geology in the site vicinity is shown on Figure 4, Regional Geology. Logs interpreting the subsurface conditions we encountered in the explorations are provided in Appendix A. The geologic materials at the site are described below.

3.1 Lacustrine Deposits

The entire site is underlain by deep lacustrine deposits associated with the ancestral Lake Cahuilla. The lacustrine sediments are estimated to be well over 100 feet thick (Kovach et al., 1962). The lake sediments are typically fine grained, and generally consist of interbedded clays (USCS classifications CL and CH), with thin lenses of silt (ML) and occasional beds of silty sand (SM). The granular soils within the lake deposits are typically medium dense in consistency. The clays range from medium to high plasticity, and range in consistency from medium stiff to hard.

Laboratory tests indicate that the surficial clays have a moderate expansion potential and would be considered corrosive to severely corrosive based on the results of our limited corrosion screening tests. The estimated undrained shear strength (Su) of the predominately clayey lacustrine deposits typically ranges from about 1 to greater than 4 kips per square foot (ksf), based on interpretations of pocket penetration (PP) tests, CPT data, and an undrained shear strength test, as shown in Appendices A and B. This indicates the clayey soils are medium stiff to hard in consistency. Shear wave velocity measurements performed at CPT-1 indicated an average shear wave velocity of about 690 feet per second (ft/s), or 210 meters per second (m/s). In our opinion, a 2019 California Building Code (CBC) Site Class D (Stiff Soil) would be most applicable to the general site conditions.

Several roughly 2-foot-thick beds, but some up to 4-feet thick locally, of silty sand (SM) and non-plastic silt (ML) were encountered in the explorations within the Lacustrine deposits at depths ranging between approximately 13 to 20, 28 to 30, and 48 to 50 feet below existing grade. The hammer energy corrected blow counts (N_{60}) within these layers ranged from approximately 11 to 29 and CPT tip resistance ranged from 75 to 175 tons per square foot (tsf), which is indicative of a loose to medium dense material. Our analyses indicate that these zones of material are potentially liquefiable under a high seismic demand, as described in the *Earthquake-Induced Ground Failure* section of this report.

3.2 Fill

Undocumented fill was encountered in all our explorations. The fill is "undocumented" because there are no known records of observation and in-place density testing of the fill placement and compaction by a Geotechnical Engineer. The fill was measured to be approximately three to four feet thick in our explorations. The surficial fill generally consists of lean clay (CL) with varying amounts of sand and organics. The fill soils have a medium potential for expansion (EI between 51 and 90) and are considered to be corrosive to severely corrosive.

3.3 Groundwater

Groundwater was measured at a depth of approximately 28 feet below ground surface (roughly elevation of -24 feet MSL) in boring B-1 after drilling. Note that groundwater levels fluctuate over time due to changes in groundwater extraction, irrigation, or rainfall. It should also be noted that changes in rainfall, irrigation practices, or site drainage may produce seepage or locally perched groundwater conditions at any depth within the fill or lacustrine deposits underlying the site.

4.0 GEOLOGIC HAZARDS

The site is located within the Salton Trough of the Colorado Desert geomorphic province, which is a seismically active area in southern California, as shown on Figure 5A, Regional Fault Locations. The Salton Trough is the zone of transition between the ocean floor spreading regime in the Sea of Cortez and the right-lateral, strike-slip regime of the San Andreas system. Geologic hazards at the site are related to the potential for strong ground shaking due to an earthquake on one of several nearby active faults, as well as the potential for associated soil liquefaction and dynamic settlement. Each of the potential geologic hazards is described in more detail below.

4.1 Strong Ground Motion

The site is in a seismically active area. There are several active faults in the site vicinity that have produced moderate to large earthquakes within the past 100 years. The Imperial Fault Zone ruptured with a magnitude 6.9 earthquake in 1940, and again with a magnitude 6.4 earthquake in 1979 (USGS, 1982). The trace of the ground rupture from the 1940 earthquake was located about 5 miles east of the site (see Figure 4 and Figure 5B for the approximate 1940 ground rupture location). Additionally, there are several other known active faults close to the site, including the Superstition Hills and Superstition Mountain fault zones to the northwest, and the Laguna Salada and Cerro Prieto fault zones to the south (see Figures 4 and 5A). The Superstition Hills fault experienced a magnitude 6.7 earthquake in 1987 (Magistrale, 1989). In 2010, a magnitude 7.2 earthquake occurred on the Laguna Salada fault zone south of the international border (Gonzalez-Ortega, 2014). These earthquakes caused damage to structures throughout Imperial Valley, including soil liquefaction, settlement, and surficial slumps along the Imperial Irrigation District canal and drains (USGS, 1982, Gonzalez-Ortega 2014, Holzer, 1989).

The new building will likely be subjected to numerous small to moderate magnitude earthquakes, as well as occasional larger magnitude earthquakes from nearby active faults over its expected life span. The resulting strong ground motions associated with this hazard may be managed by structural design per the governing edition of the CBC and California State University (CSU) Seismic Requirements (CSU, 2020). Seismic design parameters are provided in the *Recommendations* section of this report.

4.2 Ground Rupture

Ground rupture results from movement on an active fault reaching the ground surface. The site is not located within an Alquist-Priolo Active Fault Zone and no known active faults are present in the immediate site vicinity, as shown on Figure 5B, Local Faults. Potential for ground rupture should therefore be considered low.

4.3 Earthquake-Induced Ground Failure

Potentially liquefiable soils underlie the site. Figure 4, Regional Geology, illustrate that the site is mapped in an area underlain by Quaternary Lake Deposits (i.e., Lacustrine Deposits) that are known to be potentially susceptible to liquefaction and its secondary effects (e.g., earthquake-induced ground failure).

4.3.1 Background

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. Secondary effects of liquefaction are sand boils, settlement and instabilities within sloping ground that occur as lateral spreading, seismic deformation and flow sliding. Lateral spreading is the horizontal deformation of gently sloping ground (slope less than 6 percent), and seismic deformation is the horizontal movement of more steeply sloping ground, both of which can occur during strong ground shaking. Flow sliding is an overall instability of more steeply sloping ground that can occur following or near the end of strong ground shaking, depending on its duration. Associated with liquefaction is seismic compaction, which is the densification of loose to medium dense granular soils that are above groundwater. Of these, liquefaction-induced settlement and seismic compaction are considered more likely to occur given the site surface and subsurface conditions, as discussed below.

4.3.2 Vertical Settlement Analyses

4.3.2.1 Volumetric Settlements

The computer program CLiq (Geologismiki, 2019) was used to perform liquefaction triggering calculations using several CPT-based methods, including those recommended by the NCEER Workshops (Youd et al., 2001) and Boulanger and Idriss (2014). CLiq also calculates the estimated free-field volumetric settlement (below groundwater) and seismic compaction (above groundwater). The analyses adopted the following input parameters:

Peak Ground Acceleration (PGA_M):..0.59g
Earthquake Magnitude (Mw):... 7.1
Groundwater Level: ....20 feet Below Ground Surface

The PGA_M was evaluated using the maximum of the: 1) most recent version of the CSU Seismic Requirements (CSU, 2020), and; 2) maximum considered earthquake geometric mean (MCE_G) peak ground acceleration adjusted for Site Class effects obtained from the OSHPD Seismic Design Maps Tool (SEAOC/OSHPD, 2019) in accordance with the 2019 California Building Code (CBSC, 2019). The controlling magnitude used in the liquefaction evaluation was selected by reviewing deaggregation results obtained from the USGS Unified Hazard Tool (USGS, 2022). A design groundwater level of 20 feet below ground surface was adopted based on our interpretation of the soil saturation in in-situ soil samples and CPT data.

The analyses were performed using data collected from the CPTs performed at the site (CPT-1 through CPT-5). The correlated CPT parameters were compared to the results of our field and laboratory testing collected from Boring B-1. The CPT Soil Behavior Type (SBT) correlated from the CPT data was adjusted to best fit the observations, classifications and material properties of the soils within the borings.

In accordance with Special Publication 117A (CGS, 2008) and general geotechnical engineering practices, a factor of safety against liquefaction of 1.3 was adopted in the analyses, and the liquefaction analyses were limited to a depth of 50 feet.

The liquefaction settlement analyses include depth weighting proposed by Cetin et al. (2009), which consists of a simple linear weighting factor that weights the volumetric strain with depth. This reduces the impact of volumetric strains at large depths. The weighting starts at one at the ground surface and reduces to zero at the weighting limit depth, selected to be the depth of analysis for this project (i.e., 50 feet).

4.3.3 Vertical Settlement Summary

Based on the results of the triggering analyses there are several potentially liquefiable zones within the subsurface profile. In general, the potentially liquefiable soils consist of occasional thin beds that are generally less than 2-foot-thick each, but some up to 4-feet thick locally. The estimated liquefaction-induced volumetric settlement is approximately 1-inch or less at each exploration location. The estimated liquefaction-induced differential settlement is approximately 0.5-inch or less over a horizontal distance of 30 feet.

4.3.4 Instability of Sloping Ground

Since the site is essentially level and the buildings are not located immediately adjacent to sloping ground, the potential for significant liquefaction-induced lateral displacement should be low.

4.4 Landslides

Evidence of ancient landslides or slope instabilities was not observed during our literature review or site reconnaissance and the site is essentially level. Provided that our geotechnical recommendations are properly implemented during construction, it is our opinion that slope instability does not adversely impact the proposed development.

4.5 Tsunamis, Seiches, and Flooding

The distance between the subject site and the Sea of Cortez precludes damage due to seismically induced waves (tsunamis) or seiches within the Pacific Ocean or Sea of Cortez. The Salton Sea is located over 30 miles north of the site at more than 230 feet below mean sea level, which is more than 200 feet below the existing site elevations. The New River is located about three quarters of a mile west of the site, and the Alamo River is located about 7 miles east of the site. However, the normal water surface elevations in these rivers are roughly 20 to 40 feet below site grades. Further, the site is mapped in Federal Emergency Management Agency (FEMA) zone designated “Area of Minimal Flood Hazard” (FEMA, 2008). Consequently, the potential for earthquake induced or other flooding at the site is considered to be low. However, the flooding hazard at the site should be evaluated by the project civil engineer.

5.0 GEOTECHNICAL CONDITIONS

Fill and lacustrine deposits underly the site, as discussed in the *Geology and Subsurface Conditions* section of this report. Geotechnical conditions associated with these units are discussed below.

5.1 Expansive Soils

Laboratory tests indicate the surficial soils at the site should have a “Medium” Potential Expansion. The results of three Expansion Index (EI) tests conducted on bulk soils samples obtained from the ground surface to a depth of about 5 feet below existing grades ranged from 60 to 82, averaging 71 with a median of 70 (i.e., Medium Potential Expansion). Appendix B provides the test results.

5.1 Compressible Soils

Compressible soils underlie the site. Most of these soils are clay that should experience some time dependent consolidation settlement (i.e., long-term settlement). There are also beds of non-plastic silty sand and silt that should settle elastically with the initial fill and structure loading (i.e., short-term settlement). In general, the clay has a medium to high plasticity and we interpret it to be relatively stiff and slightly overconsolidated from consolidation testing, pocket penetrometer tests, undrained shear strength testing, CPT interpretations, and Plasticity Index data. The in-situ moisture contents are generally near the Plastic Limit and the Liquidity Indices are less than 0.7, which indicate relatively stiff and low compressibility soils.

Provided minimal fill placement is needed at the site to achieve the proposed finish grades and foundation loading is limited to the bearing pressures provided in the *Recommendations* section of this report, most of the long-term settlement should occur in a relatively short time following initial loading. However, there are zones of thick clay that could experience some time dependent consolidation settlement if significant loading from fill or foundation loads are proposed for the project. The estimated settlement magnitude and duration associated with the proposed fill placements and foundation loads should be evaluated during the design development phase of the project to evaluate the potential impact to the project.

5.2 Reuse of Onsite Soils

Soils from proposed onsite excavations at the site are anticipated to consist of lean and fat clay (CL and CH) and are generally not considered suitable for re-use as compacted fill without specific recommendations [see the *Post-Tensioned Slabs (Case B – Existing Clay)* section of this report]. Imported fill is anticipated to be needed to replace expansive materials underlying the proposed structures, flatwork, and pavements. Recommendations for imported fill are provided in the *Recommendations* section of this report.

6.0 CONCLUSIONS

The proposed Student Residence Hall building appears to be feasible from a geotechnical perspective, provided that appropriate measures are implemented during construction. Several geotechnical conditions exist on site that should be addressed.

- Laboratory tests indicate that the surficial soils at the site have a moderate potential for expansion (EI between 51 and 90). The use of thickened foundations and slabs underlain by imported non-expansive soil (EI<20) could reduce the potential for future distress to the building associated with soil expansion. Alternatively, a post-tensioned slab-on-grade could be used to support the new building. Alternative post-tension slab design parameters are provided for slabs bearing on either imported select soil or compacted on-site clay.

- The fill is not suitable for reuse as engineered fill without specific recommendations. Laboratory tests indicate the fill soils primarily consist of lean and fat clay (CL and CH) with a medium expansion potential. To reduce the potential for heave related distress, we recommend placing and compacting non-expansive soil (EI<20) beneath structures, pavements, flatwork and other heave-sensitive improvements.

- Groundwater was encountered at the site at a depth of about 28 feet below existing surface grades. The site is also located in an area of high seismic activity, and the potential does exist for relatively minor earthquake-induced liquefaction and settlement of the granular lacustrine deposits beneath the site. We estimate that the proposed building could experience post-liquefaction differential settlement on the order of 0.5-inch over a horizontal distance of 30 feet. In addition to helping reduce the potential for distress associated with expansive soils, the use of thickened and heavily reinforced conventional building foundations or post-tensioned could also help to reduce the potential for distress to the building associated with post-liquefaction settlement.

- The site is underlain by zones of thick clay that could experience some time dependent consolidation settlement if significant loading from fill or foundation loads are proposed for the project. The estimated settlement magnitude and duration associated with the proposed fill placements and foundation loads should be evaluated during the design development phase of the project to evaluate the potential impact to the project

- Laboratory tests indicate that the clayey surficial soils at the site present a *severe* risk of sulfate attack and are also *corrosive* to *very corrosive* to buried metals. The recommended placement of two to five feet of imported sand beneath the sidewalks and building slabs-on-grade could help to reduce the potential for sulfate attack and corrosion. However, sulfate resistant Type V cement is recommended for use at the site. Various corrosion control measures may also be needed for buried metal structures. A corrosion consultant may be contacted.

- Our previous experience indicates that the on-site clayey soils are not suitable for effective storm water infiltration measures. An infiltration rate of less than 0.05 inches per hour is estimated based on previous infiltration tests we have conducted on similar clay soils. The clays typically have a permeability of 10^{-7} to 10^{-9} centimeters per second (essentially impermeable). This suggests that the on-site soils are not suitable for full or partial infiltration measures.

- The potential for active faults or landslides to adversely impact the building is considered remote. However, the site is situated within a zone of high seismic activity. The strong ground shaking hazard may be mitigated by structural design in accordance with the applicable provisions of the governing CBC and minimum CSU Seismic Requirements.

7.0 RECOMMENDATIONS

The remainder of this report presents recommendations for earthwork construction and the design of the proposed improvements. These recommendations are based on empirical and analytical methods typical of the standards of practice in southern California. If these recommendations do not cover a specific feature of the project, please contact our office for revisions or amendments.

7.1 Plan Review

We recommend that grading and foundation plans be reviewed by Group Delta prior to finalization. We anticipate that substantial changes in the development may occur from the preliminary design concepts used for this investigation. Such changes may require additional geotechnical evaluation, which may result in substantial modifications to the remedial grading and foundation recommendations provided in this report.

7.2 Excavation and Grading Observation

Foundation and grading excavations should be observed by the project geotechnical consultant. During grading, the geotechnical engineer's representative should provide observation and testing services continuously. Such observations are considered essential to identify field conditions that differ from those anticipated by this investigation, to adjust designs to the actual field conditions, and to evaluate that the remedial grading is accomplished in general accordance with the recommendations in this report. The recommendations provided in this report are contingent upon Group Delta providing these services. Our personnel should perform sufficient testing of fill and backfill during grading and improvement operations to support our professional opinion as to compliance with the compaction recommendations.

7.3 Earthwork

Grading and earthwork should be conducted in general accordance with the requirements of the current CBC and the earthwork recommendations provided within this report. The following recommendations are provided regarding specific aspects of the proposed earthwork. These recommendations should be considered subject to revision based on the conditions observed by the geotechnical consultant during the grading operations.

7.3.1 Site Preparation

General site preparation should begin with the removal of deleterious materials, including any existing structures, vegetation, turf, contaminated soil, trash, and demolition debris. Existing subsurface utilities or groundwater wells that underly the proposed improvements should be properly abandoned and relocated outside of the proposed building footprint. Excavations associated with abandonment operations should be backfilled and compacted as described in *Fill Compaction* Section of this report. Wells, if present, should be abandoned per local and State guidelines. Alternatively, abandoned utilities may be grouted with a two-sack sand-cement slurry under the observation of the project geotechnical consultant.

7.3.2 Improvement Areas

At least two feet of compacted fill with an Expansion Index of 20 or less is recommended beneath new concrete sidewalks and exterior flatwork areas. To accomplish this objective, the upper 24-inches of soil below slab subgrade (i.e., bottom of the slab) should be excavated and removed from the site. The over-excavation should include the soil within 2-feet of the sidewalk perimeter (measured horizontally). The resulting excavation surface should be scarified, brought to 3-percentage points or more above optimum moisture content and compacted to at least 90 percent of the maximum dry density per ASTM D1557. The excavation bottom should then be backfilled to the planned slab subgrade elevations using a non-expansive (EI<20) granular material and be compacted in accordance with the recommendations in the *Fill Compaction* section below. Subgrade compaction should be conducted immediately prior to placing concrete or base.

7.3.3 Building Areas

The clayey lacustrine deposits beneath the proposed building addition consist of expansive lean clay (CL) and fat clay (CH). We recommend that the upper 5 feet of clayey soil beneath the proposed building finish pad elevations be excavated and removed from the site. The remedial excavations should extend at least 5 feet horizontally beyond the perimeter of the proposed building, wherever possible. However, the excavations should not pass below a 1:1 plane extending down and out from the bottom outside edge of any existing foundations, in order to avoid undermining these footings and causing distress to existing structures. The resulting excavation surface should be scarified, brought to 3-percentage points or more above optimum moisture content and compacted to at least 90 percent of the maximum dry density at per ASTM D1557. The excavation bottom should then be backfilled to the planned slab subgrade elevations using a non-expansive (EI<20) granular material and be compacted in accordance with the recommendations in the Fill Compaction section below.

7.3.4 Fill Compaction

All fill and backfill should be placed and compacted at or slightly above optimum moisture content per ASTM D1557 using equipment capable of producing a uniformly compacted product. The loose lift thickness should be 8 inches, unless performance observed and testing during earthwork indicates a thinner loose lift is needed, or a thicker loose lift is possible, up to a loose lift thickness of 12 inches.

The minimum recommended relative compaction is 90 percent of the maximum dry density per ASTM D1557. Sufficient observation and testing should be performed by the project geotechnical consultant during grading so that an opinion can be rendered as to the compaction achieved. Rocks or concrete fragments greater than 6 inches in maximum dimension should not be used in compacted fill.

A two-sack sand and cement slurry may be used as an alternative to compacted fill soil. It has been our experience that slurry is often useful in confined areas which may be difficult to access with typical compaction equipment. A minimum 28-day compressive strength of 100 psi is recommended for the two-sack sand and cement slurry. Samples of the slurry should be fabricated and tested for compressive strength during construction.

7.3.5 Import Soil

Imported fill sources should be observed and tested by the project geotechnical consultant prior to hauling onto the site to evaluate the suitability for use. In general, imported fill materials should consist of granular soil with more than 70 percent passing the ¾-inch sieve and less than 35 percent passing the No. 200 sieve based on ASTM C136, and an Expansion Index less than 20 based on ASTM D4829. Samples of the import should be tested by the geotechnical consultant in order to evaluate the suitability of these soils for their proposed use.

Additional testing per the guidelines provided by the Department of Toxic Substances Control (DTSC, 2001) is required by the Owner prior to accepting soil for import. Test results should meet most stringent State and Federal residential screening levels including the most up-to-date DTSC Modified Screening Levels (DTSC-SLs) and United States Environmental Protection Agency Regional Screening Level (RSL).

7.3.6 Subgrade Stabilization

All excavation bottoms should be firm and unyielding prior to placing fill. In areas of saturated or "pumping" subgrade, a geogrid such as Tensar BX-1200 or Terragrid RX1200 may be placed directly on the excavation bottom, and then covered with at least 12 inches of minus ¾-inch aggregate base. Once the excavation is firm enough to attain the recommended compaction within the base, the remainder of the excavation may be backfilled using either compacted soil or aggregate base. If wet soil conditions are encountered where further excavations are needed, an additional 12-inches of free draining open graded material (such as minus ¾-inch crushed rock) should be placed between the stabilizing geogrid and the compacted well graded aggregate base. The open graded material should be completely enveloped in filter fabric (such as Mirafi 140N).

7.3.7 Temporary Excavations

Temporary excavations may be needed to construct the planned improvements. Excavations should conform to Cal-OSHA guidelines (2018). In general, we recommended that temporary excavations be inclined no steeper than 1:1 for heights up to 5 feet. Vertical excavations should be shored. Any excavations that encounter groundwater seepage should be evaluated on a case-by-case basis.

The design, construction, maintenance, and monitoring of all temporary slopes is the responsibility of the contractor. The contractor should have a competent person evaluate the geologic conditions encountered during excavation to determine permissible temporary slope inclinations and other measures as required by Cal-OSHA. The below assessment of OSHA Soil Types for temporary slopes is based on preliminary engineering classifications of material encountered in widely spaced explorations.

Based on the findings of our subsurface investigation, the following OSHA Soil Types may be assumed for planning purposes.

PRELIMINARY CAL/OSHA SOIL TYPES

Geologic Unit	Cal/OSHA Soil Type
Fill	Type B[1]
Lacustrine Deposits	Type B[1]

1. This assumes that no groundwater seepage or caving is encountered in the excavations.

7.4 Surface Drainage

Foundation and slab performance depends greatly on how well surface runoff drains from the site. The ground surface should be graded so that water flows rapidly away from structures and top of slopes without ponding. The surface gradient needed to achieve this may depend on the prevailing landscaping. Planters should be designed and built so that water will not seep into the foundation, slab, pavement or other heave/settlement structure areas. If roof drains are used, the drainage should be channeled by pipe to the storm drain system, or discharge at least 10 feet from buildings. Irrigation should be limited to the minimum needed to sustain landscaping, and consideration should be given to utilizing drought tolerant landscape to further minimize water used for irrigation. Excessive irrigation, surface water, water line leaks, or rainfall may cause perched groundwater to develop within the underlying soil.

7.5 Storm Water Management

We anticipate that various bioretention basins, swales or pervious paver block pavements may be proposed to promote on-site infiltration for storm water Best Management Practice (BMP). In order to help evaluate the feasibility of on-site infiltration, the infiltration rate of the on-site soil may be estimated using borehole percolation or double ring infiltrometer tests conducted within the planned BMP areas. However, our experience indicates that infiltration testing in clay soils should result in a “No Infiltration” condition per the applicable BMP Design Manual. An infiltration rate of less than 0.05 inches per hour is estimated based on previous infiltration tests we have conducted in similar clay soils. The clays typically have a permeability of 10^{-7} to 10^{-9} cm/s (essentially impermeable).

7.6 Foundation Recommendations

The foundations for the new buildings should be designed by the project structural engineer using the following geotechnical parameters. These are only minimum criteria, and should not be considered a structural design, or to preclude more restrictive criteria of governing agencies or the structural engineer. The following recommendations should be considered preliminary, and subject to revision based on decisions made during design development and the conditions observed by the geotechnical consultant during grading.

7.6.1 Conventional Foundations

The following recommendations assume that remedial grading will be conducted for the building pad area as recommended in the *Earthwork* Section, and that the building pad grade will be underlain by at least 5-feet of granular non-expansive compacted fill (EI<20). Conventional shallow foundations would be considered appropriate for this condition, as shown in Figure 6.

Allowable Bearing:	*2,000 psf (allow ⅓ increase for short-term wind or seismic loads)*
Minimum Footing Width:	*12 inches*
Minimum Footing Depth:	*24 inches below lowest adjacent soil grade*
Minimum Reinforcement:	*Two No. 5 bars at both top and bottom in continuous footings*

7.6.2 Post-Tensioned Slabs

Two different post-tensioned slab foundation design conditions are summarized below. Case A provides recommendations assuming the building will be underlain by at least 5-feet of non-expansive compacted fill, and Case B assumes that a post-tension slab foundation may be designed to bear directly on recompacted expansive on-site clay. The following recommendations are provided using the Post-Tensioning Institute (PTI) Document *PTI DC10.5-19* (2019).

7.6.2.1 Case A – Select Fill

For Case A, we have assumed that remedial grading will be conducted per our recommendations, and that the proposed building will be underlain by at least 5-feet of imported granular non-expansive compacted fill in accordance with the *Earthwork* Section of this report, overlying the existing expansive clay. The following post-tension slab foundation design parameters are considered applicable to buildings that will be underlain by such conditions. Note that these recommendations should be considered preliminary, and subject to revision based on the as-graded conditions observed by the geotechnical consultant during fine grading of the site.

Post-Tension Slab Design Parameters (Case A):

Moisture Variation Distance, e_m:	*Center Lift:*	*5.5 feet*
	Edge Lift:	*2.5 feet*
Differential Soil Movement, y_m:	*Center Lift:*	*0.5 inches*
	Edge Lift:	*1.0 inches*
Allowable Bearing:	*2,000 psf at slab subgrade*	

7.6.2.2 Post-Tensioned Slabs (Case B – Existing Clay)

As an alternative to remedial grading to replace the highly expansive clays with imported sand as described in Case A above, a post-tension slab foundation may be designed to bear directly on the highly expansive on-site clay. For Case B, the undocumented fill soils underlying the proposed structure should be excavated and replaced as a uniformly compacted fill beneath the building (as a minimum). The undocumented fill depth is anticipated to extend approximately three to four feet below existing grades at the site. The clayey fill soil should be compacted to at least 90 percent relative compaction at 3-percentage points or more above optimum moisture content per ASTM D1557. The following post-tension slab foundation design parameters are considered appropriate for a building underlain by recompacted clayey fill soils.

Post-Tension Slab Design Parameters (Case B):

Moisture Variation Distance, e_m:	*Center Lift:*	*7.0 feet*
	Edge Lift:	*3.5 feet*
Differential Soil Movement, y_m:	*Center Lift:*	*1.5 inches*
	Edge Lift:	*2.5 inches*
Allowable Bearing:	*2,000 psf at slab subgrade*	

7.6.3 Settlement

Total and differential settlements of the proposed structure due to the allowable bearing loads provided above are not expected to exceed 1.5 and 0.75 inches in 30 feet, respectively. In addition to static settlement, the site may experience post-liquefaction total and differential settlements on the order of approximately 1-inch and 0.5 inches in 30 feet, respectively, as discussed in *Earthquake Induced Ground Failure* Section.

7.6.4 Lateral Resistance

Lateral loads against the structure may be resisted by friction between the bottoms of footings and slabs and the underlying soil, as well as passive pressure from the portion of vertical foundation members embedded into compacted fill. A coefficient of friction of 0.25 and a passive pressure of 250 psf per foot of depth may be used for level ground conditions.

7.7 Seismic Design

Structures should be designed in general accordance with the governing seismic provisions of the 2019 CBC, as well as the minimum seismic design requirements of the California State University (CSU, 2020). Field testing consisting of shear wave measurements in CPT-1 resulted in average shear wave velocity in the upper 30 meters ($V_{S,30}$) of approximately 210 m/s. Based on these measurements, the Site Classification using Chapter 20 of ASCE 7-16 would be Site Class D. The following preliminary seismic design parameters are recommended by the California State University Seismic Requirements (CSU, 2020) for the site.

CSU – SDSU IMPERIAL CAMPUS SEISMIC DESIGN PARAMETERS

Hazard Level	Parameter	Site Class D
BSE-1N	PGA_D	0.40
	S_{D0}	0.40
	S_{DS}	1.00
	S_{D1}	0.68
BSE-2N	PGA_M	0.59
	S_{M0}	0.60
	S_{MS}	1.50
	S_{M1}	1.02

7.8 On-Grade Slabs

The following recommendations assume that remedial grading will be conducted for the building pad area as recommended in the *Earthwork* Section, and that the building pad grade will be underlain by at least 5-feet of non-expansive compacted fill (EI<20). Conventional concrete building slabs should be at least 6 inches thick and should be reinforced with at least No. 3 bars on 12-inch centers, each way. Slab thickness, control joints, and reinforcement should be designed by the project structural engineer and should conform to the requirements of the current CBC.

7.8.1 Moisture Protection for 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 project 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 AB or finished subgrade immediately below the slab, provided it is protected from puncture and repaired per the manufacturer's recommendations if damaged. Note that the CBC specifies that a capillary break such as 4 inches of clean sand be used beneath building slabs (as defined and installed per the California Green Building Standards), along with a Vapor Retarder.

7.9 Exterior Slabs

Exterior slabs and sidewalks subjected to pedestrian traffic and light vehicle loading (e.g., golf carts) should be at least 4 inches thick and underlain by 2-feet of granular non-expansive soil in accordance with the *Improvement Areas* section of this report. 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 reinforcement would consist of 6x6 W2.9/W2.9 welded wire fabric placed securely at mid-height of the slab.

7.10 Preliminary Pavement Design

For all pavement areas, the upper 12 inches of clayey subgrade soil (below the pavement aggregate base section) should be removed. This removal should extend 2 feet or more beyond the outside edge of the pavement perimeter measured horizontally. The resulting excavation surface should be scarified immediately prior to constructing the pavements, brought to optimum moisture, and compacted to at least 90 percent of the maximum dry density at 3-percentage points or more above optimum moisture content per ASTM D1557. The excavation bottom should then be backfilled to the planned pavement subgrade (i.e., bottom of the aggregate base section) using a non-expansive (EI<20) granular material (i.e., subbase). Aggregate base and subbase should be compacted to 95 percent relative compaction at or slightly above optimum moisture content per ASTM D1557. Aggregate base should conform to the Standard Specifications for Public Works Construction (*SSPWC),* Sections 200-2.2, -2.4, or -2.5 (PWSI, 2018). Asphalt concrete should conform to Section 203-6 of the *SSPWC* and should be compacted to 91 and 97 percent of the Rice density per ASTM D2041 (PWSI, 2018).

7.10.1 Asphalt Concrete

Based on our previous experience, we anticipate that the clayey on-site soils have an R-Value of 5 or less. Preliminary asphalt concrete pavement design was conducted using the Caltrans Design Method (2018). We anticipate that a Traffic Index ranging from 5.0 to 6.0 may apply to new pavement areas. The project civil engineer should review the assumed Traffic Indices to determine if and where they may be applicable. Based on the minimum R-Value of 5 and the assumed range of Traffic Indices, the following pavement sections would apply.

SUMMARY OF PRELIMINARY ASPHALT CONCRETE PAVEMENT SECTIONS

PAVEMENT TYPE	TRAFFIC INDEX	ASPHALT SECTION	BASE SECTION	SUBBASE SECTION[1]
Passenger Car Parking	5.0	3 Inches	10 Inches	12 Inches
Light Truck Traffic Areas	6.0	4 Inches	12 Inches	12 Inches

1) <u>NOTE</u>*: One foot of non-expansive subbase should be placed beneath the pavement section to reduce the potential for cracking due to soil heave/shrink behavior.*

7.10.2 Portland Cement Concrete

Concrete pavement design was conducted in general accordance with the simplified design procedure of the Portland Cement Association (1984). 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. The concrete was assumed to have a minimum flexural strength of 600 psi. The flexural strength of the pavement concrete should be confirmed during construction using ASTM C78. For concrete pavement design, the subgrade materials were assumed to provide "low" support, based on our experience with similar materials. Using these assumptions and the same traffic indices presented previously, we recommend that the PCC pavement sections at the site consist of at least 6 inches of concrete placed over 6 inches of compacted aggregate base over 12 inches of compacted non-expansive subbase (i.e., EI < 20).

Crack control joints should be constructed for PCC pavements on a maximum spacing of 10 feet, each way. Concentrated truck traffic areas, such as trash truck aprons and loading docks, should be reinforced with number 4 bars on 18-inch centers, each way.

7.11 Pipelines

The planned addition may include various pipelines such as water, storm drain and sewer systems. Geotechnical aspects of pipeline design include lateral earth pressures for thrust blocks, modulus of soil reaction, and pipe bedding. Each of these parameters is discussed below.

7.11.1 Thrust Blocks

Lateral resistance for thrust blocks may be evaluated using a passive pressure value of 250 lbs/ft^2 per foot of embedment, assuming a triangular distribution and level ground conditions. This value may be used for thrust blocks embedded into compacted fill soils as well as the underlying lacustrine deposits, provided that these soils are located above the groundwater table.

7.11.2 Modulus of Soil Reaction

The modulus of soil reaction (E') is used to characterize the stiffness of soil backfill placed along the sides of buried flexible pipelines. For the purpose of evaluating deflection due to the load associated with trench backfill over the pipe, a value of 1,000 lbs/in^2 is recommended for the general conditions, assuming granular bedding material is placed around the pipe and the soils are located above the groundwater table.

7.11.3 Pipe Bedding

Typical pipe bedding as specified in the *Standard Specifications for Public Works Construction* may be used. As a minimum, we recommend that pipes be supported on at least 4 inches of granular bedding material such as minus ¾-inch crushed rock, disintegrated granite or granular materials with a Sand Equivalent of 20 or more. Where open graded material (e.g., ¾-inch minus crushed rock) is used as bedding and shading around and above the pipe, we recommend that open graded material should be completely enveloped in filter fabric (such as Mirafi 140N).

Where pipeline or trench excavations exceed a 15 percent gradient, we do not recommend that open graded rock be used for bedding or backfill because of the potential for piping and internal erosion. For sloping utilities, we recommend that coarse sand with a Sand Equivalent of 20 or more or sand-cement slurry be used for the bedding and pipe zone. The slurry should consist of a 2-sack mix having a slump no greater than 5 inches.

7.12 Reactive Soils

In order to assess the sulfate exposure of concrete in contact with the site soils, samples were tested for pH, resistivity, water-soluble sulfate and chloride content, as shown in Figure B-5. The sulfate test results indicate that the on-site soils present a *severe* potential for sulfate attack based on commonly accepted criteria (Bentivegna, et al., 2020). A *negligible* sulfate content is recommended for any imported soils and should be confirmed through laboratory testing prior to import.

The saturated resistivity and chloride content of the near surface soils are indicative of a *corrosive* to *very corrosive* soil with respect to buried metals based on commonly accepted criteria (Caltrans, 2021). Typical corrosion control measures should be incorporated into the project design, such as providing minimum clearances between reinforcing steel and soil, and sacrificial anodes for any buried metal structures. A corrosion consultant may be contacted for specific recommendations.

8.0 LIMITATIONS

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.

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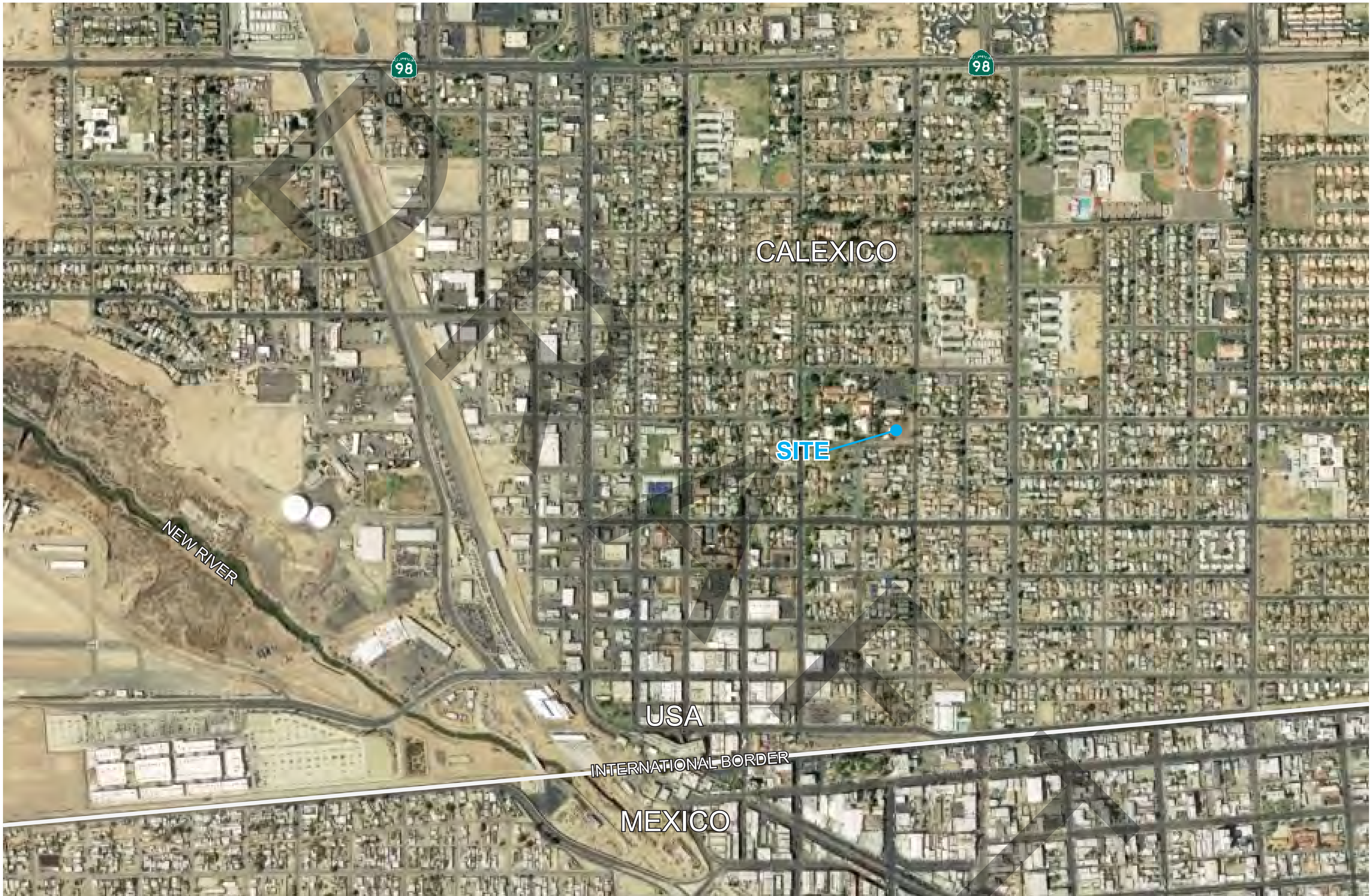

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NO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	**SITE LOCATION**	PROJECT NUMBER	FIGURE NUMBER
		SD732	1

REFERENCE: GOOGLE EARTH PRO 7.3.4.8248. IMAGERY DATE APRIL 4, 2018.

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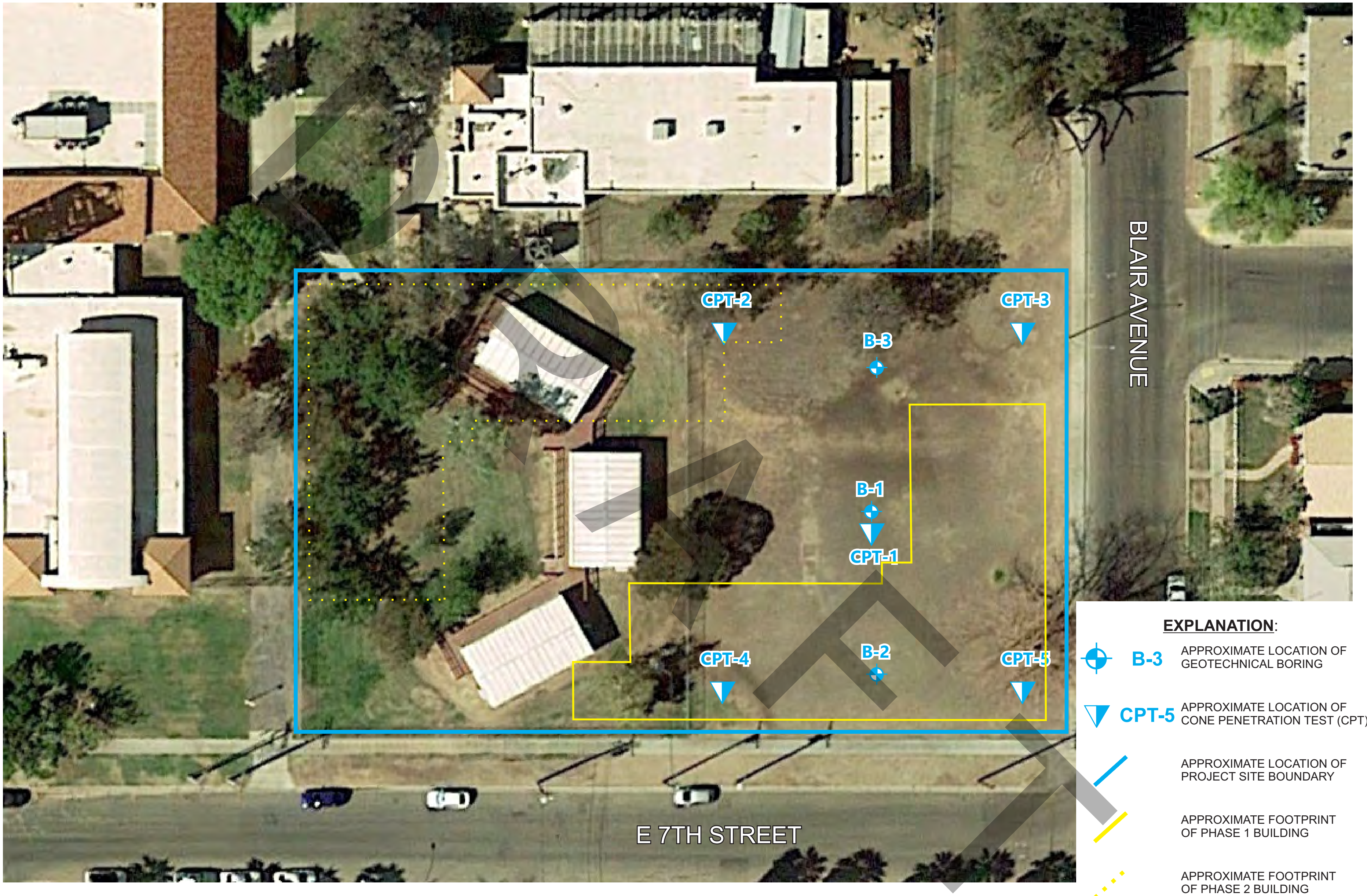
NO SCALE

PROJECT NAME	FIGURE NAME	GROUP DELTA	
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	**SITE VICINITY**	PROJECT NUMBER SD732	FIGURE NUMBER 2

REFERENCE: GOOGLE EARTH PRO 7.3.4.8248. IMAGERY DATE APRIL 4, 2018



APPROXIMATE SCALE IN FEET

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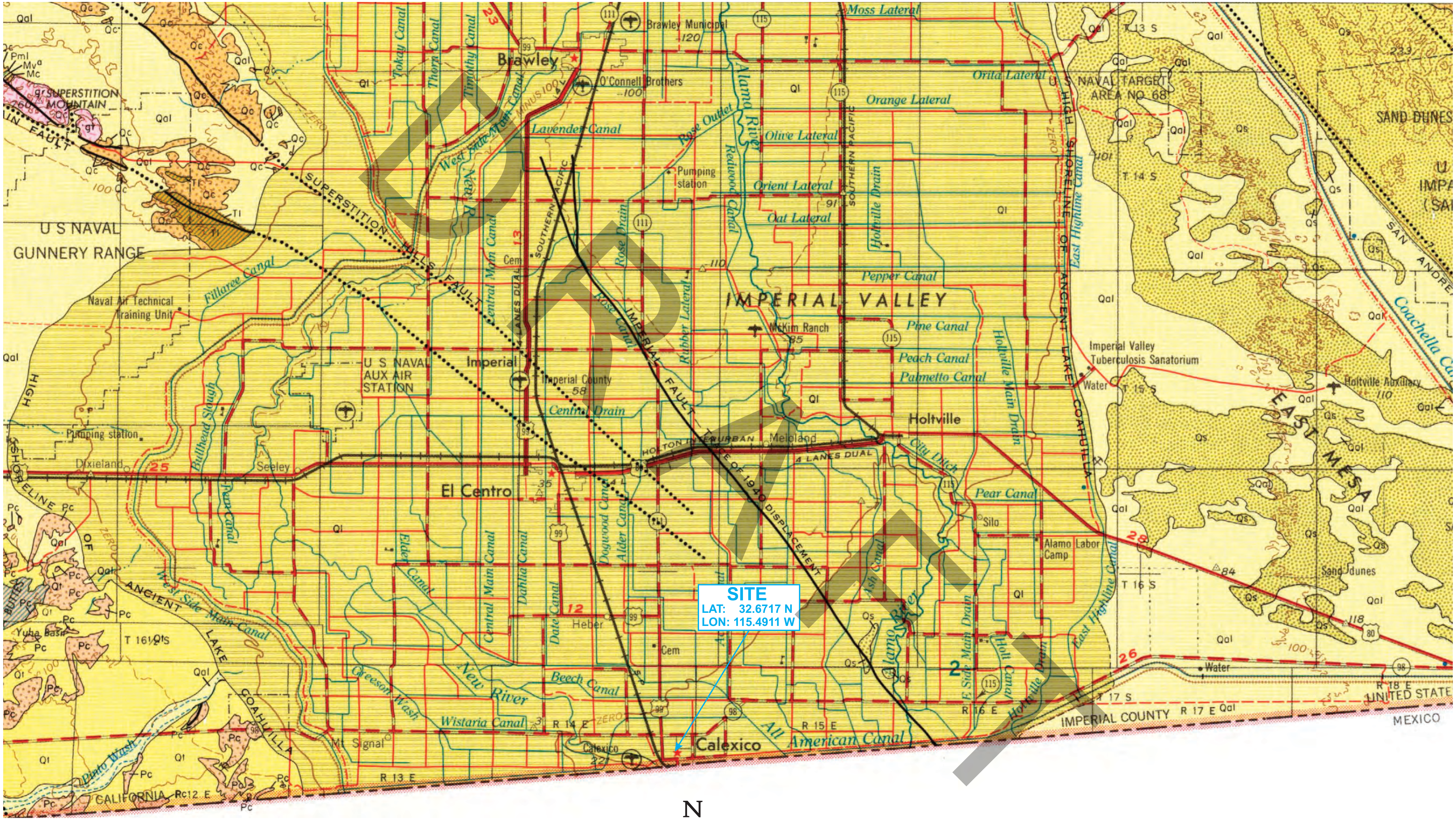
PROJECT NAME	FIGURE NAME	GROUP DELTA	
SDSU IMPERIAL VALLEY CAMPUS **NEW RESIDENCE HALL** **CALEXICO, CALIFORNIA**	**EXPLORATION LOCATIONS**	PROJECT NUMBER SD732	FIGURE NUMBER **3**

REFERENCE: GOOGLE EARTH PRO 7.3.4.8248. IMAGERY DATE AUGUST 1, 2021.



EXPLANATION:

Ql	Quaternary lake deposits	Qs	Dune sand	Qc	Pleistocene nonmarine
Qal	Alluvium	Qt	Quaternary nonmarine terrace deposits		

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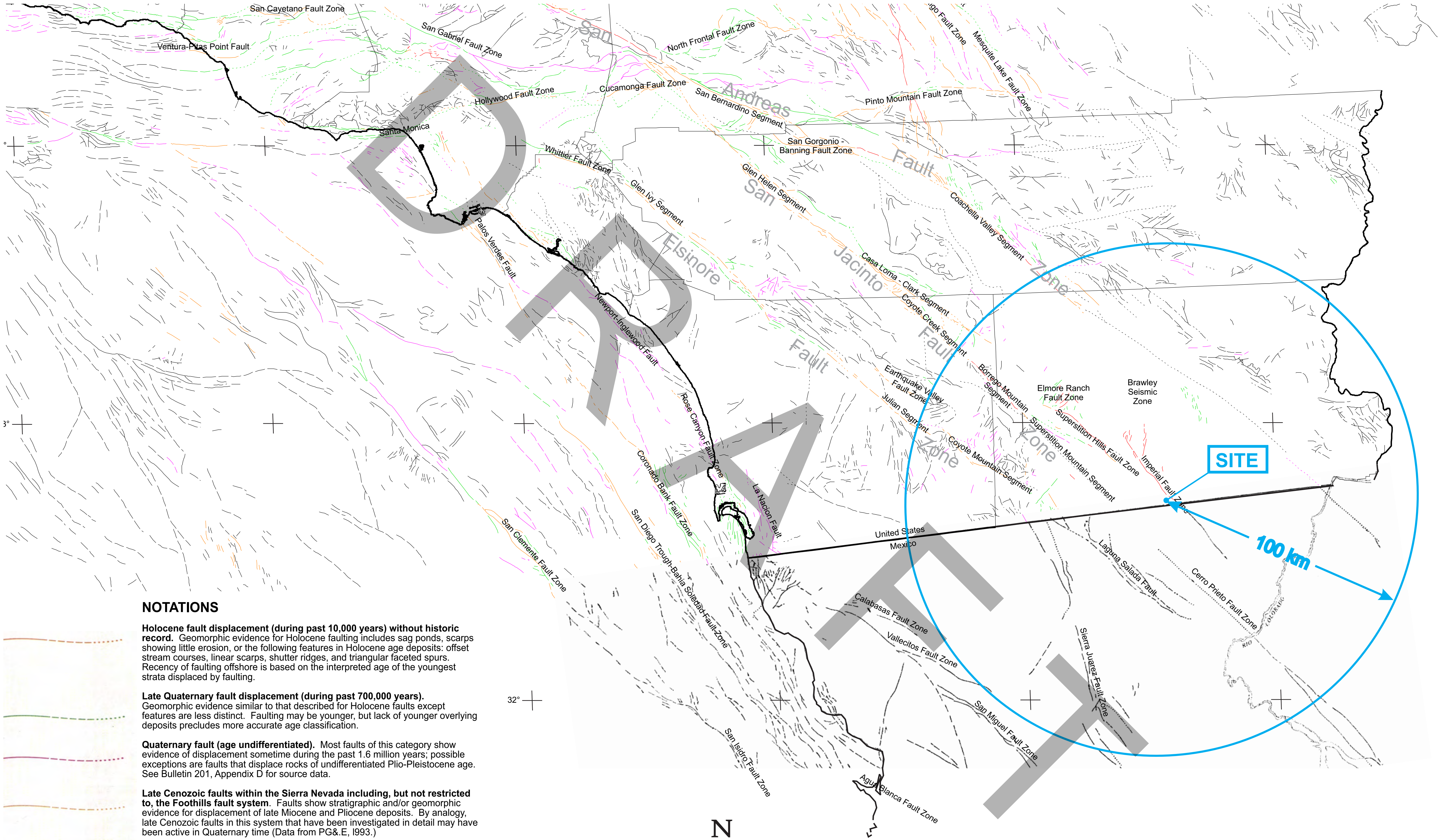
NO SCALE

PROJECT NAME	FIGURE NAME		
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	REGIONAL GEOLOGY	PROJECT NUMBER SD732	FIGURE NUMBER 4

GROUP DELTA

Reference: Rudolph Strand (1962). Geologic Map of California, San Diego-El Centro, Scale 1:250,000.



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.

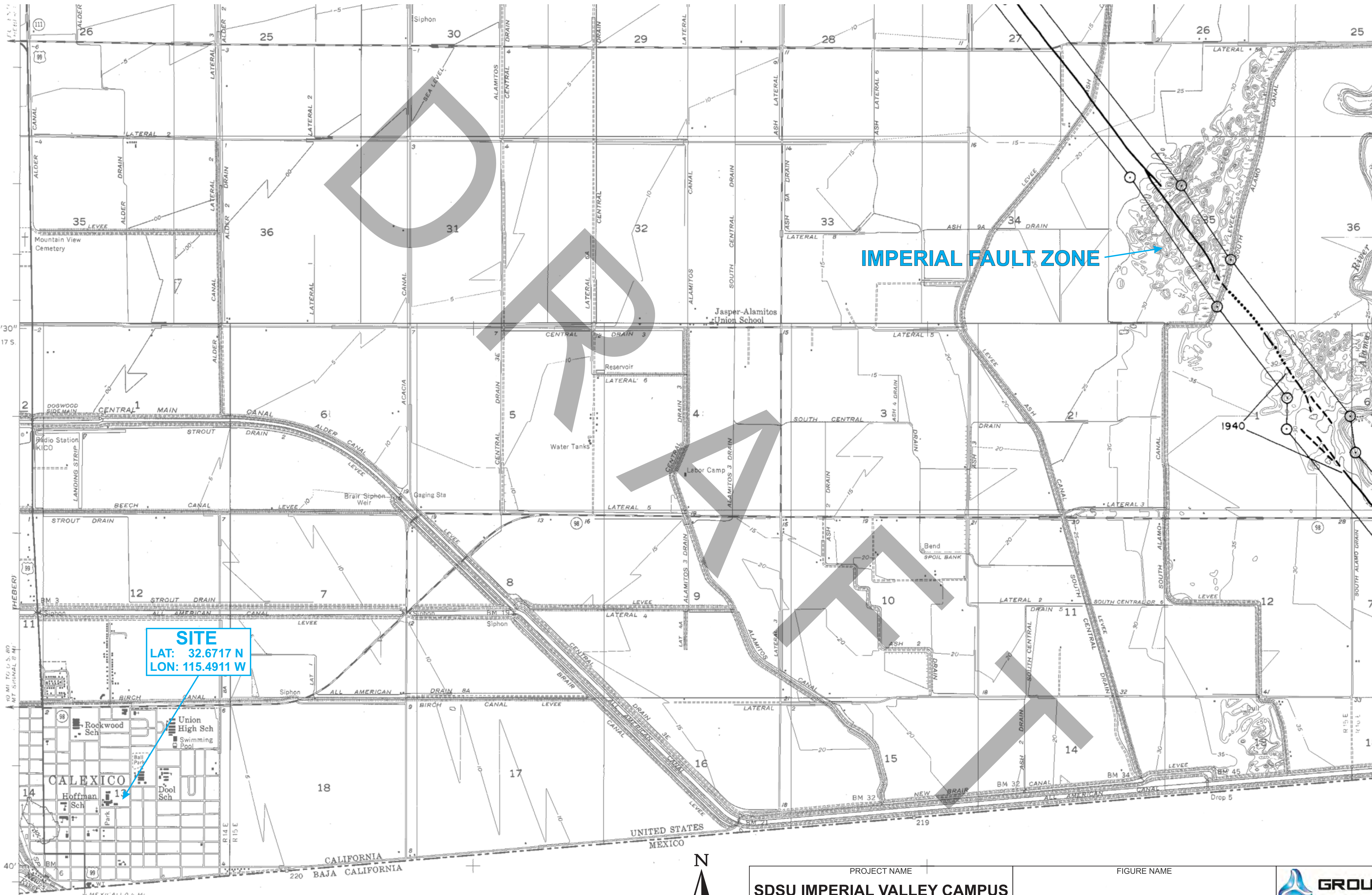
Quaternary fault (age undifferentiated). Most faults of this category show evidence of displacement sometime during the past 1.6 million years; possible exceptions are faults that displace rocks of undifferentiated Plio-Pleistocene age. See Bulletin 201, Appendix D for source data.

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, l993.)

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.

PROJECT NAME	FIGURE NAME	GROUP DELTA	
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	**REGIONAL FAULT LOCATIONS**	PROJECT NUMBER: SD732	FIGURE NUMBER: 5A

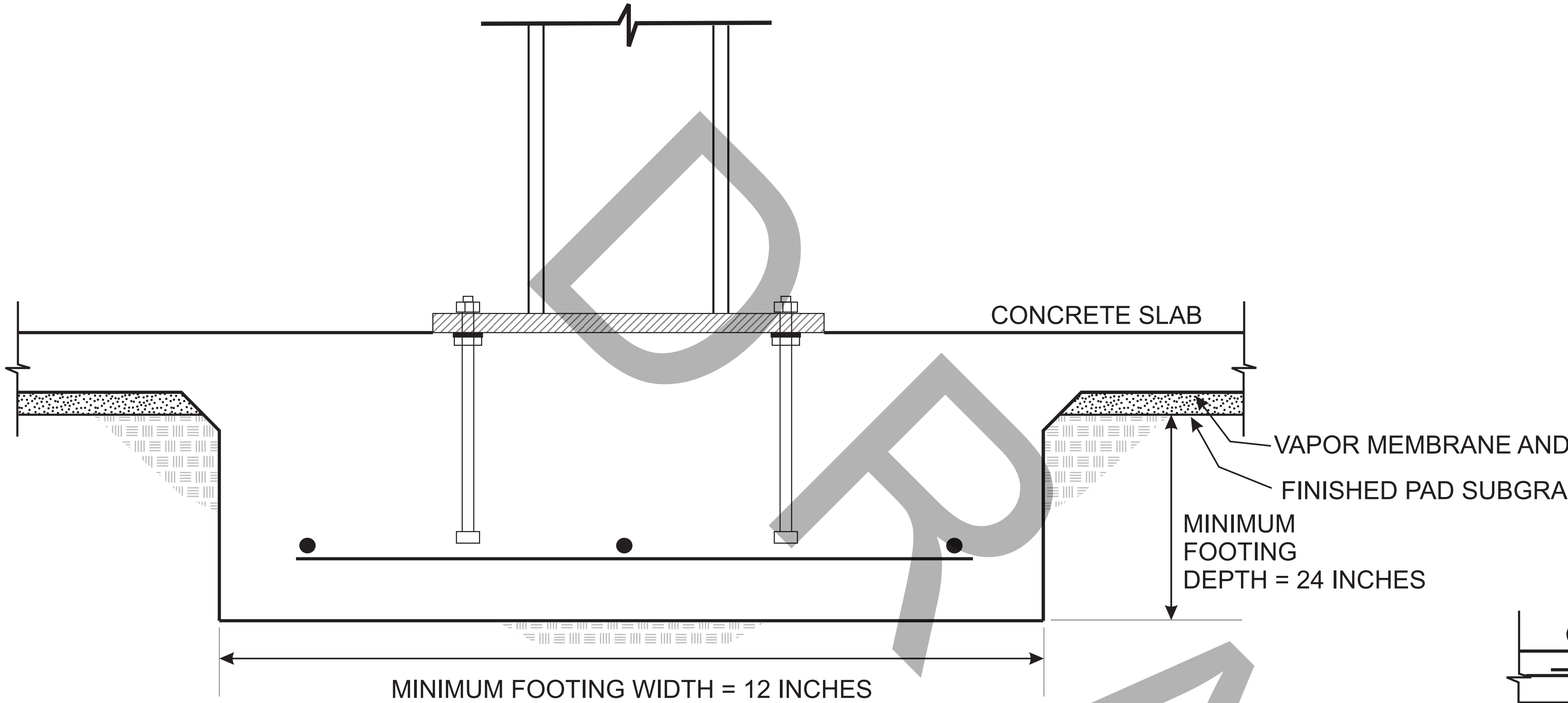
Reference: Jennings, C.W. (1994). *Fault Activity Map of Callifornia and Adjacent Areas,* CDMG Geologic Data Series, Map No. 6.



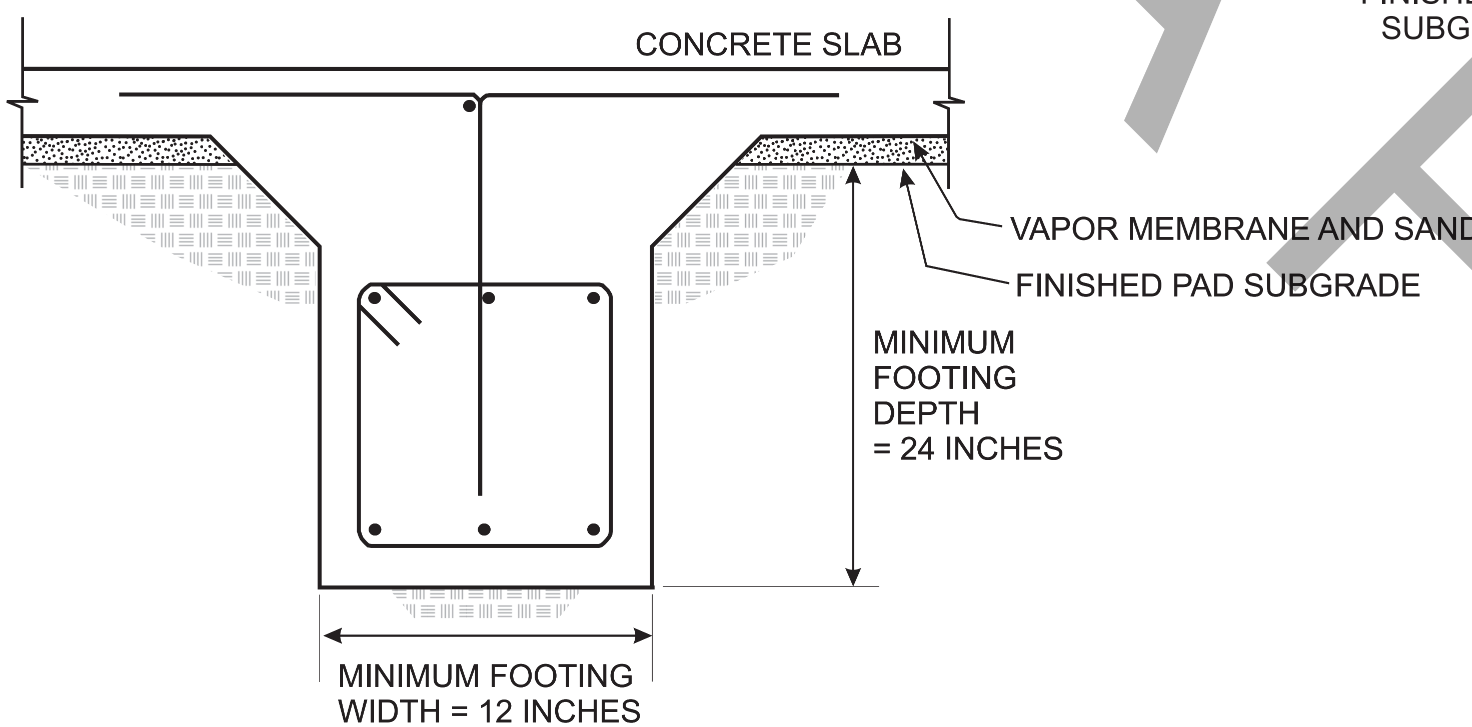
PROJECT NAME	FIGURE NAME	PROJECT NUMBER	FIGURE NUMBER
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	LOCAL FAULT LOCATIONS	SD732	5B

GROUP DELTA

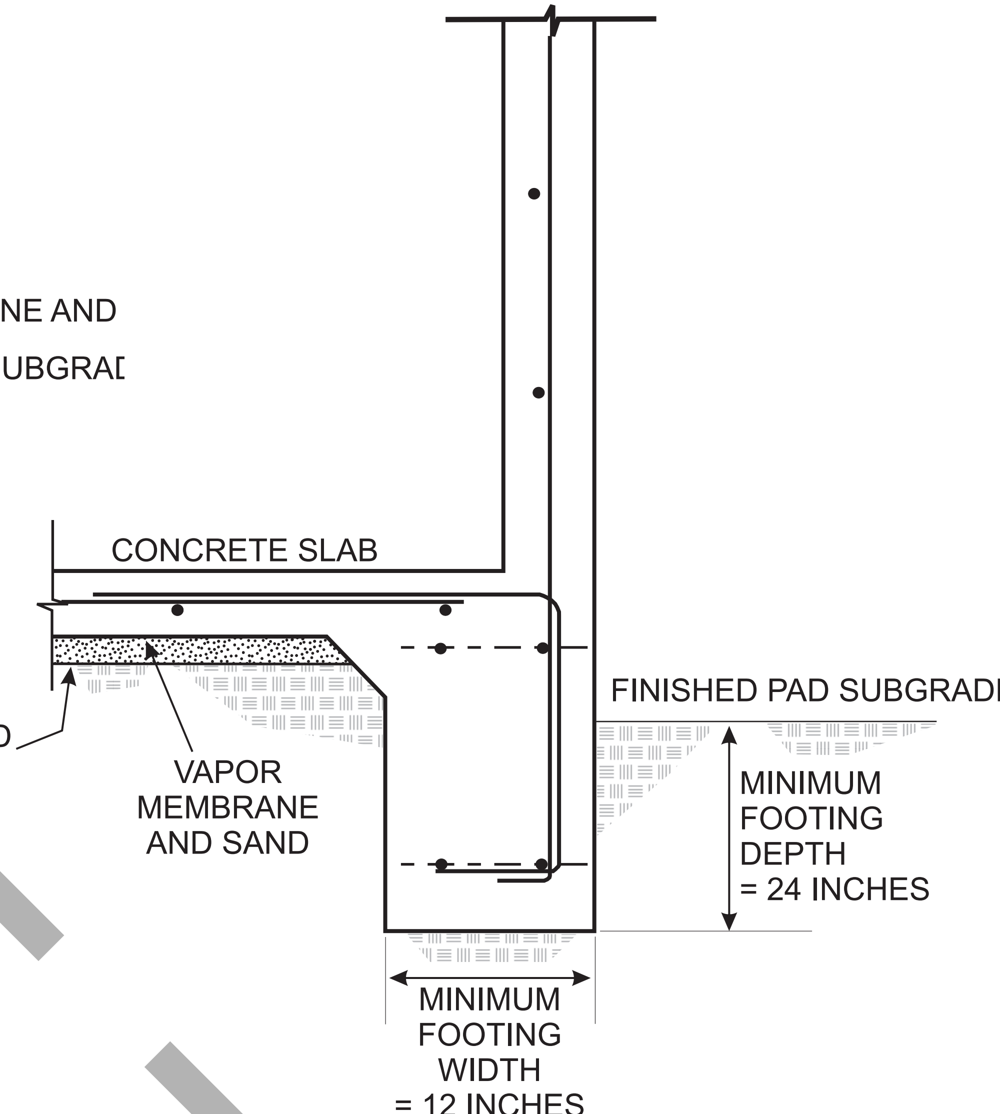
Reference: State of California (1990). *Alquist-Priolo Special Studies Zones, Calexico Quadrangle,* Revised Official Map, January 1.



SQUARE FOOTING



INTERIOR CONTINUOUS FOOTING



EXTERIOR CONTINUOUS FOOTING

PROJECT NAME	FIGURE NAME	GROUP DELTA	
SDSU IMPERIAL VALLEY CAMPUS NEW RESIDENCE HALL CALEXICO, CALIFORNIA	**SHALLOW FOUNDATION DETAILS**	PROJECT NUMBER SD732	FIGURE NUMBER 6

APPENDIX A
EXPLORATION RECORDS

APPENDIX A

EXPLORATION RECORDS

Field exploration included a visual reconnaissance of the site, the drilling of three (3) hollow stem auger geotechnical borings, and the advancement of five (5) cone penetration tests (CPTs) between May 31st and June 1st, 2022. The maximum depth of exploration was approximately 100 feet below ground surface (bgs). The approximate exploration locations are shown on Figure 3. Logs of the explorations are provided in Figures A-1 through A-3, immediately after the Boring Record Legends.

HOLLOW STEM BORINGS

The hollow stem borings were advanced on June 1st, 2022, by Tri-County Drilling using a Diedrich D-120 truck mounted drill rig. Disturbed samples were collected from the borings using a 2-inch outside diameter unlined Standard Penetration Test (SPT) sampler and less disturbed samples were collected using a 3-inch outside diameter ring lined modified California sampler. Bulk samples of surficial soils were also collected from auger cuttings. The samples were sealed in plastic bags, labeled, and returned to the laboratory for testing.

The drive samples were collected from the exploratory borings using an automatic hammer with average Energy Transfer Ratio (ETR) of approximately 86 percent. For each sample, the 6-inch incremental blow-counts were 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}). The modified California ring samples were also corrected for the 3-inch sampler diameter using Burmister's correction factor. The exploratory borings were logged using the Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010) as a guideline.

CONE PENETRATION TESTS

The CPT soundings were advanced by Kehoe Testing and Engineering on May 31st, 2022, in general accordance with ASTM D5778. The CPT soundings were carried out using an integrated electronic cone system manufactured by Vertek. The CPTs were advanced using a 30-ton CPT rig. The cone used during the program was a 15 cm^2 cone and recorded the following parameters at approximately 2.5 cm depth intervals:

- Cone Resistance (q_c);
- Sleeve Friction (f_s);
- Dynamic Pore Pressure (u);
- Inclination; and
- Penetration Speed.

APPENDIX A

EXPLORATION RECORDS

At location CPT-1, shear wave velocity measurements were obtained at five foot intervals to a depth of approximately 100 feet. The shear wave was generated using an air-actuated hammer placed under the CPT rig at a specified offset distance from the rods. The cone was equipped with a triaxial geophone, which recorded the shear wave signal generated by the air hammer. The above parameters were recorded and viewed in real time using a laptop computer. A summary of the collected shear wave measurements is presented in Figure A-9.

The lines designating the interface between differing soil materials on the logs may be abrupt or gradational, and soil conditions at locations between the explorations may be substantially different from those at the specific locations we explored. It should be noted that the passage of time may also result in changes in the soil conditions reported in the logs.

The exploration locations were determined by taping or pacing distances from landmarks shown on Figure 3. The locations shown should not be considered more accurate than is implied by the method of measurement used and the scale of the figure. Approximate existing elevations at the boring locations were estimated using Google Earth Pro 2021.

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. SD732

SDSU IVC NEW RESIDENCE HALL
CALEXICO, CALIFORNIA

BORING RECORD LEGEND #1

GROUP SYMBOLS AND NAMES

Graphic / Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL 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
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
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
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly graded SAND Poorly graded SAND with GRAVEL
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)
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)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic / Symbol	Group Names
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
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
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT 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
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
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
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
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
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
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

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. SD732

SDSU IVC NEW RESIDENCE HALL
CALEXICO, 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.

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.

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010), with the exception of consistency of cohesive soils vs. N_{60}.

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. SD732

SDSU IVC NEW RESIDENCE HALL
CALEXICO, CALIFORNIA

BORING RECORD LEGEND #3

BORING RECORD

PROJECT NAME	SDSU IVC Student Residence Hall
PROJECT NUMBER	SD732
BORING	B-1
SITE LOCATION	720 Heber Avenue, Calexico, CA
START	6/1/2022
FINISH	6/1/2022
SHEET NO.	1 of 3
DRILLING COMPANY	Tri-County Drilling Inc.
DRILLING METHOD	Hollow Stem Auger
LOGGED BY	C. Vonk
CHECKED BY	S. Narveson
DRILLING EQUIPMENT	Diedrich D-120
BORING DIA. (in)	8
TOTAL DEPTH (ft)	51.5
GROUND ELEV (ft)	4
DEPTH/*ELEV.* GROUNDWATER (ft)	▼ 28.0 / *-24.0*
SAMPLING METHOD	Hammer: 140 lbs., Drop: 30 in. (Automatic)
NOTES	ETR ~ 86%, N_{60} ~ 1.43*N_{SPT} ~ 0.96*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	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
0	4											Grass and Organics
		Bulk	B1				21.7		EI PA PI			**FILL:** Lean CLAY (CL); brown; moist; mostly fines; few to little SAND; medium plasticity. 13% Sand, 87% Fines LL=46, PL=20, PI=26; EI = 70
	0											**LACUSTRINE DEPOSITS (Ql):** Fat CLAY (CH); brown; moist; mostly fines; trace SAND; high plasticity. 4% Sand, 96% Fines LL=65, PL=23, PI=42 Hard; minor caliche cementation; trace organics. PP>4.5 tsf
5		SPT	S2	3 8 13	21	30			PA PI			
	-5											
10		Ring	R3-1 R3-2	8 19 24	43	41	16.1	108	PA PI			No sand. 100% Fines LL=70, PL=25, PI=45 PP>4.5 tsf
	-10											SILTY SAND (SM); medium dense; light grayish brown; moist; mostly fine SAND; some fines; non-plastic. 63% Sand, 37% Fines
15		SPT	S4-1 S4-2	3 2 7	9	13	6.0		PA			SILT with SAND (ML); medium dense; brown; moist; mostly fines; little fine SAND; low plasticity.
	-15											Fat CLAY (CH); very stiff; brown; moist; mostly fines; trace fine SAND; high plasticity. PP=2.25 tsf
20		Ring	R5	4 7 12	19	18	32.9	89	C			
	-20											

GROUP DELTA CONSULTANTS, INC.
9245 Activity Road, Suite 103
San Diego, California 92126

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 A-1 a

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
SDSU IVC Student Residence Hall	SD732	**B-1**

SITE LOCATION	START	FINISH	SHEET NO.
720 Heber Avenue, Calexico, CA	6/1/2022	6/1/2022	2 of 3

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling Inc.	Hollow Stem Auger	C. Vonk	S. Narveson

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D-120	8	51.5	4	▼ 28.0 / *-24.0*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	ETR ~ 86%, N_{60} ~ 1.43*N_{SPT} ~ 0.96*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	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
			S6-1 S6-2	2 3 5	8	11	28.7		PI WA			**LACUSTRINE DEPOSITS (Ql): continued** Fat CLAY (CH) *(see previous page for full description):* Stiff to very stiff. PP=1.0 tsf
	-25											SILT (ML); loose to medium dense; brown; moist to wet; mostly fines; few fine SAND; non-plastic. 94% Fines. LL=NP, PL=NP, PI=NP
30			R7-1 R7-2	3 5 8	13	12	31.6	92	C PI			Lean CLAY (CL); stiff; brown; moist; mostly fines; few fine SAND; medium plasticity. LL=40, PL=21, PI=19 PP=1.5 tsf
	-30											
35			R8-1 R8-2	6 16 23	39	37	27.9	97	C PI WA			Fat CLAY (CH); hard; brown; moist; mostly fines; high plasticity. 100% Fines LL=69, PL=22, PI=47 PP>4.5 tsf
	-35											
40			S9	6 11 15	26	37	25.4					PP>4.5 tsf
	-40											
45			R10-1 R10-2	5 7 8	15	14	32.0	91				Very stiff. PP=2.5 tsf
	-45											

GROUP DELTA CONSULTANTS, INC.
9245 Activity Road, Suite 103
San Diego, California 92126

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FIGURE

A-1 b

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
SDSU IVC Student Residence Hall	SD732	**B-1**

SITE LOCATION	START	FINISH	SHEET NO.
720 Heber Avenue, Calexico, CA	6/1/2022	6/1/2022	3 of 3

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling Inc.	Hollow Stem Auger	C. Vonk	S. Narveson

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D-120	8	51.5	4	▼ 28.0 / *-24.0*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	ETR ~ 86%, N_{60} ~ 1.43*N_{SPT} ~ 0.96*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	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
			S11	8 4 10	14	20	28.3		WA			**LACUSTRINE DEPOSITS (Ql): continued** SILT (ML); medium dense; brown; wet; mostly fines; few fine SAND; non-plastic; trace mica. 88% Fines
	-50											Total Depth = 51.5 feet (target depth reached). Groundwater measured at 28.0 feet after drilling. Boring backfilled on 6/1/2022 shortly after drilling. This Boring Record is part of a geotechnical report which must be considered in its entirety.
55												
	-55											
60												
	-60											
65												
	-65											
70												
	-70											

GDC_LOG_BORING_MMX_SOIL_SD SD732 LOGS.GPJ GDCLOG.GDT 7/20/22

GROUP DELTA CONSULTANTS, INC.
9245 Activity Road, Suite 103
San Diego, California 92126

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 A-1 c

BORING RECORD

PROJECT NAME	SDSU IVC Student Residence Hall
PROJECT NUMBER	SD732
BORING	**B-2**
SITE LOCATION	720 Heber Avenue, Calexico, CA
START	6/1/2022
FINISH	6/1/2022
SHEET NO.	1 of 1
DRILLING COMPANY	Tri-County Drilling Inc.
DRILLING METHOD	Hollow Stem Auger
LOGGED BY	C. Vonk
CHECKED BY	S. Narveson
DRILLING EQUIPMENT	Diedrich D-120
BORING DIA. (in)	8
TOTAL DEPTH (ft)	21.5
GROUND ELEV (ft)	5
DEPTH/*ELEV.* GROUNDWATER (ft)	▼ NE / *na*
SAMPLING METHOD	Hammer: 140 lbs., Drop: 30 in. (Automatic)
NOTES	ETR ~ 86%, N_{60} ~ 1.43*N_{SPT} ~ 0.96*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	DRILLING METHOD	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
0	5											Grass and Organics
												FILL: Lean CLAY (CL); brown; moist; mostly fines; few fine SAND; medium plasticity; scattered organics (rootlets). EI = 60
			B1				18.3		EI CR			**LACUSTRINE DEPOSITS (Ql):** Fat CLAY (CH); hard; brown; moist; mostly fines; few fine SAND; high plasticity; trace organics. PP>4.5 tsf
5	0		R2-1 R2-2	11 13 22	35	34	20.4	93				
10	-5		R3	8 19 33	52	50	24.4	101	SW			Brown to dark brown. PP>4.5 tsf
												Lean CLAY (CL); medium stiff; brown; moist; mostly fines; some fine SAND; medium plasticity. LL=31, PL=21, PI=10
15	-10		S4-1 S4-2	2 2 10	12	17	24.3		PI			
												Silty SAND (SM); medium dense; light grayish brown; moist; mostly fine SAND; little fines; non-plastic.
20	-15											Fat CLAY (CH); stiff to very stiff; dark brown; moist; mostly fines; trace fine SAND; high plasticity 1% Sand, 99% Fines PP=2.0 tsf; UC = 2.5 ksf
			R5-1 R5-2	4 7 13	20	19	29.2	93	PA UC			
												Total Depth = 21.5 feet (target depth reached). Groundwater not encountered during drilling. Boring backfilled on 6/1/2022 shortly after drilling. This Boring Record is part of a geotechnical report which must be considered in its entirety. Boring caved to 16.5 feet upon extracting augers.

GROUP DELTA CONSULTANTS, INC.
9245 Activity Road, Suite 103
San Diego, California 92126

FIGURE A-2

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
SDSU IVC Student Residence Hall	SD732	**B-3**

SITE LOCATION	START	FINISH	SHEET NO.
720 Heber Avenue, Calexico, CA	6/1/2022	6/1/2022	1 of 1

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Tri-County Drilling Inc.	Hollow Stem Auger	C. Vonk	S. Narveson

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUNDWATER (ft)
Diedrich D-120	8	21.5	5	▼ NE / *na*

SAMPLING METHOD	NOTES
Hammer: 140 lbs., Drop: 30 in. (Automatic)	ETR ~ 86%, N_{60} ~ 1.43*N_{SPT} ~ 0.96*N_{MC}

DEPTH (feet)	ELEVATION (feet)	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS
		B1				21.5		CR EI PA
5	0	R2-1 R2-2	7 17 25	42	40	20.9	96	C SW
10	-5	S3	6 14 20	34	49	19.8		
15	-10	R4-1 R4-2	3 11 19	30	29	11.7	99	
20	-15	S5	4 6 9	15	21			PI

DESCRIPTION AND CLASSIFICATION

Grass and Organcis

FILL: Lean CLAY (CL); brown; moist; mostly fines; few fine SAND; low to medium plasticity.
7% Sand, 93% Fines
EI = 82

LACUSTRINE DEPOSITS (Ql): Fat CLAY (CH); brown; moist; mostly fines; few fine SAND; high plasticity.

Hard.
PP>4.5 tsf

PP>4.5 tsf

SANDY SILT (ML); medium dense; brown; moist to wet; mostly fines; some fine SAND; low plasticity to non-plastic.

Silty SAND (SM); medium dense; light grayish brown; moist; mostly fine SAND; little fines; non-plastic.

Fat CLAY (CH); very stiff; brown; moist; mostly fines; trace fine SAND; high plasticity.
LL=68, PL=23, PI=45
PP=2.5 tsf

Total Depth = 21.5 feet (target depth reached).
Groundwater not encountered during drilling.
Boring backfilled on 6/1/2022 shortly after drilling.
This Boring Record is part of a geotechnical report which must be considered in its entirety.

GROUP DELTA CONSULTANTS, INC.
9245 Activity Road, Suite 103
San Diego, California 92126

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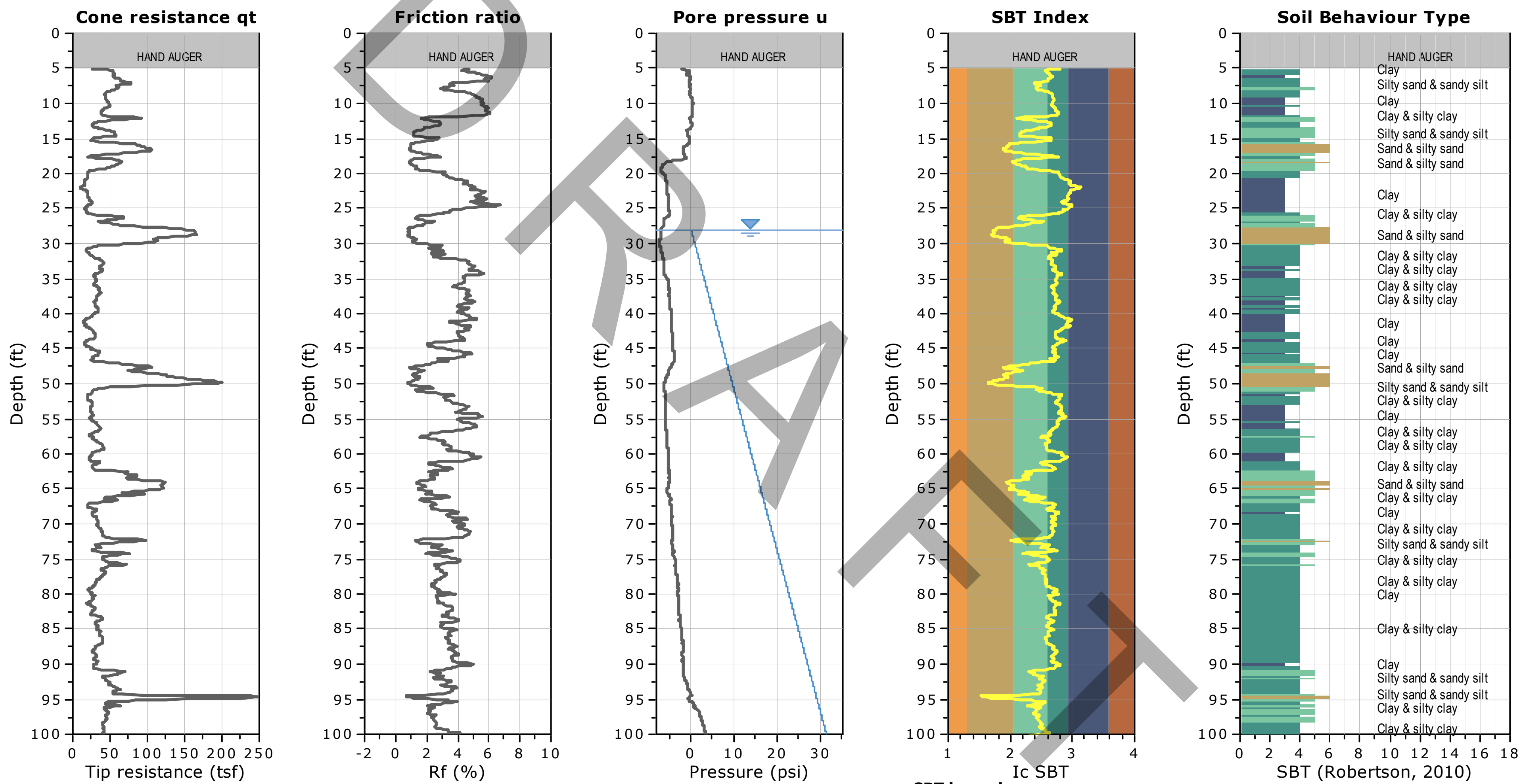
FIGURE A-3

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA
http://www.groupdelta.com

CPT: CPT-1
Total depth: 100.47 ft, Date: 5/31/2022
Surface Elevation: 4.00 ft

Project: **SD732 SDSU IVC New Residence Hall**
Location: **720 Heber Ave, Calexico, CA**



SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

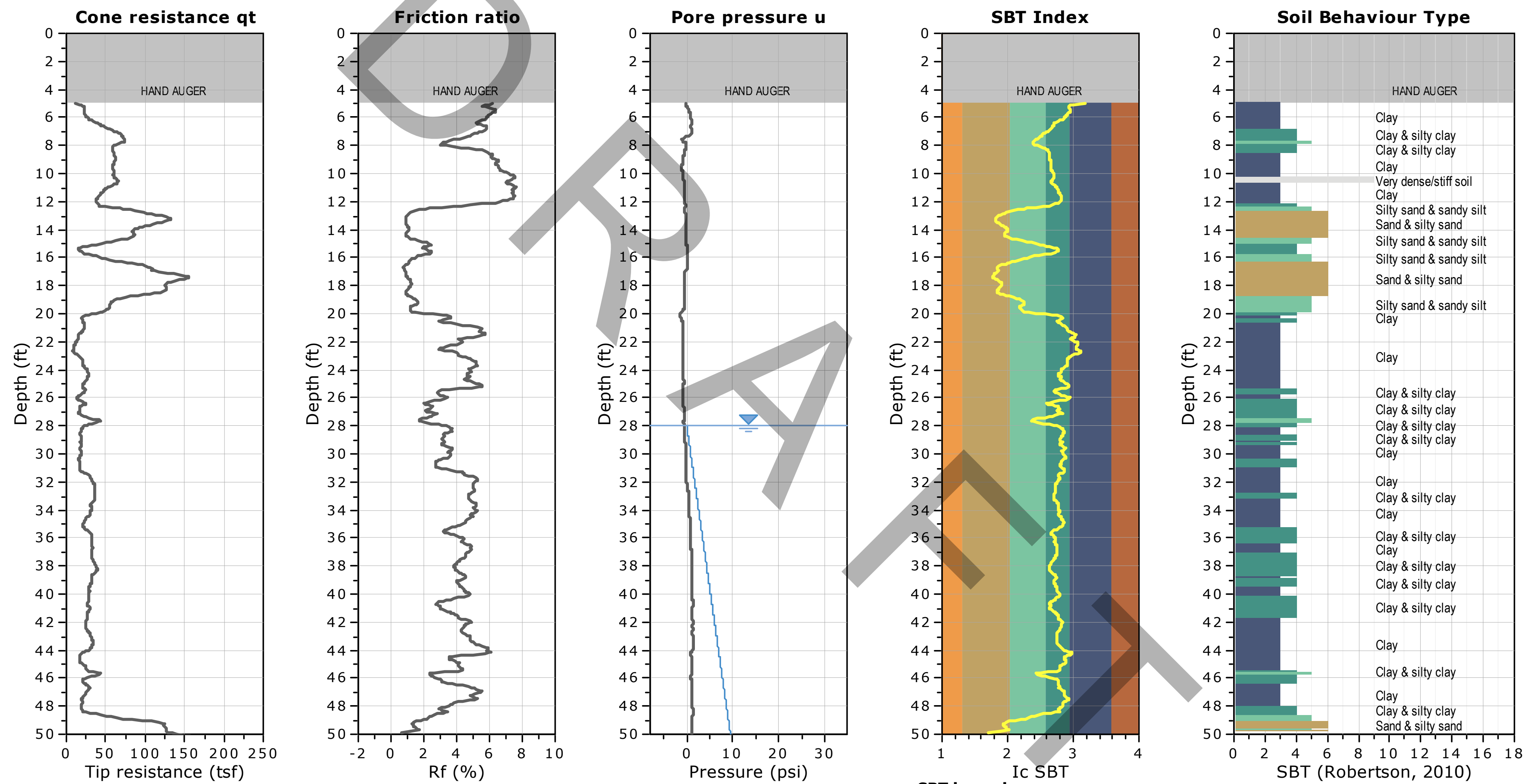
CPeT-IT v.3.5.2.2 - CPTU data presentation & interpretation software - Report created on: 6/10/2022, 10:40:43 AM
Project file: \\192.168.10.4\Files$\Projects\SD\SD700\SD732 SDSU Calexico Campus New Residence Hall\7. Calcs\CPeT-IT\SD732-CPeT-IT.cpt

FIGURE A-4

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA
http://www.groupdelta.com

CPT: CPT-2
Total depth: 50.14 ft, Date: 5/31/2022
Surface Elevation: 6.00 ft

Project: **SD732 SDSU IVC New Residence Hall**
Location: **720 Heber Ave, Calexico, CA**



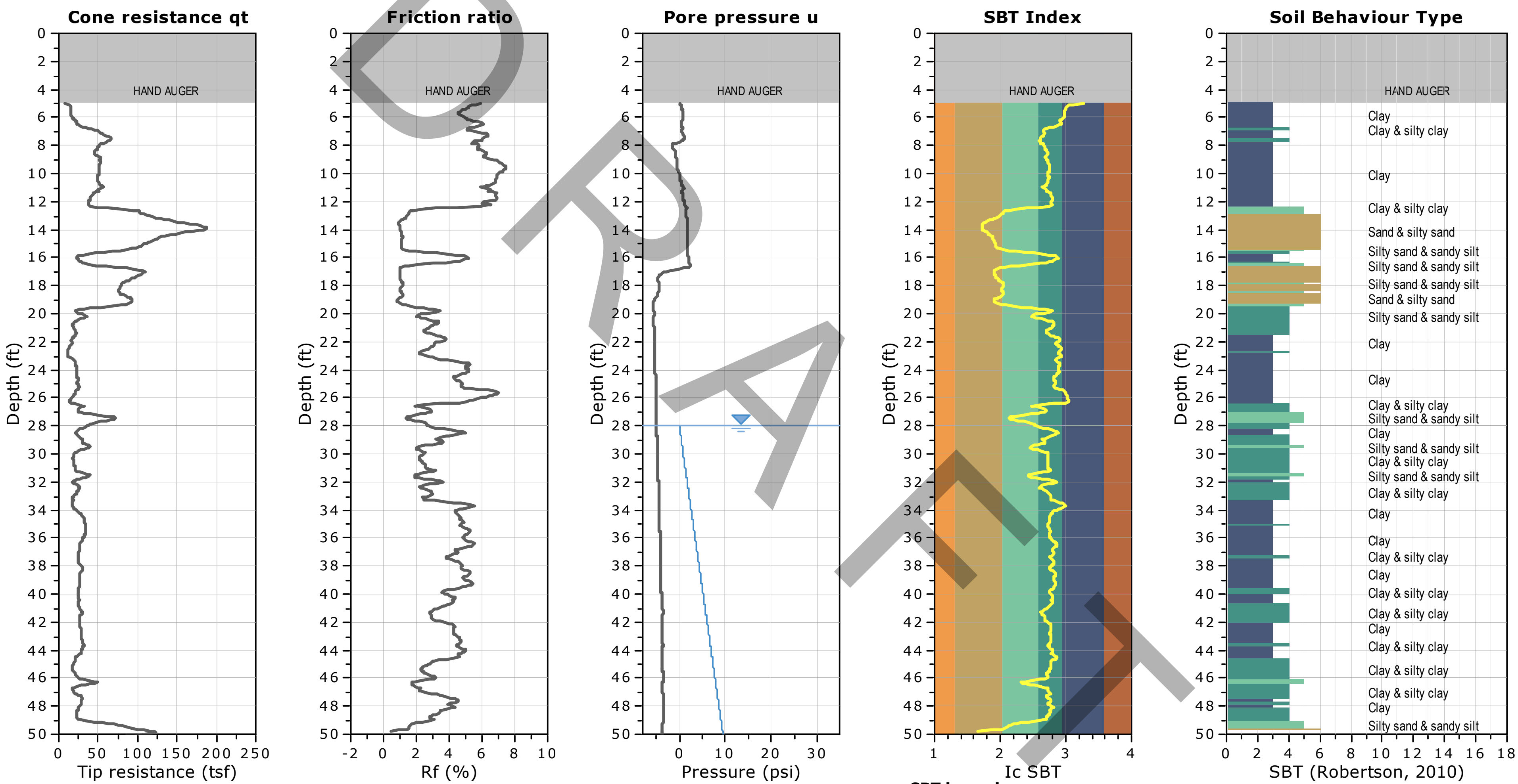
SBT legend

- 1. Sensitive fine grained
- 2. Organic material
- 3. Clay to silty clay
- 4. Clayey silt to silty clay
- 5. Silty sand to sandy silt
- 6. Clean sand to silty sand
- 7. Gravely sand to sand
- 8. Very stiff sand to clayey sand
- 9. Very stiff fine grained

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA
http://www.groupdelta.com

CPT: CPT-3
Total depth: 50.13 ft, Date: 5/31/2022
Surface Elevation: 6.00 ft

Project: **SD732 SDSU IVC New Residence Hall**
Location: **720 Heber Ave, Calexico, CA**



SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

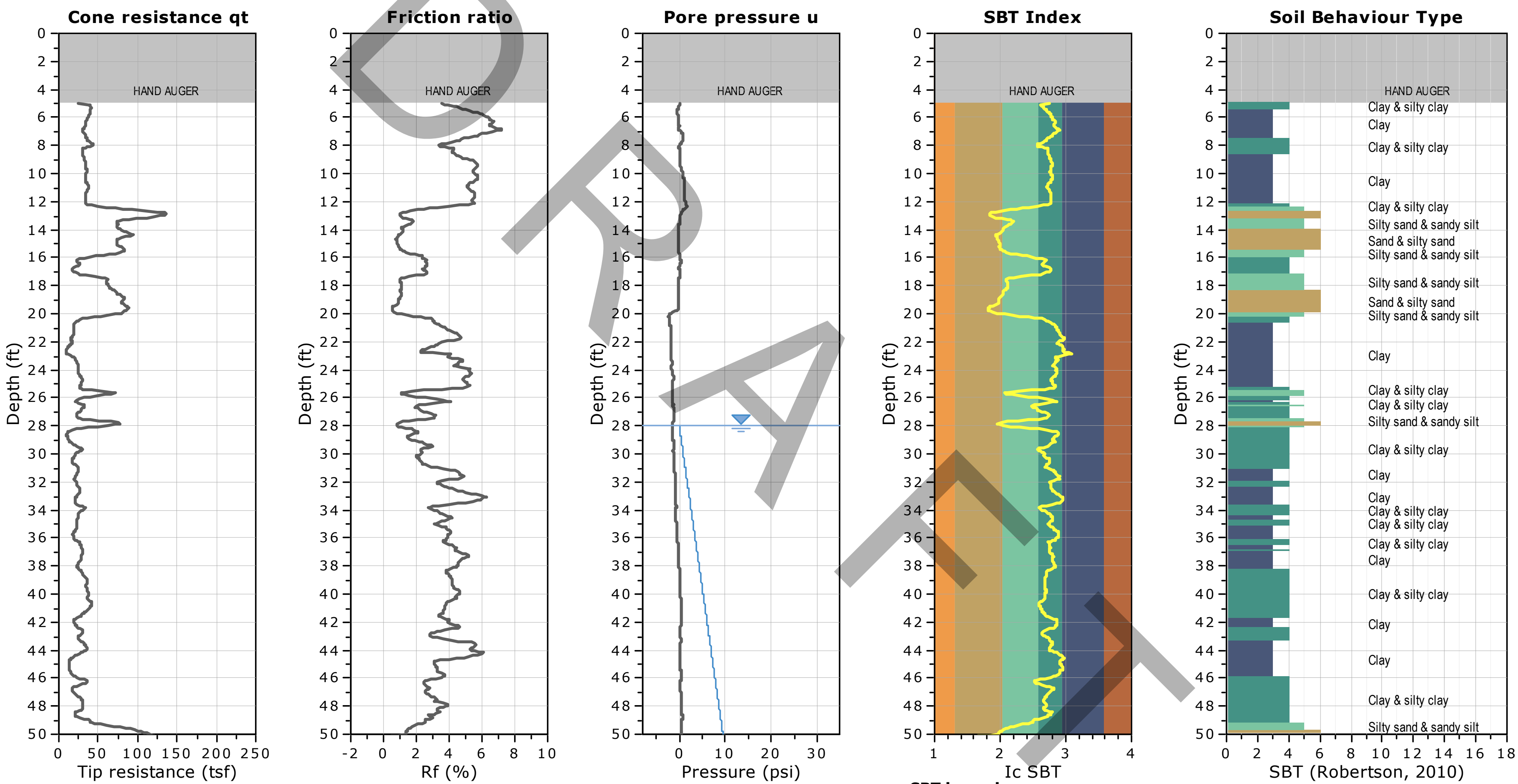
CPeT-IT v.3.5.2.2 - CPTU data presentation & interpretation software - Report created on: 6/10/2022, 10:42:26 AM
Project file: \\192.168.10.4\Files$\Projects\SD\SD700\SD732 SDSU Calexico Campus New Residence Hall\7. Calcs\CPeT-IT\SD732-CPeT-IT.cpt

FIGURE A-6

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA
http://www.groupdelta.com

CPT: CPT-4
Total depth: 50.47 ft, Date: 5/31/2022
Surface Elevation: 5.00 ft

Project: SD732 SDSU IVC New Residence Hall
Location: 720 Heber Ave, Calexico, CA



SBT legend

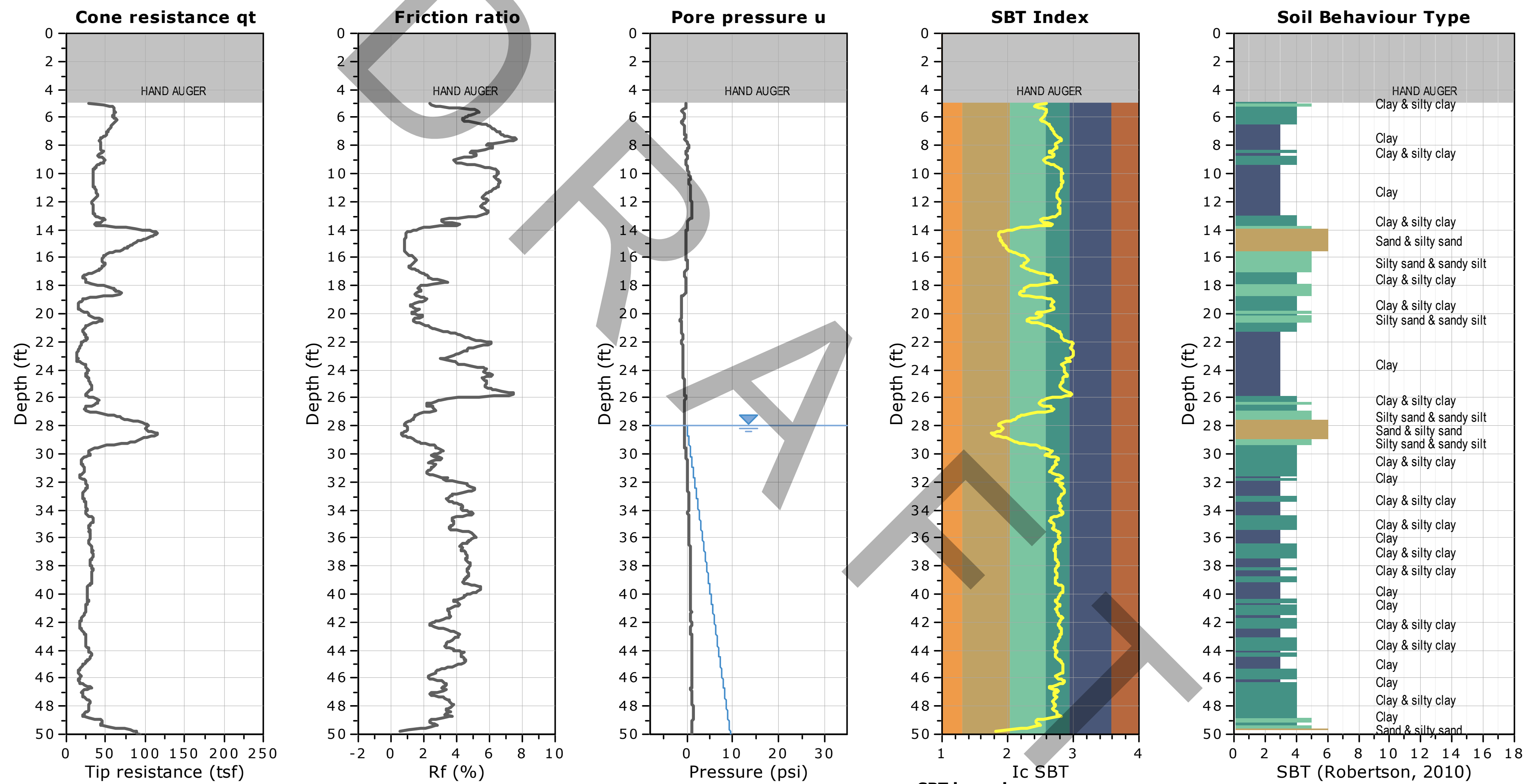
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

FIGURE A-7

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA
http://www.groupdelta.com

CPT: CPT-5
Total depth: 50.09 ft, Date: 5/31/2022
Surface Elevation: 5.00 ft

Project: **SD732 SDSU IVC New Residence Hall**
Location: **720 Heber Ave, Calexico, CA**



SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

CPeT-IT v.3.5.2.2 - CPTU data presentation & interpretation software - Report created on: 6/10/2022, 10:47:04 AM
Project file: \\192.168.10.4\Files$\Projects\SD\SD700\SD732 SDSU Calexico Campus New Residence Hall\7. Calcs\CPeT-IT\SD732-CPeT-IT.cpt

FIGURE A-8

Group Delta Consultants, Inc.
Project No. SD732

SDSU IVC Student Residence Hall
720 Heber Ave
Calexico, CA

CPT Shear Wave Measurements

Location	Tip Depth (ft)	Geophone Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
CPT-1	5.02	4.02	4.49	9.40	478	
	10.04	9.04	9.26	21.62	428	390
	15.06	14.06	14.20	31.16	456	518
	20.08	19.08	19.18	38.32	501	696
	25.03	24.03	24.11	46.68	517	590
	30.02	29.02	29.09	52.78	551	816
	35.04	34.04	34.10	58.76	580	838
	40.06	39.06	39.11	67.42	580	579
	45.08	44.08	44.13	75.14	587	650
	50.03	49.03	49.07	81.44	603	785
	55.18	54.18	54.22	89.08	609	674
	60.10	59.10	59.13	95.92	616	719
	65.06	64.06	64.09	102.36	626	770
	70.01	69.01	69.04	109.00	633	745
	75.10	74.10	74.13	115.20	643	821
	80.05	79.05	79.08	122.38	646	689
	85.07	84.07	84.09	128.04	657	887
	90.03	89.03	89.05	134.48	662	770
	95.01	94.01	94.03	140.04	671	895
	100.03	99.03	99.05	145.16	682	980

Shear Wave Source Offset - 2 ft

S-Wave Velocity from Surface = Travel Distance/S-Wave Arrival
Interval S-Wave Velocity = (Travel Dist2-Travel Dist1)/(Time2-Time1)

FIGURE A-9

APPENDIX B
LABORATORY TESTING

APPENDIX B

LABORATORY TESTING

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 tests 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 Boring Records in Appendix A.

Particle Size Analysis: Particle size analyses were performed in general accordance with ASTM D6913, D7928 and D1140, and were used to supplement visual classifications. The test results are summarized on the Boring Records in Appendix A and are presented in detail in Figures B-1.1 through B-1.6 and B-2.

Atterberg Limits: ASTM D4318 was used to determine the liquid and plastic limits, and plasticity index of selected soil samples. The test results are presented with the associated gradation analyses in Figures B-1.1 through B-1.3 and are also summarized in Figure B-3.

Expansion Index: The expansion potential of selected soil samples was estimated in general accordance with ASTM D4829. The test results are summarized in Figure B-4, along with a summary of previous expansion index tests we conducted at the site. Figure B-4 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 corrosivity test results are summarized in Figure B-5, along with previous corrosion tests we conducted on site.

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 also presented in Figure B-5, along with common criteria for evaluating soluble sulfate content.

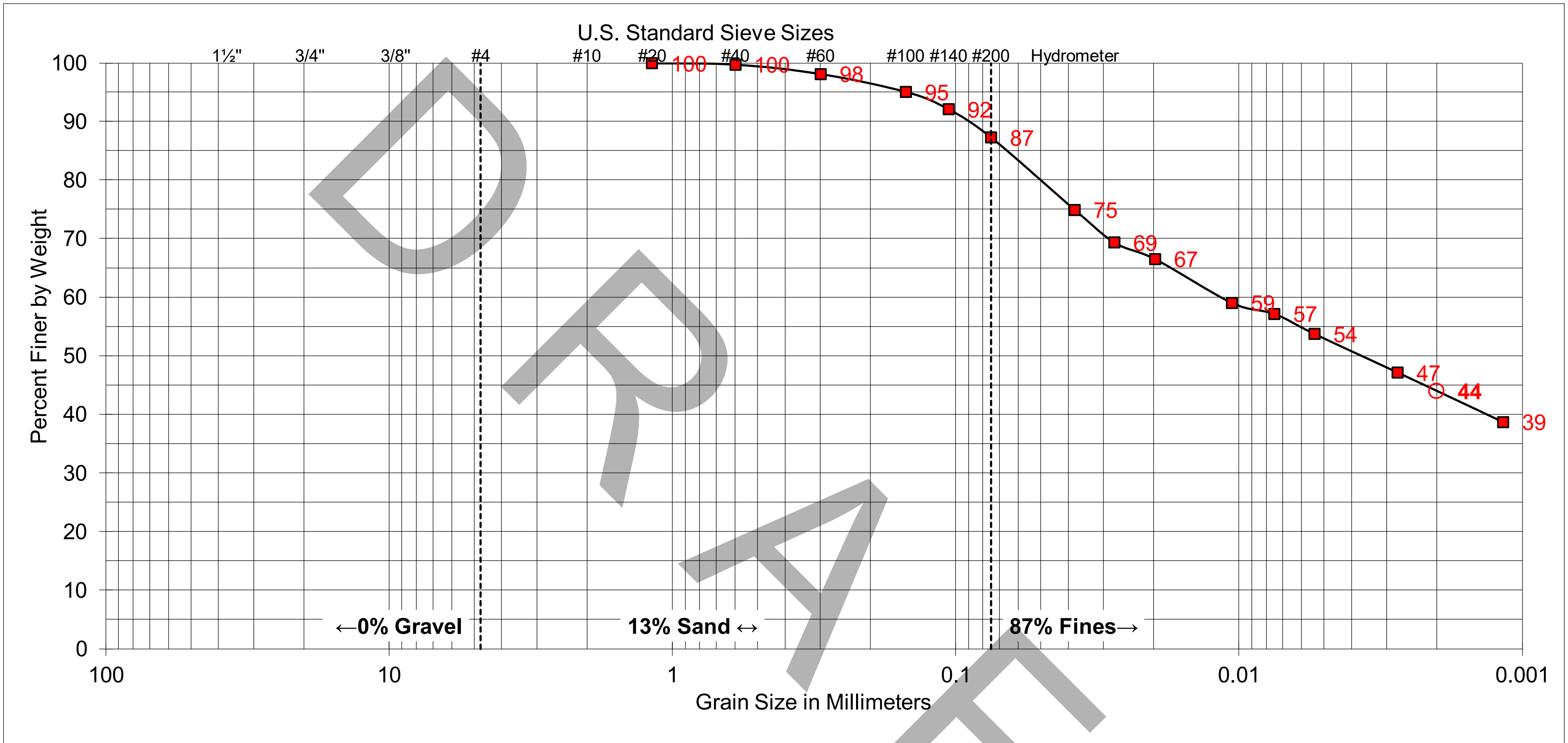
Chloride Content: Soil samples were also tested for water soluble chloride. The chloride was extracted from the soil under vacuum using a 10:1 (water to dry soil) dilution ratio. The extracted solution was then tested for water soluble chloride using a calibrated ion specific electronic probe in general accordance with ASTM D512. The test results are also shown in Figure B-5.

APPENDIX B

LABORATORY TESTING (Continued)

Unconfined Compressive Strength: The undrained shear strength of a selected soil sample was assessed using unconfined compression testing performed in general accordance with ASTM D2166. The test results are presented in Figure B-6. The Pocket Penetration tests conducted on clayey samples during the field investigation are shown in the Boring Records in Appendix A.

Consolidation: The one-dimensional consolidation properties of selected soil samples were evaluated in general accordance with ASTM D2435. With the exception of the sample R-2-2 collected from Boring B-3 from depths of 6 to 6.5 feet as shown on Figure B-7.5, the samples were inundated with water under a nominal seating load, allowed to swell, and then subjected to controlled stress increments while restrained laterally and drained axially. Sample R-2-2 collected from Boring B-3 from depths of 6 to 6.5 feet as shown on Figure B-7.5 was not inundated with water during testing to evaluate the samples strain behavior to the controlled stress increments in an unsaturated state. The test results are presented in Figure B-7.1 through B-7.6.



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY
GRAVEL		SAND			

SAMPLE	
EXPLORATION ID:	B-1
SAMPLE DEPTH:	0.5' - 5'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: LEAN CLAY

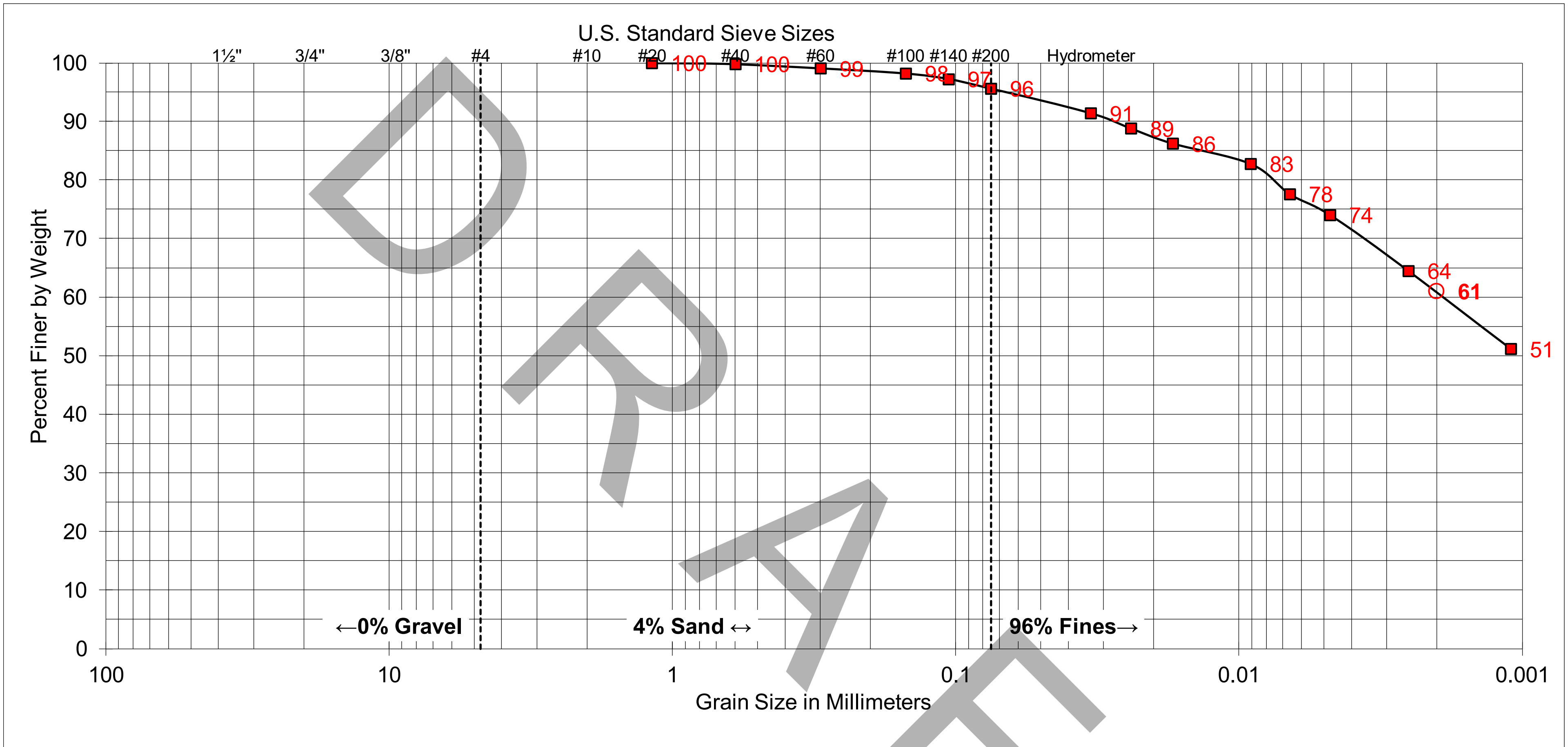
ATTERBERG LIMITS	
LIQUID LIMIT:	46
PLASTIC LIMIT:	20
PLASTICITY INDEX:	26

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD732

FIGURE B-1.1



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY
GRAVEL		SAND			

SAMPLE	
EXPLORATION ID:	B-1
SAMPLE DEPTH:	5' - 6.5'

UNIFIED SOIL CLASSIFICATION: CH

DESCRIPTION: FAT CLAY

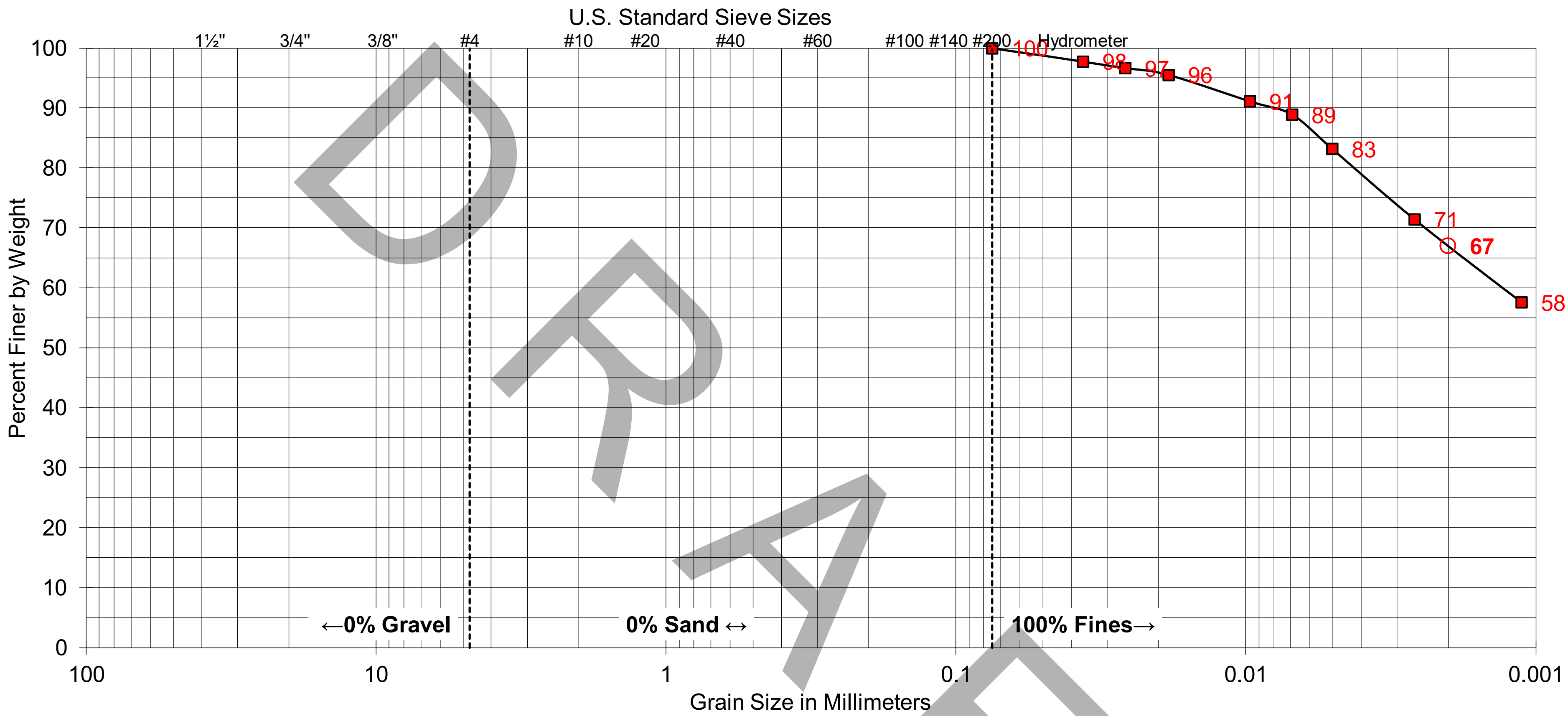
ATTERBERG LIMITS	
LIQUID LIMIT:	65
PLASTIC LIMIT:	23
PLASTICITY INDEX:	42

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD732

FIGURE B-1.2



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY
GRAVEL		SAND			

SAMPLE	
EXPLORATION ID:	B-1
SAMPLE DEPTH:	10.5' - 11'

UNIFIED SOIL CLASSIFICATION: CH

DESCRIPTION: FAT CLAY

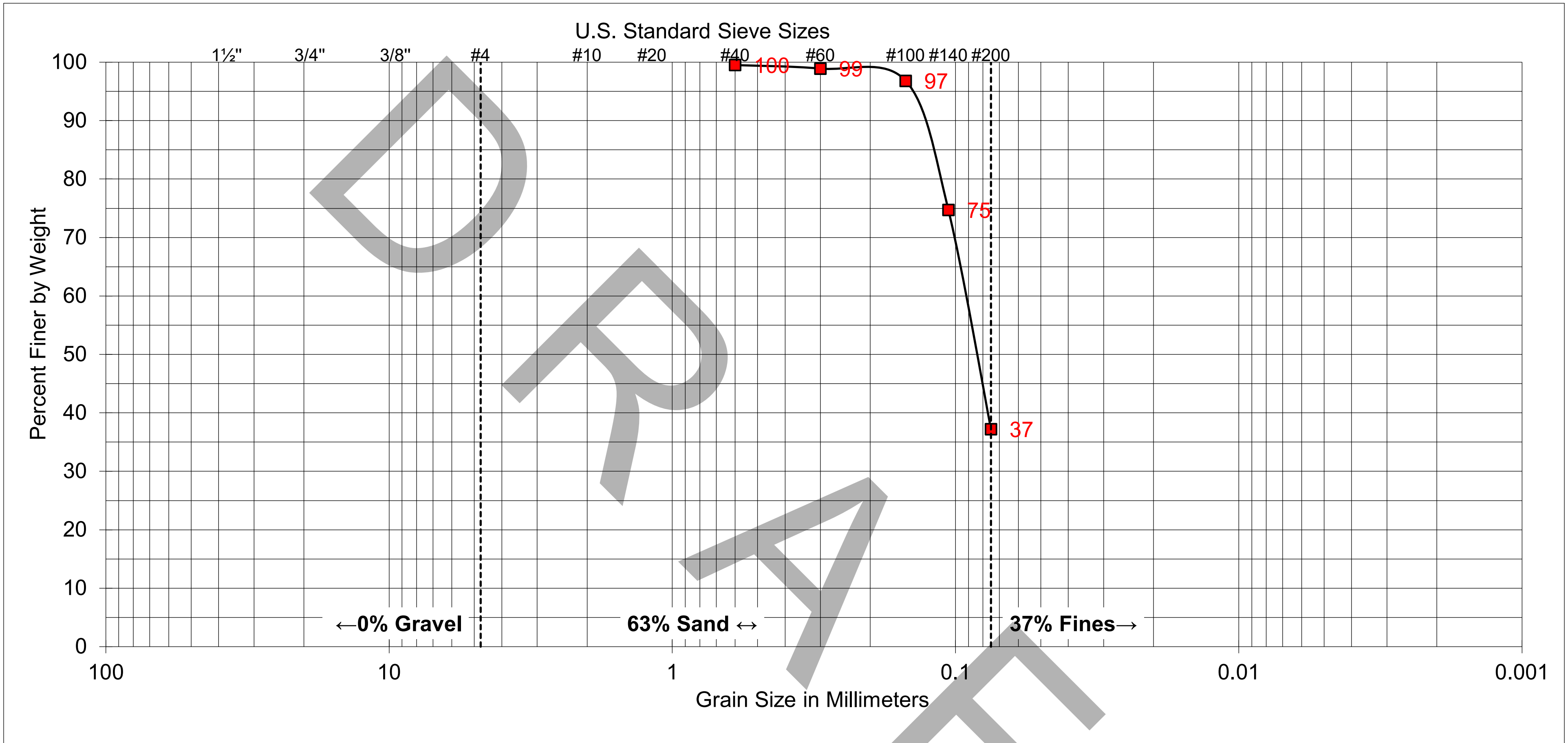
ATTERBERG LIMITS	
LIQUID LIMIT:	70
PLASTIC LIMIT:	25
PLASTICITY INDEX:	45

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD732

FIGURE B-1.3



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

SAMPLE	
EXPLORATION ID:	B-1
SAMPLE DEPTH:	15' - 15.5'

UNIFIED SOIL CLASSIFICATION: SM

DESCRIPTION: SILTY SAND

ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD732

FIGURE B-1.4

COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY
GRAVEL		SAND			

SAMPLE	
EXPLORATION ID:	B-2
SAMPLE DEPTH:	20.5' - 21'

UNIFIED SOIL CLASSIFICATION: CH

DESCRIPTION: FAT CLAY

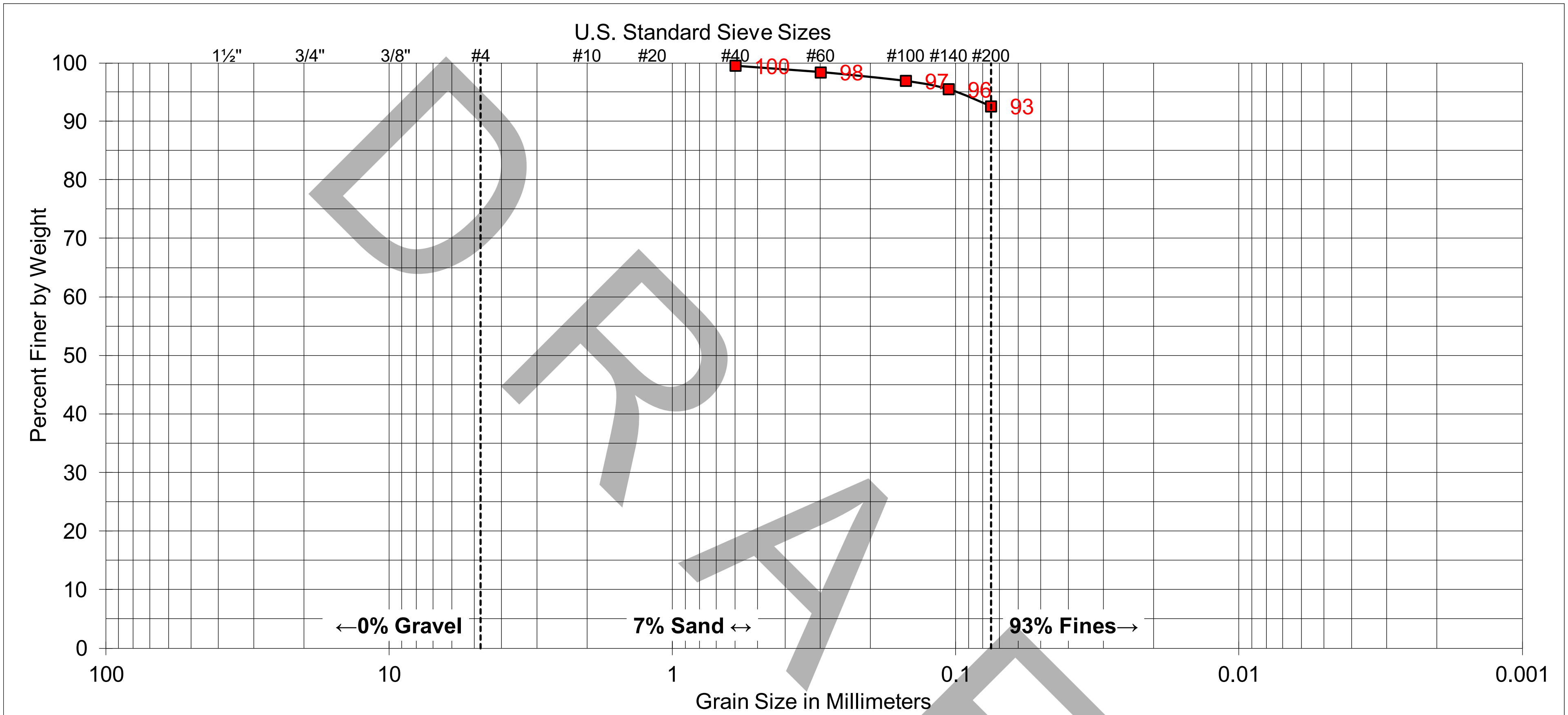
ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

Project No. SD732

FIGURE B-1.5



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY
GRAVEL		SAND			

SAMPLE	
EXPLORATION ID:	B-3
SAMPLE DEPTH:	0.5' - 5'

UNIFIED SOIL CLASSIFICATION: CL

DESCRIPTION: LEAN CLAY

ATTERBERG LIMITS	
LIQUID LIMIT:	--
PLASTIC LIMIT:	--
PLASTICITY INDEX:	--

GROUP DELTA

SOIL CLASSIFICATION

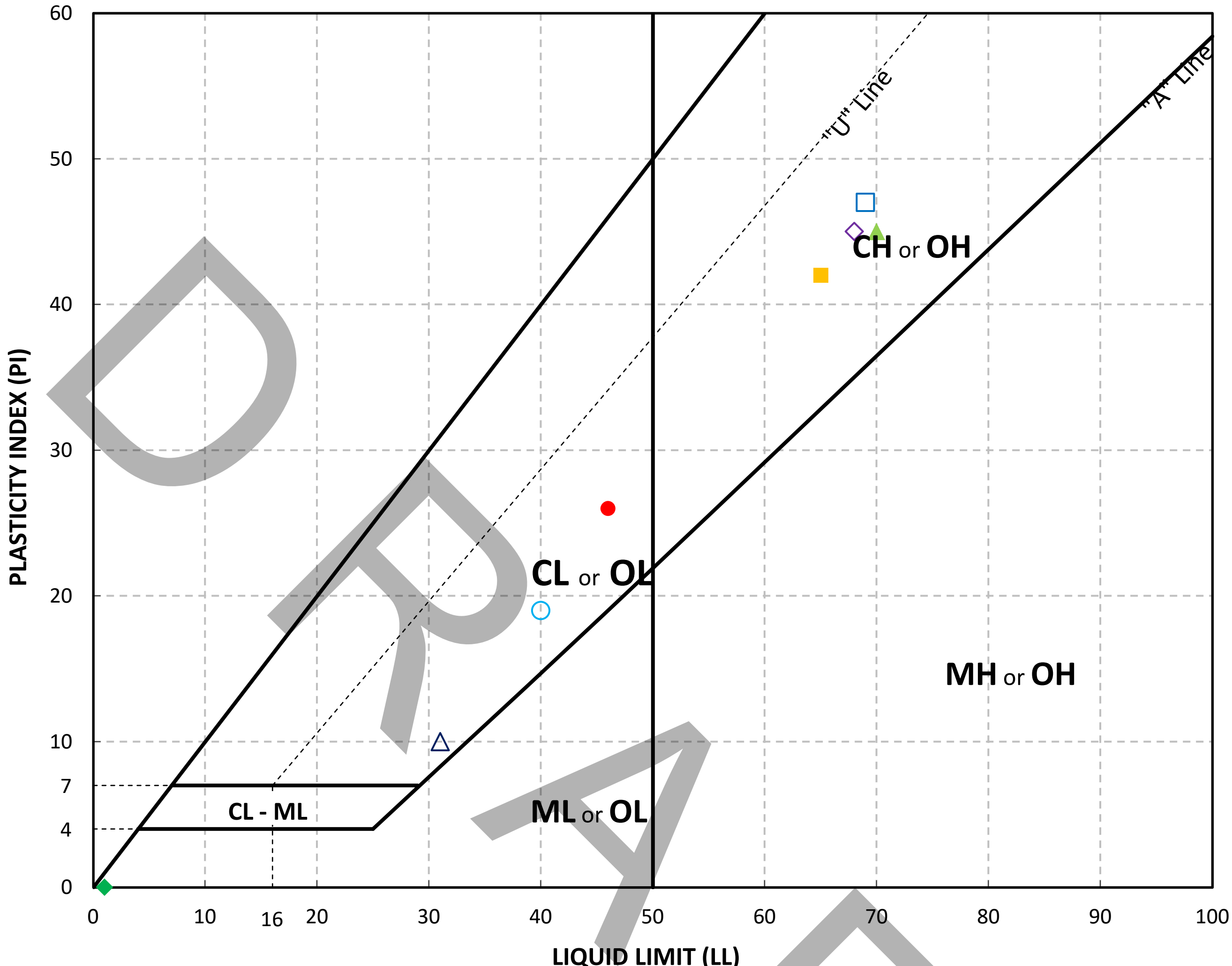
Project No. SD732

FIGURE B-1.6

PERCENT PASSING THE NO. 200 SIEVE TEST RESULTS
(ASTM D1140)

SAMPLE	DESCRIPTION	PERCENT PASSING THE NO. 200 SIEVE
B-1 @ 26' – 26.5'	SILT (ML)	94
B-1 @ 35.5' – 36'	Fat CLAY (CL)	100
B-1 @ 50' – 51.5'	SILT (ML)	88

ATTERBERG LIMITS
(ASTM D4318)



SYMBOL	BORING NO.	SAMPLE NO.	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	SOIL DESCRIPTION (USCS)
●	B-1	B-1 @ 0.5' - 5'	46	20	26	Lean CLAY (CL)
■	B-1	B-1 @ 5' - 6.5'	65	23	42	Fat CLAY (CH)
▲	B-1	B-1 @ 10.5' - 11'	70	25	45	Fat CLAY (CH)
◆	B-1	B-1 @ 26' - 26.5'	NP	NP	NP	SILT (ML)
○	B-1	B-1 @ 30.5' - 31'	40	21	19	Lean CLAY (CL)
□	B-1	B-1 @ 35.5' - 36'	69	22	47	Fat CLAY (CH)
△	B-2	B-2 @ 15' - 16'	31	21	10	Lean CLAY (CL)
◇	B-3	B-3 @ 20' - 21.5'	68	23	45	Fat CLAY (CH)

__Notes:__ (1) Unified Soil Classification System (USCS) per ASTM D2487
(2) NP = Non-Plastic per ASTM D4318

GROUP DELTA

LABORATORY TEST RESULTS

Project No. SD732
FIGURE B-3

EXPANSION TEST RESULTS
(ASTM D4829)

SAMPLE	DESCRIPTION	EXPANSION INDEX
B-1 @ 0.5' – 5'	Lean CLAY (CL)	70
B-2 @ 0.5' – 5'	Lean CLAY (CL)	60
B-3 @ 0.5' – 5'	Lean CLAY (CL)	82

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 D512, ASTM D516, CTM 643)

SAMPLE	pH	RESISTIVITY [OHM-CM]	SULFATE CONTENT [%]	CHLORIDE CONTENT [%]
B-2 @ 0.5' – 5'	7.67	482	1.08	0.05
B-3 @ 0.5' – 5'	7.88	268	1.08	0.06

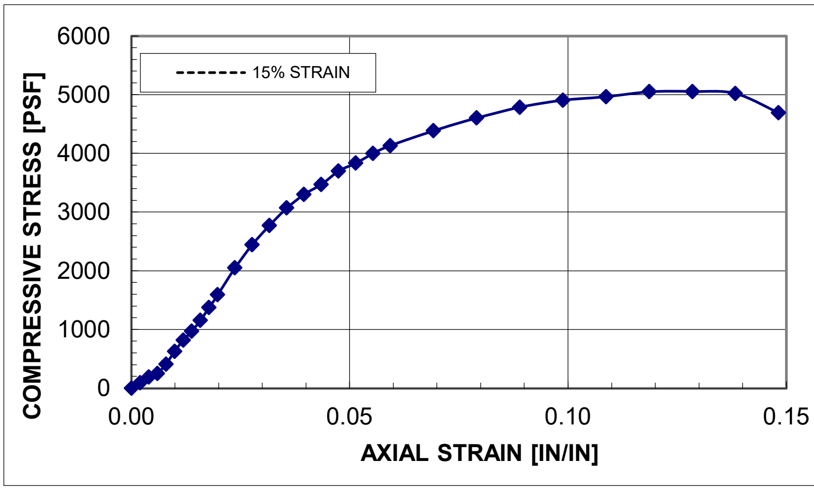
SULFATE CONTENT [%]	SULFATE EXPOSURE	CEMENT TYPE
0.00 to 0.10	Negligible	-
0.10 to 0.20	Moderate	II, IP(MS), IS(MS)
0.20 to 2.00	Severe	V
Above 2.00	Very Severe	V plus pozzolan

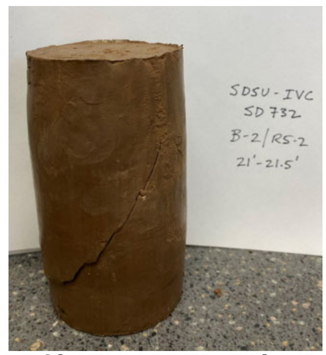
SOIL RESISTIVITY [OHM-CM]	GENERAL DEGREE OF CORROSIVITY TO FERROUS METALS
0 to 1,000	Very Corrosive
1,000 to 2,000	Corrosive
2,000 to 5,000	Moderately Corrosive
5,000 to 10,000	Mildly Corrosive
Above 10,000	Slightly Corrosive

CHLORIDE (Cl) CONTENT [%]	GENERAL DEGREE OF CORROSIVITY TO METALS
0.00 to 0.03	Negligible
0.03 to 0.15	Corrosive
Above 0.15	Severely Corrosive

PROJECT:	**SDSU IVC Student Residence Hall**	TEST METHOD:	**ASTM D2166**
SAMPLE I.D.:	**B-2 @ 21' - 21.5'**	TESTED BY:	**J. Krehbiel**
DESCRIPTION:	**Fat CLAY (CH)**	DATE:	**6/17/22**

TYPE OF SAMPLE	CAL	
WET WT. OF SAMPLE	725.26	[g]
INITIAL DIAM.	2.4	[in]
INITIAL HEIGHT	5.060	[in]
INITIAL AREA	4.524	[in^2]
INITIAL VOLUME	22.89	[in^3]
WET DENSITY	120.7	[pcf]
DRY WT. OF SAMPLE	561.16	[g]
WEIGHT OF WATER	164.1	[g]
INITIAL TOTAL MOISTURE	29.2	[%]
DRY DENSITY	93.4	[pcf]
L-D RATIO	2.1:1	
STRAIN RATE	1.21	[%/min]
STRAIN AT FAILURE	12.85	[%]
STRAIN AT FAILURE	0.650	[in]
15% STRAIN	0.759	[in]
FAILURE CRITERIA:	Yield	
COMP. STRENGTH:	5054	[psf]
SHEAR STRENGTH:	2527	[psf]
SPEC. GRAVITY (Assumed)	2.85	
SATURATION:	92	[%]
FAILURE MODE:	Plastic	





SPECIMEN AFTER FAILURE

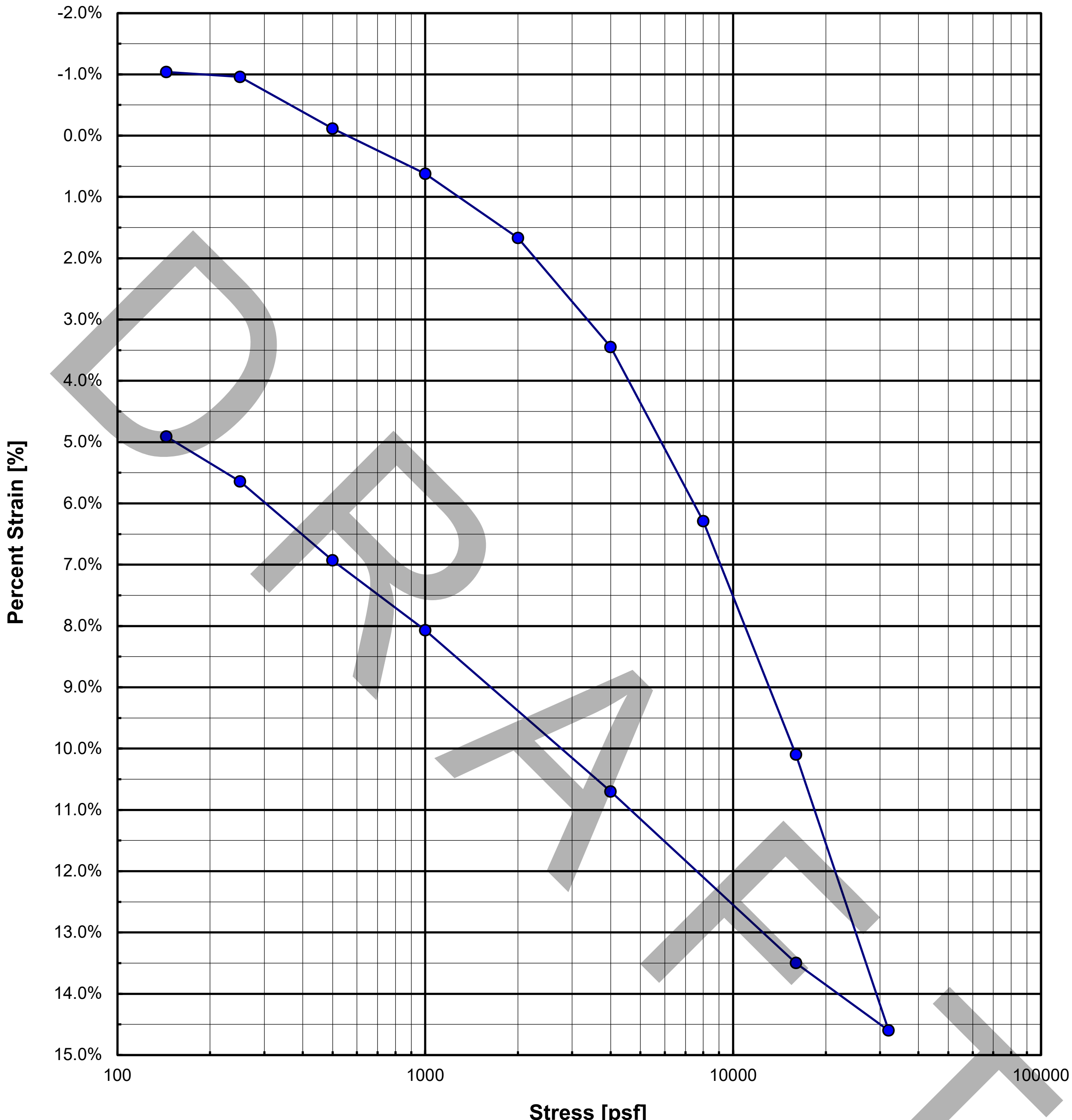
Elapsed Time [min]	Axial Load [lb]	Strain Dial [in]	Total Deformation [in]	Axial Strain [in/in]	Corrected Area [in^2]	Stress [psf]
0.0	0.0	1.000	0.000	0.000	4.52	0.0
0.2	3.0	0.990	0.010	0.002	4.53	95.3
0.3	6.0	0.980	0.020	0.004	4.54	190.2
0.6	13.0	0.960	0.040	0.008	4.56	410.5
0.8	20.0	0.950	0.050	0.010	4.57	630.3
1.0	26.0	0.940	0.060	0.012	4.58	817.8
1.5	44.0	0.910	0.090	0.018	4.61	1375.7
1.6	51.0	0.900	0.100	0.020	4.62	1591.3
1.9	66.0	0.880	0.120	0.024	4.63	2051.0
2.3	79.0	0.860	0.140	0.028	4.65	2445.1
2.6	90.0	0.840	0.160	0.032	4.67	2774.2
2.9	100.0	0.820	0.180	0.036	4.69	3069.9
3.3	108.0	0.800	0.200	0.040	4.71	3301.9
3.6	114.0	0.780	0.220	0.043	4.73	3471.0
3.9	122.0	0.760	0.240	0.047	4.75	3699.2
4.2	127.0	0.740	0.260	0.051	4.77	3834.8
4.6	133.0	0.720	0.280	0.055	4.79	3999.3
4.9	138.0	0.700	0.300	0.059	4.81	4132.2
5.7	148.0	0.650	0.350	0.069	4.86	4385.1
6.5	157.0	0.600	0.400	0.079	4.91	4602.4

GROUP DELTA

UNCONFINED COMPRESSIVE STRENGTH

Project No. SD732

FIGURE B-6



B-1, R-5 @ 21 - 21.5'

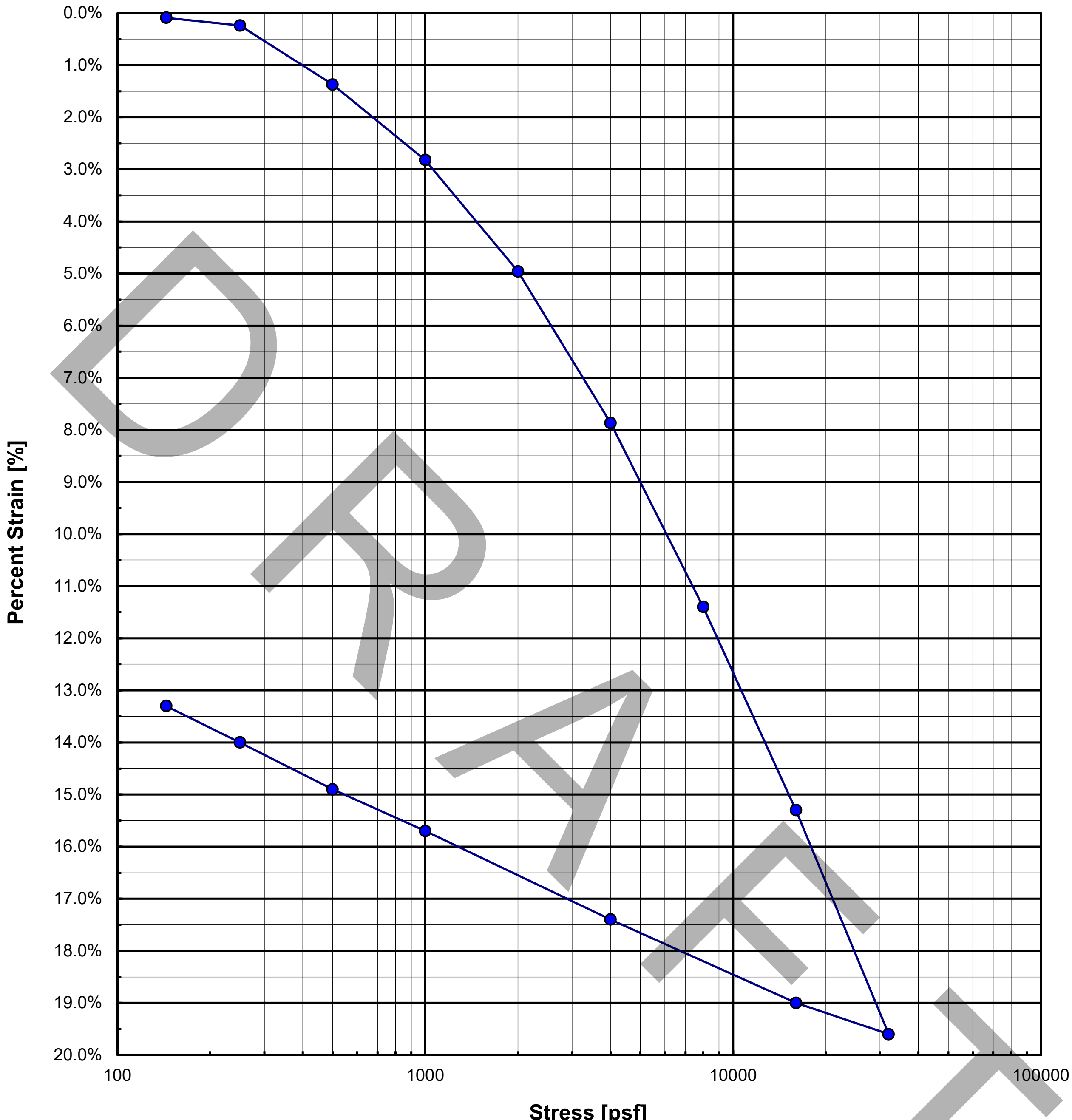
INITIAL	FINAL	
1.0000	0.9509	SAMPLE HEIGHT [IN]
89.0	93.6	DRY DENSITY [PCF]
2.79	2.79	SPECIFIC GRAVITY (ASSUMED)
0.97	0.86	VOID RATIO (e)
32.9	30.8	WATER CONTENT [%]
94.2	100.0	DEGREE OF SATURATION [%]

GROUP DELTA

CONSOLIDATION RESULTS

Project No. SD732

FIGURE B-7.1



B-1, R-7-2 @ 31' - 31.5'

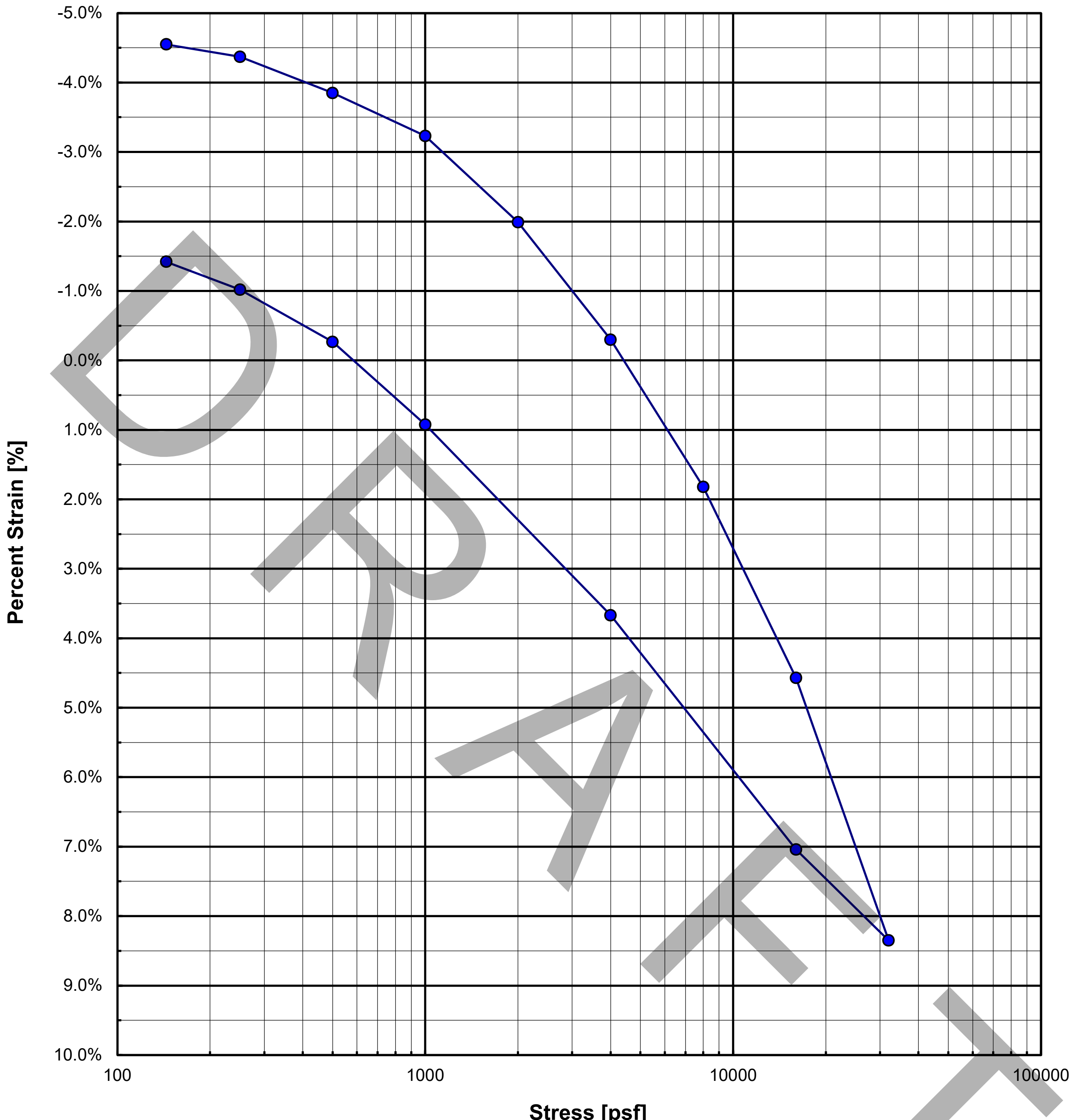
INITIAL	FINAL	
1.0000	0.8670	SAMPLE HEIGHT [IN]
91.8	105.8	DRY DENSITY [PCF]
2.77	2.77	SPECIFIC GRAVITY (ASSUMED)
0.88	0.63	VOID RATIO (e)
31.6	22.9	WATER CONTENT [%]
99.0	100.0	DEGREE OF SATURATION [%]

GROUP DELTA

CONSOLIDATION RESULTS

Project No. SD732

FIGURE B-7.2



B-1, R-8-2 @ 36 - 36.5'

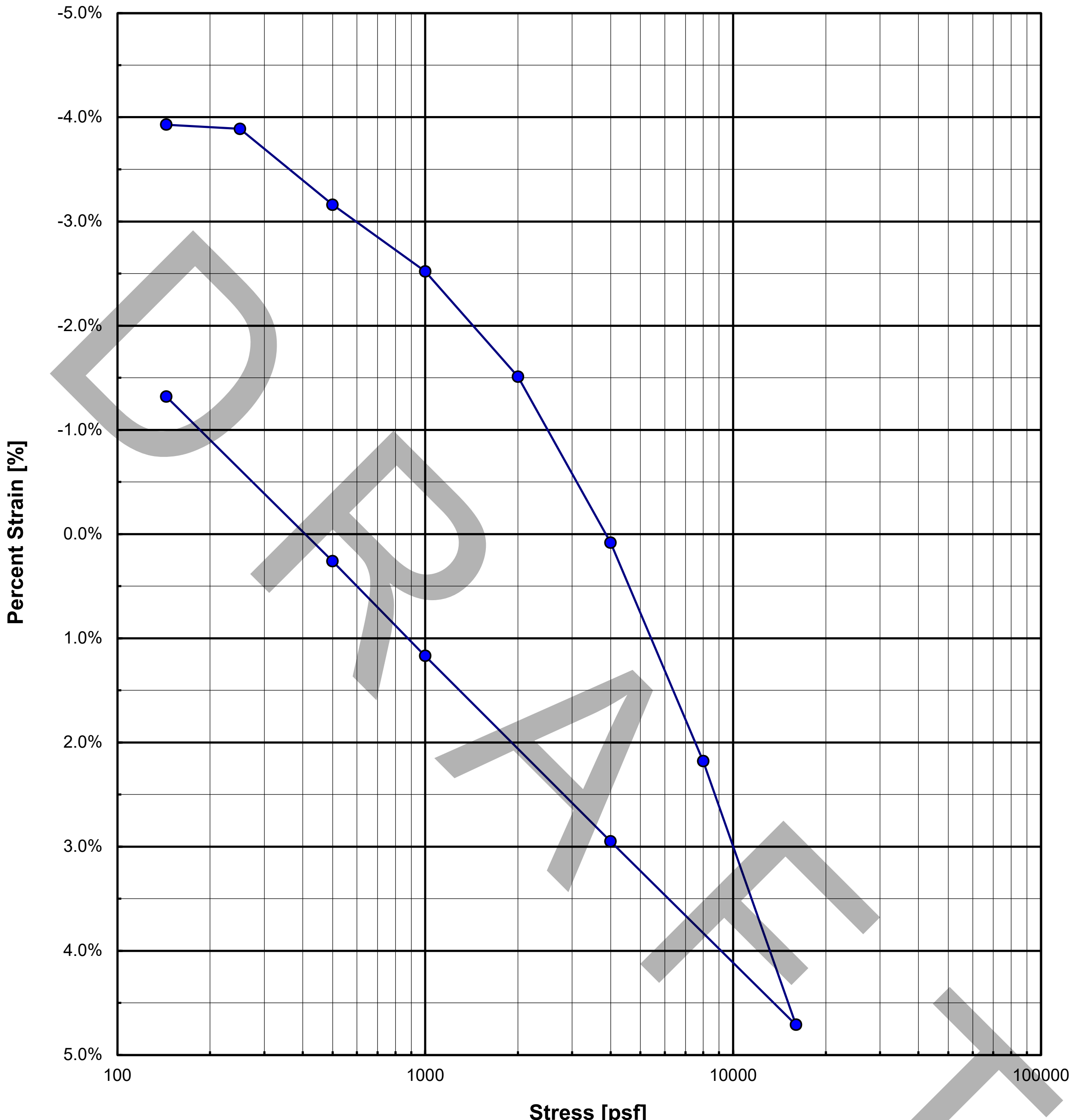
INITIAL	FINAL	
1.0000	1.0142	SAMPLE HEIGHT [IN]
96.8	95.4	DRY DENSITY [PCF]
2.83	2.83	SPECIFIC GRAVITY (ASSUMED)
0.91	0.85	VOID RATIO (e)
27.9	30.1	WATER CONTENT [%]
86.7	100.0	DEGREE OF SATURATION [%]

GROUP DELTA

CONSOLIDATION RESULTS

Project No. SD732

FIGURE B-7.3



B-2, R-3 @ 11 - 11.5'

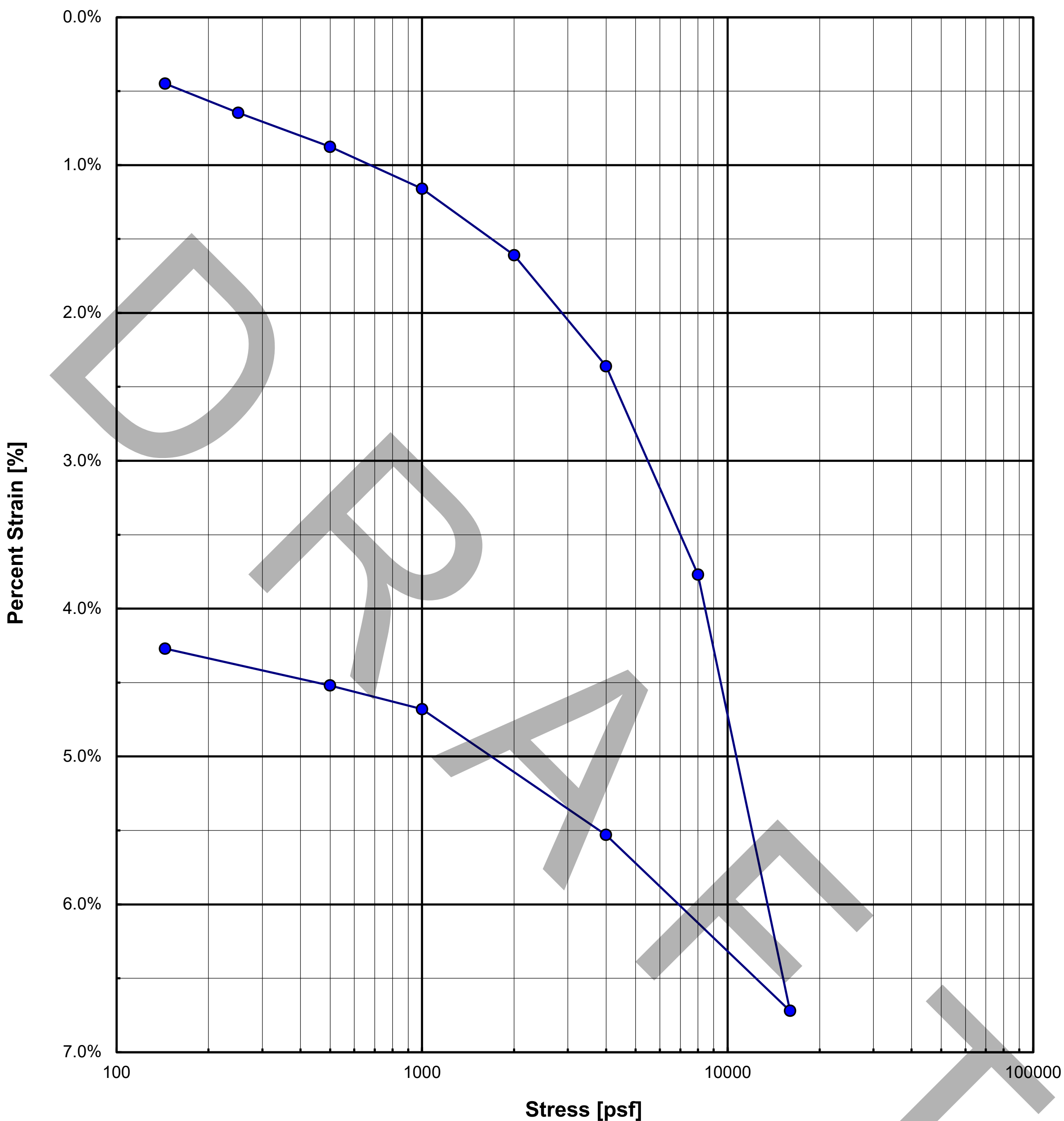
INITIAL	FINAL	
1.0000	1.0132	SAMPLE HEIGHT [IN]
101.0	99.7	DRY DENSITY [PCF]
2.84	2.84	SPECIFIC GRAVITY (ASSUMED)
0.83	0.78	VOID RATIO (e)
24.4	27.5	WATER CONTENT [%]
83.7	100.0	DEGREE OF SATURATION [%]

GROUP DELTA

CONSOLIDATION RESULTS

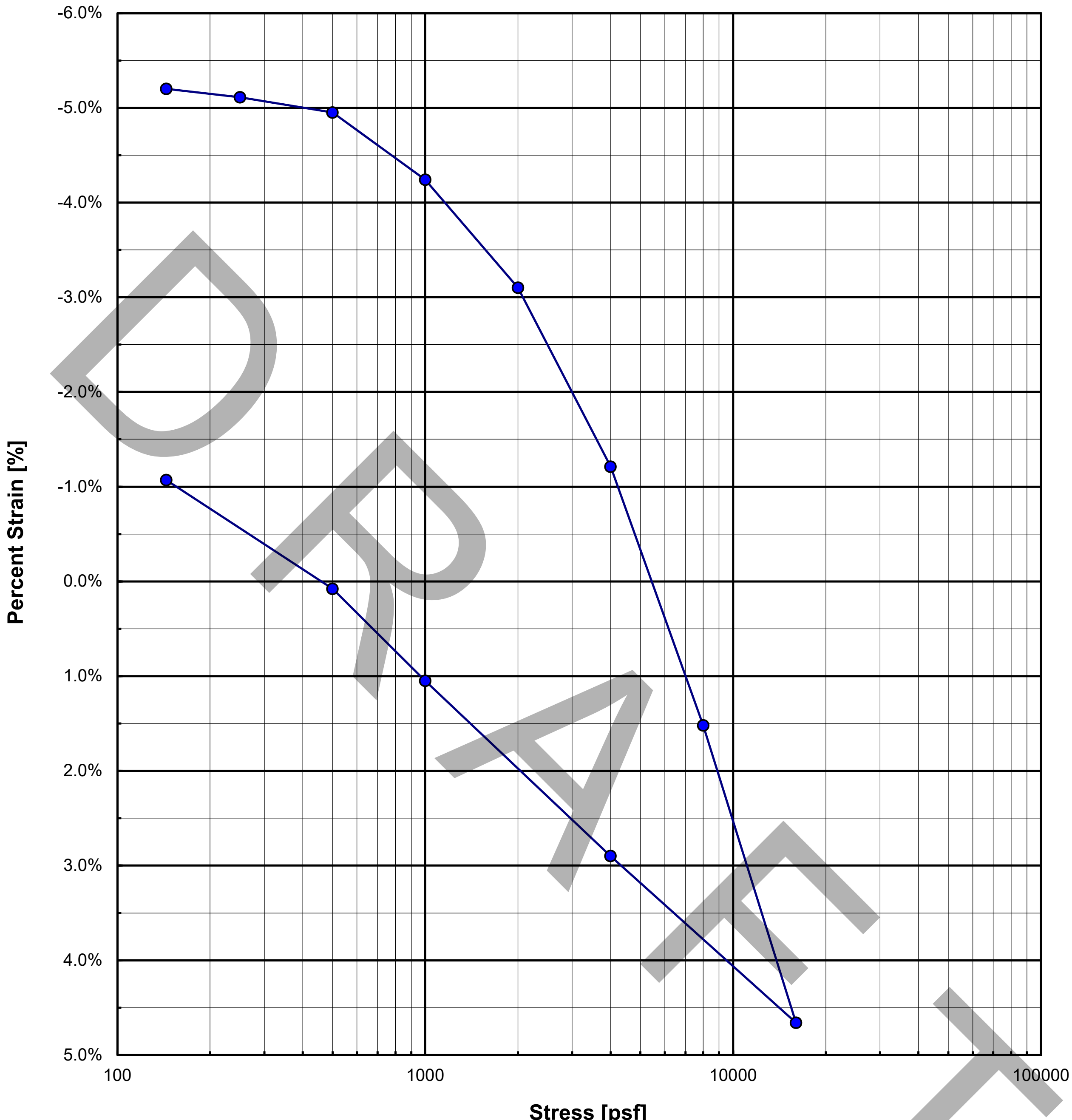
Project No. SD732

FIGURE B-7.4



B-3, R-2-2 @ 6-6.5'

INITIAL	FINAL	
1.0000	0.9573	SAMPLE HEIGHT [IN]
95.6	99.8	DRY DENSITY [PCF]
2.80	2.80	SPECIFIC GRAVITY (ASSUMED)
0.82	0.75	VOID RATIO (e)
19.8	18.9	WATER CONTENT [%]
67.5	70.6	DEGREE OF SATURATION [%]



B-3, R-2-2 @ 6-6.5'

INITIAL	FINAL	
1.0000	1.0107	SAMPLE HEIGHT [IN]
95.8	94.8	DRY DENSITY [PCF]
2.63	2.63	SPECIFIC GRAVITY (ASSUMED)
0.81	0.73	VOID RATIO (e)
20.9	27.9	WATER CONTENT [%]
68.5	100.0	DEGREE OF SATURATION [%]

GROUP DELTA

CONSOLIDATION RESULTS

Project No. SD732

FIGURE B-7.6

Attachment C

Confidential SDNHM Paleontological Records Search Results

Appendix G

Transportation Assessment

TRANSPORTATION TECHNICAL MEMORANDUM

To:	Kara Peterson, San Diego State University
From:	Sabita Tewani, AICP, PTP, Dudek
Subject:	SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project – Transportation Assessment
Date:	December 12, 2024
cc:	Sarah Lozano, Mollie Brogdon, Dennis Pascua, Dudek; Michael Haberkorn, Gatzke Dillon & Ballance
Attachments	A – Figures B – Traffic Impact Assessment SDSU Imperial Valley Campus Calexico, California, March 2002

This technical memorandum presents an analysis of the potential transportation-related impacts associated with construction and development of the proposed San Diego State University (SDSU) Calexico Affordable Student Housing Project (Project or proposed Project), to be located at the SDSU Imperial Valley Off-Campus Center, located in Calexico, California. The analysis of potential transportation-related impacts presented here was conducted pursuant to and consistent with the requirements of the California Environmental Quality Act (CEQA), Public Resources Code section 21000, et seq. and the CEQA Guidelines, Appendix G.

1 Project Overview and Background

In September 2003, the California State University (CSU) certified an environmental impact report for the SDSU Imperial Valley Master Plan Project (State Clearinghouse No. 2002051010) and approved a Campus Master Plan for the expansion and improvement of the SDSU Imperial Valley Off-Campus Center, which includes locations in Calexico and Brawley, both located in Imperial County (SDSU 2003). The Off-Campus Center is an extension of SDSU's main campus in San Diego and furthers the University's regional educational mission to provide additional educational opportunities to the outlying communities of Imperial County. The previously certified and approved Campus Master Plan and EIR provided the authorization necessary for enrollment of 850 full-time equivalent (FTE)[1] students at the Off-Campus Center, corresponding associated faculty and staff, and a framework for development of the facilities necessary to serve this projected enrollment and campus population.

The Off-Campus Center - Calexico is approximately 8.3 acres in size and is located in the City of Calexico (City). Most of the Calexico location is built out, consisting of several educational and support facilities. The environmental impacts associated with development of the Off-Campus Center – Calexico were evaluated at a program level of review in the 2003 EIR. In the CSU's continuing effort to build out the Imperial Valley Off-Campus Center and provide additional educational opportunities, SDSU presently proposes construction and operation of a four-building

1 A full-time equivalent (FTE) student is one full-time student taking 15 course credits, or 3 part-time students each taking 5 course credits.

complex that would provide affordable student housing at the Calexico location for 80 students and a resident manager. Additional details regarding the proposed housing is provided below.

2 Project Location and Existing Conditions

The Off-Campus Center – Calexico is located at 720 Heber Avenue in downtown Calexico, approximately 0.5 miles north of the United States–Mexico border (see Figure 1, Regional Map). Regional access to the Off-Campus Center is provided via SR-111 and SR-98 to the north. The Calexico location is bordered by four streets: Heber Avenue to the west, Sherman Street to the north, Blair Avenue to the east, and 7th Street to the south. Residential uses bound the Calexico complex to the north, east, south, and west. Other surrounding uses include Calexico High School, located northeast, and Calexico City Hall, located immediately south. The Off-Campus Center - Calexico currently consists of 17 buildings and an associated surface parking lot (see Figure 2, Vicinity Map, and Figure 3A, Existing Campus Master Plan).

As a state entity, the CSU/SDSU is not subject to local government plans, regulations, and guidelines, such as those contained in the City's General Plan. The above notwithstanding, for information purposes, the Off-Campus Center - Calexico is zoned as Open Space and is designated as Public Facilities in the City's General Plan (City of Calexico 2015a).

The proposed Project site is approximately 0.58 acres in size (25,320 square feet) and is located at the southeast corner of the campus, at the northwest corner of East 7th Street and Blair Avenue (see Figure 2). The entirety of the Project site has previously been graded and is relatively flat in nature, with an average elevation of 3.5 feet above mean sea level. The Project site encompasses the locations identified in the Campus Master Plan as future Building 21 (see Figure 3A and Figure 3B, Proposed Campus Master Plan). The Project site consists of vacant and undeveloped land with two trees located along the northern boundary of the site. A chain-link fence separates the Project site from the recently removed temporary Campus Buildings 201, which were located immediately west of the Project site.

3 Project Description

3.1 Affordable Student Housing Complex

The proposed Project would involve the construction of a single-story, four-building complex approximately 12,840 square feet in size that would provide for affordable student housing. The complex would include three student housing buildings, including one smaller live-in unit building, and a community building. Two of the three proposed residential buildings would each be approximately 5,500 square feet in size and would include five four-bedroom, two-bathroom apartment units, totaling 40 student beds per building (two student beds per bedroom, 80 student beds in total). The third proposed residential building would be a live-in manager unit that would consist of a single two-bedroom, one-bathroom apartment. The proposed live-in unit would also include approximately 100 square feet of office space that is intended to provide a space for tenant meetings, social services, or counseling. All apartment units would also be equipped with a living area and kitchen. The proposed community building program would be approximately 840 square feet and include laundry, mail, restroom, electrical, and maintenance facilities. The mail room would be located outside, under the shaded amenity patio of the community building (see Table 1).

Table 1. Affordable Student Housing Complex Area Calculations

	Quantity	Area (Square Feet)	Beds
Residential Buildings (3)			
4-Bedroom, 8-Bed Unit	5	5,150	40
4-Bedroom, 8-Bed Unit	5	5,150	40
Live-In Unit	1	1,000	2
Office (Included in Live-In Unit)	N/A	N/A	N/A
Subtotal	*11*	*11,300*	*82*
Community Building (1)			
Laundry Room	1	300	N/A
Service Rooms	4	450	N/A
Restroom	2	100	N/A
Mail/Package (Outside)	1	270	N/A
Subtotal	*N/A*	*1,150*	*N/A*
Other			
Trash/Recycling Enclosure	1	850	N/A
Open Space	N/A	2,300	N/A
Landscaping/hardscaping	N/A	12,500	N/A
Subtotal	*N/A*	*13,650*	*N/A*
Combined Total	**N/A**	**26,100**	**82**

Note: N/A = not applicable.
All square foot amounts presented in the table are approximate amounts only and may not add to the site plan area totals described in this document due to rounding.

Other on-site proposed amenities include a courtyard, bike racks, and a community waste enclosure. The courtyard would be approximately 1,600 square feet and would be centrally located in the proposed complex (see Figure 4, Site Plan). Approximately 15 bike racks would be provided throughout the Project site. A community waste enclosure at the northeast corner of the Project site would allow residents a convenient place to dispose of waste and recyclables.

3.1.1 Operation

The Off-Campus Center - Calexico, including the Project site, is owned and operated by the CSU/SDSU. The CSU Board of Trustees, on behalf of SDSU, is the lead agency responsible for certifying the adequacy and completeness of this document and approval of the proposed Project. SDSU and the IVCCD have received joint funding under the State of California Higher Education Student Housing Grant Program to construct the proposed Project.

To support basic housing needs for students in the Imperial Valley, SDSU and IVCCD have executed a 30-year master lease agreement that details operation of the Project. This agreement dictates that 40 of the 82 proposed student beds would be reserved for IVCCD students who attend the Imperial Valley College in Imperial. Likewise, 40 of the proposed 82 beds, would be reserved for SDSU Off-Campus Center - Calexico students. A 2-bedroom unit would also provide living space for on-site management. SDSU would be responsible for operating, managing, and maintaining the proposed Project once operational.

Student beds made available under the proposed Project would be leased/rented to eligible low-income students. Eligible low-income students are defined as having 30% of 50% of the Annual Median Income for Imperial County. In the event, after a good faith outreach effort, there is not sufficient demand from students meeting the eligibility requirements within 90 days of the start of the fall semester, unassigned beds may be leased at market rates to SDSU and IVCCD students not meeting the low-income eligibility requirements. In addition to meeting the low-income criteria, eligible students would be required to be enrolled students and take a minimum average of 12 degree-applicable units per semester term, or the quarterly equivalent (with exceptions permitted), to facilitate timely degree completion.

3.1.2 Other Project Elements

Building and Site Design

The proposed buildings have been designed to reflect the character and massing of the existing Off-Campus Center - Calexico, as well as the surrounding neighborhood. Building design is centered around a courtyard-style housing complex and would consist of smooth stucco walls with downspouts and rafters, punctuated by composite terra cotta–colored roof tile accents and windows. Maximum building heights would range from 14 feet to 18 feet.

Landscaping, Other Site Improvements, and Lighting

The Project would include approximately 16,000 square feet of on-site landscaping and hardscape improvements (i.e., pedestrian walkways). All proposed landscaping would consist of drought-tolerant, indigenous plants. The landscape scheme would include shrubs, hedges, and a variety of trees. A total of 39 trees would be added to the Project site including five fan palms, eight mesquite trees, six evergreen elms, and 20 yucca trees.

All exterior on-site lighting would be hooded or shielded, directed downward, and would be compliant with applicable standards for lighting control and light pollution reduction (i.e., Title 24, American National Standards Institute/Illuminating Engineering Society).

The proposed complex would be secured via an iron security fence that would measure 6 feet in height and run approximately 64 linear feet, connecting to the proposed buildings. Access to the complex would only be available to residents and their guests via two pedestrian gates located at the northwestern corner and southern portion of the proposed complex. The gates would be equipped with security card access for residents.

Utilities and Public Services

New points of connection for domestic water, fire supply water, sewer, storm drainage and electrical connections from existing utility lines would be required to serve the proposed Project. Potable water service, as well as sewer collection services at the Project site, would be provided by the City. The Project would connect to an existing sanitary sewer maintenance access line located in Blair Avenue via new 6-inch mains. Connections for water (including domestic, fire, and irrigation) would be from an existing water main located in Blair Avenue. Distribution water pipes would be extended underground to serve each proposed building. A new water meter would be located in the proposed maintenance room in the community building. Adequate water treatment capacity and supply and sewer treatment capacity exists within the City's water and sewer system to accommodate the Project; therefore, no capacity upgrades to infrastructure would be necessary.

Stormwater drainage includes two stormwater catch basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated immediately east of the existing chain-link fence at the western boundary of the Project site. The proposed catch basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to stormwater discharge into the City's stormwater system via one new storm drain located in the southeast corner of the Project site.

Electrical services within the Project area are provided by Imperial Irrigation District, which provides electric power to over 158,000 customers in the Imperial Valley in addition to areas of Riverside and San Diego counties (IID 2024). New utility connections and infrastructure would be required to support electrical services on site. The Project would connect to on-site electrical power infrastructure via an existing 12kV, three phase, three wire, 60 Hertz overhead line routed along East 7th Street. No natural gas usage is proposed for the Project.

The Project would require a new point of connection for on-site telecommunications and would connect to the existing AT&T communications via the on-campus minimum point of entry.

Access, Circulation, and Parking

Regional access to the Project site is provided via SR-111 and SR-98 to the north. Local access is provided via Blair Avenue and East 7th Street. Parking to the Project site is available in the existing campus parking lot, immediately north of the Project site, which has sufficient capacity to serve the proposed Project. On-site circulation improvements would consist of additional paved pathway/pedestrian walkway features throughout the proposed complex and along the northern boundary of the Project site (see Figure 4). Emergency access would be provided directly adjacent to the Project site on East 7th Street and Blair Avenue.

3.1.3 Design Standards and Energy Efficiency

In May 2014, the CSU Board of Trustees broadened the application of sustainable practices to all areas of the university by adopting the first systemwide sustainability policy, which applies sustainable principles across all areas of university operations, including facility operations and utility management. In May 2024, the CSU Sustainability Policy was updated to expand on existing sustainability goals (CSU 2024). The CSU Sustainability Policy seeks to integrate sustainability into all facets of the CSU, including academics, facility operations, the built environment, and student life (CSU 2018). Relatedly, the state has also strengthened energy-efficiency requirements in the California Green Building Standards Code (Title 24 of the California Code of Regulations).

As a result, all CSU new construction, remodeling, renovation, and repair projects, including the proposed Project, would be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable state energy codes and regulations. Progress submittals during design are monitored for individual envelope, indoor lighting, and mechanical system performances. In compliance with these goals, the proposed Project would be equipped with solar ready design features that would facilitate and optimize the future installation of a solar photovoltaic (PV) system.

3.1.4 Off-Site Improvements

Off-site improvements would include the resurfacing of a portion of Blair Avenue adjacent to the eastern boundary of the Project site that would be disturbed as a result of trenching to make necessary connections to the existing

water main and sanitary sewer maintenance access. Any area disturbed as a result of this connection within Blair Avenue would be resurfaced to existing conditions. All off-site improvements would occur within the Blair Avenue right-of-way.

3.1.5 Construction

Construction would be performed by qualified contractors. Plans and specifications would incorporate stipulations regarding standard CSU/SDSU requirements and acceptable construction practices, such as those set forth in the SDSU Stormwater Management Plan, CSU Seismic Policy, The CSU Office of the Chancellor Guidelines, and the CSU Sustainability Policy, regarding grading and demolition, safety measures, vehicle operation and maintenance, excavation stability, erosion control, drainage alteration, groundwater disposal, public safety, and dust control.

Construction Timeline

Construction of the proposed Project would take approximately 17 months to complete and is estimated to begin as early as January 2025 and be completed by May 2026, with occupancy planned for fall 2026. Construction activities would generally occur Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m., with the potential for weekend construction on Saturday between 9:00 a.m. and 5:00 p.m. No construction would occur on Sundays or holidays or at night.

Construction Activities

A construction mobilization or staging area would be located immediately northeast of the proposed Project site and would occupy approximately 8,000 square feet. The area would be located east of existing Campus Building 6, west of Blair Avenue, and south of the existing parking lot (see Figure 2 and Figure 3A). To accommodate use of this area, four trees would be removed.

Construction would include site preparation, grading and excavation, utility installation/trenching, building foundation pouring, building construction, and landscaping. Excavation depths are anticipated to be 3 feet below grade. The majority of waste (i.e., excavated gravel/soil) generated during Project construction would be balanced/used within the site. Approximately 2,600 cubic yards of soil would be removed from the site and exported to Republic Services Allied Imperial Landfill, approximately 12 miles north. The entire Project site, including construction mobilization area (approximately 34,000 square feet in total) would be disturbed as a result of Project construction. Two trees would be removed from the Project site to accommodate the proposed Project.

Table 2 displays the construction equipment anticipated to be used during construction.

Table 2. Anticipated Construction Equipment

Aerial Lifts	Pressure Washers
Air Compressors	Pumps
Cement and Mortar Mixers	Rollers
Concrete/Industrial Saws	Rough Terrain Forklifts
Dumpers/Tenders	Rubber-Tired Dozers
Excavators	Rubber-Tired Loaders
Forklifts	Scrapers

Table 2. Anticipated Construction Equipment

Generator Sets	Signal Boards
Graders	Skid Steer Loaders
Off-Highway Tractors	Surfacing Equipment
Off-Highway Trucks	Sweepers/Scrubbers
Other Construction Equipment	Tractors/Loaders/Backhoes
Other General Industrial Equipment	Trenchers
Other Material Handling Equipment	Welders
Plate Compactors	

Source: Dorsey and Nielson Construction Inc, pers. comm., 2024

Construction Waste

The Project would generate construction debris during on-site clearing activities. In accordance with Section 5.408 of the California Green Building Standards Code, the Project would implement a construction waste management plan for recycling and/or salvaging for reuse of at least 65% of nonhazardous construction/demolition debris. Additionally, the Project would be required to meet Leadership in Energy and Environmental Design v4 requirements for waste reduction during construction. Solid waste generated during construction would be hauled off site to the Republic Services Allied Imperial Landfill at 104 East Robinson Road in Imperial, California.

4 2003 Campus Master Plan Environmental Impact Report Traffic Impact Analysis

A summary of the traffic impact assessment (TIA) presented in the 2003 EIR in support of the approved Campus Master Plan (SDSU Imperial Valley Off-Campus Center - Calexico) is presented below.

In 2002, Linscott, Law and Greenspan prepared a TIA pursuant to the requirements of CEQA for the then-proposed SDSU Imperial Valley Off-Campus Center in Calexico. The Off-Campus Center – Calexico is located east of SR-111, bounded by Sherman Street to the north, 7th Street to the south, Heber Avenue to the west, and Blair Avenue to the east within the City of Calexico. The TIA analyzed the potential transportation-related impacts associated with development of the campus, including an FTE student increase from 500 to 850. The project analyzed in the TIA included the replacement of portable buildings with permanent buildings and the expansion of the existing campus. The complete study, Traffic Impact Assessment SDSU Imperial Valley Campus, Calexico, California (March 2002, Linscott, Law and Greenspan), is attached to this memorandum as Attachment B.

Table 1 of the TIA (Attachment B) shows that the SDSU Off-Campus Center – Calexico at buildout, with a net increase of 350 FTE students, would generate 830 average daily trips, with 70 AM peak hour trips and 75 PM peak hour trips. Linscott, Law and Greenspan used the Institute of Transportation Engineers (5th Edition) trip rates to calculate the number of daily and peak hour trips that would be generated by the SDSU Off-Campus Center – Calexico at buildout.

The study area analyzed in the TIA included the following three unsignalized intersections (see TIA Table 2, Attachment B).

1. Heber Street/7th Street

2. Heber Street/Sherman Street
3. Sherman Street/Blair Avenue

All the intersections were calculated to operate at acceptable level of service C or better under Existing and Existing plus Project conditions. The analysis presented in the TIA concluded that the SDSU Off-Campus Center – Calexico, with a net increase in enrollment from 500 to 850 FTE students, would not result in significant impacts to traffic and no mitigation measures were required (Attachment B).

5 Analysis Methodology

The proposed Project would not increase the SDSU Imperial Valley student enrollment at the SDSU Off-Campus Center – Calexico beyond the previously analyzed and approved capacity of 850 FTE students analyzed in the 2003 EIR for SDSU Imperial Valley Master Plan Project (SCH No. 2002051010). The environmental impacts associated with enrollment of 850 FTE students, including transportation-related impacts, were analyzed in the 2003 EIR, and, therefore, the traffic-related impacts associated with the 40 SDSU Off-Campus Center – Calexico students who would live in the proposed student housing were previously analyzed, and, as a result, no further analysis is necessary. In fact, the 2003 analysis was premised on all students commuting to school, rather than students living on campus, where they would generate fewer vehicle trips and, therefore, the prior 2003 analysis effectively overstates the vehicle trips that would be generated by the students.

Impacts associated with the 40 Imperial Valley College students who would reside in the proposed housing, including transportation-related impacts, have not been previously analyzed. For the 40 Imperial Valley College students, the focus of transportation analysis is now on vehicle miles traveled (VMT) rather than the previous criteria of level of service or vehicle delay, as a result of passage of Senate Bill 743. In furtherance of SB 743, and consistent with the state Office of Planning and Research (OPR) Technical Advisory (OPR 2018), the CSU prepared a Transportation Impact Study Manual (TISM) to provide each campus within the system with implementation tools necessary to adopt analysis methodology, impact thresholds, and mitigation approaches for VMT analysis (CSU 2019).

An analysis of transportation-related impacts specific to the proposed Project per Appendix G of the CEQA Guidelines, including VMT analysis, is provided below.

8 Transportation Impacts Assessment

8.1 Transportation Impact Analysis and Conclusions

8.1.1 Thresholds of Significance

The criteria used to evaluate the Project impacts to transportation are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). For the purposes of this transportation, a significant impact would occur if the Project would:

a) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

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

d) Result in inadequate emergency access.

8.1.2 Impact Analysis

The TIA prepared for the 2003 EIR determined that there would be no significant transportation impacts as a result of development of the SDSU Imperial Valley Off-Campus Center Master Plan - Calexico. The TIA concluded that there would be no construction-related impacts or Project-related impacts during operation. As such, no transportation mitigation measures were required or identified in the 2003 EIR.

The analysis presented here is based on the CEQA Guidelines Appendix G criteria specific to Transportation.

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

The proposed Project would be constructed and developed consistent with the previously approved 2003 Campus Master Plan, which is the governing document regulating development on the SDSU Calexico campus. The Project would be built generally on the site of Future Building 21, as shown on the approved Campus Master Plan (see Figure 3a). The proposed Project does not include any modifications to the City's circulation system, including transit, roadway, bicycle, or pedestrian facilities, outside the campus boundaries.

While the Project falls under the purview of the CSU and would not directly affect the City's circulation element, the Project would not preclude implementation of any City related goals and policies. Additionally, it would provide Calexico students easy access to the SDSU Off-Campus Center – Calexico and reduce the need for vehicular trips, as well as facilitate use of alternative modes such as walking and biking.

The proposed Project would not conflict with the existing transit system. Near the proposed Project, Imperial Valley Transit (IVT) Route 1 N runs north-south and serves the Imperial Avenue Corridor from Calexico to El Centro and has a stop at Encinitas and 7th Avenue. Route 1 N operates weekdays and weekends. IVT Route 21 also runs north-south on the Imperial Avenue Corridor between Calexico and Imperial Valley College. Route 21 operates during the academic calendar of Imperial Valley College. The nearest bus stops (for Route 1N and 21) are located at Encinitas Avenue and 7th Street, approximately 0.2 miles from the Project site. Construction of the proposed Project would not affect existing and planned transit operations.

As to pedestrian and bicycle facilities, there are existing sidewalks along both sides of Blair Avenue and East 7th Street adjacent to the Project site. There are no Class II marked bike facilities along roadways near the proposed Project. The Project would use existing driveways along Sherman Street to access the complex and would not impede the function of any existing campus or City pedestrian or bicycle facilities and, in fact, would facilitate bicycle travel by providing 15 bike racks as part of the Project.

Any transportation-related improvements constructed as part of the proposed Project would be constructed on site and would be consistent with the Campus Master Plan and any applicable CSU policies. Moreover, the Project would not preclude implementation of any City plans or policies regarding existing or proposed roadways or bicycle or pedestrian facilities in the area. As such, the Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, and impacts would be **less than significant.**

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

CEQA Guidelines Section 15064.3(b) focuses on VMT for determining the significance of transportation impacts. The Guidelines define VMT as “the amount and distance of automobile travel attributable to a project.” “Automobile” refers to on-road passenger vehicles, specifically cars and light trucks. The Governor’s Office of Planning and Research (OPR) has clarified in its Technical Advisory (OPR 2018) that heavy-duty truck VMT is not required to be included in the estimation of a project’s VMT.

The Project proposes a total of 82 beds, including 40 affordable housing student beds for students of the SDSU Off-Campus Center – Calexico, 40 student beds for students of the Imperial Valley College, and a two bedroom live-in manager unit. VMT-related impacts attributable to the SDSU Calexico Students and the Imperial Valley College students are each addressed separately below.

SDSU Calexico Off-Campus Center Students

With respect to the 40 student beds that would be occupied by students of the SDSU Off-Campus Center – Calexico, as previously noted, vehicle trips associated with these students were previously analyzed in the 2003 EIR, and, therefore, no further analysis of traffic impacts associated with these students is required under CEQA. Moreover, for information purposes, we note that per the CSU Transportation Impact Study Manual, on-campus housing serving students, faculty, and staff (i.e., new resident advisor) is included in the list of projects screened from required project-level VMT assessment such that no further analysis is necessary. This is because those students attending the SDSU Off-Campus Center – Calexico would not generate daily vehicular trips commuting back and forth to school because they would be residing on-campus. Further, rather than adding VMT to the roadway network, if some of these students previously commuted to school, their associated vehicular trips would now be eliminated, thereby reducing VMT.

It is also important to note that the proposed Project would be restricted as affordable housing, and, therefore, offered only to students of families of very low- or low-income. As such, and consistent with relevant data, it is anticipated that there would be a low rate of car ownership among students, further resulting in reduced trips and related VMT. While some new trips for the purposes of shopping or recreation would occur, based on typical student practice and finances, it is reasonable to assume that students would carpool, bike, or use transit, thereby further reducing VMT.

In conclusion, any vehicle trips that would be generated by the 40 SDSU Off-Campus Center – Calexico students were previously accounted for and analyzed in the 2003 EIR and no further analysis is necessary. Further, even assuming VMT analysis was required, there would be nominal new student trips and related VMT generated by the 40 SDSU students and one SDSU staff occupying the proposed Project beds. Additionally, since the Project includes affordable housing that would serve existing and new students included in the FTE analyzed in the 2003 EIR, the Project is presumed to be consistent with the Regional Transportation Plan. Therefore, impacts related to VMT generated by SDSU students would be **less than significant.**

Imperial Valley College Students

As to the 40 student beds that would be occupied by Imperial Valley College students, these students would commute to the Imperial Valley College site from the proposed Project site and would generate new vehicle trips at the Project site. The Imperial Valley College is approximately 11.5 miles from the site of the proposed Project at the SDSU Off-Campus Center – Calexico. However, when considering both vehicle trips and VMT, it is noted that these Imperial Valley College students are already generating existing trips and VMT by commuting from their homes in nearby Imperial and El Centro, as well as other parts of Imperial County to attend the community college. Therefore, these students would not be generating new trips but, instead, would generate the same number of trips but with a different origin. Also to be considered is the increased likelihood that students would carpool back and forth to the community college since they would now be living in the same residence. Therefore, at the County or regional level, in Dudek's professional judgment the net change in trip length would not be substantial.

Additionally, the number of vehicle trips generated by the Imperial Valley College students would meet a different project screening criteria provided for in the CSU TISM by generating less than 110 vehicle trips per day.[2]

To calculate the number of vehicle trips that would be generated by the 40 Imperial Valley College students, the trip rate for off-campus student housing provided in The Institute of Transportation Engineers Trip Generation Handbook, 11th Edition, (ITE 2021) was applied to the 40 students. Note that this rate is considered conservative under the circumstances in that it is not for affordable student housing, which statistically would generate fewer vehicle trips than standard student housing.

As shown below in Table 3, Imperial Valley College Student Trip Generation, the proposed student housing for the Imperial Valley College students is estimated to generate 79 average daily trips, with 3 AM peak hour trips and 6 PM peak hour trips.

Table 3. Imperial Valley College Student Trip Generation

Land Use	Size/Units		Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Generation Rates[1]									
Off-Campus Student Apartment (low-rise) 0.5 miles from Campus	Bedrooms		3.97	0.04	0.12	0.16	0.16	0.15	0.31
Trip Generation									
Housing for Imperial Valley College Students	20	Bedrooms[2]	79	1	2	3	3	3	6

Notes:

1 Trip rates from Institute of Transportation Engineers Trip Generation Manual, 11th Edition, 2021.

2 The Project consists of three residential buildings, including two student housing buildings with 40 student beds each. Each student housing building includes five four-bedroom for a total of 80 student beds. The trip generation is estimated only for 40 student beds that would be allocated to the Imperial Valley College. The Institute of Transportation Engineers trip rate is per bedroom, and the trip

2 Projects generating less than 110 vehicle trips per day are presumed to result in a less than significant impact. See, *California State University Transportation Impact Study Manual* (2019), pp. 11-12.

rate has been established per bedroom unit, which could include two to five beds. Therefore, conservatively assuming each bedroom would have two beds, the trip generation has been estimated for 20 bedrooms (40 beds ÷ 2 beds per bedroom)

Therefore, the student housing proposed for the Imperial Valley Community College students and the on-site manager would meet the project screening criteria by generating less than 110 vehicle trips per day, and impacts related to VMT would be **less than significant.**

Therefore, the proposed Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and impacts would be **less than significant.**

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

The proposed Project would involve construction of three residential buildings and one community building and use existing roadways and driveways for access and circulation. The rectangular grass lawn on the northwest corner of East 7th Street and Blair Avenue would be used as construction staging area. The Project would maintain vehicular access to the site via an existing entrance on East Sherman Street via an existing parking lot. This parking lot is shown on Figure 4, north of the Physical Plant Building.

During construction, it is anticipated that temporary sidewalk and lane closures would be required on the westside of Blair Avenue and the northside of East 7th Street. To ensure access to all road users during construction and reduce potential hazard impacts associated with construction activities, the following mitigation measure is proposed that would require preparation and implementation of a traffic control plan during construction activities:

MM TRA-1: Prior to the commencement of construction activities, CSU/SDSU, or its designee, shall prepare a traffic control plan, consistent with guidelines available through the California Department of Transportation, to ensure the safe passage of pedestrians, bicyclists, motorists, and emergency vehicles in the immediate vicinity of construction activities. The traffic control plan shall be implemented during Project construction activities and shall be discontinued upon completion of such activities.

The Project would not introduce incompatible uses or other hazards associated with Project operations. Therefore, with implementation of mitigation measure MM-TRA-1, potential impacts associated with a hazardous geometric design feature or incompatible uses would be **less than significant.**

d) Would the project result in inadequate emergency access?

Construction of the Project may require temporary road closures in public rights-of-way on Blair Avenue and East 7th Street. As mentioned above, a traffic control plan would be implemented to provide access to all road users during construction, and to prevent interference with emergency response vehicles. The Project would be designed and constructed to state standards and would ensure emergency access would be maintained during construction, per the requirements of the City's fire department. Upon completion, the Project site would continue to be accessible via the existing driveway on Sherman Street. Therefore, construction and operation of the proposed Project would not result in inadequate emergency access and impacts would be **less than significant.**

9 References

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SDSU (San Diego State University). 2003. *Environmental Impact Report and Initial Study for SDSU Imperial Valley Master Plan Project.* Final. SCH No. 200251010. https://imperialvalley.sdsu.edu/about/brawley/environmental-impact-reports.

Attachment A

Figures

SOURCE: ESRI

DUDEK

0 4 8 Miles

FIGURE 1

Regional Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

SOURCE: AERIAL-ESRI MAPPING SERVICE 2023; DEVELOPMENT-SDSU 2024

DUDEK

0 100 200 Feet

FIGURE 2
Vicinity Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

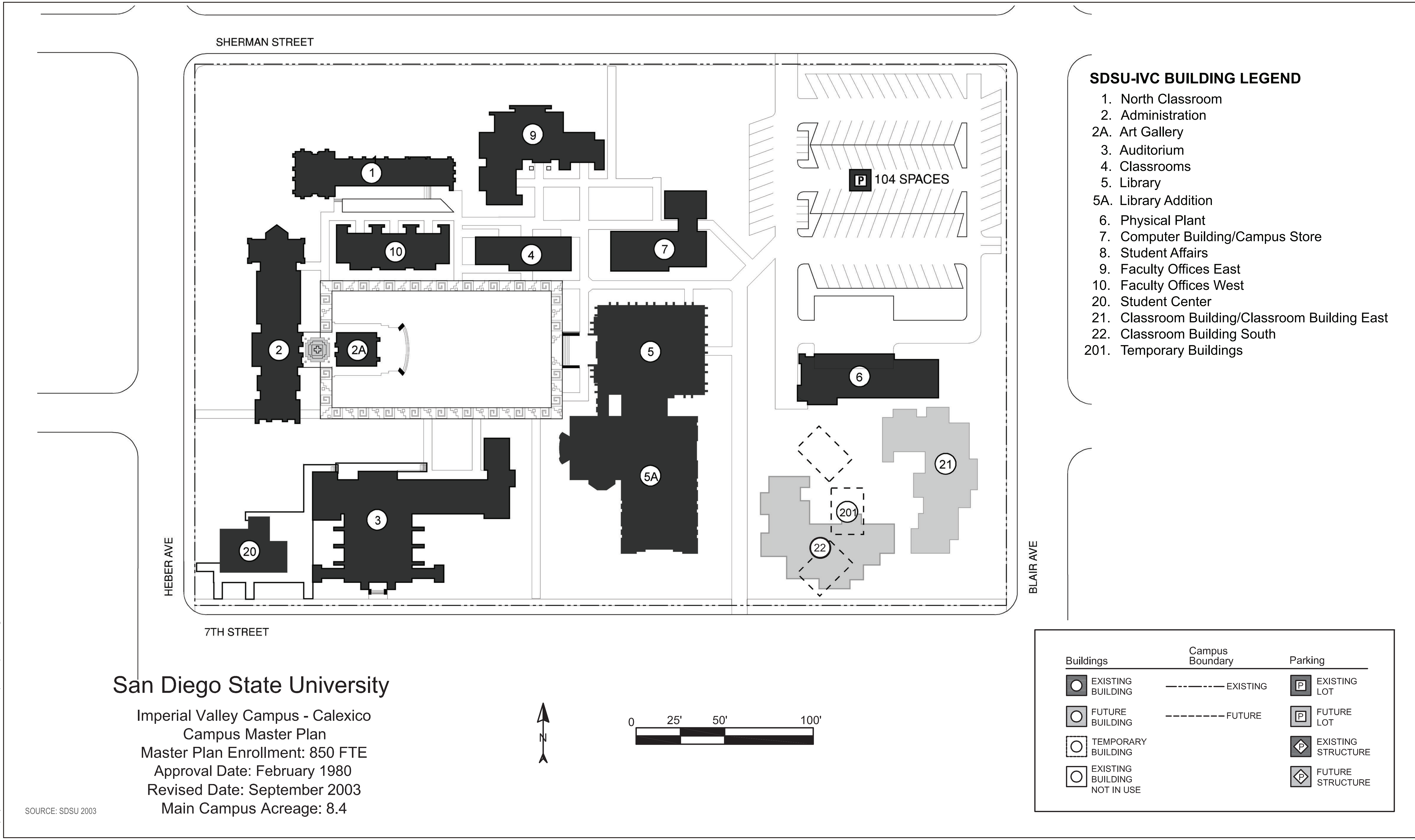
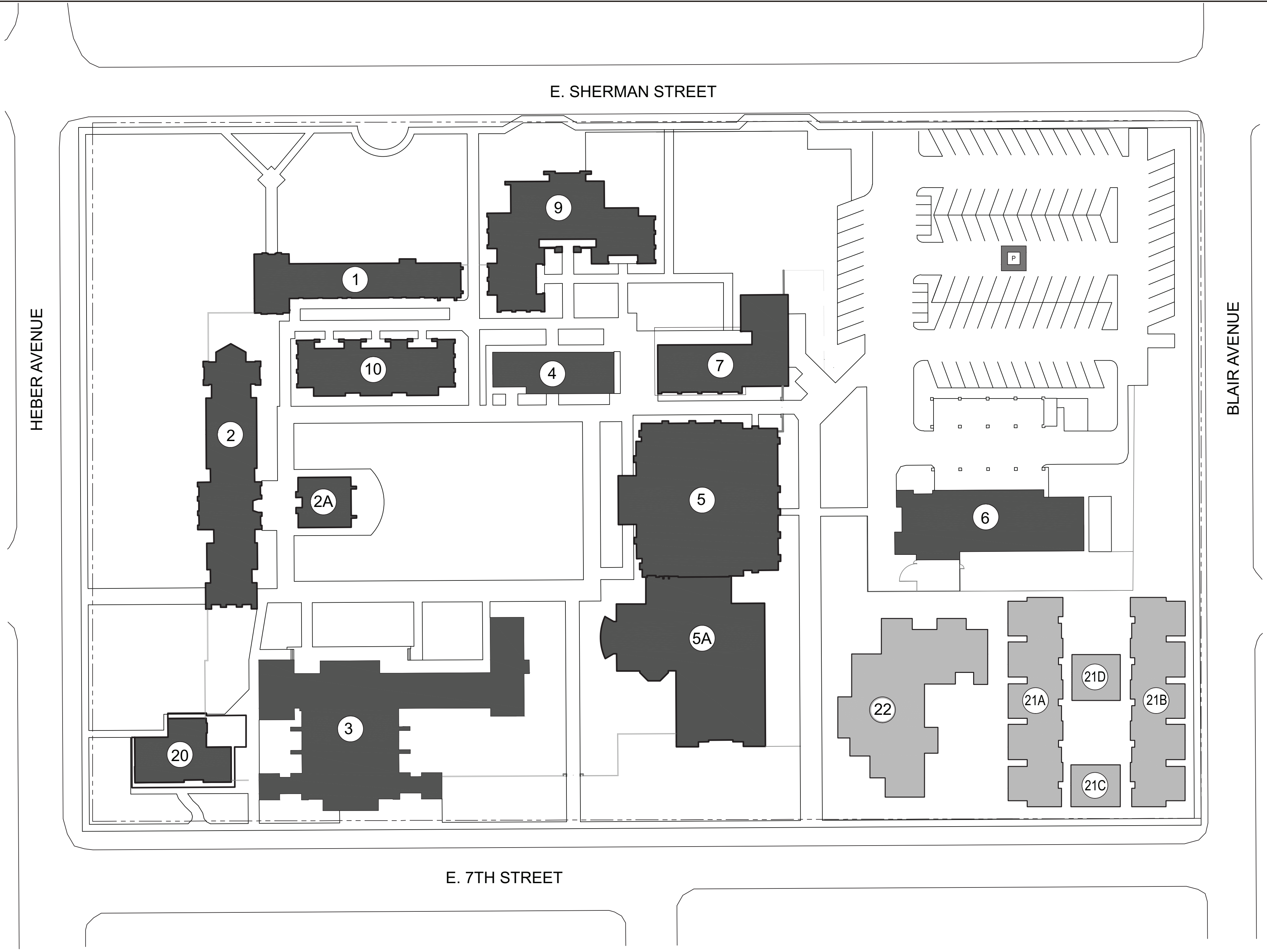


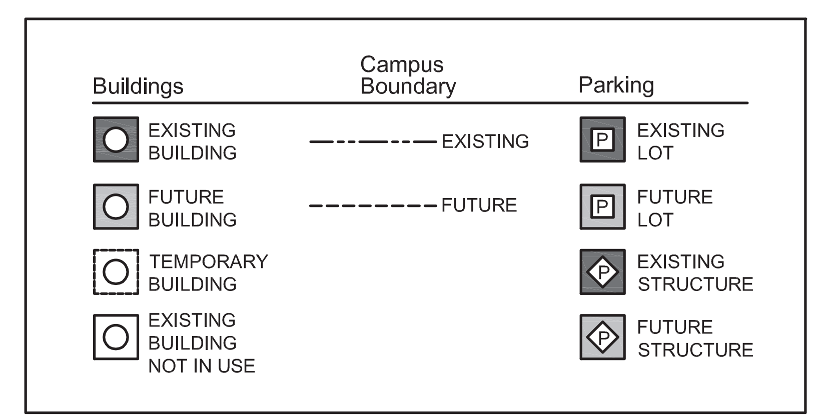
FIGURE 3A

Existing Campus Master Plan

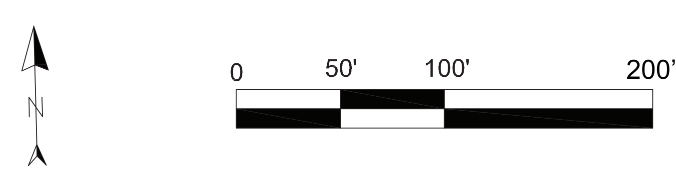


SDSU-IVC BUILDING LEGEND

1. North Classroom
2. Administration
2A. Art Gallery
3. Auditorium
4. Classrooms
5. Library
5A. Library Addition
6. Physical Plant
7. Computer Building/Campus Store
8. Student Affairs
9. Faculty Offices East
10. Faculty Offices West
20. Student Center
21A. Student Housing West
21B. Student Housing East
21C. Student Housing Office
21D. Student Housing Community Center
22. Classroom Building South



PROPOSED
San Diego State University
Imperial Valley Campus - Calexico
Campus Master Plan
Master Plan Enrollment: 850 FTE
Approval Date: 1980
Revised Date: September 2003
Main Campus Acreage: 8.4

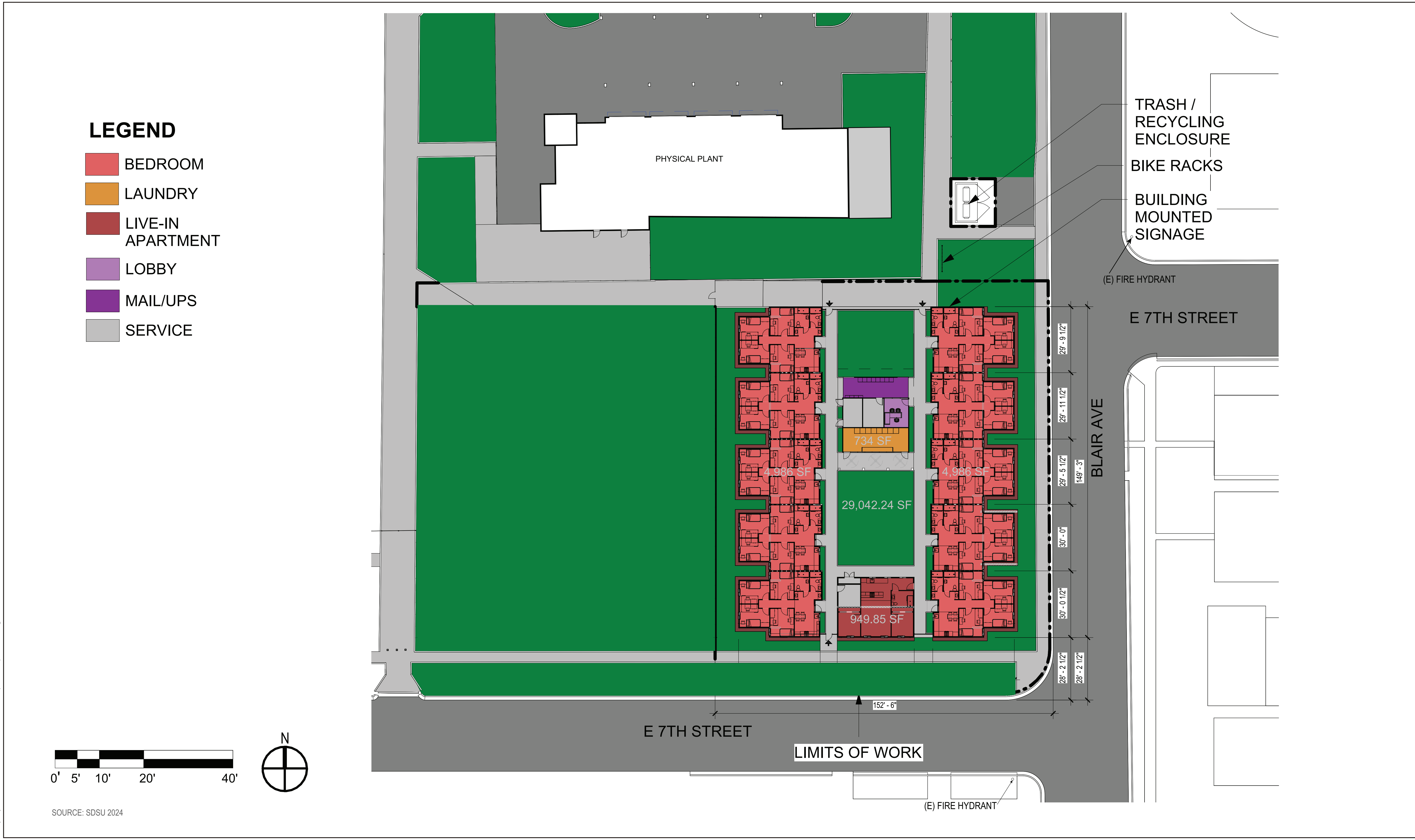


SOURCE: SDSU 2024

FIGURE 3B

Proposed Campus Master Plan

DUDEK



SOURCE: SDSU 2024

FIGURE 4
Site Plan

Attachment B

Traffic Impact Assessment SDSU Imperial Valley Campus Calexico, California, March 2002

LINSCOTT LAW & GREENSPAN
ENGINEERS

TRAFFIC IMPACT ASSESSMENT
SDSU IMPERIAL VALLEY CAMPUS
CALEXICO, CALIFORNIA

1.0 INTRODUCTION

Linscott, Law & Greenspan Engineers (LLG) has been retained to assess the traffic implications of expanding the San Diego State University Imperial Valley Campus in the City of Calexico. **Figure 1** sets out the overall site vicinity.

The subject site is located east of SR 111, bounded by Sherman Street to the north and 7th Street to the south, Heber Avenue to the west, and Blair Avenue to the east within the City of Calexico. **Figure 2** illustrates, in more detail, the site location.

1.1 Study Methodology

The following study methodology was adopted for the traffic study, and can be broken into three distinct steps. The first step involved the assessment of the existing traffic conditions in the study area, and includes an inventory of roadway geometries, observations of traffic flow, and the collection of peak period traffic counts.

In the second step of the study, future traffic conditions were forecasted building on the collected existing data. Traffic forecasts reflect traffic generation and the distribution of project traffic.

The third step involves intersection performance analysis and identification of operational issues. Significant impacts, within the study area were identified, and mitigation measures recommended as appropriate.

REV. 05/30/02

NO SCALE

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Figure 1

VICINITY MAP

LINSCOTT LAW & GREENSPAN ENGINEERS

SDSU IMPERIAL VALLEY CAMPUS

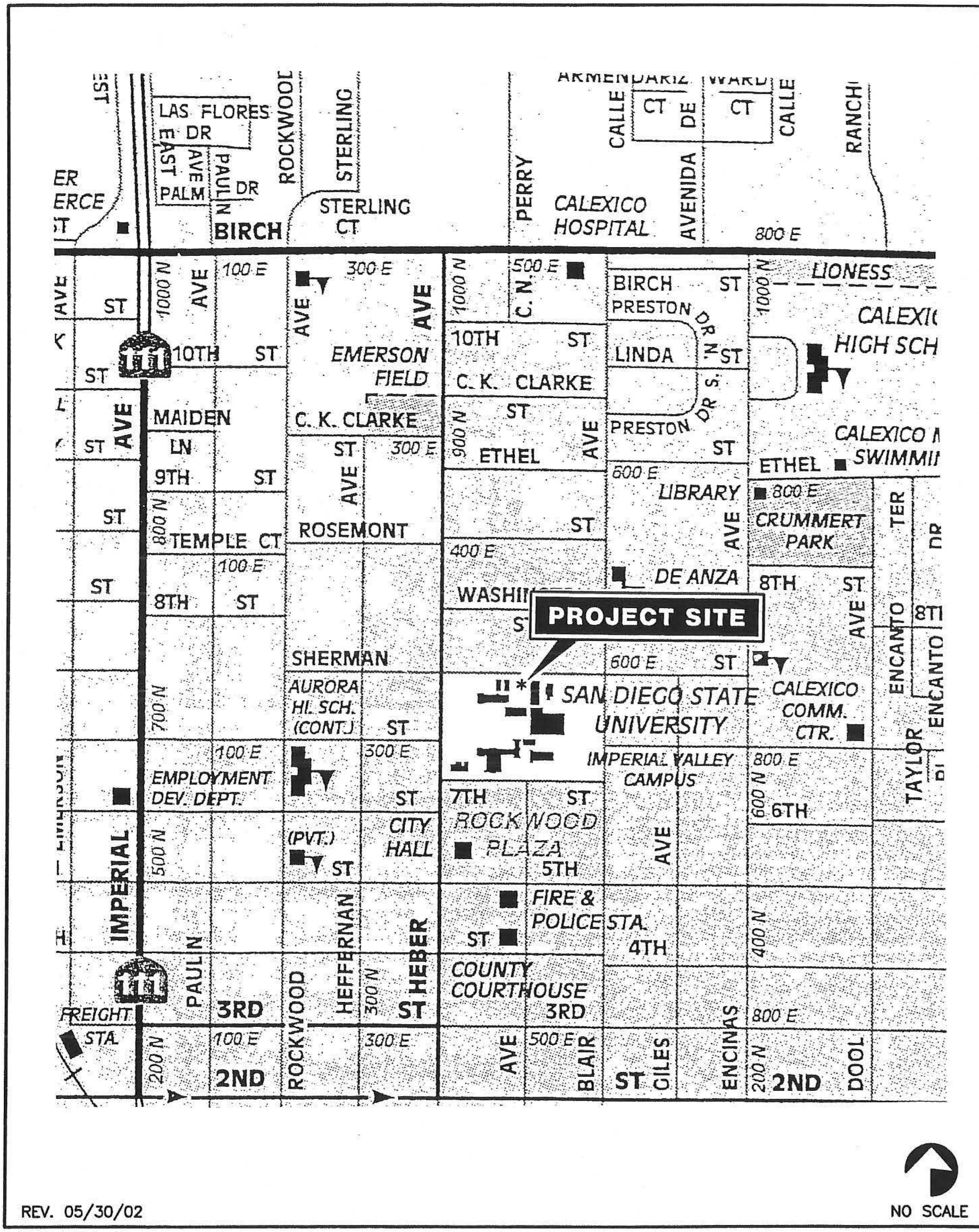

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Figure 2

PROJECT AREA MAP

SDSU IMPERIAL VALLEY CAMPUS

LINSCOTT LAW & GREENSPAN ENGINEERS

1.2 Study Area

The study area for this project encompasses areas of anticipated impact related to the project. The scope of the study area was developed per conversations with client. The specific study area includes three intersections as described below:

- Heber Street / 7th Street;
- Heber Street / Sherman Street; and
- Sherman Street / Blair Avenue.

Included in this traffic assessment are the following chapters:

- Site Context;
- Traffic Forecasts;
- Traffic Operational Analysis; and
- Significance of Impacts/Mitigation Measures.

2.0 SITE CONTEXT

2.1 Project Description

The project proposes the addition of new classroom and administrative buildings to the existing campus, which would increase the full time enrollment (FTE) from 500 FTE to 850 FTE. Access to the campus would be provided via the two existing access points, at Sherman Avenue and 7th Street to one main parking lot. **Figure 3** shows the site plan.

2.2 Existing Street System

According to County of Imperial Public Road Standards, Primary Arterials should be 80 feet wide in 100 feet of Right-of-Way (R/W), providing four thru lanes, and a raised or painted median. Major Roads should be 60 feet wide in 80 feet of R/W, providing four undivided thru lanes, and curbside parking. Collectors should be 40 feet wide in 60 feet of R/W providing two-thru undivided lanes.

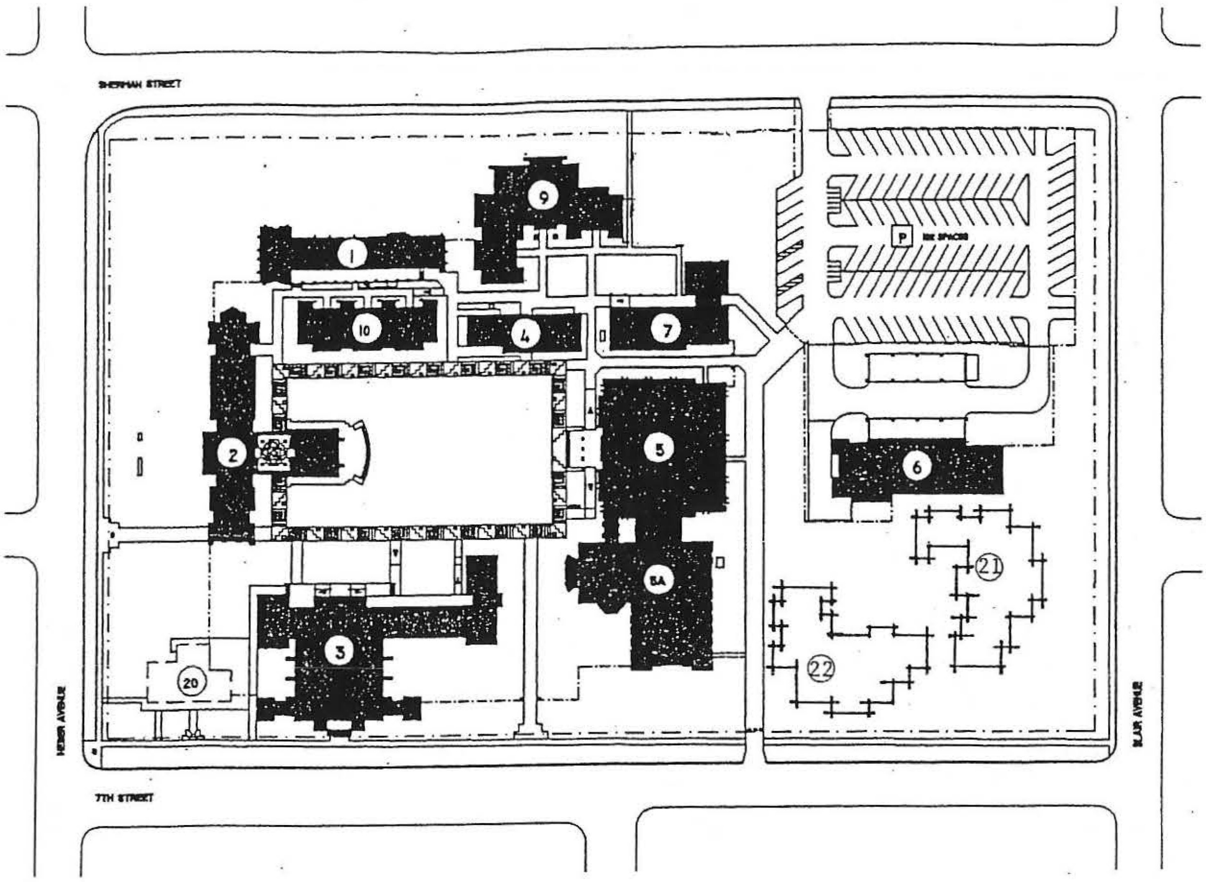
The following is a general description of the roadways in the project area. **Figure 4** depicts the existing conditions including the lane geometrics of the key intersections in the study area.

Heber Avenue is an unclassified roadway within the City of Calexico. Heber Avenue is currently constructed as a two lane undivided roadway. It has a posted speed limit of 25 mph with curbside parking is generally permitted.

Sherman Street is an unclassified roadway within the City of Calexico. Sherman Street is currently constructed as a two lane undivided roadway. Sherman Street has a posted speed limit of 25 mph with curbside parking generally permitted.

7th Street is an unclassified roadway within the City of Calexico. 7th Street is currently constructed as a two lane undivided roadway. 7th Street has a posted speed limit of 25 mph with curbside parking generally permitted.

Blair Avenue is an unclassified roadway within the City of Calexico. Blair Avenue is currently constructed as a two lane undivided roadway. Blair Avenue has a posted speed limit of 25 mph with curbside parking generally permitted.



SAN DIEGO STATE UNIVERSITY
IMPERIAL VALLEY CAMPUS
MASTER PLAN
Proposed January 2003

FACILITY LEGEND: EXISTING FACILITY, PROPOSED FACILITY — MASTER PLAN ENROLLMENT: 400 FTE

1 NORTH CLASSROOM BUILDING
2 ADMINISTRATION BUILDING
3 AUDITORIUM / CLASSROOMS
4 CLASSROOMS BUILDING
5 LIBRARY
5A LIBRARY ADDITION
6 PHYSICAL PLANT
7 COMPUTER BUILDING

9 FACULTY OFFICES BUILDING EAST
10 FACULTY OFFICES BUILDING WEST
20 STUDENT CENTER
21 Classroom Building East
22 Classroom Building South

EXISTING BUILDING
FUTURE BUILDING
TEMPORARY BUILDING
P EXISTING PARKING LOT

CAMPUS ACREAGE	8.38 ACRES
EXISTING PARKING SPACES	102 SPACES

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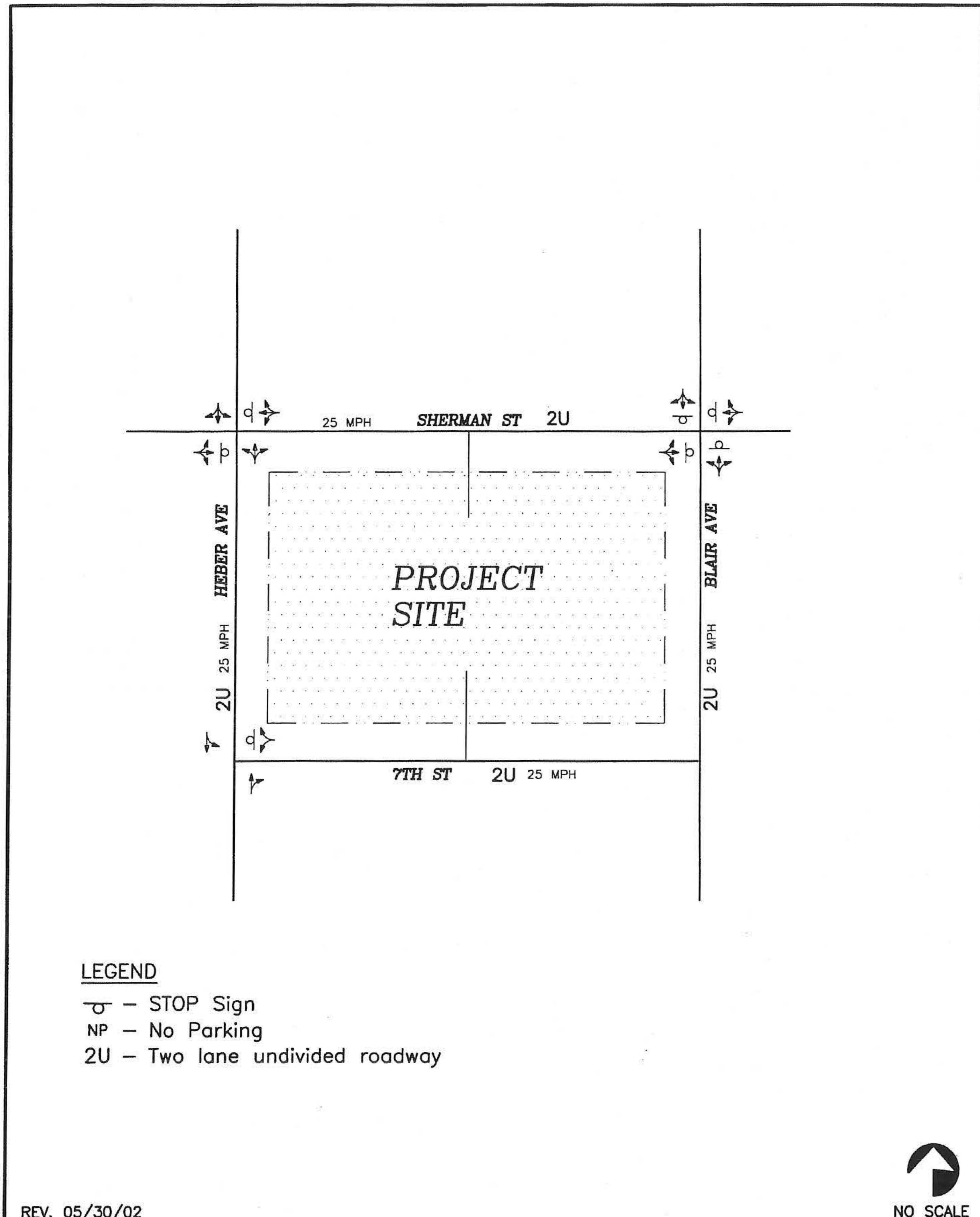
Figure 3

SITE PLAN

LINSCOTT LAW & GREENSPAN ENGINEERS

SDSU IMPERIAL VALLEY CAMPUS



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LINSCOTT LAW & GREENSPAN ENGINEERS

Figure 4

EXISTING CONDITIONS DIAGRAM

SDSU IMPERIAL VALLEY CAMPUS

3.0 TRAFFIC FORECASTS

3.1 Existing Traffic Volumes

Existing morning and afternoon traffic volumes where counted at the key area intersections to capture peak commuter activity. Existing AM and PM counts were conducted by LLG in May 2002 at the key intersections. **Figure 5** shows the existing AM / PM peak hour turning movement counts. **Appendix A** contains copies of the intersection manual count sheets.

3.2 Project Traffic Generation

Trip generation estimates for the proposed development were calculated based on Institute of Transportation Engineers (ITE) rates for a College Campus. The amount of students (350) used to formulate a trip generation was based on the net increase from the current enrollment (500 FTE) to the projected enrollment (850 FTE). **Table 1** tabulates the project traffic generation. The project is calculated to generate approximately 830 ADT with 55 inbound / 15 outbound trips during the AM peak hour and 20 inbound / 55 outbound trips during the PM peak hour.

Table 1
Project Trip Generation Summary

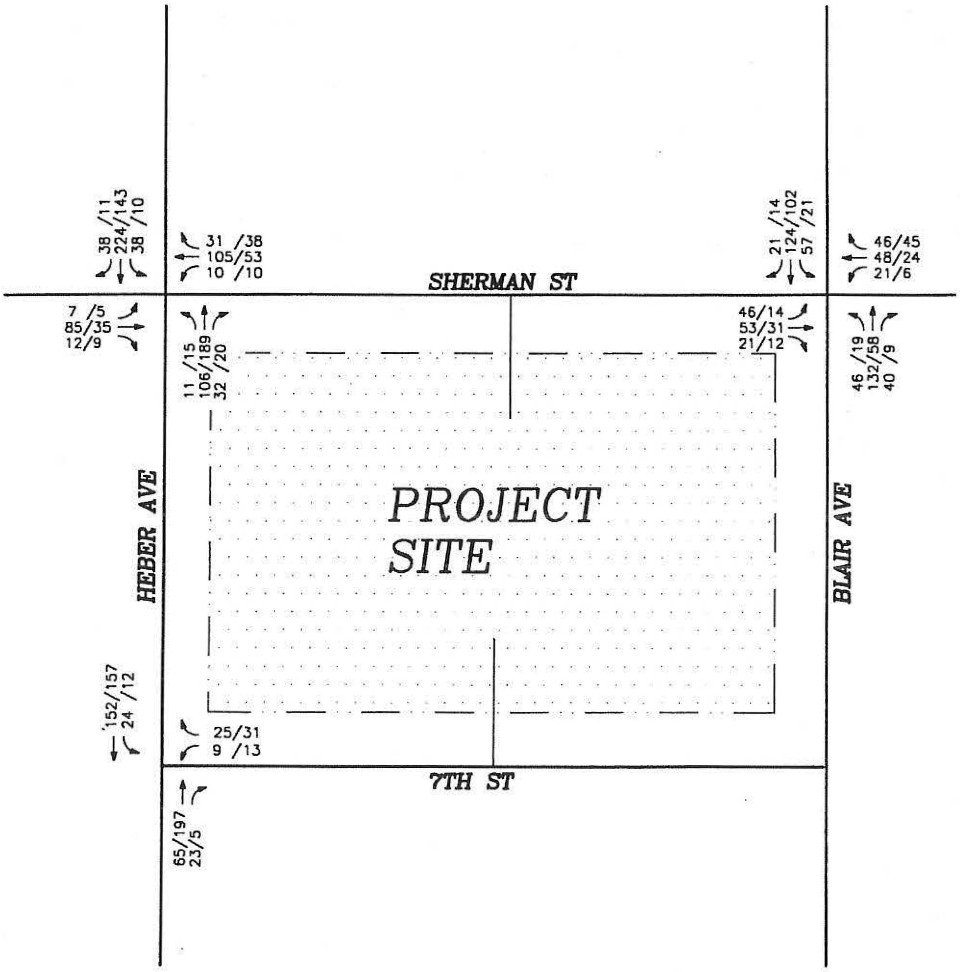
USE	AMOUNT	DAILY TRIP ENDS		AM PEAK HOUR				PM PEAK HOUR			
		RATE	ADT	PEAK %	IN:OUT	VOLUME IN	VOLUME OUT	PEAK %	IN:OUT	VOLUME IN	VOLUME OUT
College Campus	350 Students	2.38	830	8.4%	75:25	55	15	9.0%	30:70	20	55

SOURCE: Institute of Transportation Engineers (ITE) Generation Rates (5^{th} Ed.)

3.4 Project Traffic Distribution / Assignment

The project-generated traffic was distributed and assigned to the street system based on the site access, roadway system characteristics (i.e. project's proximity to SR 98 and SR 111), existing traffic turning movement counts, and the location of potential students.

Figure 6 shows the project trip distribution percentages. **Figure 7** shows the assignment of project traffic based on Figure 6. The primary access point is via Sherman Street and access is also available via 7^{th} Street. **Figure 8** shows the existing + project traffic volumes.



NOTE:
- AM/PM Peak hour volumes are shown at the intersections

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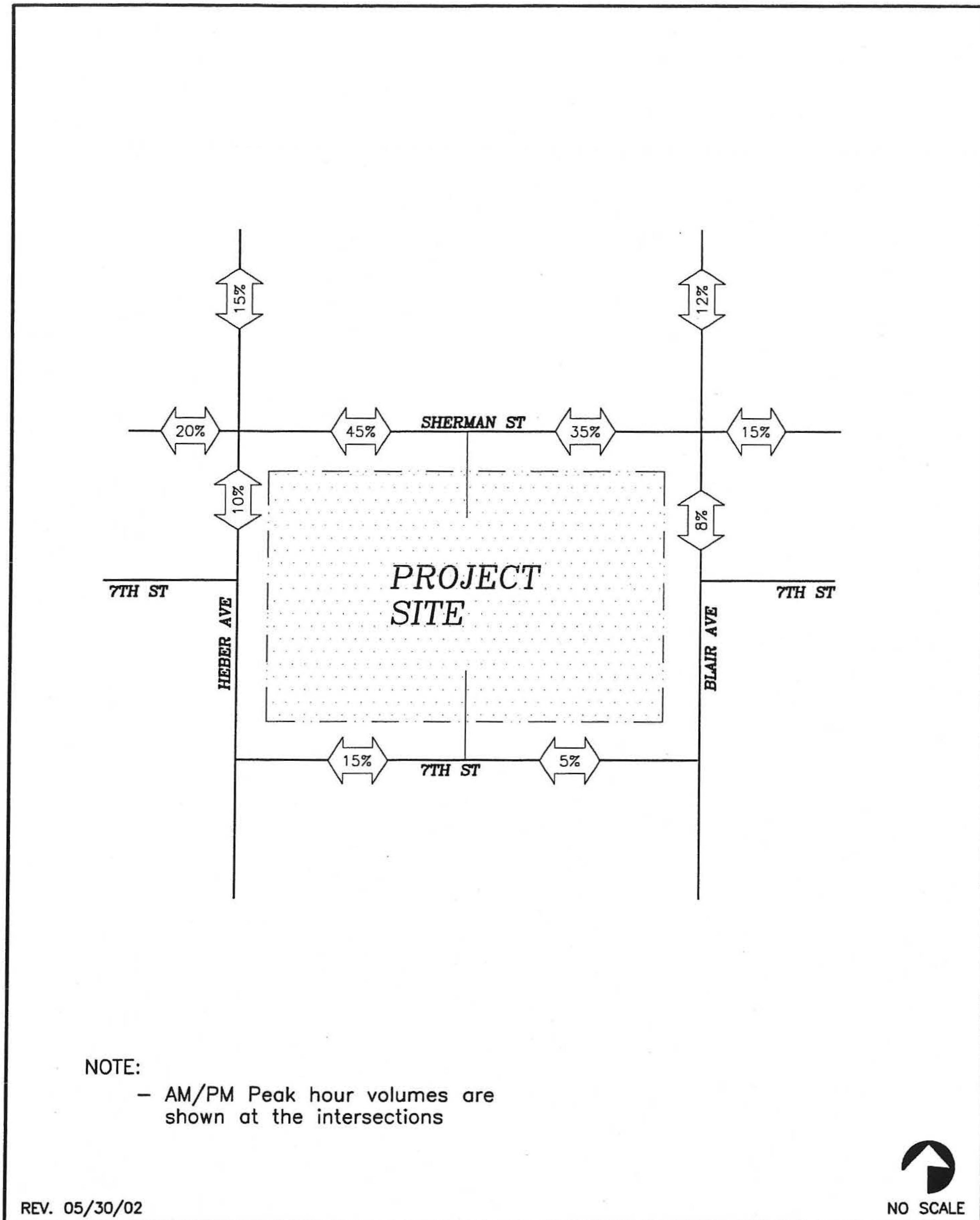
LINSCOTT LAW & GREENSPAN ENGINEERS

Figure 5

EXISTING TRAFFIC VOLUMES AM/PM PEAK HOURS

SDSU IMPERIAL VALLEY CAMPUS



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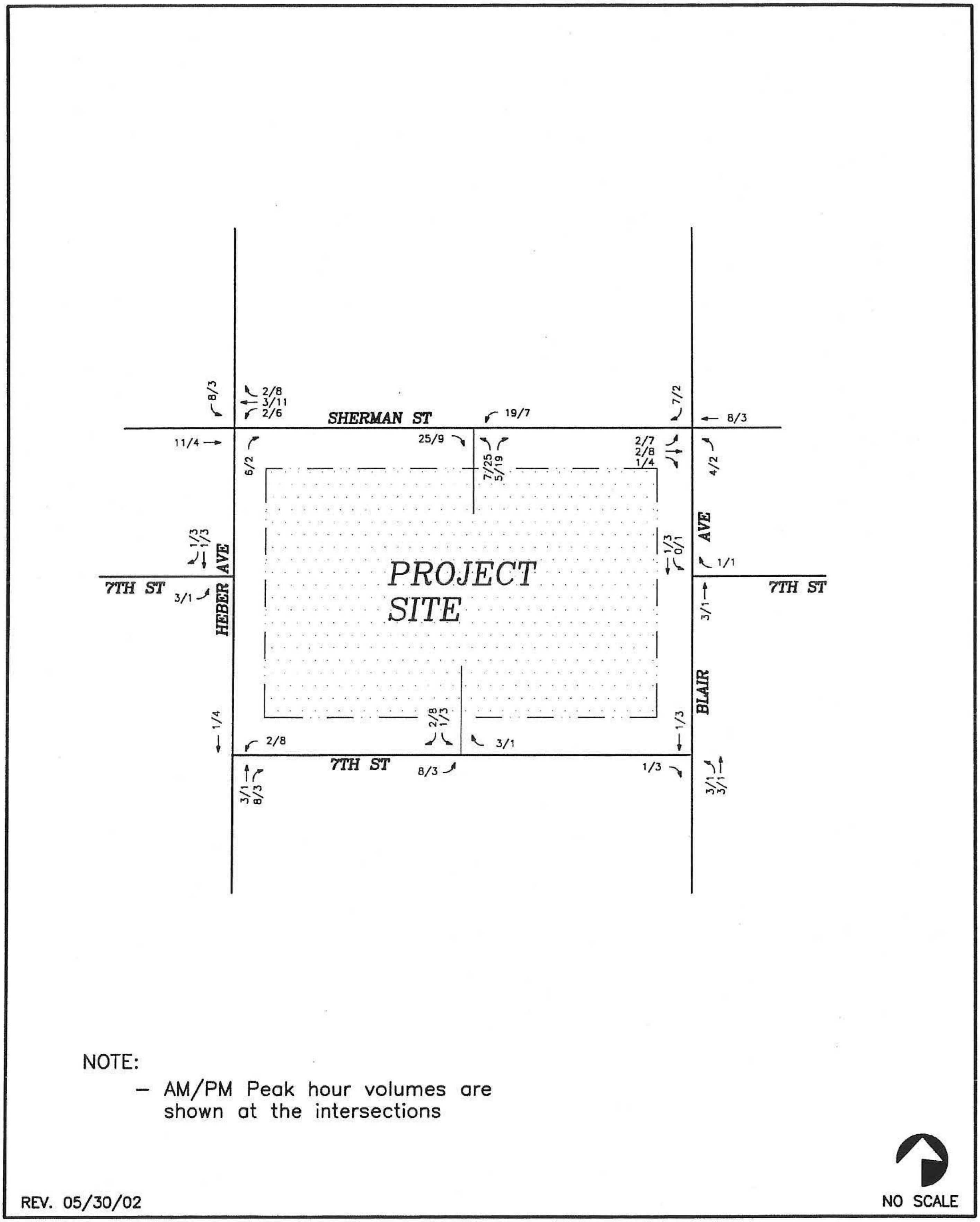
LINSCOTT LAW & GREENSPAN ENGINEERS

Figure 6

REGIONAL TRIP DISTRIBUTION

SDSU IMPERIAL VALLEY CAMPUS



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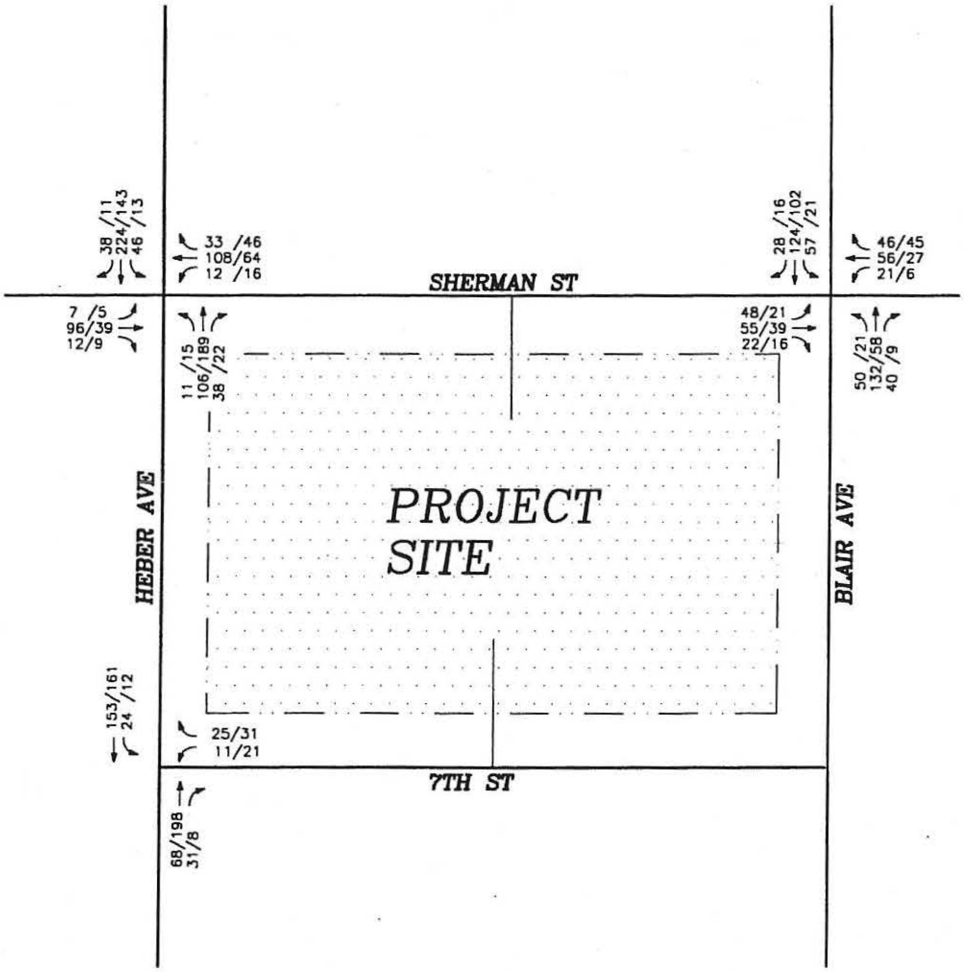
LINSCOTT LAW & GREENSPAN ENGINEERS

Figure 7

PROJECT TRAFFIC VOLUMES
AM/PM PEAK HOURS

SDSU IMPERIAL VALLEY CAMPUS



NOTE:
- AM/PM Peak hour volumes are shown at the intersections

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Figure 8

EXISTING + PROJECT TRAFFIC VOLUMES AM/PM PEAK HOURS

SDSU IMPERIAL VALLEY CAMPUS

4.0 TRAFFIC OPERATIONS ANALYSIS

4.1 Significance Criteria

A project traffic impact was considered significant if the addition of project traffic caused an intersection or street segment to operate at worse than LOS C, based on language contained in the Imperial County General Plan. If an intersection or street segment is calculated to operate at a pre-project LOS D or worse, an impact is considered significant if the project causes the LOS to degrade from LOS D to LOS E or F, or from LOS E to LOS F.

4.2 Traffic Analysis Methodology

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure of the effect of a number of factors including roadway geometries, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions.

All of the key intersections are unsignalized. Unsignalized intersections were analyzed under morning and afternoon peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapter 10 of the *2000 Highway Capacity Manual (HCM),* with the assistance of the *Traffix* (version 7.5) computer software. Unsignalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in **Appendix B**.

Table 2 reports unsignalized intersection operations during peak hour conditions.

4.3 Existing Operations

Table 2 shows under existing conditions, the minor street movements at the key unsignalized intersections are calculated to operate at LOS C or better during the morning and afternoon peak periods. The All-Way Stop Control (AWSC) intersection currently operates at LOS A.

4.4 Existing + Project Operations

Table 2 shows that with the addition of project traffic, the minor street movements at all key unsignalized intersections are calculated to continue to operate at LOS C or better during the morning and afternoon peak periods.

Table 2
Unsignalized Intersection Operations

Intersection	Peak Hour	Turning Movement (Lane or Approach)	Existing		Existing + Project		Delay Increase Due to Project	Significant[3]
			Delay[1]	LOS[2]	Delay	LOS		
Heber Avenue/7th Street	AM	WB LTR	9.2	A	9.4	A	0.2	NO
	PM	WB LTR	10.3	B	10.5	B	0.2	NO
Heber Avenue/ Sherman Street	AM	WB LTR	15.9	C	16.7	C	0.8	NO
		EB LTR	15.5	C	16.5	C	1.0	NO
	PM	WB LTR	12.5	B	13.2	B	0.7	NO
		EB LTR	12.5	B	12.7	B	0.2	NO
Sherman Street/ Blair Avenue	AM	AWSC	9.6	A	9.7	A	0.1	NO
	PM	AWSC	7.9	A	8.0	A	0.1	NO

Notes:
1. Average delay expressed in seconds per vehicle.
2. Level of Service. See Appendix for delay thresholds.
3. Significant project impacts determined based on Significance Criteria.
4. WB LTR – Westbound shared Left-Thru-Right turn lane.
5. AWSC – All-Way Stop Controlled intersection.

5.0 SIGNIFICANCE OF IMPACTS / MITIGATION MEASURES

The proposed project is calculated to generate at 830 ADT with 55 inbound trips and 15 outbound trips during the AM peak hour and 20 inbound/55 outbound trips during the PM peak hour. Based on the established significance criteria, no significant impacts were calculated. Therefore, mitigation measures are not necessary.

Appendix H

Hydrology and Water Quality Technical Memorandum

MEMORANDUM

To:	Kara Peterson, San Diego State University
From:	Perry Russell, Dudek
Subject:	SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project – Hydrology and Water Quality Technical Memorandum
Date:	December 12, 2024
cc:	Sarah Lozano, Mollie Brogdon, Dudek; Michael Haberkorn, Gatzke Dillon & Ballance
Attachment:	A – Figures

Dudek has conducted an evaluation pursuant to the requirements of the California Environmental Quality Act (CEQA), California Public Resources Code 21000 et seq., to analyze the potential impacts related to hydrology and water quality associated with construction and operation of the proposed San Diego State University (SDSU) Calexico Affordable Student Housing Project (Project or proposed Project), to be located at the SDSU Imperial Valley Off-Campus Center, located in Calexico, California. This technical memorandum provides the results of the hydrology and water quality analysis.

1 Project Overview and Background

In September 2003, the CSU certified an environmental impact report for the SDSU Imperial Valley Master Plan Project (State Clearinghouse No. 2002051010) and approved a Campus Master Plan for the expansion and improvement of the SDSU Imperial Valley Off-Campus Center, which includes locations in Calexico and Brawley, both located in Imperial County (SDSU 2003). The Off-Campus Center is an extension of SDSU's main campus in San Diego and furthers the University's regional educational mission to provide additional educational opportunities to the outlying communities of Imperial County. The previously certified and approved Campus Master Plan and EIR provided the authorization necessary for enrollment of 850 full-time equivalent (FTE)[1] students at the Off-Campus Center, corresponding associated faculty and staff, and a framework for development of the facilities necessary to serve this projected enrollment and campus population.

The Off-Campus Center - Calexico is approximately 8.3 acres in size and is located in the City of Calexico (City). Most of the Calexico location is built out, consisting of several educational and support facilities. The environmental impacts associated with development of the Off-Campus Center – Calexico were evaluated at a program level of review in the 2003 EIR. In the CSU's continuing effort to build out the Imperial Valley Off-Campus Center and provide additional educational opportunities, SDSU presently proposes construction and operation of a four-building complex that would provide affordable student housing at the Calexico location for 80 students and a resident manager. Additional details regarding the proposed housing is provided below.

1 A full-time equivalent (FTE) student is one full-time student taking 15 course credits, or 3 part-time students each taking 5 course credits.

2 Project Location and Existing Conditions

The Off-Campus Center – Calexico is located at 720 Heber Avenue in downtown Calexico, approximately 0.5 miles north of the United States–Mexico border (see Figure 1, Regional Map). Regional access to the Off-Campus Center is provided via SR-111 and SR-98 to the north. The Calexico location is bordered by four streets: Heber Avenue to the west, Sherman Street to the north, Blair Avenue to the east, and 7th Street to the south. Residential uses bound the Calexico complex to the north, east, south, and west. Other surrounding uses include Calexico High School, located northeast, and Calexico City Hall, located immediately south. The Off-Campus Center - Calexico currently consists of 17 buildings and an associated surface parking lot (see Figure 2, Vicinity Map, and Figure 3A, Existing Campus Master Plan).

As a state entity, the CSU/SDSU is not subject to local government plans, regulations, and guidelines, such as those contained in the City's General Plan. The above notwithstanding, for information purposes, the Off-Campus Center - Calexico is zoned as Open Space and is designated as Public Facilities in the City's General Plan (City of Calexico 2015a).

The proposed Project site is approximately 0.58 acres in size (25,320 square feet) and is located at the southeast corner of the campus, at the northwest corner of East 7th Street and Blair Avenue (see Figure 2). The entirety of the Project site has previously been graded and is relatively flat in nature, with an average elevation of 3.5 feet above mean sea level. The Project site encompasses the locations identified in the Campus Master Plan as future Building 21 (see Figure 3A and Figure 3B, Proposed Campus Master Plan). The Project site consists of vacant and undeveloped land with two trees located along the northern boundary of the site. A chain-link fence separates the Project site from the recently removed temporary Campus Buildings 201, which were located immediately west of the Project site.

3 Project Description

3.1 Affordable Student Housing Complex

The proposed Project would involve the construction of a single-story, four-building complex approximately 12,840 square feet in size that would provide for affordable student housing. The complex would include three student housing buildings, including one smaller live-in unit building, and a community building. Two of the three proposed residential buildings would each be approximately 5,500 square feet in size and would include five four-bedroom, two-bathroom apartment units, totaling 40 student beds per building (two student beds per bedroom, 80 student beds in total). The third proposed residential building would be a live-in manager unit that would consist of a single two-bedroom, one-bathroom apartment. The proposed live-in unit would also include approximately 100 square feet of office space that is intended to provide a space for tenant meetings, social services, or counseling. All apartment units would also be equipped with a living area and kitchen. The proposed community building program would be approximately 840 square feet and include laundry, mail, restroom, electrical, and maintenance facilities. The mail room would be located outside, under the shaded amenity patio of the community building (see Table 1).

Table 1. Affordable Student Housing Complex Area Calculations

	Quantity	Area (Square Feet)	Beds
Residential Buildings (3)			
4-Bedroom, 8-Bed Unit	5	5,150	40
4-Bedroom, 8-Bed Unit	5	5,150	40
Live-In Unit	1	1,000	2
Office (Included in Live-In Unit)	N/A	N/A	N/A
Subtotal	*11*	*11,300*	*82*
Community Building (1)			
Laundry Room	1	300	N/A
Service Rooms	4	450	N/A
Restroom	2	100	N/A
Mail/Package (Outside)	1	270	N/A
Subtotal	*N/A*	*1,150*	*N/A*
Other			
Trash/Recycling Enclosure	1	850	N/A
Open Space	N/A	2,300	N/A
Landscaping/hardscaping	N/A	12,500	N/A
Subtotal	*N/A*	*13,650*	*N/A*
Combined Total	**N/A**	**26,100**	**82**

Note: N/A = not applicable.
All square foot amounts presented in the table are approximate amounts only and may not add to the site plan area totals described in this document due to rounding.

Other on-site proposed amenities include a courtyard, bike racks, and a community waste enclosure. The courtyard would be approximately 1,600 square feet and would be centrally located in the proposed complex (see Figure 4, Site Plan). Approximately 15 bike racks would be provided throughout the Project site. A community waste enclosure at the northeast corner of the Project site would allow residents a convenient place to dispose of waste and recyclables.

3.1.1 Operation

The Off-Campus Center - Calexico, including the Project site, is owned and operated by the CSU/SDSU. The CSU Board of Trustees, on behalf of SDSU, is the lead agency responsible for certifying the adequacy and completeness of this document and approval of the proposed Project. SDSU and the IVCCD have received joint funding under the State of California Higher Education Student Housing Grant Program to construct the proposed Project.

To support basic housing needs for students in the Imperial Valley, SDSU and IVCCD have executed a 30-year master lease agreement that details operation of the Project. This agreement dictates that 40 of the 82 proposed student beds would be reserved for IVCCD students who attend the Imperial Valley College in Imperial. Likewise, 40 of the proposed 82 beds, would be reserved for SDSU Off-Campus Center - Calexico students. A 2-bedroom unit would also provide living space for on-site management. SDSU would be responsible for operating, managing, and maintaining the proposed Project once operational.

Student beds made available under the proposed Project would be leased/rented to eligible low-income students. Eligible low-income students are defined as having 30% of 50% of the Annual Median Income for Imperial County. In the event, after a good faith outreach effort, there is not sufficient demand from students meeting the eligibility requirements within 90 days of the start of the fall semester, unassigned beds may be leased at market rates to SDSU and IVCCD students not meeting the low-income eligibility requirements. In addition to meeting the low-income criteria, eligible students would be required to be enrolled students and take a minimum average of 12 degree-applicable units per semester term, or the quarterly equivalent (with exceptions permitted), to facilitate timely degree completion.

3.1.2 Other Project Elements

Building and Site Design

The proposed buildings have been designed to reflect the character and massing of the existing Off-Campus Center - Calexico, as well as the surrounding neighborhood. Building design is centered around a courtyard-style housing complex and would consist of smooth stucco walls with downspouts and rafters, punctuated by composite terra cotta–colored roof tile accents and windows. Maximum building heights would range from 14 feet to 18 feet.

Landscaping, Other Site Improvements, and Lighting

The Project would include approximately 16,000 square feet of on-site landscaping and hardscape improvements (i.e., pedestrian walkways). All proposed landscaping would consist of drought-tolerant, indigenous plants. The landscape scheme would include shrubs, hedges, and a variety of trees. A total of 39 trees would be added to the Project site including five fan palms, eight mesquite trees, six evergreen elms, and 20 yucca trees.

All exterior on-site lighting would be hooded or shielded, directed downward, and would be compliant with applicable standards for lighting control and light pollution reduction (i.e., Title 24, American National Standards Institute/Illuminating Engineering Society).

The proposed complex would be secured via an iron security fence that would measure 6 feet in height and run approximately 64 linear feet, connecting to the proposed buildings. Access to the complex would only be available to residents and their guests via two pedestrian gates located at the northwestern corner and southern portion of the proposed complex. The gates would be equipped with security card access for residents.

Utilities and Public Services

New points of connection for domestic water, fire supply water, sewer, storm drainage and electrical connections from existing utility lines would be required to serve the proposed Project. Potable water service, as well as sewer collection services at the Project site, would be provided by the City. The Project would connect to an existing sanitary sewer maintenance access line located in Blair Avenue via new 6-inch mains. Connections for water (including domestic, fire, and irrigation) would be from an existing water main located in Blair Avenue. Distribution water pipes would be extended underground to serve each proposed building. A new water meter would be located in the proposed maintenance room in the community building. Adequate water treatment capacity and supply and sewer treatment capacity exists within the City's water and sewer system to accommodate the Project; therefore, no capacity upgrades to infrastructure would be necessary.

Stormwater drainage includes two stormwater catch basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated immediately east of the existing chain-link fence at the western boundary of the Project site. The proposed catch basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to stormwater discharge into the City's stormwater system via one new storm drain located in the southeast corner of the Project site.

Electrical services within the Project area are provided by Imperial Irrigation District, which provides electric power to over 158,000 customers in the Imperial Valley in addition to areas of Riverside and San Diego counties (IID 2024). New utility connections and infrastructure would be required to support electrical services on site. The Project would connect to on-site electrical power infrastructure via an existing 12kV, three phase, three wire, 60 Hertz overhead line routed along East 7th Street. No natural gas usage is proposed for the Project.

The Project would require a new point of connection for on-site telecommunications and would connect to the existing AT&T communications via the on-campus minimum point of entry.

Access, Circulation, and Parking

Regional access to the Project site is provided via SR-111 and SR-98 to the north. Local access is provided via Blair Avenue and East 7th Street. Parking to the Project site is available in the existing campus parking lot, immediately north of the Project site, which has sufficient capacity to serve the proposed Project. On-site circulation improvements would consist of additional paved pathway/pedestrian walkway features throughout the proposed complex and along the northern boundary of the Project site (see Figure 4). Emergency access would be provided directly adjacent to the Project site on East 7th Street and Blair Avenue.

3.1.3 Design Standards and Energy Efficiency

In May 2014, the CSU Board of Trustees broadened the application of sustainable practices to all areas of the university by adopting the first systemwide sustainability policy, which applies sustainable principles across all areas of university operations, including facility operations and utility management. In May 2024, the CSU Sustainability Policy was updated to expand on existing sustainability goals (CSU 2024). The CSU Sustainability Policy seeks to integrate sustainability into all facets of the CSU, including academics, facility operations, the built environment, and student life (CSU 2018). Relatedly, the state has also strengthened energy-efficiency requirements in the California Green Building Standards Code (Title 24 of the California Code of Regulations).

As a result, all CSU new construction, remodeling, renovation, and repair projects, including the proposed Project, would be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable state energy codes and regulations. Progress submittals during design are monitored for individual envelope, indoor lighting, and mechanical system performances. In compliance with these goals, the proposed Project would be equipped with solar ready design features that would facilitate and optimize the future installation of a solar photovoltaic (PV) system.

3.1.4 Off-Site Improvements

Off-site improvements would include the resurfacing of a portion of Blair Avenue adjacent to the eastern boundary of the Project site that would be disturbed as a result of trenching to make necessary connections to the existing

water main and sanitary sewer maintenance access. Any area disturbed as a result of this connection within Blair Avenue would be resurfaced to existing conditions. All off-site improvements would occur within the Blair Avenue right-of-way.

3.1.5 Construction

Construction would be performed by qualified contractors. Plans and specifications would incorporate stipulations regarding standard CSU/SDSU requirements and acceptable construction practices, such as those set forth in the SDSU Stormwater Management Plan, CSU Seismic Policy, The CSU Office of the Chancellor Guidelines, and the CSU Sustainability Policy, regarding grading and demolition, safety measures, vehicle operation and maintenance, excavation stability, erosion control, drainage alteration, groundwater disposal, public safety, and dust control.

Construction Timeline

Construction of the proposed Project would take approximately 17 months to complete and is estimated to begin as early as January 2024 and be completed by May 2026, with occupancy planned for fall 2026. Construction activities would generally occur Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m., with the potential for weekend construction on Saturday between 9:00 a.m. and 5:00 p.m. No construction would occur on Sundays or holidays or at night.

Construction Activities

A construction mobilization or staging area would be located immediately northeast of the proposed Project site and would occupy approximately 8,000 square feet. The area would be located east of existing Campus Building 6, west of Blair Avenue, and south of the existing parking lot (see Figure 2 and Figure 3A). To accommodate use of this area, four trees would be removed.

Construction would include site preparation, grading and excavation, utility installation/trenching, building foundation pouring, building construction, and landscaping. Excavation depths are anticipated to be 3 feet below grade. The majority of waste (i.e., excavated gravel/soil) generated during Project construction would be balanced/used within the site. Approximately 2,600 cubic yards of soil would be removed from the site and exported to Republic Services Allied Imperial Landfill, approximately 12 miles north. The entire Project site, including construction mobilization area (approximately 34,000 square feet in total) would be disturbed as a result of Project construction. Two trees would be removed from the Project site to accommodate the proposed Project.

Table 2 displays the construction equipment anticipated to be used during construction.

Table 2. Anticipated Construction Equipment

Aerial Lifts	Pressure Washers
Air Compressors	Pumps
Cement and Mortar Mixers	Rollers
Concrete/Industrial Saws	Rough Terrain Forklifts
Dumpers/Tenders	Rubber-Tired Dozers
Excavators	Rubber-Tired Loaders
Forklifts	Scrapers

Table 2. Anticipated Construction Equipment

Generator Sets	Signal Boards
Graders	Skid Steer Loaders
Off-Highway Tractors	Surfacing Equipment
Off-Highway Trucks	Sweepers/Scrubbers
Other Construction Equipment	Tractors/Loaders/Backhoes
Other General Industrial Equipment	Trenchers
Other Material Handling Equipment	Welders
Plate Compactors	

Source: Dorsey and Nielson Construction Inc, pers. comm., 2024

Construction Waste

The Project would generate construction debris during on-site clearing activities. In accordance with Section 5.408 of the California Green Building Standards Code, the Project would implement a construction waste management plan for recycling and/or salvaging for reuse of at least 65% of nonhazardous construction/demolition debris. Additionally, the Project would be required to meet Leadership in Energy and Environmental Design v4 requirements for waste reduction during construction. Solid waste generated during construction would be hauled off site to the Republic Services Allied Imperial Landfill at 104 East Robinson Road in Imperial, California.

4 Analysis Methodology

The analysis presented here considers the potential hydrology and water quality impacts of the proposed Project relative to existing conditions. Establishment of the Project site's existing hydrology and water quality conditions has been prepared using information contained in the previously certified 2003 EIR (SDSU 2003), combined with updated information, as applicable, from the California Department of Water Resources, Federal Emergency Management Agency, and the Colorado River Basin Regional Water Quality Control Board (RWQCB).

5 Hydrology and Water Quality

5.1 Existing Conditions

Hydrology and Drainage

Water used to irrigate virtually the entire Imperial Valley originates from the Colorado River. Local drainage patterns within Imperial Valley have been altered through agricultural activities. The Imperial Irrigation District maintains approximately 1,600 miles of irrigation drainage structures, which collect surface water runoff and subsurface drainage from some 32,200 miles of agriculture (tile) drains and channel the flow into the New River and Alamo River, which ultimately drain to the Salton Sea. The canals and laterals are often open and unprotected (SDSU 2003).

Surface runoff from the SDSU Off-Campus Center - Calexico flows into the City drainage system (SDSU 2003), which in turn flows into the New River, located approximately 0.7 miles southwest of the Off-Campus Center - Calexico.

The New River is a sub-watershed of the larger Salton Sea Watershed. The New River starts in Mexicali, Mexico, approximately 15 miles south of the United States–Mexico International Border, and flows north through Calexico, the Imperial Valley, and then into the Salton Sea, approximately 66 miles north of Calexico (see Figure 5, Hydrology Map). The sub-watershed covers approximately 750 square miles, 63% of which is in Mexico and 37% of which is in the United States (City of Calexico 2015).

Water Quality

The SDSU Off-Campus Center - Calexico is located in the Colorado River Basin (Basin), under jurisdiction of the RWQCB, Colorado River Basin Region. The Basin encompasses the eastern portions of San Bernardino, Riverside, and San Diego Counties and all of Imperial County. The Imperial Valley Planning Area consists of 2,500 square miles in the southern portion of the region. The West Basin (the portion of the Basin that does not drain to the Colorado River) contains the Alamo River, the New River, and some Imperial Valley agricultural drains. These surface water features are among the most contaminated and poorest quality water resources in the state. The New River, located approximately 0.7 miles southwest of the Off-Campus Center - Calexico and one of the few natural surface drainage features in the region, has a total dissolved solids concentration between 2,000 and 4,000 parts per million and is classified as brackish rather than freshwater. The New River flows into Imperial Valley from Mexico with very high loads of sewage and industrial waste. As the New River flows through Imperial Valley, drainage from agricultural operations dramatically increases its flows. The New River is unsuitable for either domestic or agricultural uses.

In accordance with state policy for water quality control, RWQCB employs a range of beneficial use definitions for surface waters, groundwater basins, marshes, and mudflats that serve as the basis for establishing water quality objectives and discharge conditions and prohibitions. The RWQCB Water Quality Control Plan for the Colorado River Basin (RWQCB Colorado River Basin Plan) has identified existing and potential beneficial uses supported by the key surface water drainages throughout its jurisdiction. Beneficial uses of the New River include freshwater replenishment, industrial service supply (potential), water contact recreation (limited to fishing), non-contact water recreation, warm freshwater habitat, wildlife habitat, and preservation of rare, threatened, or endangered species (Colorado River Basin RWQCB 2019).

Under Clean Water Act Section 303(d), the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives. The New River water quality impairments include ammonia, bifenthrin, chlordane, chloride, chlorpyrifos, cyhalothrin (lambda), cypermethrin, dichlorodiphenyldichloroethane, dichlorodiphenyldichloroethylene, dichlorodiphenyltrichloroethane, diazinon, dieldrin, disulfoton, hexachlorobenzene, imidacloprid, indicator bacteria, malathion, mercury, naphthalene, nutrients, organic enrichment/low dissolved oxygen, polychlorinated biphenyls, pyrethroids, sediment, selenium, toxaphene, toxicity, and trash (SWRCB 2024a).

A total maximum daily load defines how much of a specific pollutant/stressor a given water body can tolerate and still meet relevant water quality standards. RWQCB has developed total maximum daily loads for select reaches of water bodies. According to the State Water Resources Control Board, bacteria, which are pathogen-indicator organisms, impair the entire segment of the New River. Pollution is most severe at the United States–Mexico International Border due to discharges of wastes from Mexico. The bacterial concentrations exceed the water quality objectives established to protect recreational beneficial uses of the New River. As a result, a New River pathogen total maximum daily load was approved by the U.S. Environmental Protection Agency in August 2002. This total maximum daily load addresses bacterial concentrations in the New River (SWRCB 2011).

Flooding

Flooding occurs in varying degrees throughout Imperial County. Floodwaters rise either from sudden downpours or because of slow heavy precipitation. Flood zones identified on Federal Emergency Management Agency Flood Insurance Rate Maps are identified as a Special Flood Hazard Area (SFHA). An SFHA is defined as the area that will be inundated by the flood event having a 1% chance of being equaled or exceeded in any given year. The 1%-annual-chance flood is also referred to as the base flood or 100-year flood. "Floodways" are areas within the SFHA that include the channel of a river/watercourse and adjacent land areas, which in an unobstructed condition can discharge a 100-year flood/base flood without any increase in water surface elevations. The Off-Campus Center - Calexico is not located within an SFHA (FEMA 2024).

Groundwater

The SDSU Off-Campus Center - Calexico is located in the Imperial Valley Planning Area of the West Colorado River Basin, in the Imperial Hydrologic Subunit. Isolated aquifers of good quality groundwater are present in the Imperial Hydrologic Subunit, but overall groundwater quality is generally poor. Groundwater resources are generally unsuitable for domestic consumption under federal and state drinking water standards. Groundwater is stored in the Pleistocene sediments of the Imperial Valley floor. These fine-grained lake sediments inhibit groundwater movement, and tile-drain systems are utilized to dewater the sediments to a depth below the root zone of crops and to prevent the accumulation of saline water on the surface. Few wells have been drilled in these lake sediments because the yield is poor, and the water is generally saline. The few wells in Imperial Valley are for domestic use only. Factors that diminish groundwater reserves are consumptive use, evapotranspiration, evaporation from soils where groundwater is near the surface, and losses through outflow and export. In addition, poor groundwater quality is considered to result from infiltration of agricultural runoff and pre-existing subsurface salt deposits. RWQCB has designated groundwaters in the Imperial Hydrologic Subunit for the beneficial uses of municipal and industrial supply (SDSU 2003).

The Imperial County groundwater basins are not adjudicated and are all designated by the California Department of Water Resources as having a very low priority regarding enacting the Sustainable Groundwater Management Act (DWR 2024). Low and very low priority basins are not required to prepare Groundwater Sustainability Plans. Groundwater is managed by Imperial County's Groundwater Ordinance contained in Title 9, Division 22, Section 92201 of Imperial County's Code of Ordinances.

The City of Calexico's Department of Public Works provides potable water services to users within the incorporated City limits, which includes the SDSU Off-Campus Center - Calexico. The Imperial Irrigation District distributes raw water from the Colorado River to the City, including the Off-Campus Center - Calexico (SDSU 2003). Groundwater is not used as a potable or nonpotable water source on the Off-Campus Center - Calexico.

6 Impact Analysis and Conclusions

6.1 Thresholds of Significance

The significance criteria used to evaluate the impacts of the proposed Project related to hydrology and water quality are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). A significant impact to hydrology and water quality under CEQA would occur if the proposed Project would:

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    i) result in substantial erosion or siltation on- or off-site;
    ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off site;
    iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    iv) impede or redirect flood flows.
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

6.2 Impact Analysis

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Impacts relative to this significance criteria and threshold are separately addressed in the contexts of Project construction and operation.

Construction

Construction impacts related to water quality were evaluated in Section 3.11, Water Quality, of the 2003 EIR, which concluded that the potential surface water and groundwater quality impacts during construction would be less than significant with implementation of a construction stormwater pollution prevention plan (SWPPP), as required by the Clean Water Act (SDSU 2003).

Project construction activities, such as grading, excavation, and trenching, would result in disturbance of soils on the Project site. Construction site runoff can contain soil particles and sediments from these activities.

Dust from construction sites, in addition to spills or leaks from heavy equipment and machinery, staging areas, or building sites can also enter runoff and water bodies. Typical pollutants could include petroleum products and heavy metals from equipment, as well as products such as paints, solvents, and cleaning agents, which could contain hazardous constituents. Sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of construction materials could result in water quality degradation if runoff containing the sediment entered receiving waters in sufficient quantities to exceed water quality objectives. However, contributions of sediment from construction and construction-related pollutants would be minor and not measurable in the context of the watershed.

Stormwater best management practices (BMPs) would be installed during grading and construction to minimize the potential for soil erosion and potential off-site migration of construction related pollutants. BMPs would be consistent with construction site runoff controls detailed in the SDSU Stormwater Management Plan (SDSU 2022), including good site management housekeeping, non-stormwater management, erosion controls, sediment controls, and run-on/runoff controls. Typical construction BMPs would include straw wattles, sediment basins, sediment fences, covering stockpiled soil, vehicle track-out controls at entrance/exit points, limitations on work periods during storm events, temporary secondary containment around portable toilets and equipment fueling areas, and on-site storage of absorbent pads for potential small spills. After construction, the Project site would be developed with impermeable surfaces and approximately 16,000 square feet of on-site landscaping, thus eliminating the potential for soil erosion. Based on the SDSU Stormwater Management Plan, construction sites less than 1 acre (such as the Project site) would be inspected weekly by the Environmental Health and Safety staff for proper BMP implementation. If the Environmental Health and Safety staff deems a project is not in compliance with minimum BMPs set forth in the construction contract language, they would provide the contractor with a copy of their site inspection/audit report and include a list of actions required to bring the site into compliance. Staff would re-inspect the site within 72 hours after notifying the contractor of the deficiencies. Non-stormwater discharges during construction would include periodic application of water for dust control purposes. Because dust control is necessary during windy and dry periods to prevent wind erosion and dust plumes, water would be applied in sufficient quantities to wet the soil but not so excessively as to produce runoff from the construction site. Water applied for dust control would either quickly evaporate or locally infiltrate into shallow surface soils. Water would only be applied in a manner that does not generate runoff. Therefore, water applied for dust control would not result in appreciable effects on groundwater or surface water features and thus would not cause or contribute to exceedances of water quality objectives contained in the RWQCB Colorado River Basin Plan.

No new information or substantial changes in circumstances have occurred requiring new or additional analysis regarding construction-related impacts to water quality at the Project site. Based on implementation of the above practices, potential Project impacts relating to violation of surface water and groundwater quality standards or waste discharge requirements during construction would be **less than significant**, and no mitigation is required.

Operation

The analysis presented in Section 3.11, Water Quality, of the 2003 EIR, concluded that no significant impacts to water quality are expected because the City has an established storm drain system. In addition, the 2003 EIR concluded that the existing SDSU Off-Campus Center - Calexico is a developed and urban use; therefore, no increase in impervious surfaces are anticipated (SDSU 2003). The 2003 EIR did not include mitigation measures related to water quality.

The Project site is predominantly unpaved and includes turf and trees, which allows stormwater to infiltrate into the subsurface, thus reducing stormwater runoff, erosion, and downstream sedimentation of the New River. Similarly, following construction, the Project site would be developed with impermeable surfaces and 18,100 square feet of on-site landscaping, thus eliminating the potential for soil erosion and off-site siltation of the New River. Runoff from building rooftops, driveways, and landscaped areas can contain nonpoint source pollutants such as sediment, trash, oil, grease, heavy metals, pesticides, herbicides, and/or fertilizers. Concentrations of pollutants carried in urban runoff are extremely variable, depending on factors such as the volume of runoff reaching the storm drains, time since the last rainfall, and degree to which street cleaning occurs. Without design features to capture and treat stormwater runoff, the increase in the developed area could have adverse water quality impacts on downstream drainages and the New River.

SDSU is enrolled under State Water Resources Control Board Phase II Small Municipal Separate Storm Sewer System (MS4) General Permit 2013-0001 DWQ, which provides permit coverage for non-traditional MS4s, such as public campuses (SWRCB 2024b). Stormwater drainage systems would be located throughout the Project site and would direct all stormwater on site to two stormwater catch basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated immediately east of the existing chain-link fence on the western boundary of the Project site. In compliance with the Small MS4 General Permit and the SDSU Stormwater Management Plan (SDSU 2022), the catch basins would include bio-retention features. Section 10 of the SDSU Stormwater Management Plan includes post-construction stormwater management protocol, including development, implementation, and enforcement of a program to address discharges of post-construction stormwater runoff from impervious areas for new development and redevelopment projects. The program includes site design measures, low impact development design standards, source control measures, stormwater treatment and baseline hydromodification, alternative designs for bioretention, an alternative post-construction stormwater management program, and operation and maintenance of post-construction stormwater management measures. As a result, the proposed catch basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to off-site stormwater discharge. In addition, proposed landscaping would further reduce potential adverse water quality impacts by reducing impervious surfaces, which increase runoff, collect pollutants, and contribute to adverse water quality impacts.

With construction of proposed bio-retention features and landscaping, water quality impacts would be minimized such that the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Impacts would be **less than significant**, and no mitigation is required.

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

The initial study (IS) prepared for the 2003 EIR determined that no impact would occur regarding decreased groundwater supplies or groundwater recharge (SDSU 2003) based on the following set of facts: The City's

Department of Public Works provides potable water services to users within the incorporated City limits, which includes the SDSU Off-Campus Center - Calexico. The Imperial Irrigation District distributes raw water from the Colorado River to the City, including the Off-Campus Center - Calexico. Groundwater is not used as a potable or nonpotable water source on the Off-Campus Center - Calexico. As a result, no impacts would occur with respect to groundwater supplies.

Following Project construction, changes in land cover (e.g., increases in impervious surfaces) ultimately could affect the amount of stormwater that percolates into the ground versus the amount that runs off into the downstream storm drains and the New River. However, construction of the proposed buildings and associated pedestrian walkways would have a nominal effect on groundwater recharge due to the small scale of the proposed impervious surfaces, in comparison to existing conditions. In addition, the Project would include bio-retention basins that will be located throughout the Project site, and approximately 16,000 square feet of on-site landscaping. These pervious areas will slow runoff and enhance groundwater recharge.

As such, direct impacts of the proposed Project on the local groundwater table would be negligible. The Project would not substantially interfere with groundwater recharge such that the Project may impede sustainable groundwater management of the underlying groundwater basin. Impacts would be **less than significant**.

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

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

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

iii) ***create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?***

Impacts related to changes in drainage patterns and potential increased runoff were evaluated in Section 3.8, Hydrology/Flood Control, of the 2003 EIR, which concluded that the majority of the SDSU Off-Campus Center - Calexico consists of impervious surfaces and is surrounded by urban development (SDSU 2003). No increase in impervious surfaces would occur because of the project, and as a result, the project would not have an adverse impact on the hydrology of the site or surrounding area. In the absence of significant impacts, no mitigation was required.

The proposed Project would involve the construction of additional improvements that would increase the impervious surface area; these include the proposed buildings, pedestrian walkways, and landscaping. As discussed for Threshold a, the Project site is predominantly unpaved and includes turf and trees, which allows stormwater to infiltrate into the subsurface, thus reducing stormwater runoff, erosion, and downstream flooding. Similarly, following construction, the Project site would be developed with impermeable surfaces and approximately 16,000 square feet of on-site landscaping, thus eliminating the potential for soil erosion and siltation of the downstream New River.

In compliance with the Phase II Small MS4 General Permit, stormwater drainage systems would be located throughout the Project site and would direct all stormwater on site to two bio-retention basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated immediately east of the existing chain-link fence on the western boundary of the Project site. These basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to off-site stormwater discharge. In addition, proposed landscaping would further reduce stormwater runoff velocities and minimize the potential for off-site flooding of City streets and storm drains. With construction of proposed bio-retention basins and landscaping, stormwater runoff impacts would be minimized such that the Project would not result in siltation of the downstream New River, flooding of adjacent streets and storm drains, and polluted runoff. Impacts relative to existing drainage patterns would be **less than significant**, and no additional mitigation is required.

iv) impede or redirect flood flows?

The IS prepared for the 2003 EIR determined that no impact would occur regarding 100-year flood hazard areas (SDSU 2003).

The SDSU Off-Campus Center - Calexico is not located within an SFHA. Therefore, neither construction nor operation of the proposed Off-Campus Center - Calexico buildings would impede or redirect flood flows, and **no impacts** would occur relative to flood flows.

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

The IS prepared for the 2003 EIR determined that no impact would occur regarding flooding, including flooding as a result of failure of a levee or dam or inundation by seiche, tsunami, or mudflow (SDSU 2003).

As discussed for Threshold c-iv, the SDSU Off-Campus Center - Calexico is not located within an SFHA. The Project site is not located in proximity to the Pacific Ocean and would therefore not be susceptible to tsunamis. A seiche is oscillations in an enclosed body of water, such as a lake or reservoir, typically because of seismically induced ground shaking. No such bodies of water are located adjacent to the Off-Campus Center - Calexico; therefore, the proposed buildings would not be susceptible to seiches. Since adoption of the 2003 EIR, the CEQA significance criteria have been revised (per Appendix G of the 2023 CEQA Statute and Guidelines), and impacts related to failure of a levee or dam or inundation by mudflow are no longer evaluated under CEQA. Therefore, flooding related to levees, dams, and mudflows have not been evaluated in this memo.

For the reasons provided, neither construction nor operation of the proposed SDSU Off-Campus Center - Calexico buildings would risk the release of pollutants due to Project inundation. As such, **no impacts** related to pollutant release would occur.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The 2003 EIR and IS prepared for the 2003 EIR did not specifically address conflict with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan. Therefore, a discussion regarding this issue is provided below. Impacts related to construction and operation of the proposed Project are addressed separately.

Construction

As previously discussed, stormwater BMPs would be installed during grading and construction to minimize the potential for soil erosion and potential off-site migration of construction related pollutants. BMPs would be consistent with construction site runoff controls detailed in the SDSU Stormwater Management Plan (SDSU 2022), including good site management housekeeping, non-stormwater management, erosion controls, sediment controls, and run-on/runoff controls. After construction, the Project site would be developed with impermeable surfaces and approximately 16,000 square feet of on-site landscaping, thus eliminating the potential for soil erosion. These measures would substantially reduce the potential for impacts to surface water quality occurring during construction. Therefore, the Project would not conflict with or obstruct implementation of water quality objectives contained in the RWQCB Colorado River Basin Plan and impacts from construction would be **less than significant.**

Operations

The proposed Project would be subject to the requirements of the RWQCB Colorado River Basin Plan, which outlines water quality objectives for all surface water resources within the Basin, including the nearby New River. Compliance with the Colorado River Basin Plan is implemented through waste discharge requirements for all surface water discharges, including stormwater. Imperial County, as a Permittee under the State Water Resources Control Board Phase II Small MS4 General Permit (2013-0001 DWQ), is required to implement stormwater BMPs that comply with water quality objectives, including capturing and treating stormwater runoff. The Project would include construction of numerous biofiltration features and landscaping, which would ensure that the Project is consistent with the Colorado River Basin Plan's water quality objectives.

Further, groundwater would not be used as a water source for the Project. Water would be supplied from the Colorado River via the All American Canal. Therefore, the Project would not conflict with or obstruct implementation of the Colorado River Basin Plan or a Groundwater Sustainability Plan (under the Sustainable Groundwater Management Act). As a result, **no impacts** would occur.

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Attachment A

Figures

SOURCE: ESRI

DUDEK

0 4 8 Miles

FIGURE 1

Regional Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

SOURCE: AERIAL-ESRI MAPPING SERVICE 2023; DEVELOPMENT-SDSU 2024

DUDEK

0 100 200 Feet

FIGURE 2
Vicinity Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

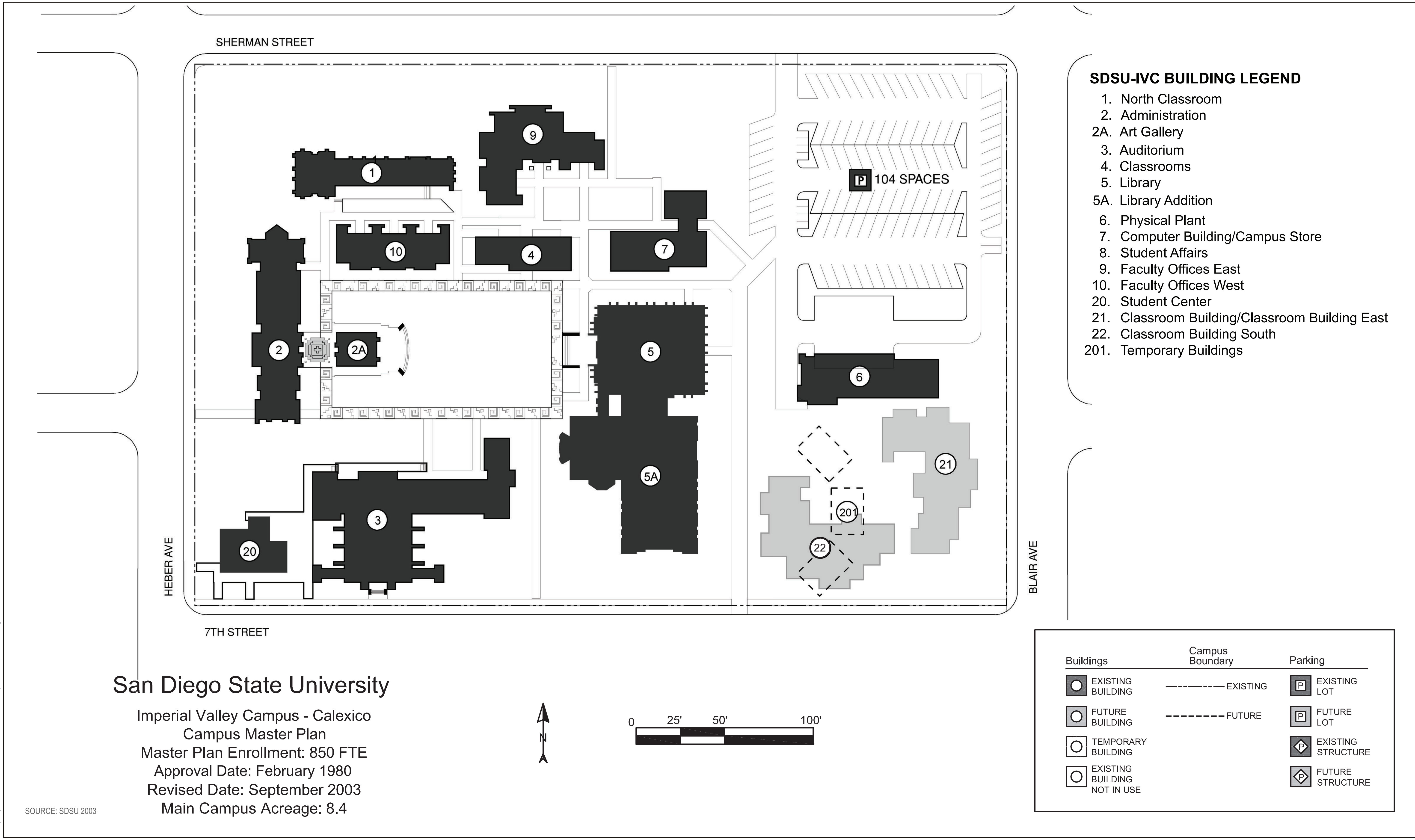
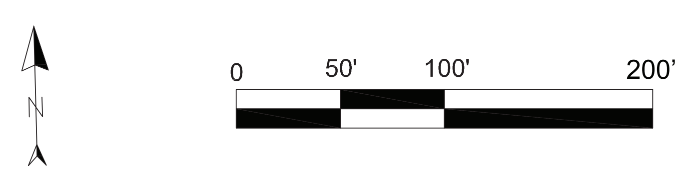
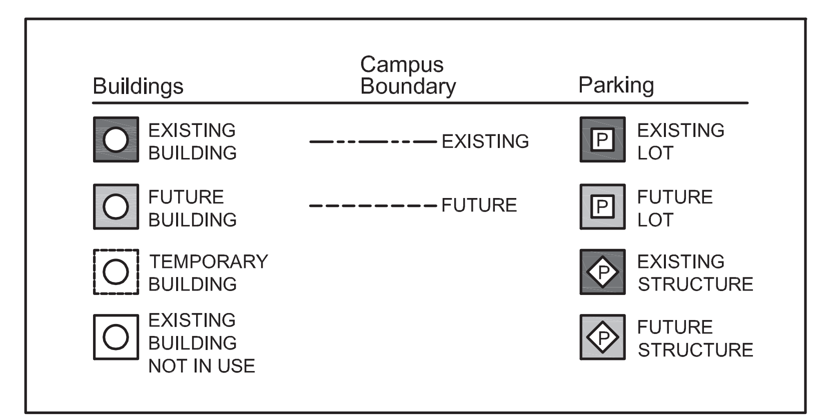


FIGURE 3A

Existing Campus Master Plan

PROPOSED
San Diego State University
Imperial Valley Campus - Calexico
Campus Master Plan
Master Plan Enrollment: 850 FTE
Approval Date: 1980
Revised Date: September 2003
Main Campus Acreage: 8.4

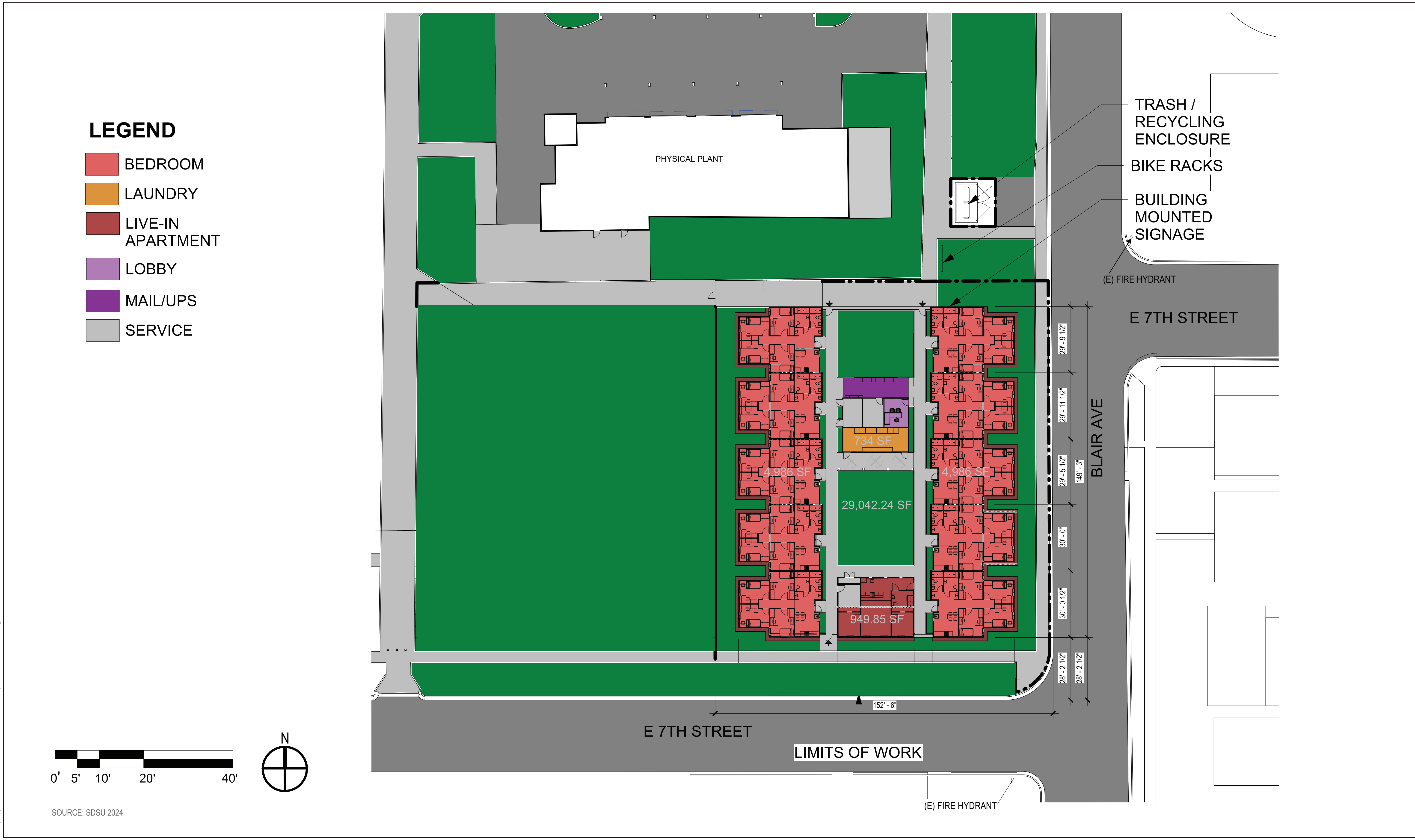




SOURCE: SDSU 2024

FIGURE 3B

Proposed Campus Master Plan



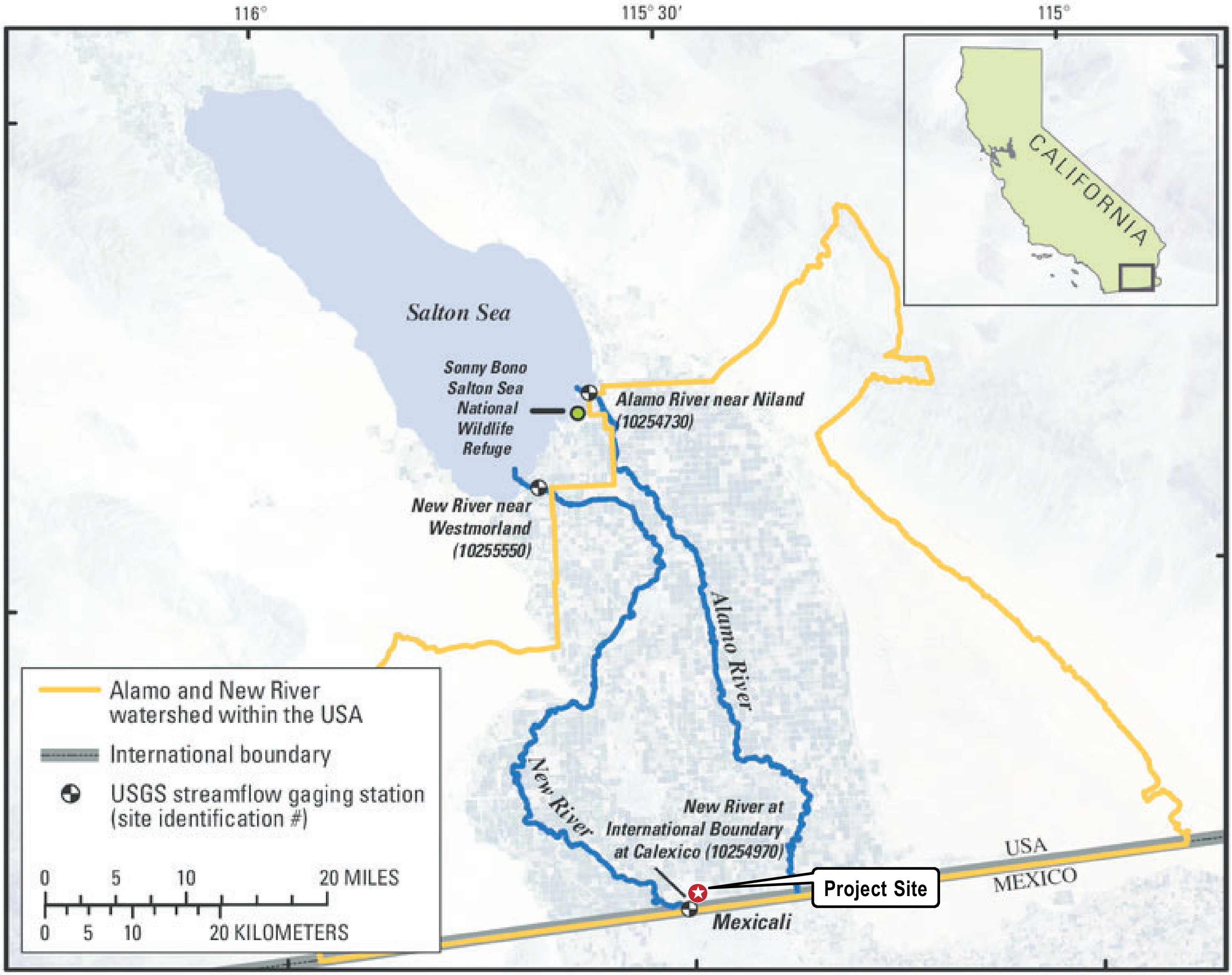
SOURCE: SDSU 2024

DUDEK

FIGURE 4

Site Plan

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center – Calexico Affordable Student Housing Project



Base map from National Agriculture Imagery Program (2005)

Z:\Projects\15464001\MAPDOC\DOCUMENT\TO05 Calexico Campus\Tech Reports

SOURCE: RESEARCHGATE.NET, ACCESSED JUNE 25, 2024

DUDEK

FIGURE 5

Hydrology Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center – Calexico Affordable Student Housing Project

Appendix I

Noise Technical Memorandum

NOISE TECHNICAL MEMORANDUM

To:	Kara Peterson; San Diego State University
From:	Nick Segovia, Dudek
Subject:	SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project – Noise Technical Memorandum
Date:	December 12, 2024
cc:	Mollie Brogdon, Sarah Lozano, Dudek; Michael Haberkorn, Gatzke Dillon & Ballance
Attachments:	A – Figures B – Baseline Noise Measurement Field Data C – Construction Noise Prediction Model Worksheets D – Traffic Noise Modeling Calculations E – Operation Noise Prediction Model Inputs

Dudek is pleased to provide these noise technical analyses for the proposed California State University (CSU)/San Diego State University (SDSU) Calexico Affordable Student Housing Project (Project or proposed Project), to be located at the SDSU Imperial Valley Off-Campus Center, located in Calexico, California. The potential for significant noise-related impacts from construction and operation of the project is assessed in accordance with the California Environmental Quality Act (CEQA) Guidelines. As a state entity, CSU is not subject to local planning regulations, including those of the City of Calexico (City) or Imperial County (County). However, to the extent feasible, consideration is given to relevant City and County noise regulations.

This memorandum presents quantitative estimates of project on-site construction and post-construction operational noise emission levels relative to the surrounding sound environment, which consists of existing urban uses, including commercial, institutional, and medical facilities near the project site. Construction vibration is also estimated using Federal Transit Administration (FTA) techniques in the absence of explicit City thresholds, and traffic noise impacts are discussed qualitatively.

1 Project Overview and Background

In September 2003, the CSU certified an environmental impact report for the SDSU Imperial Valley Master Plan Project (State Clearinghouse No. 2002051010) and approved a Campus Master Plan for the expansion and improvement of the SDSU Imperial Valley Off-Campus Center, which includes locations in Calexico and Brawley, both located in Imperial County (SDSU 2003). The Off-Campus Center is an extension of SDSU's main campus in San Diego and furthers the University's regional educational mission to provide additional educational opportunities to the outlying communities of Imperial County. The previously certified and approved Campus Master Plan and EIR provided the authorization necessary for enrollment of 850 full-time equivalent (FTE)[1] students at the Off-Campus

1 A full-time equivalent (FTE) student is one full-time student taking 15 course credits, or 3 part-time students each taking 5 course credits.

Center, corresponding associated faculty and staff, and a framework for development of the facilities necessary to serve this projected enrollment and campus population.

The Off-Campus Center - Calexico is approximately 8.3 acres in size and is located in the City of Calexico (City). Most of the Calexico location is built out, consisting of several educational and support facilities. The environmental impacts associated with development of the Off-Campus Center – Calexico were evaluated at a program level of review in the 2003 EIR. In the CSU's continuing effort to build out the Imperial Valley Off-Campus Center and provide additional educational opportunities, SDSU presently proposes construction and operation of a four-building complex that would provide affordable student housing at the Calexico location for 80 students and a resident manager. Additional details regarding the proposed housing is provided below.

2 Project Location and Existing Conditions

The Off-Campus Center – Calexico is located at 720 Heber Avenue in downtown Calexico, approximately 0.5 miles north of the United States–Mexico border (see Figure 1, Regional Map). Regional access to the Off-Campus Center is provided via SR-111 and SR-98 to the north. The Calexico location is bordered by four streets: Heber Avenue to the west, Sherman Street to the north, Blair Avenue to the east, and 7th Street to the south. Residential uses bound the Calexico complex to the north, east, south, and west. Other surrounding uses include Calexico High School, located northeast, and Calexico City Hall, located immediately south. The Off-Campus Center - Calexico currently consists of 17 buildings and an associated surface parking lot (see Figure 2, Vicinity Map, and Figure 3A, Existing Campus Master Plan).

As a state entity, the CSU/SDSU is not subject to local government plans, regulations, and guidelines, such as those contained in the City's General Plan. The above notwithstanding, for information purposes, the Off-Campus Center - Calexico is zoned as Open Space and is designated as Public Facilities in the City's General Plan (City of Calexico 2015a).

The proposed Project site is approximately 0.58 acres in size (25,320 square feet) and is located at the southeast corner of the campus, at the northwest corner of East 7th Street and Blair Avenue (see Figure 2). The entirety of the Project site has previously been graded and is relatively flat in nature, with an average elevation of 3.5 feet above mean sea level. The Project site encompasses the locations identified in the Campus Master Plan as future Building 21 (see Figure 3A and Figure 3B, Proposed Campus Master Plan). The Project site consists of vacant and undeveloped land with two trees located along the northern boundary of the site. A chain-link fence separates the Project site from the recently removed temporary Campus Buildings 201, which were located immediately west of the Project site.

3 Project Description

3.1 Affordable Student Housing Complex

The proposed Project would involve the construction of a single-story, four-building complex approximately 12,840 square feet in size that would provide for affordable student housing. The complex would include three student housing buildings, including one smaller live-in unit building, and a community building. Two of the three proposed residential buildings would each be approximately 5,500 square feet in size and would include five four-bedroom, two-bathroom apartment units, totaling 40 student beds per building (two student beds per bedroom, 80 student beds in total). The third proposed residential building would be a live-in manager unit that would consist of a single two-bedroom, one-bathroom apartment. The proposed live-in unit would also include approximately 100 square feet of office space that is intended to provide a space for tenant meetings, social services, or counseling. All apartment units would also be equipped with a living area and kitchen. The proposed community building program would be approximately 840 square feet and include laundry, mail, restroom, electrical, and maintenance facilities. The mail room would be located outside, under the shaded amenity patio of the community building (see Table 1).

Table 1. Affordable Student Housing Complex Area Calculations

	Quantity	Area (Square Feet)	Beds
Residential Buildings (3)			
4-Bedroom, 8-Bed Unit	5	5,150	40
4-Bedroom, 8-Bed Unit	5	5,150	40
Live-In Unit	1	1,000	2
Office (Included in Live-In Unit)	N/A	N/A	N/A
Subtotal	*11*	*11,300*	*82*
Community Building (1)			
Laundry Room	1	300	N/A
Service Rooms	4	450	N/A
Restroom	2	100	N/A
Mail/Package (Outside)	1	270	N/A
Subtotal	*N/A*	*1,150*	*N/A*
Other			
Trash/Recycling Enclosure	1	850	N/A
Open Space	N/A	2,300	N/A
Landscaping/hardscaping	N/A	12,500	N/A
Subtotal	*N/A*	*13,650*	*N/A*
Combined Total	**N/A**	**26,100**	**82**

Note: N/A = not applicable.
All square foot amounts presented in the table are approximate amounts only and may not add to the site plan area totals described in this document due to rounding.

Other on-site proposed amenities include a courtyard, bike racks, and a community waste enclosure. The courtyard would be approximately 1,600 square feet and would be centrally located in the proposed complex (see Figure 4, Site Plan). Approximately 15 bike racks would be provided throughout the Project site. A community waste enclosure at the northeast corner of the Project site would allow residents a convenient place to dispose of waste and recyclables.

3.1.1 Operation

The Off-Campus Center - Calexico, including the Project site, is owned and operated by the CSU/SDSU. The CSU Board of Trustees, on behalf of SDSU, is the lead agency responsible for certifying the adequacy and completeness of this document and approval of the proposed Project. SDSU and the IVCCD have received joint funding under the State of California Higher Education Student Housing Grant Program to construct the proposed Project.

To support basic housing needs for students in the Imperial Valley, SDSU and IVCCD have executed a 30-year master lease agreement that details operation of the Project. This agreement dictates that 40 of the 82 proposed student beds would be reserved for IVCCD students who attend the Imperial Valley College in Imperial. Likewise, 40 of the proposed 82 beds, would be reserved for SDSU Off-Campus Center - Calexico students. A 2-bedroom unit would also provide living space for on-site management. SDSU would be responsible for operating, managing, and maintaining the proposed Project once operational.

Student beds made available under the proposed Project would be leased/rented to eligible low-income students. Eligible low-income students are defined as having 30% of 50% of the Annual Median Income for Imperial County. In the event, after a good faith outreach effort, there is not sufficient demand from students meeting the eligibility requirements within 90 days of the start of the fall semester, unassigned beds may be leased at market rates to SDSU and IVCCD students not meeting the low-income eligibility requirements. In addition to meeting the low-income criteria, eligible students would be required to be enrolled students and take a minimum average of 12 degree-applicable units per semester term, or the quarterly equivalent (with exceptions permitted), to facilitate timely degree completion.

3.1.2 Other Project Elements

Building and Site Design

The proposed buildings have been designed to reflect the character and massing of the existing Off-Campus Center - Calexico, as well as the surrounding neighborhood. Building design is centered around a courtyard-style housing complex and would consist of smooth stucco walls with downspouts and rafters, punctuated by composite terra cotta–colored roof tile accents and windows. Maximum building heights would range from 14 feet to 18 feet.

Landscaping, Other Site Improvements, and Lighting

The Project would include approximately 16,000 square feet of on-site landscaping and hardscape improvements (i.e., pedestrian walkways). All proposed landscaping would consist of drought-tolerant, indigenous plants. The landscape scheme would include shrubs, hedges, and a variety of trees. A total of 39 trees would be added to the Project site including five fan palms, eight mesquite trees, six evergreen elms, and 20 yucca trees.

All exterior on-site lighting would be hooded or shielded, directed downward, and would be compliant with applicable standards for lighting control and light pollution reduction (i.e., Title 24, American National Standards Institute/Illuminating Engineering Society).

The proposed complex would be secured via an iron security fence that would measure 6 feet in height and run approximately 64 linear feet, connecting to the proposed buildings. Access to the complex would only be available to residents and their guests via two pedestrian gates located at the northwestern corner and southern portion of the proposed complex. The gates would be equipped with security card access for residents.

Utilities and Public Services

New points of connection for domestic water, fire supply water, sewer, storm drainage and electrical connections from existing utility lines would be required to serve the proposed Project. Potable water service, as well as sewer collection services at the Project site, would be provided by the City. The Project would connect to an existing sanitary sewer maintenance access line located in Blair Avenue via new 6-inch mains. Connections for water (including domestic, fire, and irrigation) would be from an existing water main located in Blair Avenue. Distribution water pipes would be extended underground to serve each proposed building. A new water meter would be located in the proposed maintenance room in the community building. Adequate water treatment capacity and supply and sewer treatment capacity exists within the City's water and sewer system to accommodate the Project; therefore, no capacity upgrades to infrastructure would be necessary.

Stormwater drainage includes two stormwater catch basins. One basin would be located on the eastern boundary of the Project site, and the second would be situated immediately east of the existing chain-link fence at the western boundary of the Project site. The proposed catch basins would function as both water quality and flood control features, by filtering out surface water contaminants and slowing stormwater runoff prior to stormwater discharge into the City's stormwater system via one new storm drain located in the southeast corner of the Project site.

Electrical services within the Project area are provided by Imperial Irrigation District, which provides electric power to over 158,000 customers in the Imperial Valley in addition to areas of Riverside and San Diego counties (IID 2024). New utility connections and infrastructure would be required to support electrical services on site. The Project would connect to on-site electrical power infrastructure via an existing 12kV, three phase, three wire, 60 Hertz overhead line routed along East 7th Street. No natural gas usage is proposed for the Project.

The Project would require a new point of connection for on-site telecommunications and would connect to the existing AT&T communications via the on-campus minimum point of entry.

Access, Circulation, and Parking

Regional access to the Project site is provided via SR-111 and SR-98 to the north. Local access is provided via Blair Avenue and East 7th Street. Parking to the Project site is available in the existing campus parking lot, immediately north of the Project site, which has sufficient capacity to serve the proposed Project. On-site circulation improvements would consist of additional paved pathway/pedestrian walkway features throughout the proposed complex and along the northern boundary of the Project site (see Figure 4). Emergency access would be provided directly adjacent to the Project site on East 7th Street and Blair Avenue.

3.1.3 Design Standards and Energy Efficiency

In May 2014, the CSU Board of Trustees broadened the application of sustainable practices to all areas of the university by adopting the first systemwide sustainability policy, which applies sustainable principles across all areas of university operations, including facility operations and utility management. In May 2024, the CSU Sustainability Policy was updated to expand on existing sustainability goals (CSU 2024). The CSU Sustainability Policy seeks to integrate sustainability into all facets of the CSU, including academics, facility operations, the built environment, and student life (CSU 2018). Relatedly, the state has also strengthened energy-efficiency requirements in the California Green Building Standards Code (Title 24 of the California Code of Regulations).

As a result, all CSU new construction, remodeling, renovation, and repair projects, including the proposed Project, would be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable state energy codes and regulations. Progress submittals during design are monitored for individual envelope, indoor lighting, and mechanical system performances. In compliance with these goals, the proposed Project would be equipped with solar ready design features that would facilitate and optimize the future installation of a solar photovoltaic (PV) system.

3.1.4 Off-Site Improvements

Off-site improvements would include the resurfacing of a portion of Blair Avenue adjacent to the eastern boundary of the Project site that would be disturbed as a result of trenching to make necessary connections to the existing water main and sanitary sewer maintenance access. Any area disturbed as a result of this connection within Blair Avenue would be resurfaced to existing conditions. All off-site improvements would occur within the Blair Avenue right-of-way.

3.1.5 Construction

Construction would be performed by qualified contractors. Plans and specifications would incorporate stipulations regarding standard CSU/SDSU requirements and acceptable construction practices, such as those set forth in the SDSU Stormwater Management Plan, CSU Seismic Policy, The CSU Office of the Chancellor Guidelines, and the CSU Sustainability Policy, regarding grading and demolition, safety measures, vehicle operation and maintenance, excavation stability, erosion control, drainage alteration, groundwater disposal, public safety, and dust control.

Construction Timeline

Construction of the proposed Project would take approximately 17 months to complete and is estimated to begin as early as January 2025 and be completed by May 2026, with occupancy planned for fall 2026. Construction activities would generally occur Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m., with the potential for weekend construction on Saturday between 9:00 a.m. and 5:00 p.m. No construction would occur on Sundays or holidays or at night.

Construction Activities

A construction mobilization or staging area would be located immediately northeast of the proposed Project site and would occupy approximately 8,000 square feet. The area would be located east of existing Campus Building 6, west of Blair Avenue, and south of the existing parking lot (see Figure 2 and Figure 3A). To accommodate use of this area, four trees would be removed.

Construction would include site preparation, grading and excavation, utility installation/trenching, building foundation pouring, building construction, and landscaping. Excavation depths are anticipated to be 3 feet below grade. The majority of waste (i.e., excavated gravel/soil) generated during Project construction would be balanced/used within the site. Approximately 2,600 cubic yards of soil would be removed from the site and exported to Republic Services Allied Imperial Landfill, approximately 12 miles north. The entire Project site, including construction mobilization area (approximately 34,000 square feet in total) would be disturbed as a result of Project construction. Two trees would be removed from the Project site to accommodate the proposed Project.

Table 2 displays the construction equipment anticipated to be used during construction.

Table 2. Anticipated Construction Equipment

Aerial Lifts	Pressure Washers
Air Compressors	Pumps
Cement and Mortar Mixers	Rollers
Concrete/Industrial Saws	Rough Terrain Forklifts
Dumpers/Tenders	Rubber-Tired Dozers
Excavators	Rubber-Tired Loaders
Forklifts	Scrapers
Generator Sets	Signal Boards
Graders	Skid Steer Loaders
Off-Highway Tractors	Surfacing Equipment
Off-Highway Trucks	Sweepers/Scrubbers
Other Construction Equipment	Tractors/Loaders/Backhoes
Other General Industrial Equipment	Trenchers
Other Material Handling Equipment	Welders
Plate Compactors	

Source: Dorsey and Nielson Construction Inc, pers. comm., 2024

Construction Waste

The Project would generate construction debris during on-site clearing activities. In accordance with Section 5.408 of the California Green Building Standards Code, the Project would implement a construction waste management plan for recycling and/or salvaging for reuse of at least 65% of nonhazardous construction/demolition debris. Additionally, the Project would be required to meet Leadership in Energy and Environmental Design v4 requirements for waste reduction during construction. Solid waste generated during construction would be hauled off site to the Republic Services Allied Imperial Landfill at 104 East Robinson Road in Imperial, California.

4 Assessment Framework

4.1 Acoustical Fundamentals

The following subsections provide a summary of acoustical terminology and concepts that the analyses utilize to evaluate potential noise and vibration impacts associated with the project.

4.1.1 Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receptor, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receptor determine the sound level and characteristics of the noise perceived by the receptor. The field of acoustics deals primarily with the propagation and control of sound.

Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

Addition of Decibels

A logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels (dB). Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dB increase. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would combine to produce 73 dB. Three sources of equal loudness together (e.g., three cars passing simultaneously) would produce a sound level 5 dB louder than one source.

A-weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity of the sound is a purely physical quantity, the perceived loudness is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies and in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz and perceive sounds within that range better than sounds in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies, and expressed as “A-weighted” decibels (dBA).

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Table 3 describes typical A-weighted noise levels for various noise sources.

Table 3. Typical A-Weighted Noise Levels for Common Indoor and Outdoor Sources

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Diesel truck at 50 feet at 50 mph	85	Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime	75	—
Gas lawn mower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area	65	Normal speech at 3 feet
Heavy traffic at 300 feet	60	—

Table 3. Typical A-Weighted Noise Levels for Common Indoor and Outdoor Sources

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	55	Large business office
Quiet urban daytime	50	Dishwasher next room
	45	—
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime	35	—
	30	Library
Quiet rural nighttime	25	Bedroom at night, concert hall (background)

Source: Caltrans 2013.
Notes: dBA = A-weighted decibel; mph = miles per hour.

Human Response to Changes in Noise Levels

As discussed above, doubling sound energy results in a 3 dB increase in sound. However, a measured doubling of sound energy usually does not correspond to a subjective human perception of a doubling of loudness.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1 dB changes in sound levels when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000 Hz–8,000 Hz) range (Caltrans 2013). However, in typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. In typical environments, people begin detecting sound level increases at 3 dB. A 5 dB increase is generally perceived as a distinctly noticeable increase, and a 10 dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the number of cars on a highway), which would result in a 3 dB increase, would generally be perceived as barely detectable by the average healthy human.

Noise Descriptors

Noise in our daily environment fluctuates over time at varying rates. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors utilized in this analysis.

- **Energy Equivalent Level** (L_{eq}): L_{eq} represents an energy average of the sound level occurring over a specified period. L_{eq} is not an arithmetic average of varying decibel levels over a period of time; it accounts for greater sound energy represented by higher decibel contributions.
- **Maximum Sound Level** (L_{max}): L_{max} is the highest instantaneous sound level measured during a specified period.
- **Community Noise Equivalent Level** (CNEL): CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to sound occurring during the nighttime hours (between 10:00 p.m. and 7:00 a.m.) and a 5 dB penalty applied to the sound occurring during evening hours (between 7:00 p.m. and 10:00 p.m.).

Sound Propagation

When sound propagates over a distance, it changes in level and frequency. The manner in which noise reduces with distance depends on the following factors.

- **Geometric Spreading** – Sound from a localized source (i.e., an ideal point source) propagates uniformly outward in a spherical pattern (or hemispherical when near a surface). The sound level decreases at a rate of 6 dB for each doubling of distance from a point source. Roadways consist of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels decrease at a rate of 3 dB for each doubling of distance from a line source.
- **Ground Absorption** – The propagation path of noise from a sound emission source to a receptor is usually horizontal and close to the ground. Under these conditions, noise decrease from ground absorption and reflective wave canceling can add to the decrease associated with geometric spreading. For acoustically "hard" paths over which sound may traverse (i.e., sites with a reflective surface between the source and the receptor, such as a parking lot or body of water), no excess sound decrease due to ground absorption is assumed. For acoustically absorptive or "soft" sites (i.e., those sites with an absorptive ground surface between the source and the receptor, such as fresh-fallen snow, soft dirt, or dense vegetative ground cover), an additional ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to cylindrical spreading for line source sound propagation, the excess sound decrease due to ground absorption results in an overall drop-off rate of 4.5 dB per doubling of distance.
- **Atmospheric Effects** – Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. SPLs can also be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects when distances between a source and receptor are large.
- **Shielding by Natural or Human-Made Features** – A large object or barrier in the path between a noise source and a receptor can substantially decrease noise levels at the receptor. The decrease provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receptor specifically to reduce noise. A barrier that breaks the line of sight between a source and a receptor will typically result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction. While a line of trees may visually occlude the direct line between a source and a receptor, its actual noise-reducing effect is usually negligible because it does not create a solid barrier. Deep expanses of dense wooded areas, on the other hand, can offer noise reduction under the right conditions.

4.1.2 Vibration Characteristics

Vibration is oscillatory movement of mass (typically a solid) over time. It is described in terms of frequency and amplitude and, unlike sound, can be expressed as displacement, velocity, or acceleration. Vibration impacts to buildings are generally discussed in terms of inches per second (ips) peak particle velocity (PPV), and unless the same PPV metric is also used as an assessment metric for receiving structure interiors, the potential for annoyance to occupants within those buildings can be evaluated with vibration velocity levels (L_v) or root-mean-square vibration decibels (VdB), which are calculated from PPV and application of a crest factor (CF) with the following expression (FTA 2018):

$$L_v = 20*LOG(PPV/[CF*V_{ref}]) = 20*LOG(PPV/[4*0.000001])$$

Common sources of vibration within communities include construction activities and railroad operations. Ground-borne vibration generated by construction projects is usually highest during pile driving, rock blasting, soil compacting, jack hammering, and demolition-related activities where sudden releases of subterranean energy or powerful impacts of tools on hard materials occur. Depending on their distances to a sensitive receptor, operation of large bulldozers, graders, loaded dump trucks, or other heavy construction equipment and vehicles on a construction site also have the potential to cause high vibration amplitudes.

4.2 Environmental Setting

The project site is surrounded by urban uses, including residential and commercial land uses. Consequently, noise sources affecting noise levels on the project site and in the vicinity would mainly include vehicular traffic from nearby roadways, existing SDSU Off-Campus Center - Calexico operations, and the indistinct background noise representing the mix of other distant and/or unseen natural and human-made noises.

4.2.1 Studied Sensitive Receptors

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas are typically considered noise- and vibration-sensitive receptors and may warrant unique measures for protection from intruding noise. The noise-sensitive receptors nearest to the project site are residences approximately 85 feet to the east and south.

4.2.2 Measured Outdoor Ambient Sound

Field measurements of SPL were conducted near the project site on May 2, 2024, to quantify and characterize the existing outdoor ambient sound levels. Table 4 provides the location, date, and time period at which these baseline noise level measurements were captured by an attending Dudek field investigator using a Rion-branded Model NL-52 sound level meter equipped with a 0.5-inch, pre-polarized condenser microphone with pre-amplifier. The sound level meter meets the current American National Standards Institute standard for a Type 1 (Precision Grade) sound level meter. The accuracy of the sound level meter was verified using a field calibrator before and after the measurements, and the measurements were conducted with the microphone positioned approximately 5 feet above the ground.

As shown in Table 4, four short-term (ST) noise level measurement locations that represent existing noise-sensitive receivers (ST1–ST4) were selected near the project site to quantify and characterize the representative existing outdoor ambient noise environment of the area. These locations are depicted as receivers ST1–ST4 in Figure 5, Baseline Outdoor Ambient Noise Measurement Locations. The measured L_{eq} and L_{max} noise levels recorded at the ST locations are provided in Table 4. The primary noise sources at the sites identified in Table 4 consisted of traffic along adjacent roadways, distant conversations/yelling, the sounds of leaves rustling, birdsong, and an on-campus generator. As shown in Table 4, the measured SPL ranged from approximately 52.3 dBA L_{eq} at ST2 to 60.9 dBA L_{eq} at ST1. Beyond the summarized information presented in Table 4, detailed noise measurement data are included in Attachment B, Baseline Noise Measurement Field Data.

Table 4. Measured Baseline Outdoor Ambient Noise Levels

Site Position Tag	Location or Address	Date, Time	L_{eq} (dBA)	L_{max} (dBA)
ST1	On western project site boundary, east of SDSU IVC CLAT classrooms	05/02/2024, 9:30 a.m. to 9:45 a.m.	60.9	63.8
ST2	North of project site within laydown area	05/02/2024, 9:51 a.m.to 10:06 a.m.	52.3	58.9
ST3	East of project site along East 7th Street	05/02/2024, 10:11 a.m. to 10:26 a.m.	59.5	66.2
ST4	South of project site along East 7th Street	05/02/2024, 10:30 a.m. to 10:45 a.m.	59.5	64.2

Source: Attachment B, Baseline Noise Measurement Field Data.
Notes: L_{eq} = energy equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibel; L_{max}= maximum sound level during the measurement interval; ST = short-term noise measurement locations; SDSU IVC = San Diego State University Imperial Valley Campus.

4.3 Regulatory Setting

4.3.1 Federal Regulations and Guidance

Federal Transit Administration

In its Transit Noise and Vibration Impact Assessment guidance manual, FTA recommends a daytime construction noise level threshold of 80 dBA L_{eq} over an 8-hour period (FTA 2018) when detailed construction noise assessments are performed to evaluate potential impacts to community residences surrounding a project. Although this FTA guidance is not a regulation, it can serve as a quantified standard in the absence of such noise limits at the state and local jurisdictional levels.

With respect to vibration, Table 5 presents FTA guidance thresholds for assessing building damage risk and human annoyance. Similar to the guidance for construction noise, the values in Table 5 represent recommended assessment guidance when local regulations lack such standards.

Table 5. Federal Transit Administration Vibration Threshold Guidance

Vibration Receptor	Vibration Assessment Metric	
	Peak Particle Velocity (PPV, ips)	Approximate Root Mean Square VdB*
Potential Damage to Structures by Building/Structural Category		
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102

Table 5. Federal Transit Administration Vibration Threshold Guidance

Vibration Receptor	Vibration Assessment Metric	
	Peak Particle Velocity (PPV, ips)	Approximate Root Mean Square VdB*
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90
Residential Building Occupant Human Response		
Frequent events *(more than 70 events per day)*		72
Occasional events *(30–70 events per day)*		75
Infrequent events *(fewer than 30 events per day)*		80
Institutional Land Use (Primarily Daytime Use) Occupant Human Response		
Frequent events *(more than 70 events per day)*		75
Occasional events *(30–70 events per day)*		78
Infrequent events *(fewer than 30 events per day)*		83

Source: FTA 2018.
Notes: PPV = peak particle velocity; ips = inches per second; VdB = vibration decibels.
* Root mean square VdB is calculated from the PPV using a crest factor of 4 and is with respect to 1 micro-inch per second.

4.3.2 State Guidance

The California Department of Transportation (Caltrans) Transportation and Construction Vibration Guidance Manual (Caltrans 2020) offers guidance comparable to the FTA guidance presented in Table 5 but includes recommended thresholds (expressed as PPV) for building damage risk and occupant annoyance that distinguish between "transient" sources (e.g., detonation of explosive charges or a dropped ball during building demolition) and "continuous" or "frequently intermittent" vibration sources. The latter two categories would be comparable to the "frequent" and "occasional" FTA event frequency categories in Table 5.

4.3.3 Local Regulations and Guidance

Because SDSU is a component of the CSU, which is a state agency, the proposed project is not subject to local government planning and land use plans, policies, or regulations. However, for informational purposes, SDSU has considered the following planning documents, and the project site's location within, and relationship to, each as summarized in the following subsections.

Imperial County General Plan Noise Element

Stationary Operational Noise

Section IV of the County's General Plan Noise Element identifies compatible exterior noise levels for various land use types (County of Imperial 2015). The maximum allowable noise exposure varies depending on the land use.

The maximum acceptable exterior noise level for residential uses and other noise-sensitive uses (including kindergarten through 12th grade schools, libraries, hospitals, daycare facilities, hotels, motels) is 60 dBA CNEL. Table 6 reproduces Table 6 from the County's General Plan Noise Element (County of Imperial 2015).

Table 6. Imperial County Noise/Land Use Compatibility Guidelines

Land Use Category	Exterior Noise Exposure (dBA CNEL)					
	55–60	60--65	65–70	70–75	75–80	80-85
Residential	*Normally Acceptable*	*Conditionally Acceptable*	*Conditionally Acceptable*	*Normally Unacceptable*	*Clearly Unacceptable*	*Clearly Unacceptable*
Transient Lodging—Motels, Hotels	*Normally Acceptable*	*Conditionally Acceptable*	*Conditionally Acceptable*	*Conditionally Acceptable*	*Normally Unacceptable*	*Clearly Unacceptable*
Schools, Libraries, Churches, Hospitals, Nursing Homes	*Normally Acceptable*	*Conditionally Acceptable*	*Conditionally Acceptable*	*Normally Unacceptable*	*Normally Unacceptable*	*Clearly Unacceptable*
Auditoriums, Concert Halls, Amphitheaters	*Conditionally Acceptable*	*Conditionally Acceptable*	*Conditionally Acceptable*	*Clearly Unacceptable*	*Clearly Unacceptable*	*Clearly Unacceptable*
Sports Arena, Outdoor Spectator Sports	*Conditionally Acceptable*	*Conditionally Acceptable*	*Conditionally Acceptable*	*Normally Unacceptable*	*Clearly Unacceptable*	*Clearly Unacceptable*
Playgrounds, Neighborhood Parks	*Normally Acceptable*	*Normally Acceptable*	*Normally Acceptable*	*Conditionally Acceptable*	*Clearly Unacceptable*	*Clearly Unacceptable*
Golf Courses, Riding Stables, Water Recreation, Cemeteries	*Normally Acceptable*	*Normally Acceptable*	*Normally Acceptable*	*Conditionally Acceptable*	*Conditionally Acceptable*	*Clearly Unacceptable*
Office Buildings, Business Commercial and Professional	*Normally Acceptable*	*Normally Acceptable*	*Conditionally Acceptable*	*Conditionally Acceptable*	*Normally Unacceptable*	*Clearly Unacceptable*
Industrial, Manufacturing Utilities, Agriculture	*Normally Acceptable*	*Normally Acceptable*	*Normally Acceptable*	*Conditionally Acceptable*	*Normally Unacceptable*	*Clearly Unacceptable*

Source: County of Imperial 2015.
Notes: dBA = A-weight decibel; CNEL = Community Noise Equivalent Level.
Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.
Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable: New construction or development clearly should not be undertaken.

Part 4 of Section IV of the County's General Plan Noise Element also provides guidelines for the evaluation of significant noise impacts with respect to the CNELs set forth in Table 6, specifically providing limits for noise level increases over the existing outdoor ambient noise levels (County of Imperial 2015):

a. If the future noise level after the project is completed will be within the "normally acceptable" noise levels shown in the Noise/Land Use Compatibility Guidelines, but will result in an increase of 5 dB CNEL or greater, the project will have a potentially significant noise impact and mitigation measures must be considered.
b. If the future noise level after the project is completed will be greater than the "normally acceptable" noise levels shown in the Noise/Land Use Compatibility Guidelines, a noise increase of 3 dB CNEL or greater shall be considered a potentially significant noise impact and mitigation measures must be considered.

Section IV of the County's General Plan Noise Element also identifies compatible exterior noise levels for various land use types at the property line (County of Imperial 2015). The maximum allowable noise exposure varies depending on the land use, as shown in Table 7 below.

Table 7. Imperial County Property Line Noise Limits

Land Use	Time	Applicable Limit One-Hour Average Sound Level (Decibels)
Residential Zones	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
Multi-residential Zones	7:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial Zones	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	55
Light Industrial/Industrial Park Zones	Anytime	70
General Industrial Zones	Anytime	75

Source: County of Imperial 2015.
Notes: One-hour average sound level = L_{eq} (energy equivalent level).

The County also establishes a 45 dBA CNEL threshold for interior noise levels for detached single-family dwellings, or 50 dB averaged over a 1-hour period for schools, libraries, offices, and other noise-sensitive areas where the occupancy is normally only in the daytime.

Construction Noise

Part 3 of Section IV of the County's General Plan Noise Element sets forth that "construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB L_{eq} when averaged over an eight (8) hour period, and measured at the nearest sensitive receptor.... Construction equipment operation shall be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. on Saturday. No commercial construction operations are permitted on Sunday or holidays" (County of Imperial 2015).

City of Calexico Municipal Code

Stationary Operational Noise

Section 8.46.031 of the City's Municipal Code establishes maximum exterior noise levels for various land use types. The maximum allowable noise exposure varies depending on the land use, as shown in Table 8 below.

Table 8. City of Calexico Exterior Noise Level Limits

Land Use	Time	Applicable Limit One-hour Average Sound Level (Decibels)
Residential – Low Density	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	40
Residential – High Density	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	50
Commercial	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	50
Industrial	7:00 a.m. to 10:00 p.m.	70
	10:00 p.m. to 7:00 a.m.	55

Source: City of Calexico Municipal Code Section 8.46.031.
Notes: One-hour average sound level = L_{eq} (energy equivalent level).

Section 8.46.035 of the City's Municipal Code also establishes maximum interior noise levels for multifamily residential land uses of 45 dBA from 7:00 a.m. to 10:00 p.m. and 35 dBA from 10:00 p.m. to 7:00 a.m.. If the measured ambient noise level differs from the permissible level, the allowable interior noise level shall be adjusted in 5 dB increments in each category as appropriate to reflect the measured ambient noise level.

Construction Noise

Section 8.46.042 of the City's Municipal Code prohibits construction activities "between the hours of five p.m. of each day and eight a.m. the next day if the noise or other sound produced by such work is of such intensity or quality that it disturbs the peace and quiet of any other person of normal sensitivity."

4.4 Thresholds of Significance

The following significance criteria, included for analysis in this acoustical assessment, are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) and will be used to determine the significance of potential noise impacts. Noise impacts would be significant if the project would result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
b) Generation of excessive ground-borne vibration or ground-borne noise levels.

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

Quantitative thresholds of significance have been established for the purposes of this analysis based on the local polices and regulations described in Section 4.3.3 and are listed below.

- **Construction noise** – For purposes of this assessment, SDSU will apply the County's construction noise threshold of not exceeding 75 dBA for an 8-hour period, between 7:00 a.m. and 7:00 p.m., when received at any property zoned as residential.
- **Construction vibration** – The County and City do not explicitly provide thresholds for construction vibration. Therefore, for purposes of this analysis, for building damage risk to these existing off-site residential buildings, the threshold would be 0.3 ips PPV per Caltrans guidance with respect to continuous or intermittent sources (e.g., construction activities). The building occupant annoyance threshold within such a structure would be 0.2 ips PPV.
- **Project-attributed stationary source noise emission to the community** – For purposes of this analysis, Project-attributed stationary source noise will be assessed considering the maximum exterior L_{eq} for single-family residential land uses of 50 dBA hourly L_{eq} during daytime hours (7:00 a.m. to 10:00 p.m.) and 40 dBA hourly L_{eq} during nighttime hours (10:00 p.m. to 7:00 a.m.) as shown in Table 8, per Section 8.46.030 of the City's Municipal Code.
- **Off-site traffic noise exposure** – For purposes of this analysis, a direct roadway noise impact would be considered significant if increases in roadway traffic noise levels attributed to the proposed project were greater than 3 dBA CNEL at an existing noise-sensitive land use.
- **Exterior to interior traffic noise intrusion** – For purposes of this analysis, traffic noise intrusion to the project would be considered significant if interior noise levels exceed 45 dBA from 7:00 a.m. to 10:00 p.m. or if the adjusted allowable interior noise level with respect to higher existing ambient noise levels is exceeded, as discussed in Section 8.46.035 of the City's Municipal Code.
- **Exposure of project workers or visitors to excessive aviation noise** – Typically, and for purposes of this analysis, project areas where outdoor workers or visitors may be present that intersect the 65 dBA CNEL aviation noise contour of a public or private airport would be considered a potentially significant noise impact.

5 Impact Assessment

5.1 Approach and Methodology

5.1.1 Construction

The following methodology was utilized to reasonably estimate total project-attributed construction noise exposure at the nearest off-site noise-sensitive receptor, an existing home 95 feet east of the project site, along Blair Avenue.

This predictive analysis locates multiple sound-emitting sources (i.e., operating stationary and mobile equipment) associated with each construction phase as close as the nearest project site boundary with respect to the noise-sensitive receptor position—approximately 95 feet. This approach is conservative and "worst case," as construction equipment would normally be operating across the entire project site as construction work proceeds. Only under a worst case would multiple pieces of heavy construction equipment be concurrently operating as close as 95 feet to the noise-sensitive receptor and its neighbors along Blair Avenue.

Based on information provided by SDSU's construction management team, the construction activities that are expected to occur, grouped by phase, are shown in Table 9.

Table 9. Construction Scenario Assumptions

Construction Phase	Equipment		
	Equipment Type	Quantity	Usage Hours
Site Preparation	Grader	1	8
	Tractors/Loaders/Backhoes	2	8
	Roller	1	8
	Dump Truck	1	8
Grading	Grader	1	8
	Tractors/Loaders/Backhoes	2	8
	Roller	1	8
	Dump Truck	1	8
Building Construction	Aerial Lifts (electric)	3	8
	Forklifts	1	8
	Tractors/Loaders/Backhoes	2	8
	Cement and Mortar Mixers	5	8
	Welders	2	8
Paving/Architectural Coating	Air Compressors	1	8
	All other equipment greater than 5 horsepower	1	8

Source: Dorsey and Nielson Construction Inc, pers. comm., 2024.

Using the roster from Table 9 as guidance for input parameters, and as detailed in the worksheets appearing in Attachment C, combined construction noise emission for each listed phase was predicted with a model that emulates the Federal Highway Administration Roadway Construction Noise Model and utilizes its reference sound level data and "acoustical usage factors" by equipment type (FHWA 2008).

Vibration

Ground-borne vibration decreases rapidly, even over short distances. The decreasing of ground-borne vibration as it propagates from source to receptor through intervening soils and rock strata can be estimated with expressions found in FTA and Caltrans guidance. To examine potential building damage risk using PPV as the evaluation metric, vibration velocity level can be estimated with the following expression (FTA 2018):

$$PPV_{rcvr} = PPV_{ref} * (25/D)^n$$

where PPV_{rcvr} is the predicted vibration velocity at the receiver position, PPV_{ref} is the reference value at 25 feet from the vibration source, D is the actual horizontal distance to the receiver, and "n" is the Wiss exponent that FTA defines as 1.5 to generally characterize the propagation of vibration through soil/strata between the source and the receptor position.

5.1.2 Operations

Roadway Traffic Noise

The project is expected to generate 87 daily trips to the roadway system. Utilizing this information as well as additional traffic data provided in Attachment D, Traffic Noise Modeling Calculations, the Federal Highway Administration's Highway Traffic Noise Prediction Model RD-77-108 was used to estimate potential noise impacts at adjacent noise-sensitive uses. Information used in the model included average daily traffic (from on-site traffic counts taken during the investigator-attended outdoor ambient baseline SPL survey on May 5, 2024), posted traffic speeds, day/evening/night mix percentage, and truck mix percentage. Consistent with Caltrans guidance (Caltrans 2013), this analysis assumes 80% of the average daily traffic occurs during daytime hours (7:00 a.m. to 7:00 p.m.), 5% during the evening (7:00 p.m. to 10:00 p.m.), and 15% during the nighttime (10:00 p.m. to 7:00 a.m.). The truck percentages used in the noise model for existing arterials were 2.0% medium trucks and 1.0% heavy trucks, generally consistent with similar studies where such arterial roadways accept truck traffic.

The change in roadway noise levels was predicted for two scenarios; existing year 2025 and existing year 2025 plus project traffic noise levels are calculated for roadway segments bounded by intersections within the project area and listed as follows:

- Blair Avenue – from Sherman Street to 7th Street
- 7th Street – from Blair Avenue to Giles Avenue
- 7th Street – from Heber Avenue to Blair Avenue

Additionally, as illustrated in Section 5.2, Analysis Results, the model results were used to estimate the exterior to interior traffic noise intrusion to the occupants of the project, once operational.

Stationary Source Noise

Using DataKustik's CadnaA software, which models three-dimensional outdoor sound propagation based on International Organization for Standardization 9613-2 algorithms and relevant reference data, an operational scenario of the project was modeled for purposes of this analysis (ISO 1996). The modeled scenario included operating assumptions for the anticipated noise sources, specifically, heating, ventilation, and air conditioning (HVAC) units representative of SPL data for packaged terminal air conditioner units provided by SDSU, placed on the first-floor exterior windows of the modeled Off-Campus Center - Calexico Affordable Student Housing units. HVAC units associated with the building are expected to operate at any time up to 24 hours a day, 365 days a year, with an expected overall sound power level of 64 dBA. Additionally, an exterior on-site transformer located at the southwest corner of Building C was modeled, with an expected overall sound power level of 72 dBA. In addition to the HVAC sound source inputs, the following parameters are included in this CadnaA-supported stationary noise source assessment:

- Ground effect acoustical absorption coefficient equal to 0.8, which represents a mix of ground types over which project sound would travel across and beyond the project site, considering acoustically reflective roadway surfaces surrounding the site and acoustically absorptive "soft" vegetated ground cover, loose soils, and granular aggregate

- Reflection order of 1, which allows for a single reflection of sound paths on encountered structural surfaces, such as the rooftop "canopies"
- Conservative consideration of topography: both the project site and the grade of the nearest residential community to the east are, on average, at the same elevation above sea level, as is reflective of the true similarities in elevation between the proposed housing units and eastern residences
- Calm meteorological conditions (i.e., no wind) with 68°F and 50% relative humidity

Details of the CadnaA modeling input parameters (e.g., modeled sources) can be found in Attachment E, Operation Noise Prediction Model Inputs.

Vibration

Once operational, the project would not be expected to feature major on-site producers of ground-borne vibration. Anticipated HVAC systems are designed and manufactured to feature rotating and reciprocating components (e.g., fans and refrigeration compressors) that are well-balanced with isolated vibration within or external to the equipment casings.

5.2 Analysis Results

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

On-Site Construction Noise (Temporary)

2003 Imperial Valley Campus Master Plan Project EIR

Table 3.9-1 of the 2003 Imperial Valley Campus Master Plan Project EIR identifies predicted construction noise levels at the Brawley Campus site, where construction equipment would operate at a nearest distance of 300 feet from noise-sensitive receptors. No impacts associated with the construction of the proposed Brawley Campus site were expected. The 2003 EIR does not provide predicted construction noise levels for the proposed Calexico Campus project site, but does establish that construction activities would be of a "lesser degree" than the construction of the Brawley Campus site (SDSU 2003).

SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project

Using a Roadway Construction Noise Model–emulating Excel workbook, the predicted noise level exposures from the proposed construction activities at the nearest studied residential noise-sensitive receptor are summarized in Table 10. The nearest residential noise-sensitive receptor is represented by the outdoor ambient noise measurement location ST4 (as shown Table 4) and is the closest distance to each construction phase area on the project site. Although the prediction results in Table 10 are presented as 8-hour L_{eq} values, they are essentially equivalent to hourly L_{eq} values since Table 9 indicates that construction equipment would operate 8 hours during a typical work shift within the City's established construction period.

Table 10. On-Site Construction Noise Model Results Summary without Mitigation (Noise-Sensitive Receptor at ST4 – Residence)

Construction Phase (from Table 8)	Construction Noise (dBA 8-hour L_{eq}) at ST4* - Nearest Residential Noise-Sensitive Receptor			
	Construction Noise Levels	Exceed City's 75 dBA 8-hour L_{eq} Threshold? (Yes/No)	Existing Noise Levels at ST4*	Temporary Noise Level Increase
Site Preparation	75.6	Yes	59.5	16.1
Grading	75.6	Yes		16.1
Building Construction	76.9	Yes		17.4
Paving/Architectural Coating	75.0	Yes		15.5

Notes: dBA = A-weighted decibel; L_{eq} = energy equivalent continuous sound level.
*See Table 4 for the measured outdoor ambient noise levels at measurement location ST4.
Source: See Attachment C, Construction Noise Prediction Model Worksheets, for complete results.

Project construction noise at the nearest noise-sensitive receptor would be higher than the measured ambient levels of the project site (see Table 4), so nearby sensitive receptors may experience temporary noise level increases of up to 24.6 dBA. The predicted construction noise levels at the noise-sensitive receptor appearing in Table 10 would exceed the City's 75 dBA 8-hour L_{eq} threshold if mitigation is not incorporated. Table 11 shows the predicted noise level exposures from the proposed construction activities at the nearest studied noise-sensitive receptor with a 6-foot-tall temporary construction noise barrier incorporated.

Table 11. On-Site Construction Noise Model Results Summary with Mitigation (Noise-Sensitive Receptor – Residence)

Construction Phase (from Table 9)	Construction Noise (dBA 8-hour L_{eq}) at ST4* - Nearest Residential Noise-Sensitive Receptor			
	Construction Noise Levels	Exceed City's 75 dBA 8-hour L_{eq} Threshold? (Yes/No)	Existing Noise Levels at ST4*	Temporary Noise Level Increase
Site Preparation	73.4	No	59.5	13.9
Grading	73.4	No		13.9
Building Construction	74.6	No		15.1
Paving/Architectural Coating	72.8	No		13.3

Notes: dBA = A-weighted decibel; L_{eq} = energy equivalent continuous sound level.
*See Table 4 for the measured outdoor ambient noise levels at measurement location ST4.
Source: See Attachment C, Construction Noise Prediction Model Worksheets, for complete results.

Implementation of **Mitigation Measure (MM) NOI-1** (see below) would require SDSU, prior to the commencement of construction activities, to direct the contractor to install a 6-foot-tall temporary construction noise barrier along the southern and eastern project boundaries to remain in place throughout the entire construction process. As a result, all predicted construction noise levels at the noise-sensitive receptor appearing in Table 11 would be below the City's 75 dBA 8-hour L_{eq} threshold. Attachment C shows the predicted construction noise levels before and after the installation of a 6-foot-tall temporary noise barrier. Construction noise at the nearest noise-sensitive receptor would be higher than the measured ambient levels of the project site (see Table 4), so nearby sensitive receptors may experience temporary noise level increases of up to 22.3 dBA. On this basis, and with a 6-foot-tall temporary construction noise barrier incorporated during project construction, construction noise levels would be **less-than-significant with mitigation incorporated.**

Operation Noise

Roadway Traffic Noise

2003 Imperial Valley Campus Master Plan Project EIR

The 2003 Imperial Valley Campus Master Plan Project EIR states that the proposed Calexico Campus would produce an additional 830 ADT to an estimated existing 5000 ADT based on field observations performed by ISE (SDSU 2003). The project-related 830 ADT trip generation would increase traffic noise levels within a range of 0.5 to 1 dBA CNEL, which would not constitute an impact, and aggregate levels would still fall below the 65 dBA CNEL that is compatible for the proposed project expansion use without mitigation (SDSU 2003).

SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project

Because the proposed project would not increase student enrollment and would serve the previously approved campus enrollment, substantial changes to localized traffic patterns are not anticipated (see Dudek Trip Generation and Vehicle Miles Traveled (VMT) Screening Analysis). Table 11 summarizes the predicted increases in traffic noise attributable to the project along the area roadways (Blair Avenue and 7th Avenue). As appearing in Table 12, impacts associated with roadway traffic noise would not increase existing traffic noise levels by more than 3 dBA CNEL and would therefore be **less than significant.**

Table 12. Traffic Noise Levels with and without Project

Street Name	From	To	Noise Level *without* Project (dBA CNEL)	Noise Level *with* Project (dBA CNEL)	Project Increase (dBA CNEL)
Blair Avenue	Sherman Street	7th Street	56.4	56.5	0.1
7th Street	Blair Avenue	Giles Avenue	54.9	55.2	0.3
7th Street	Heber Avenue	Blair Avenue	55.2	55.5	0.3

Source: Dudek 2024.
Notes: dBA = A-weighted decibel; CNEL = Community Noise Equivalent Level.

Additionally, the CNEL values appearing in Table 12 suggest that corresponding hourly L_{eq} values associated with roadway traffic noise after the project is operational would not exceed the City's daytime (7:00 a.m. to 10:00 p.m.) or nighttime (10:00 p.m. to 7:00 a.m.) interior noise thresholds of 45 dBA and 35 dBA L_{eq}, respectively. For example, the occupant of a project housing unit facing Blair Avenue with a partially open window would experience a 15 dB reduction from exterior to interior traffic noise intrusion, or a 25 dB reduction with a closed window. Thus, an exterior traffic noise level of 56.5 dBA hourly L_{eq}

(existing plus project noise) along Blair Avenue would be reduced to an interior noise level of 41.5 dBA hourly L_{eq} when a window is partially open, or 31.5 dBA hourly L_{eq} when a window is closed.

After applying these same exterior-to-interior decibel reductions attributed to building sound insulation, both predicted scenario noise levels appearing in Table 12 would be below the City's 45 dBA CNEL interior noise limit during daytime hours, and during nighttime hours, interior noise levels would likely be even lower as Caltrans assumes that 15% of average daily traffic would occur at night (Caltrans 2013). Therefore, a potential exterior-to-interior traffic noise intrusion impact would be **less than significant.**

Stationary Sources

2003 Imperial Valley Campus Master Plan Project EIR

The 2003 Imperial Valley Campus Master Plan Project EIR does not provide an analysis for project-related stationary noise sources.

SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project

Predicted noise exposure levels attributed to concurrent operation of project on-site stationary sources (i.e., HVAC systems) as modeled appear in Table 13. The predicted levels at the studied noise-sensitive receptor locations would not exceed the City's exterior noise level threshold for single-family residential land uses (at the property line) of 50 dBA hourly L_{eq} during daytime hours (7:00 a.m. to 10:00 p.m.) or 40 dBA hourly L_{eq} during nighttime hours (10:00 p.m. to 7:00 a.m.); therefore, potential noise impacts associated with project operation would be **less than significant.**

Table 13. Project Operation Noise Prediction Model Results Summary

Modeled Receptor	Modeled Property Line Receptor Distance from Project Boundary	Predicted Operation Noise (dBA hourly L_{eq}) at Indicated Modeled Property Line Receptor
R1	85 feet northeast	19.6
R2	85 feet east	21.4
R3	85 feet east	23.6
R4	90 feet south	32.8
R5	100 feet south	29.3

Notes: dBA = A-weighted decibel; L_{eq} = energy equivalent continuous sound level.

Figure 6, Predicted Stationary Source Operation Noise from Proposed Project, correspondingly illustrates (for this same modeled full operation scenario) predicted project stationary equipment operation sound levels across a horizontal plane approximately 5 feet above grade (i.e., a first-floor or pedestrian listening elevation) over the project site and beyond into the surrounding vicinity.

Mitigation Measure

MM-NOI-1 Prior to the commencement of construction activities, CSU/SDSU, or its designee, shall direct the construction contractor to install a 6-foot-tall temporary construction noise barrier (either solid plywood or chain link fencing with sound blankets) along the southern and eastern Project boundaries to remain in place throughout the entire construction process.

b) Would the project result in generation of excessive ground-borne vibration or ground-borne noise levels?

On-Site Construction Activities

2003 Imperial Valley Campus Master Plan Project EIR

The 2003 Imperial Valley Campus Master Plan Project EIR does not provide an analysis for project-related ground-borne vibration or ground-borne noise levels.

SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project

Using the expressions described in Section 5.1.1, Construction, ground-borne vibration velocity levels attributed to anticipated on-site usage of a dozer, loader, and vibratory roller at the nearest off-site noise-sensitive receptor to the construction of the project were calculated.

For example, the project's paving phase would appear to occur as close as 95 feet to the western façade of the nearest off-site receptor along Blair Avenue. At this distance, and using a reference ground-borne PPV of 0.21 ips for the roller at a distance of 25 feet, the estimated PPV at the receiving building façade and likely closest interior occupied space can be estimated as follows:

$$PPV_{rcvr} = 0.21*(25/95)^{1.5} = 0.028 \text{ ips}$$

As shown in Table 14, predicted ground-borne vibration velocity levels are below the Caltrans guidance-based 0.3 ips PPV threshold for avoiding building damage to older residential structures, as well as the 0.2 ips PPV threshold for occupant annoyance.

Subsequent on-site construction activities would involve greater quantities of equipment but would be less vibratory than a roller and/or their distances to the studied sensitive receptors would be much greater. Hence, ground-borne vibration propagating from these more distant or lower magnitude sources of on-site vibration would be substantially less than the estimates in Table 14 and the Caltrans guidance-based vibration exposure thresholds. Therefore, on the basis of compliance with these standards, impacts associated with construction vibration would be **less than significant.**

Table 14. Predicted On-Site Construction Vibration at Nearest Noise-Sensitive Receptor

Studied Receptor (Description)	Anticipated Vibration Source Closest Distance (feet)	Predicted PPV (ips) and VdB (rms) for Indicated Equipment Type					
		Dozer		Loader		Roller	
		PPV	VdB	PPV	VdB	PPV	VdB
Residence 95 feet East along Blair Avenue	95	0.012	70	0.012	70	0.028	77

Notes: PPV (ips) = peak particle velocity (inches per second); VdB (rms) = vibration decibels (root mean square).

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

2003 Imperial Valley Campus Master Plan Project EIR

The 2003 Imperial Valley Campus Master Plan Project EIR does not discuss impacts associated with aviation noise levels.

SDSU Imperial Valley Off-Campus Center – Calexico, Affordable Student Housing Project

The Calexico International Airport is approximately 6,000 feet, or 1.15 miles from the Project site. The Compatibility Map for Calexico International Airport shown in the Imperial County General Plan Noise Element does not provide noise contours (County of Imperial 2015). However, the Calexico International Airport is not a major airport, and due to the distance of approximately 1.15 miles from the Project site, construction workers and post-construction Project operational or maintenance staff on site are not likely be exposed to excessive noise levels. Thus, there would be a **less-than-significant** impact associated with aviation noise levels

6 Conclusions

As analyzed herein, potential noise and vibration-related impacts to the surrounding community associated with Project construction and operations would be less than significant with implementation of recommended mitigation measures during Project construction.

7 References

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Attachment A

Figures

SOURCE: ESRI

DUDEK

0 4 8 Miles

FIGURE 1

Regional Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

SOURCE: AERIAL-ESRI MAPPING SERVICE 2023; DEVELOPMENT-SDSU 2024

DUDEK

0 100 200 Feet

FIGURE 2
Vicinity Map

Technical Memorandum for the SDSU Imperial Valley Off-Campus Center - Calexico Affordable Student Housing Project

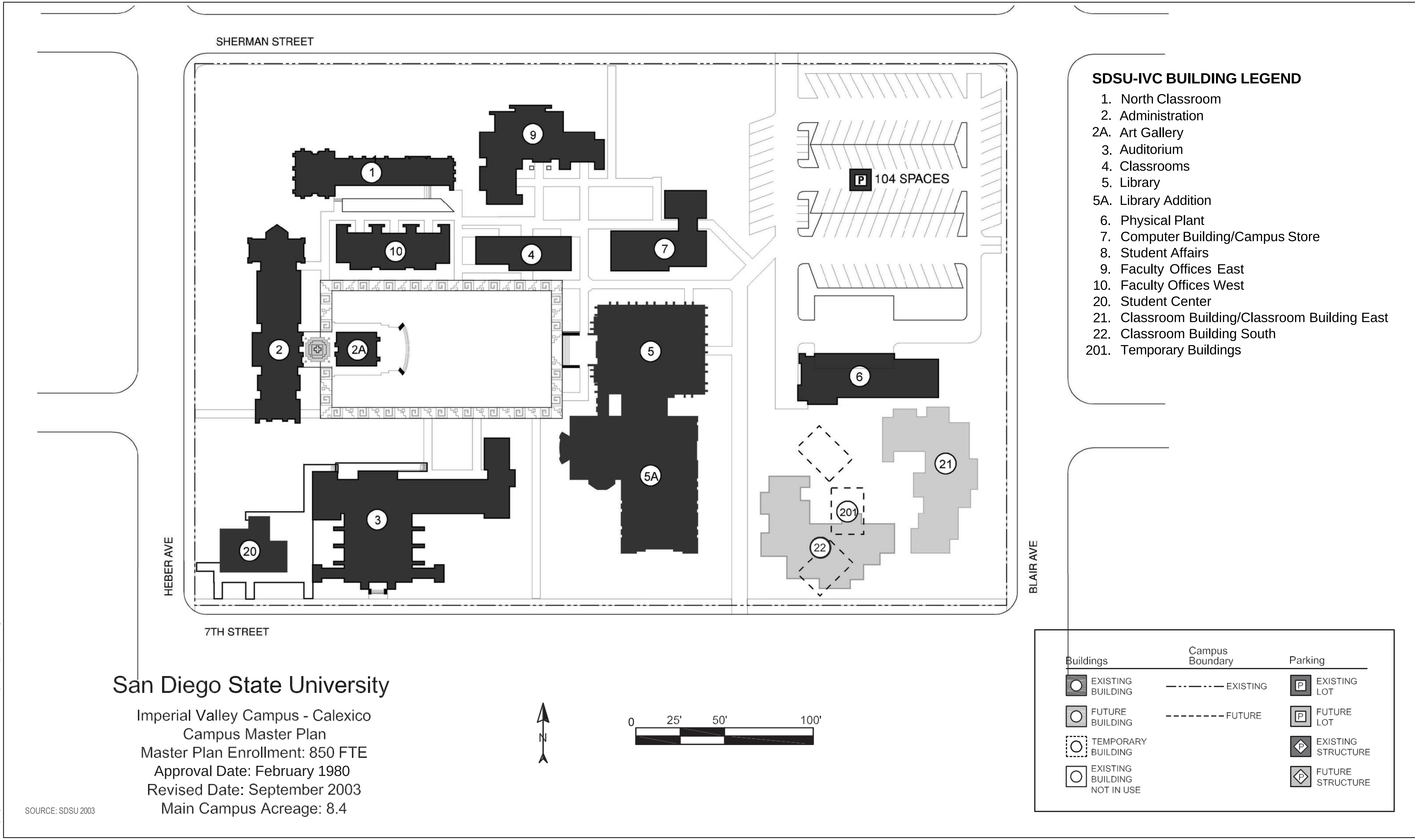
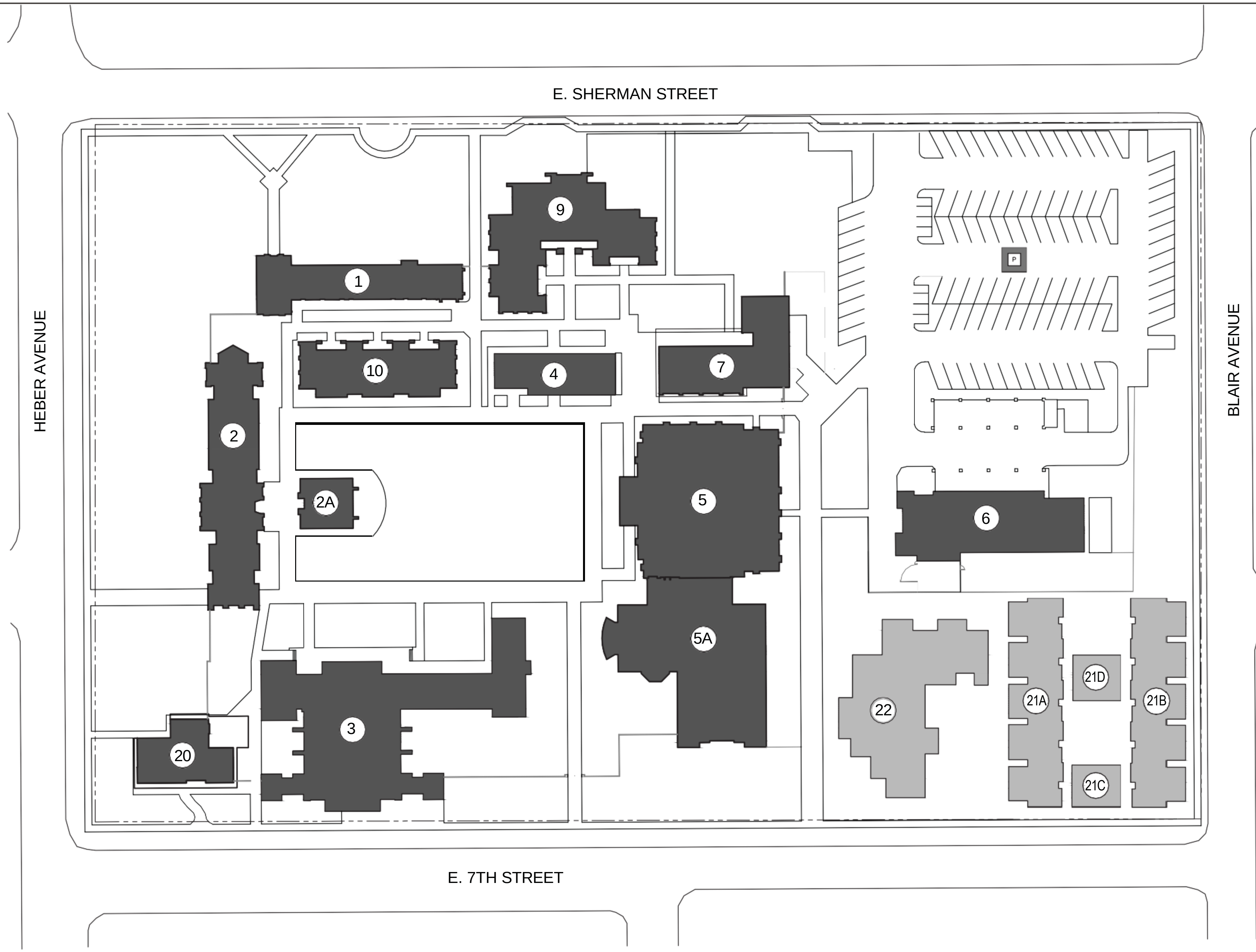


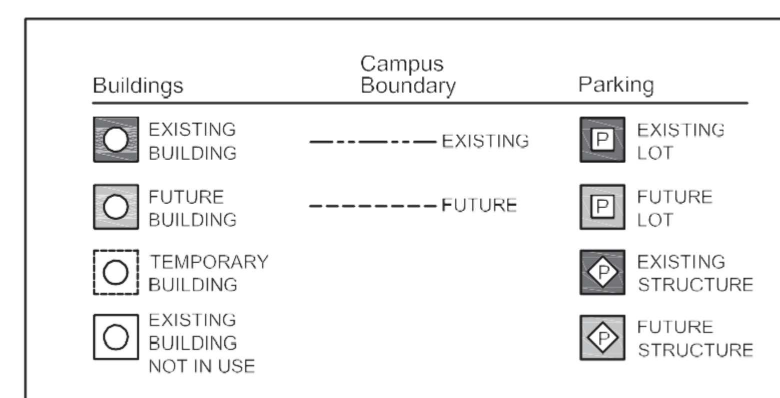
FIGURE 3A

Existing Campus Master Plan

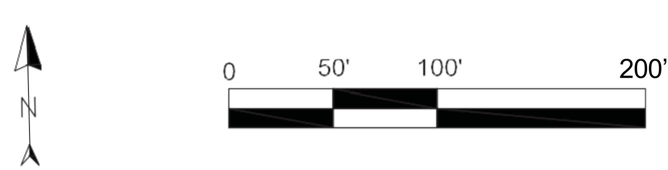


SDSU-IVC BUILDING LEGEND

1. North Classroom
2. Administration
2A. Art Gallery
3. Auditorium
4. Classrooms
5. Library
5A. Library Addition
6. Physical Plant
7. Computer Building/Campus Store
8. Student Affairs
9. Faculty Offices East
10. Faculty Offices West
20. Student Center
21A. Student Housing West
21B. Student Housing East
21C. Student Housing Office
21D. Student Housing Community Center
22. Classroom Building South



PROPOSED
San Diego State University
Imperial Valley Campus - Calexico
Campus Master Plan
Master Plan Enrollment: 850 FTE
Approval Date: 1980
Revised Date: September 2003
Main Campus Acreage: 8.4



SOURCE: SDSU 2024

DUDEK

FIGURE 3B
Proposed Campus Master Plan
Technical Memorandum for the SDSU Imperial Valley Off-Campus Center – Calexico Affordable Student Housing Project

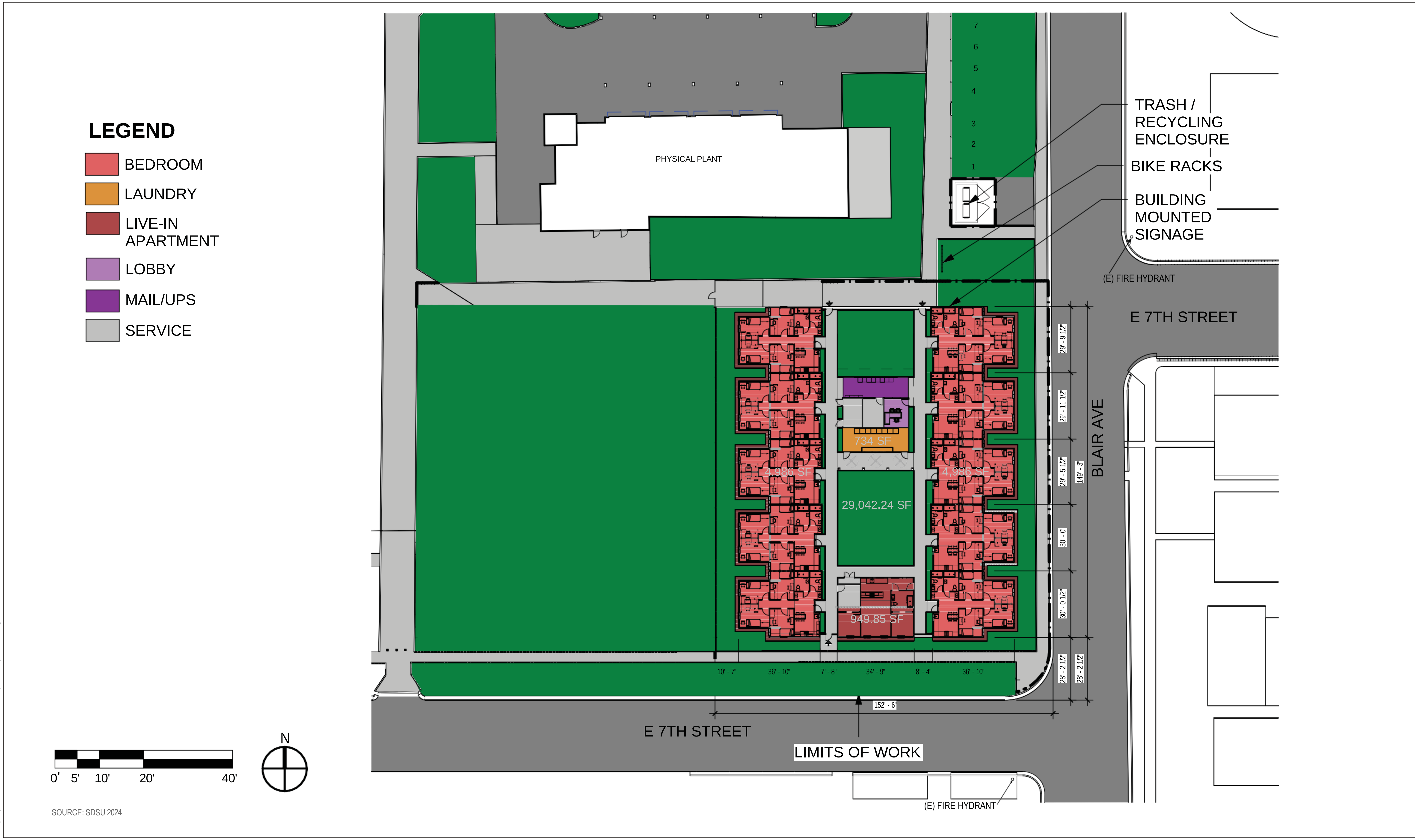
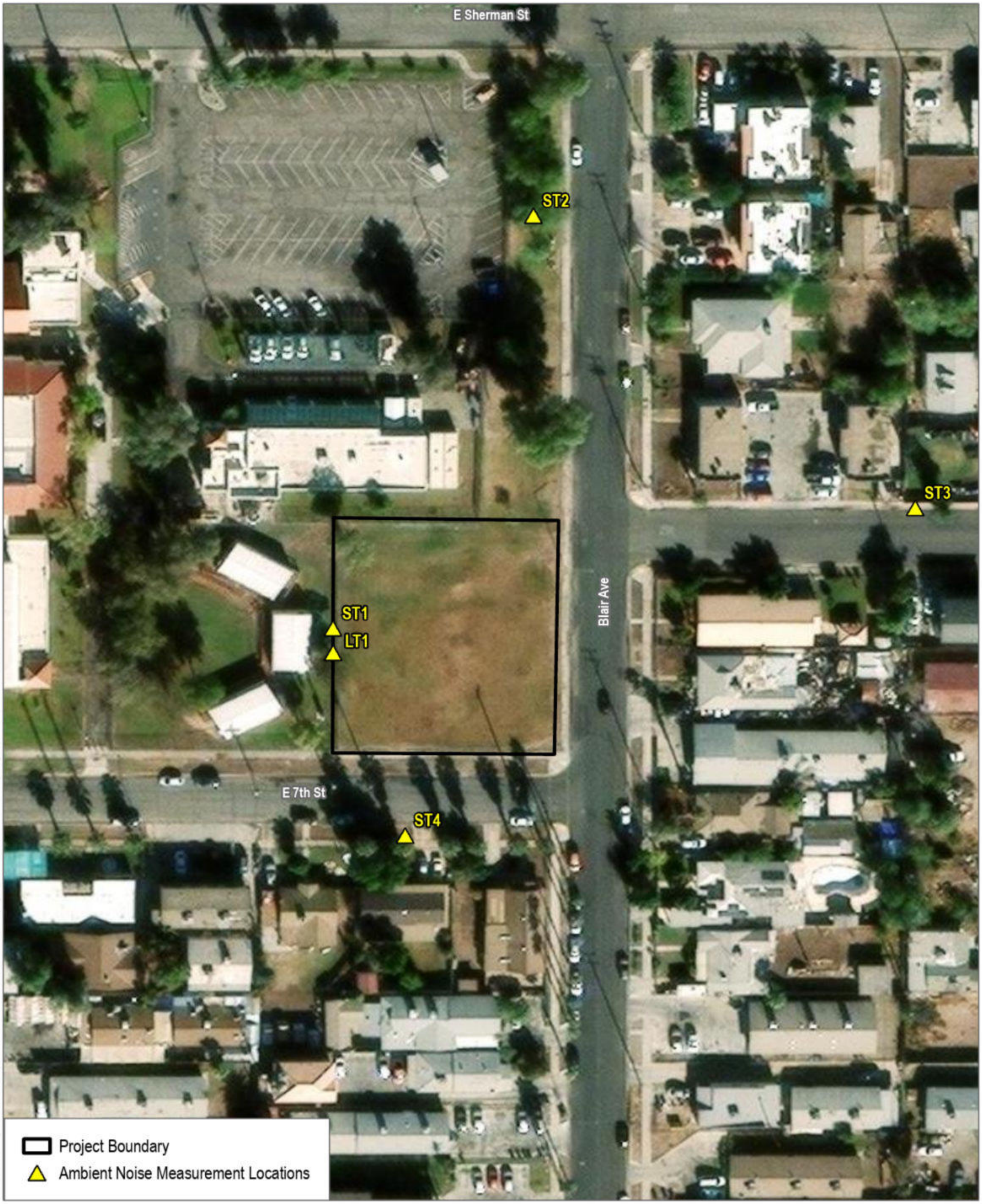


FIGURE 4
Site Plan



SOURCE: Esn World Imagery; Open Street Map 2024

DUDEK

46 92 Feet

FIGURE 5

Baseline Outdoor Ambient Noise Measurement Locations

SOURCES: Google 2024; SDSU Calexico 2024; Dudek 2024

DUDEK

0 68 136 Feet

FIGURE 6

Predicted Stationary Source Operation Noise from Proposed Project

SDSU Calexico Campus Affordable Student Housing Project (Imperial County, CA)

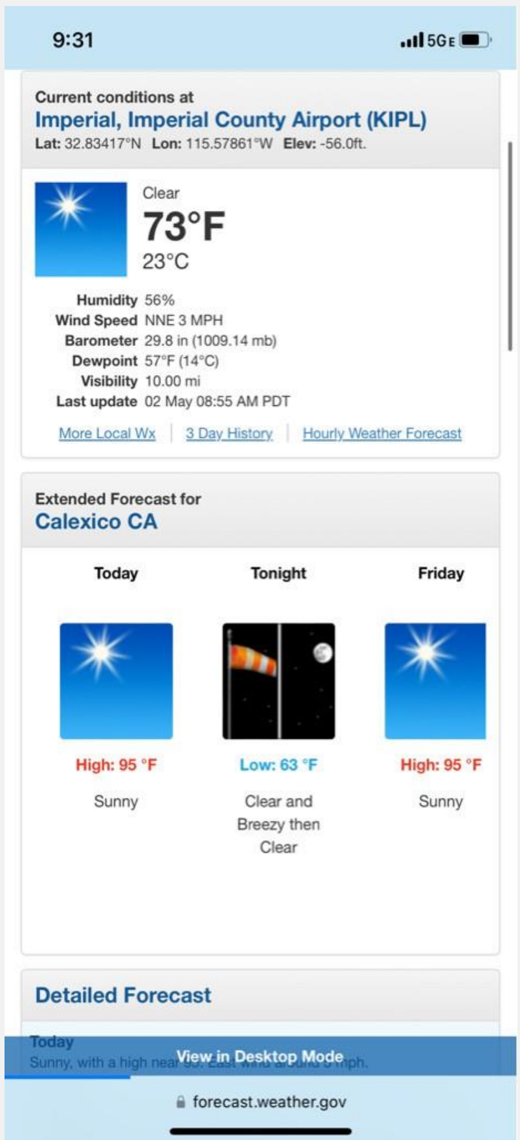
Attachment B

Baseline Noise Measurement Field Data

FORMS DUDEK FIELD DATA REPORT

Field Noise Measurement Data

Record: 1896	
Project Name	*SDSU Calexico*
Project #	*15464.05*
Date	*2024-05-02*

Meteorological Conditions	
Upload NOAA Forecast	

FORMS DUDEK FIELD DATA REPORT

Temp (F)	*73*
Humidity % (R.H.)	*56*
Wind	*Calm*
Wind Speed (MPH)	*3*
Wind Direction	*North*
Sky	*Clear*

Instrument and Calibrator Information	
Instrument Name List	*(SAC) NL-62*
Instrument Name	*(SAC) NL-62*
Instrument Name Lookup Key	*(SAC) NL-62*
Manufacturer	*Rion*
Model	*NL-62*
Serial Number	*350815*
Calibration Date	
Calibrator Name	*(SAC) Rion NC-74*
Calibrator Name	*(SAC) Rion NC-74*
Calibrator Name Lookup Key	*(SAC) Rion NC-74*
Calibrator Manufacturer	*Rion*
Calibrator Model	*NC-74*
Calibrator Serial #	*34167529*
Pre-Test (dBA SPL)	*93.6*
Post-Test (dBA SPL)	*94*

Windscreen	*Yes*
Weighting?	*A-WTD*
Slow/Fast?	*Slow*
ANSI?	*Yes*

Monitoring	
Record #	*1*
Site ID	*ST1/LT1*
Site Location Lat/Long	*32.671711, -115.491260*
Begin (Time)	*09:30:00*
End (Time)	*09:45:00*
Leq	*60.9*
Lmax	*63.8*
Lmin	*56.8*
Other Lx?	*L90, L50, L10*
L90	*58.6*
L50	*60.7*
L10	*62.9*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Generator*
Other Noise Sources (Background)	*Birds, Distant Dog Barking, Distant Traffic*
Other Noise Sources Additional Description	*Loud on-campus generator, home construction across the street, intermittent traffic*
Is the same instrument and calibrator being used as previously noted?	*Yes*

Are the meteorological conditions the same as previously noted?	*Yes*

Description / Photos	
Terrain	*Soft*

Site Photos	
Photo	

FORMS FIELD DATA REPORT

Comments / Description	*Facing W + LT1*

Site Photos	
Photo	
Comments / Description	*Facing N*

FORMS FIELD DATA REPORT

Site Photos	
Photo	
Comments / Description	*Facing E*

Monitoring	
Record #	*2*
Site ID	*ST2*
Site Location Lat/Long	*32.672571, -115.490876*

Begin (Time)	*09:51:00*
End (Time)	*10:06:00*
Leq	*52.3*
Lmax	*58.9*
Lmin	*47.5*
Other Lx?	*L90, L50, L10*
L90	*48.2*
L50	*50.1*
L10	*55.7*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Birds, Distant Conversations / Yelling, Distant Traffic*
Other Noise Sources Additional Description	*Traffic on Blair St, nearby home construction, distant on-campus generator noise*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

Source Info and Traffic Counts	
Number of Lanes	*2*
Lane Width (feet)	*10*
Roadway Width (feet)	*20*
Roadway Width (m)	*6.1*
Distance to Roadway (feet)	*50*

FORMS DUDEK FIELD DATA REPORT

Distance to Roadway (m)	*15.3*
Distance Measured to Centerline or Edge of Pavement?	*Centerline*
Estimated Vehicle Speed (MPH)	*25*
Posted Speed Limit Sign (MPH)	*25*

Traffic Counts	
Vehicle Count Summary	*A 37, MT 0, HT 0, B 0, MC 0*
Select Method for Recording Count Duration	*Enter Manually*
Counting Both Directions?	*Yes*
Count Duration (minutes)	*15*
Vehicle Count Tally	
Select Method for Vehicle Counts	*Use Counter (+/-)*
Number of Vehicles - Autos	*37*
Number of Vehicles - Medium Trucks	*0*
Number of Vehicles - Heavy Trucks	*0*
Number of Vehicles - Buses	*0*
Number of Vehicles - Motorcyles	*0*

Description / Photos	
Terrain	*Mixed*

Site Photos

Photo	
Comments / Description	*Facing N*

Site Photos

FORMS FIELD DATA REPORT

Photo	
Comments / Description	*Facing E*

Site Photos

Photo	
Comments / Description	*Facing S*

Monitoring	
Record #	*3*
Site ID	*ST3*
Site Location Lat/Long	*32.671923, -115.490058*

FORMS FIELD DATA REPORT

Begin (Time)	*10:11:00*
End (Time)	*10:26:00*
Leq	*59.5*
Lmax	*66.2*
Lmin	*55.1*
Other Lx?	*L90, L50, L10*
L90	*55.8*
L50	*59.2*
L10	*61*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Birds, Distant Aircraft, Distant Traffic*
Other Noise Sources Additional Description	*On-campus generator, traffic*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

Source Info and Traffic Counts	
Number of Lanes	*2*
Lane Width (feet)	*10*
Roadway Width (feet)	*20*
Roadway Width (m)	*6.1*
Distance to Roadway (feet)	*20*

Distance to Roadway (m)	*6.1*
Distance Measured to Centerline or Edge of Pavement?	*Centerline*
Estimated Vehicle Speed (MPH)	*25*
Posted Speed Limit Sign (MPH)	*25*

Traffic Counts	
Vehicle Count Summary	*A 13, MT 0, HT 0, B 0, MC 0*
Select Method for Recording Count Duration	*Enter Manually*
Counting Both Directions?	*Yes*
Count Duration (minutes)	*15*
Vehicle Count Tally	
Select Method for Vehicle Counts	*Use Counter (+/-)*
Number of Vehicles - Autos	*13*
Number of Vehicles - Medium Trucks	*0*
Number of Vehicles - Heavy Trucks	*0*
Number of Vehicles - Buses	*0*
Number of Vehicles - Motorcyles	*0*

Description / Photos	
Terrain	*Hard*

FIELD DATA REPORT

Site Photos

Photo	
Comments / Description	*Facing E*

Site Photos

Photo	
Comments / Description	*Facing S*

Site Photos

FORMS FIELD DATA REPORT

Photo	
Comments / Description	*Facing W*

Monitoring	
Record #	*4*
Site ID	*ST4*
Site Location Lat/Long	*32.671408, -115.491059*

FORMS FIELD DATA REPORT

Begin (Time)	*10:30:00*
End (Time)	*10:45:00*
Leq	*59.5*
Lmax	*64.2*
Lmin	*54.3*
Other Lx?	*L90, L50, L10*
L90	*55.4*
L50	*58.1*
L10	*63*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Birds, Distant Conversations / Yelling, Distant Traffic*
Other Noise Sources Additional Description	*On-campus generator noise, traffic, nearby home construction*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

Source Info and Traffic Counts	
Number of Lanes	*2*
Lane Width (feet)	*10*
Roadway Width (feet)	*20*
Roadway Width (m)	*6.1*
Distance to Roadway (feet)	*20*

Distance to Roadway (m)	*6.1*
Distance Measured to Centerline or Edge of Pavement?	*Centerline*
Estimated Vehicle Speed (MPH)	*25*
Posted Speed Limit Sign (MPH)	*25*

Traffic Counts	
Vehicle Count Summary	*A 14, MT 0, HT 0, B 0, MC 0*
Select Method for Recording Count Duration	*Enter Manually*
Counting Both Directions?	*Yes*
Count Duration (minutes)	*15*
Vehicle Count Tally	
Select Method for Vehicle Counts	*Use Counter (+/-)*
Number of Vehicles - Autos	*14*
Number of Vehicles - Medium Trucks	*0*
Number of Vehicles - Heavy Trucks	*0*
Number of Vehicles - Buses	*0*
Number of Vehicles - Motorcyles	*0*

Description / Photos	
Terrain	*Mixed*

Site Photos

Photo	
Comments / Description	*Facing N*

Site Photos

Photo	
Comments / Description	*Facing W*

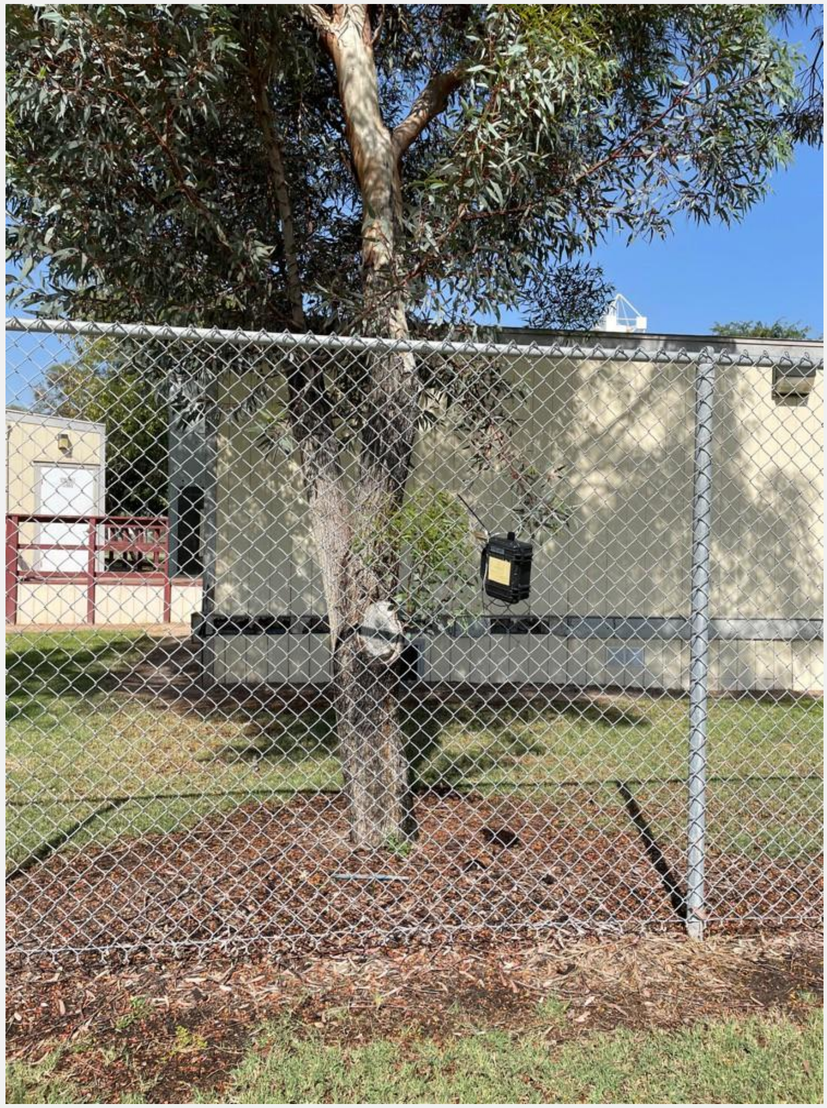
Site Photos

Photo	
Comments / Description	*Facing E*

Description / Photos	
Terrain	*Soft*

FIELD DATA REPORT

Site Photos

Photo	
Comments / Description	*LT1 facing W*

Site Photos

FIELD DATA REPORT

Photo	
Comments / Description	*LT1 facing N*

Site Photos

FORMS FIELD DATA REPORT

Photo	
Comments / Description	*LT1 facing S*

Site Photos

Photo	
Comments / Description	*On-campus generator (significant noise contributor)*

Attachment C

Construction Noise Prediction Model Worksheets

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase at residential land use, per Imperial County = 75

allowable hours over which Leq is to be averaged, Imperial County = 8

0 = temporary barrier (TB) of input height inserted between source and receptor

Construction Activity	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Site Preparation	grader	1	40	85		95	0.1		77.3	8	480	73
	backhoe	2	40	78		95	0.1		70.3	8	480	69
	roller	1	20	80		95	0.1		72.3	8	480	65
	dump truck	1	40	76		95	0.1		68.3	8	480	64
									Total for Site Preparation Phase:			75.6
Grading	grader	1	40	85		95	0.1		77.3	8	480	73
	backhoe	2	40	78		95	0.1		70.3	8	480	69
	roller	1	20	80		95	0.1		72.3	8	480	65
	dump truck	1	40	76		95	0.1		68.3	8	480	64
									Total for Grading Phase:			75.6
Building Construction	man lift	3	20	75	"aerial lifts (electric)"	95	0.1		67.3	8	480	65
	man lift	1	20	75	"forklifts"	95	0.1		67.3	8	480	60
	backhoe	2	40	78		95	0.1		70.3	8	480	69
	concrete mixer truck	5	40	79		95	0.1		71.3	8	480	74
	front end loader	1	40	79	"skid steer loader"	95	0.1		71.3	8	480	67
	welder / torch	2	40	73		95	0.1		65.3	8	480	64
									Total for Building Construction Phase:			76.9
Paving / Architectural coating	compressor (air)	1	40	78		95	0.1		70.3	8	480	66
	all other equipment > 5 HP	1	50	85		95	0.1		77.3	8	480	74
									Total for Paving / Architectural coating Phase:			75.0

Construction Activity	Equipment	Source Elevation (ft)	Receiver Elevation (ft)	Barrier Height (ft)	Source to Barr. ("A") Horiz. (ft)	Rcvr. to Barr. ("B") Horiz. (ft)	Source to Rcvr. ("C") Horiz. (ft)	"A" (ft)	"B" (ft)	"C" (ft)	Path Length Diff. "P" (ft)	Abarr (dB)	Heff (with barrier)	Heff (wout barrier)	G (with barrier)	G (without barrier)	ILbarr (dB)
Site Preparation	grader	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	roller	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	dump truck	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
Grading	grader	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	roller	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	dump truck	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
Building Construction	man lift	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	man lift	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	concrete mixer truck	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	front end loader	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	welder / torch	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
Paving / Architectural coating	compressor (air)	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	all other equipment > 5 HP	5	5	0	10	85	95	11.2	85.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase at residential land use, per Imperial County = 75

allowable hours over which Leq is to be averaged, Imperial County = 8

6 = temporary barrier (TB) of input height inserted between source and receptor

Construction Activity	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Site Preparation	grader	1	40	85		155	0.1		71.7	8	480	68
	backhoe	2	40	78		155	0.1		64.7	8	480	64
	roller	1	20	80		155	0.1		66.7	8	480	60
	dump truck	1	40	76		155	0.1		62.7	8	480	59
									Total for Site Preparation Phase:			**69.9**
Grading	grader	1	40	85		155	0.1		71.7	8	480	68
	backhoe	2	40	78		155	0.1		64.7	8	480	64
	roller	1	20	80		155	0.1		66.7	8	480	60
	dump truck	1	40	76		155	0.1		62.7	8	480	59
									Total for Grading Phase:			**69.9**
Building Construction	man lift	3	20	75	"aerial lifts (electric)"	155	0.1		61.7	8	480	59
	man lift	1	20	75	"forklifts"	155	0.1		61.7	8	480	55
	backhoe	2	40	78		155	0.1		64.7	8	480	64
	concrete mixer truck	5	40	79		155	0.1		65.7	8	480	69
	front end loader	1	40	79	"skid steer loader"	155	0.1		65.7	8	480	62
	welder / torch	2	40	73		155	0.1		59.7	8	480	59
									Total for Building Construction Phase:			**71.2**
Paving / Architectural coating	compressor (air)	1	40	78		155	0.1		64.7	8	480	61
	all other equipment > 5 HP	1	50	85		155	0.1		71.7	8	480	69
									Total for Paving / Architectural coating Phase:			**69.3**

Construction Activity	Equipment	Source Elevation (ft)	Receiver Elevation (ft)	Barrier Height (ft)	Source to Barr. ("A") Horiz. (ft)	Rcvr. to Barr. ("B") Horiz. (ft)	Source to Rcvr. ("C") Horiz. (ft)	"A" (ft)	"B" (ft)	"C" (ft)	Path Length Diff. "P" (ft)	Abarr (dB)	Heff (with barrier)	Heff (wout barrier)	G (with barrier)	G (without barrier)	ILbarr (dB)
Site Preparation	grader	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	roller	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	dump truck	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
Grading	grader	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	roller	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	dump truck	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
Building Construction	man lift	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	man lift	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	concrete mixer truck	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	front end loader	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	welder / torch	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
Paving / Architectural coating	compressor (air)	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	all other equipment > 5 HP	5	5	0	70	85	155	70.2	85.1	155.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase at residential land use, per Imperial County = 75

allowable hours over which Leq is to be averaged, Imperial County = 8

6 = temporary barrier (TB) of input height inserted between source and receptor

Construction Activity	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Site Preparation	grader	1	40	85		95	2.3		75.1	8	480	71
	backhoe	2	40	78		95	2.3		68.1	8	480	67
	roller	1	20	80		95	2.3		70.1	8	480	63
	dump truck	1	40	76		95	2.3		66.1	8	480	62
									Total for Site Preparation Phase:			**73.4**
Grading	grader	1	40	85		95	2.3		75.1	8	480	71
	backhoe	2	40	78		95	2.3		68.1	8	480	67
	roller	1	20	80		95	2.3		70.1	8	480	63
	dump truck	1	40	76		95	2.3		66.1	8	480	62
									Total for Grading Phase:			**73.4**
Building Construction	man lift	3	20	75	"aerial lifts (electric)"	95	2.3		65.1	8	480	63
	man lift	1	20	75	"forklifts"	95	2.3		65.1	8	480	58
	backhoe	2	40	78		95	2.3		68.1	8	480	67
	concrete mixer truck	5	40	79		95	2.3		69.1	8	480	72
	front end loader	1	40	79	"skid steer loader"	95	2.3		69.1	8	480	65
	welder / torch	2	40	73		95	2.3		63.1	8	480	62
									Total for Building Construction Phase:			**74.6**
Paving / Architectural coating	compressor (air)	1	40	78		95	2.3		68.1	8	480	64
	all other equipment > 5 HP	1	50	85		95	2.3		75.1	8	480	72
									Total for Paving / Architectural coating Phase:			**72.8**

Construction Activity	Equipment	Source Elevation (ft)	Receiver Elevation (ft)	Barrier Height (ft)	Source to Barr. ("A") Horiz. (ft)	Rcvr. to Barr. ("B") Horiz. (ft)	Source to Rcvr. ("C") Horiz. (ft)	"A" (ft)	"B" (ft)	"C" (ft)	Path Length Diff. "P" (ft)	Abarr (dB)	Heff (with barrier)	Heff (wout barrier)	G (with barrier)	G (without barrier)	ILbarr (dB)
Site Preparation	grader	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
	backhoe	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
	roller	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
	dump truck	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
Grading	grader	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
	backhoe	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
	roller	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
	dump truck	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
Building Construction	man lift	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
	man lift	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
	backhoe	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
	concrete mixer truck	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
	front end loader	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
	welder / torch	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
Paving / Architectural coating	compressor (air)	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3
	all other equipment > 5 HP	5	5	6	10	85	95	10.0	85.0	95.0	0.06	2.6	11.0	5.0	0.6	0.7	2.3

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase at residential land use, per Imperial County = 75

allowable hours over which Leq is to be averaged, Imperial County = 8

6 = temporary barrier (TB) of input height inserted between source and receptor

Construction Activity	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Site Preparation	grader	1	40	85		155	0.2		71.5	8	480	68
	backhoe	2	40	78		155	0.2		64.5	8	480	64
	roller	1	20	80		155	0.2		66.5	8	480	60
	dump truck	1	40	76		155	0.2		62.5	8	480	59
									Total for Site Preparation Phase:			**69.8**
Grading	grader	1	40	85		155	0.2		71.5	8	480	68
	backhoe	2	40	78		155	0.2		64.5	8	480	64
	roller	1	20	80		155	0.2		66.5	8	480	60
	dump truck	1	40	76		155	0.2		62.5	8	480	59
									Total for Grading Phase:			**69.8**
Building Construction	man lift	3	20	75	"aerial lifts (electric)"	155	0.2		61.5	8	480	59
	man lift	1	20	75	"forklifts"	155	0.2		61.5	8	480	55
	backhoe	2	40	78		155	0.2		64.5	8	480	64
	concrete mixer truck	5	40	79		155	0.2		65.5	8	480	69
	front end loader	1	40	79	"skid steer loader"	155	0.2		65.5	8	480	62
	welder / torch	2	40	73		155	0.2		59.5	8	480	59
									Total for Building Construction Phase:			**71.0**
Paving / Architectural coating	compressor (air)	1	40	78		155	0.2		64.5	8	480	61
	all other equipment > 5 HP	1	50	85		155	0.2		71.5	8	480	69
									Total for Paving / Architectural coating Phase:			**69.2**

Construction Activity	Equipment	Source Elevation (ft)	Receiver Elevation (ft)	Barrier Height (ft)	Source to Barr. ("A") Horiz. (ft)	Rcvr. to Barr. ("B") Horiz. (ft)	Source to Rcvr. ("C") Horiz. (ft)	"A" (ft)	"B" (ft)	"C" (ft)	Path Length Diff. "P" (ft)	Abarr (dB)	Heff (with barrier)	Heff (wout barrier)	G (with barrier)	G (without barrier)	ILbarr (dB)
Site Preparation	grader	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
	backhoe	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
	roller	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
	dump truck	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
Grading	grader	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
	backhoe	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
	roller	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
	dump truck	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
Building Construction	man lift	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
	man lift	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
	backhoe	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
	concrete mixer truck	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
	front end loader	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
	welder / torch	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
Paving / Architectural coating	compressor (air)	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2
	all other equipment > 5 HP	5	5	6	70	85	155	70.0	85.0	155.0	0.01	0.7	11.0	5.0	0.6	0.7	0.2

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Lesser of or available Lmax	Spec. 721 Lmax	Measured L_{max} @50ft (dBA, slow)
All Other Equipment > 5 HP	No	50	85	85	-- N/A --
Auger Drill Rig	No	20	84	85	84
Backhoe	No	40	78	80	78
Bar Bender	No	20	80	80	-- N/A --
Blasting	Yes	-- N/A --	94	94	-- N/A --
Boring Jack Power Unit	No	50	80	80	83
Chain Saw	No	20	84	85	84
Clam Shovel (dropping)	Yes	20	87	93	87
Compactor (ground)	No	20	80	80	83
Compressor (air)	No	40	78	80	78
Concrete Batch Plant	No	15	83	83	-- N/A --
Concrete Mixer Truck	No	40	79	85	79
Concrete Pump Truck	No	20	81	82	81
Concrete Saw	No	20	90	90	90
Crane	No	16	81	85	81
Dozer	No	40	82	85	82
Drill Rig Truck	No	20	79	84	79
Drum Mixer	No	50	80	80	80
Dump Truck	No	40	76	84	76
Excavator	No	40	81	85	81
Flat Bed Truck	No	40	74	84	74
Front End Loader	No	40	79	80	79
Generator	No	50	72	72	81
Generator (<25KVA, VMS signs)	No	50	70	70	73
Gradall	No	40	83	85	83
Grader	No	40	85	85	-- N/A --
Grapple (on backhoe)	No	40	85	85	87
Horizontal Boring Hydr. Jack	No	25	80	80	82
Hydra Break Ram	Yes	10	90	90	-- N/A --
Impact Pile Driver	Yes	20	95	95	101
Jackhammer	Yes	20	85	85	89
Man Lift	No	20	75	85	75
Mounted Impact Hammer (hoe ram)	Yes	20	90	90	90
Pavement Scarafier	No	20	85	85	90
Paver	No	50	77	85	77
Pickup Truck	No	40	55	55	75
Pneumatic Tools	No	50	85	85	85
Pumps	No	50	77	77	81
Refrigerator Unit	No	100	73	82	73
Rivit Buster/chipping gun	Yes	20	79	85	79
Rock Drill	No	20	81	85	81
Roller	No	20	80	85	80
Sand Blasting (Single Nozzle)	No	20	85	85	96
Scraper	No	40	84	85	84
Shears (on backhoe)	No	40	85	85	96
Slurry Plant	No	100	78	78	78
Slurry Trenching Machine	No	50	80	82	80
Soil Mix Drill Rig	No	50	80	80	-- N/A --
Tractor	No	40	84	84	-- N/A --
Vacuum Excavator (Vac-truck)	No	40	85	85	85
Vacuum Street Sweeper	No	10	80	80	82
Ventilation Fan	No	100	79	85	79
Vibrating Hopper	No	50	85	85	87
Vibratory Concrete Mixer	No	20	80	80	80
Vibratory Pile Driver	No	20	95	95	101
Warning Horn	No	5	83	85	83
Welder / Torch	No	40	73	73	74

Attachment D

Traffic Noise Modeling Calculations

Attachment D

Traffic Noise Modeling Calculations - Summary

Project: 15464.05SDSU Calexico

Number	Name	Segment Description and Location From	To	Existing	Existing + Project	Δ Existing – Existing + Project
Summary of Net Changes						
1	Blair Ave	Sherman St	7th St	56.4	56.5	0.1
2	7th St	Blair Ave	Giles Ave	54.9	55.2	0.3
3	7th St	Heber Ave	Blair Ave	55.2	55.5	0.3

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Attachment D - 1

Traffic Noise Model Calculations

Project: 15464.05SDSU Calexico

Noise Level Descriptor: CNEL
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor: 10

Segment Description and Location				Input										Output				
					Speed	Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						CNEL,	Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	(mph)	Near	Far	% Auto	% Med	% Hvy	% Day	% Eve	% Night	(dBA)[5,6,7]	70 dBA	65 dBA	60 dBA	55 dBA
Existing Conditions																		
1	Blair Ave	Sherman St	7th St	3,404	25	50	50	97.0%	2.0%	1.0%	85.0%	10.0%	5.0%	56.4	2	7	22	69
2	7th St	Blair Ave	Giles Ave	1,196	25	25	25	97.0%	2.0%	1.0%	85.0%	10.0%	5.0%	54.9	1	2	8	24
3	7th St	Heber Ave	Blair Ave	1,288	25	25	25	97.0%	2.0%	1.0%	85.0%	10.0%	5.0%	55.2	1	3	8	26

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Attachment D - 2

Traffic Noise Model Calculations

Project: 15464.05SDSU Calexico

Noise Level Descriptor: CNEL
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor: 10

Number	Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)[4] Near	Far	% Auto	% Med	% Hvy	% Day	% Eve	% Night	CNEL, (dBA)[5,6,7]	70 dBA	65 dBA	60 dBA	55 dBA
	Segment Description and Location			Input				Traffic Distribution Characteristics						Output	Distance to Contour, (feet)[3]			
Existing + Project Conditions																		
1	Blair Ave	Sherman St	7th St	3,491	25	50	50	97.0%	2.0%	1.0%	85.0%	10.0%	5.0%	56.5	2	7	22	71
2	7th St	Blair Ave	Giles Ave	1,283	25	25	25	97.0%	2.0%	1.0%	85.0%	10.0%	5.0%	55.2	1	3	8	26
3	7th St	Heber Ave	Blair Ave	1,375	25	25	25	97.0%	2.0%	1.0%	85.0%	10.0%	5.0%	55.5	1	3	9	28

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Attachment E

Operation Noise Prediction Model Inputs

Point Sources

Name	Sel.	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuatio	Operating Time			K0	Freq.	Direct.	Height		Coordinate		
				Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value	norm. dB(A)	Day dB(A)	Evening dB(A)	Night dB(A)	R	Area (ft²)		Day (min)	Special (min)	Night (min)	(dB)	(Hz)		(ft)		X (ft)	' ft)	Z (ft)
Condenser Unit			LMU543H	63.7	63.7	63.7	Lw	LMU		0	0	0							0		(none)	3.5	g	743.48	594.84	21.5
Condenser Unit			LMU543H	63.7	63.7	63.7	Lw	LMU		0	0	0							0		(none)	3.5	g	743.48	600.76	21.5
Condenser Unit			LMU543H	63.7	63.7	63.7	Lw	LMU		0	0	0							0		(none)	3.5	g	843.89	600.27	21.5
Condenser Unit			LMU543H	63.7	63.7	63.7	Lw	LMU		0	0	0							0		(none)	3.5	g	843.89	593.75	21.5
Condenser Unit			LMU543H	63.7	63.7	63.7	Lw	LMU		0	0	0							0		(none)	3.5	g	843.75	658.66	21.5
Condenser Unit			LMU543H	63.7	63.7	63.7	Lw	LMU		0	0	0							0		(none)	3.5	g	843.84	662.11	21.5
Condenser Unit			LMU543H	63.7	63.7	63.7	Lw	LMU		0	0	0							0		(none)	3.5	g	843.75	655.39	21.5
Condenser Unit			LMU543H	63.7	63.7	63.7	Lw	LMU		0	0	0							0		(none)	3.5	g	742.34	659.09	21.5
Condenser Unit			LMU543H	63.7	63.7	63.7	Lw	LMU		0	0	0							0		(none)	3.5	g	742.26	664.43	21.5
Condenser Unit			LMU543H	63.7	63.7	63.7	Lw	LMU		0	0	0							0		(none)	3.5	g	742.26	654.35	21.5
Solar Transformer			SOLT	73	73	73	Lw	MVT		0	0	0			-0.6				0		(none)	4	r	733.63	551.2	4
Condenser Unit			LMU543H	63.7	63.7	63.7	Lw	LMU		0	0	0							0		(none)	4	r	794.9	551.2	4

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height Begin (ft)
Housing East		+	HE	x	0		18
Housing West		+	HW	x	0		18
Housing South		+	HS	x	0		18
Laundry_Mail_Lobby		+	LML	x	0		14
Roof Canopy		+	CAN	x	0		
Roof Canopy		+	CAN	x	0		
Roof Canopy		+	CAN	x	0		
Roof Canopy		+	CAN	x	0		

Sound Levels (local)

Name	ID	Type	1/3 Oktave Spectrum (dB)												Source
			Weight.	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	
LG LMU543HV Condenser	LMU	Lw		0	73	64	65	62	58	53	49	44	63.7	74.5	LG LMU543HV Condenser (Heating, OBCF [Hz])
Medium Voltage Transformer	MVT	Lw	A	30	49	61	63	69	66	62	57	48	72.4	81.1	SILLMAN 65 dB ref, EEI EPPENG calcs