EIR Appendix A

Notice of Preparation, Written Comments, and Initial Study

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE SAN DIEGO HIGH SCHOOL WHOLE SITE MODERNIZATION AND LONG-RANGE FACILITIES MASTER PLAN PROJECT

May 29, 2020

The San Diego Unified School District (District) is the Lead Agency requesting input regarding the preparation of an Environmental Impact Report (EIR) to analyze impacts of the Whole Site Modernization (WSM) and Long-Range Facility Master Plan (LRFMP) Project, pursuant to the California Environmental Quality Act (CEQA). This Notice of Preparation (NOP) serves to solicit input as to the scope and content of the draft EIR for the WSM and LRFMP improvements at the existing San Diego High School campus.

Project Title: San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan Project

Project Applicant: **San Diego Unified School District**

Project Description: The proposed project involves a lease between the City and the District and the WSM and LRFMP upgrades. The lease would extend the permission for the District to continue operations at the project site consistent with existing use for an additional 99 years from the date of the lease. These improvements would occur as part of Propositions S and Z and Measure YY in the near-term and new structures and facilities in the long-term.

Campus-wide WSM improvements would generally involve interior and exterior improvements to existing school buildings. School buildings would be upgraded with plumbing, windows, lighting, painting, signage, and roof improvements, as well as new or replaced heating, ventilation, air conditioning. Interior finish upgrades would consist of replacing interior flooring and base, painting walls, ceilings and doors, removing existing casework and providing movable storage, and new window blinds. Other WSM components include, but are not limited to, the removal of excess relocatable classrooms, reconfiguration of the upper and lower quad including construction of new food kiosks, improvements to the east parking lot, and construction of new softball field amenities. The LRFMP improvements would involve the construction of a new two story classroom building with a ground floor parking area, new food service and custodial building, various stadium amenities, four new buildings within the existing campus boundaries including a new performing arts building, auxiliary gymnasium, parking structure with tennis courts, aquatic center, and field house. Other LRFMP components to improve project circulation and access include the interior realignment of the existing driveway with Interstate 5 near the proposed performing arts center and the interior realignment of the 16th Street entrance into the project site. Completion of the WSM improvements and LRFMP improvements would not result in an increase in classroom capacity and is not anticipated to result in an increase in enrollment.

Project Location: The project site is located within the Centre City Community of the City of San Diego, California, at the existing school site of San Diego High School, at 1405 Park Boulevard, San Diego, CA 92101. The site is bound by Interstate 5 (I-5) to the north and east; and educational buildings associated with Garfield High School and San Diego City College to the south and west. The project site has a General Plan land use designation of Public/Civic and Existing Park/Open Space and is zoned as "Centre City Planned District – Public/Civic" and "Centre City Planned District – Open Space." Please see the attached Figure 1, *Project Location*.

Probable Environmental Effects: The District has determined that an EIR will be prepared for the proposed project and an Initial Study (IS) has been prepared for the project that identifies the following environmental impact issue areas to be included for analysis in the EIR: air quality, cultural resources, geology/soils, greenhouse gas emissions, hazards and hazardous materials, noise and vibration, and transportation and traffic. The following environmental impact issue areas were determined to be less than significant or have no impact and additional analysis in the EIR is not anticipated: aesthetics, agricultural/forestry resources, biological resources, energy, hydrology/water quality, land use/planning, mineral resources, population/housing, public services, recreation, utilities/service systems, and wildfire.

Pursuant to CEQA Guidelines Section 15082(b), your comments regarding the scope and content of the environmental analysis must be submitted no later than 30 days after the receipt of this notice by the Office of Planning and Research, by each responsible and trustee agency, and receipt by the San Diego County Clerk Recorder. The public review period is from May 29, 2020 to June 29, 2020. Please send your comments directly to: Paul Garcia, Civil/Environmental Project Coordinator, 4860 Ruffner Street, San Diego, CA 92111, or via email to environmental@sandi.net.

Due to the Shelter-in-Place Order in response to the COVID-19 outbreak, the proposed Scoping Meeting for the EIR will be held virtually. The meeting will occur on June 17, 2020 from 5:00 PM to 6:00 PM. Please use the following web address to access the zoom meeting:

https://us02web.zoom.us/j/87953392432?pwd=bHYvcFpBQ0k1bVZKcUVKNUlsbkpIUT09

The public meeting will provide an opportunity to disseminate information, identify environmental issues, and discuss the scope of review to be included in the EIR. Given the limitation of the meeting venue, public comments should be provided through email or through regular mail at the contact information provided above.

AVISO DE PREPARACIÓN DE UN REPORTE DE IMPACTO AMBIENTAL PARA LA MODERNIZACIÓN TOTAL DEL PLANTEL DE LA PREPARATORIA SAN DIEGO Y EL PROYECTO MAESTRO DE LARGO PLAZO DE LAS INSTALACIONES

Mayo 29, 2020

El Distrito Escolar Unificado de San Diego (Distrito) es la Agencia Principal que solicita opiniones sobre la preparación de un Reporte de Impacto Ambiental (EIR, por sus siglas en inglés) para analizar los impactos de la Modernización Total del Plantel (WSM, por sus siglas en inglés) y del Proyecto de Largo Plazo de las Instalaciones (LRFMP, por sus siglas en inglés), de acuerdo con la Ley de Calidad Ambiental de California (CEQA, por sus siglas en inglés). Este Aviso de Preparación (NOP, por sus siglas en inglés) sirve para solicitar opiniones en relación al alcance y contenido del borrador del EIR para las mejoras de la WSM y el LRFMP en el actual plantel de la Escuela Preparatoria San Diego.

Título del proyecto: Modernización Total del Plantel de la Escuela Preparatoria San Diego y Proyecto Maestro de Largo Plazo de sus Instalaciones

Solicitante del proyecto: **Distrito Escolar Unificado de San Diego**

Descripción del proyecto: El proyecto propuesto implica un convenio de usufructo entre la Ciudad y el Distrito y las mejoras de la WSM y el LRFMP. El convenio ampliaría el permiso para que el Distrito continúe operando plantel del proyecto consistente con el uso existente por 99 años adicionales a partir de la fecha del convenio de usufructo. Estas mejoras ocurrirían como parte de las Proposiciones S y Z y de la Medida YY en el corto plazo y nuevas estructuras e instalaciones en el largo plazo.

Las mejoras la WSM implicarían, por lo general, renovación interior y exterior de los edificios escolares existentes. Los edificios escolares serían mejorados con renovación de plomería, ventanas, pintura, letreros y techos, así como calefacción, ventilación y aire acondicionado nuevos o reemplazados. Las mejoras de acabados interiores consistirían en reemplazar pisos interiores, pintar paredes, reemplazar techos y puertas, persianas nuevas para las ventanas, y eliminar los gabinetes existentes de almacenaje y proveer depósitos móviles de almacenamiento. Otros componentes de la WSM incluyen, pero no se limitan a, la remoción de salones móviles sobrantes, reconfiguración del patio superior e inferior, incluyendo la construcción de kioscos de comida, mejoramientos del estacionamiento al este, y la construcción de nuevos servicios del campo de softball. Las mejoras del WSM implicarían la construcción de un nuevo edificio de dos pisos de salones de clase, un área de estacionamiento en la planta baja, un nuevo edificio para servicios alimenticios y conserjería, diversos servicios para el estadio, cuatro nuevos edificios dentro de los límites del plantel existente, incluyendo un nuevo edificio de artes escénicas, un gimnasio secundario, estructura de estacionamiento con canchas de tenis, centro acuático y pabellón deportivo. Otros componentes del LRFMP para mejorar la circulación y el acceso, incluyen el realineamiento interior de la entrada para autos existente con la Interestatal 5 cerca del centro propuesto de artes escénicas y el realineamiento interior de la entrada por 16th Street al plantel del proyecto. El completar los mejoramientos de la WSM y del LRFMP no dará como resultado un incremento en la capacidad de los salones y no se anticipa un incremento en la matriculación.

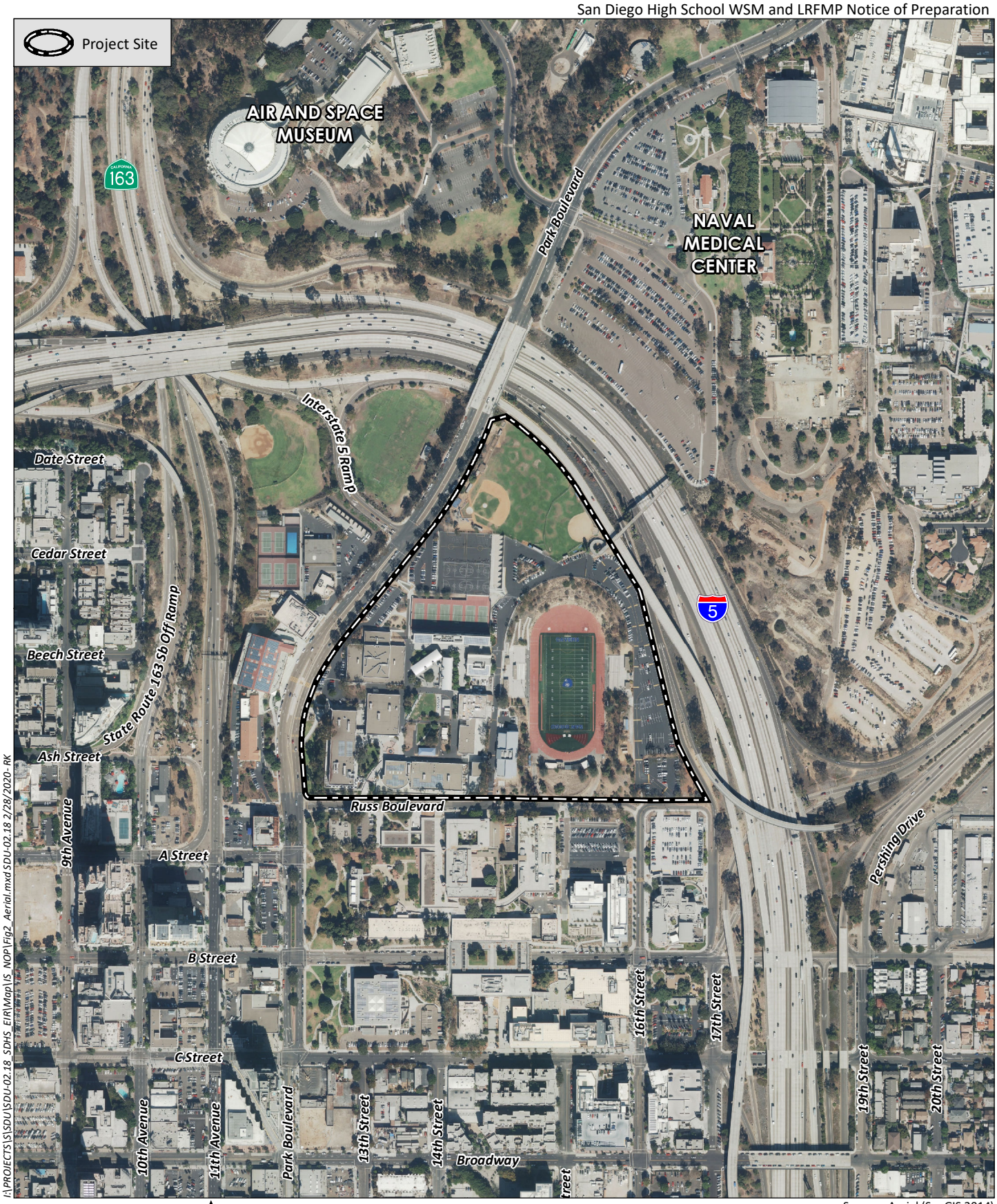
Ubicación del proyecto: El sitio del proyecto se localiza dentro del Centro Comunitario de la Ciudad de San Diego, California, en el plantel escolar existente de la Preparatoria San Diego, en at 1405 Park Boulevard, San Diego, CA 92101. El plantel está limitado por la Interestatal 5 (I-5) al norte y este; y los edificios educativos asociados con la Escuela Preparatoria Garfield y con el Colegio Comunitario de la Ciudad de San Diego al sur y al oeste. El proyecto del plantel tiene un Plan General de uso de suelo designado como Público/Cívico y de Parque Existente/Espacio Abierto y como zona designada como “Centro Citadino Planeado por del Distrito – Público/Cívico” y “Centro Citadino Planeado por del Distrito – Espacio Abierto”. Favor de ver la Figura 1 anexa, *Ubicación del proyecto*.

Probables efectos ambientales: El Distrito ha determinado que se preparará un EIR para el proyecto propuesto y se ha preparado un Estudio Inicial (IS, por sus siglas en inglés) para el proyecto que identifique las siguientes áreas de problemas de impacto ambiental para que sean incluidas en el análisis del EIR: calidad del aire, recursos culturales, geología/suelos, emisiones de gas de efecto de invernadero, peligros y materiales peligrosos, ruido y vibración, y transporte y tráfico. Se determinó que las siguientes áreas de problemas de impacto ambiental son menos significativas o no tienen impacto alguno, y no se anticipa un análisis adicional en el EIR: estética, recursos agrícolas/forestales, recursos biológicos, energía, hidrología/calidad del agua, uso/planeación de suelos, recursos minerales, población/vivienda, servicios públicos, recreación, servicios/sistemas de utilidad pública, e incendios forestales.

En cumplimiento de las directrices de CEQA Sección 15082(b), sus comentarios en relación al alcance y contenido del análisis ambiental debe ser presentado a más tardar 30 días después de que reciba este aviso por parte de la Oficina de Planeación e Investigación, por cada agencia y administrador responsable y sea recibida por el Oficial de Registro del Condado de San Diego. El periodo de revisión pública será del 29 de mayo de 2020 al 29 de junio de 2020. Favor de enviar sus comentarios directamente a: Paul Garcia, Civil/Environmental Project Coordinator, 4860 Ruffner Street, San Diego, CA 92111, o vía correo-e a environmental@sandi.net.

Debido a la Orden de Refugio en el Lugar en respuesta a la epidemia de COVID-19, la junta propuesta de alcance para el EIR se realizará virtualmente. La junta tendrá lugar el 17 de junio de 2020 de 5:00 PM a 6:00 PM. Use Por favor el siguiente sitio en la red para acceder a la junta en zoom: https://us02web.zoom.us/j/87953392432?pwd=bHYvcFpBQ0k1bVZKcUVKNUlsbkpIUT09

La junta pública brindará una oportunidad para difundir información, identificar problemas ambientales y discutir el alcance de la revisión que debe incluirse en el EIR. Dada la limitación del lugar de la junta, los comentarios públicos deberán ser proporcionados por correo-e o mediante el correo regular en la información de contacto proporcionada arriba.



Source: Aerial (SanGIS 2014)

HELIX Environmental Planning

Project Location

Figure 1

BALBOA PARK HERITAGE ASSOCIATION

PRESS STATEMENT RE: Proposed Gift or bargain sale or lease of 34 Acres of dedicated Balboa Park Lands to San Diego Unified School District.

DATE: June 28, 2020

CONTACT PERSON: David Lundin

E Mail Address: LoveBalboaPark@GMail.com

Phone: 619 407 9737

Any Proposed Bargain Sale or Lease of

Balboa Park Lands to the San Diego Unified

School District is Unlawful;

Any Whole Site Modernization or Long-Range

Facilities Projects On Land Neither owned nor Leased by the

District are both Unwise and Probably Unlawful.

Pursuant to Notice dated May 29, 2020,The San Diego Unified School District [“SDUSD”] proposes moving forward with plans to spend millions of dollars of Bond and other public funds to modernize and further develop 34 acres of dedicated Balboa Park lands [“Park Lands”] that are neither owned by SDUSD nor the subject of any lease extending beyond 2024.

The existing fifty-year lease of 34 acres of legally dedicated Balboa Park Lands [“Lease”] was entered into by the City of San Diego [“City”] SDUSD in 1974, and expires in 2024. These Park Lands are the current site of the San Diego High School [“SDHS”] campus. [A full copy of the Lease is attached]

Moving forward with such plans, spending public funds for such plans and spending public funds to improve lands neither owned by SDUSD nor subject to a lease extending beyond 2024 giving SDUSD control over such Park Lands is at best unwise, and in all probability, unlawful.

The legal,fiscal and land use issues raised by any such proposals must be included in any Environmental Impact Report [“EIR”] for such undertakings by the SDUSD.

More importantly, all issues relating to any purchase or lease of the Park Lands by the SDUSD must be fully resolved before public funds are invested in long-term school-related capital improvements on the Park Lands.

History of the Existing Park Lands Lease

In 1974, competing claims to 34 acres of dedicated Balboa Park Lands were resolved by a settled eminent domain suit brought against the City by SDUSD. A Lease and Court Order permitted the District to remain in the Park Lands for 50 years, paying a $200 annual rent. Most importantly the District promised to vacate the Park Lands on or before 2024, restoring them to park use at the District's expense. The District promised to acquire a non-Park site and build a new campus. In the 46 years since the Lease was signed in 1974, the District has breached those obligations, doing nothing to create a new campus or planning to vacate the Park Lands.

SDUSD appeared before the Charter Review Committee of the City Council on February 2, 2016 and requested support for a Charter Amendment permitting the continued use of the Park Lands beyond the initial 50 year term of the Lease. The Committee [Councilpersons Lightner, Emerald, Cate and Kersey] wisely and unanimously rejected this request.

Thereafter SDUSD placed a Charter Amendment on the Ballot amending Charter Section 55 to permit a lease for the Park Lands.That amendment was approved by voters in November of 2016. That amendment does not specify terms of any such lease, nor does it amend controlling state law prohibiting the bargain sale or lease of dedicated Park Lands for non-park purposes.

The charter amendment reads:

"The City Council may, without a vote of the people, authorize a lease of the property occupied by San Diego High School to the San Diego Unified School District for educational, cultural, recreational, and civic programs and activities, provided that the property is used for a public high school. The property occupied by San Diego High School means the area used by the San Diego Unified School District for San Diego High School as of the date this amendment is effective, and further described in the legal description on file with the City Clerk as Document No. OO-20721."

As San Diego continues to be an increasingly urbanized, growing and diverse City, accessible, free, well-maintained public Park

Lands become increasingly scarce and precious. 34 acres of additional Balboa Park lands bordering on the heart of downtown San Diego will never again be available. This land is already owned by the City and is legally dedicated Park Land. It need only be recovered from SDUSD in accordance with the existing Lease terms.

BPHA's position on this matter is simple. First, both the City and SDUSD should fully perform their respective obligations under the existing governing Lease. On or before the expiration of the Lease, the Park Lands should be returned to the City and should be returned to public use as legally dedicated Balboa Park Land. Second,the City must fully comply with the Park Lands protective provisions of California Public Resources Code sections 5401 (a) and 5405.

The California Legislature wisely recognized years ago that precious dedicated Park Lands are under constant threat of being taken or converted for non-park uses by other governmental entities. A school district salivates over Park Lands "free" for the taking to be used as a campus. A water district may need a new office or pumping station. What better location than "free" Park Lands. Police or fire departments may need new stations of facilities. Again, "free" park lands are the perfect sites.

Fortunately the Legislature recognized Park Lands would vanish unless they were effectively protected from such takings. California Public Resources Code sections 5401(a) and 5405 were passed to protect dedicated Park Lands from the very taking proposed by SDUSD. It is critical to note that the 2016 Charter Amendment to section 55 did not alter these critical protections in any way. A lease for non-park purposes is now permitted under the Charter, but any such lease must still comply with controlling State law protecting such Park Lands.

California Public Resources Code section 5401(a) is unambiguous. It provides:

> (a) No city, city and county, county, public district, or agency of the state, including any division, department or agency of the state government, or public utility, shall acquire (by purchase, exchange, condemnation, or otherwise) any real property, which property is in use as a public park at the time of such acquisition, for the purpose of utilizing such property for any nonpark purpose, unless the acquiring entity pays or transfers to the legislative body of the entity operating the park sufficient compensation or land, or both, as required by the provisions of this chapter to enable the operating entity to replace the park land and the facilities thereon.

Simply put, if SDUSD wishes to acquire the use of the Park Lands it must pay sufficient compensation or land or both as required "to enable… [the City]… to replace the park land…" taken by SDUSD.

Public Resources Code section 5405 specifies the formula to be used in such a value determination:

…the amount of compensation or land, or both, required by this chapter for the taking of the park land and facilities shall be equal to one of the following:

(a) The cost of acquiring substitute park land of comparable characteristics and of substantially equal size located in an area which would allow for use of the substitute park land and facilities by generally the same persons who used the existing park land and facilities, and the cost of acquiring substitute facilities of the same type and number, plus the cost of development of such substitute park land, including the placing of such substitute facilities thereon.

(b) Substitute park land of comparable characteristics and of substantially equal size located in an area which would allow for use of the substitute park land by generally the same persons who used the existing park land, and the cost of acquiring substitute facilities of the same type and number, plus the cost of development of such substitute park land, including the placing of such substitute facilities thereon.

(c) Any combination of substitute park land and compensation in an amount sufficient to provide substitute park land of comparable characteristics and of substantially equal size located in an area which would allow for use of the substitute park land and facilities by generally the same persons who used the existing park land and facilities, and to provide substitute facilities of the same type and number, plus the cost of development of such substitute park land, including the placing of such substitute facilities thereon.

In plain English. SDUSD would be required to pay the full fair market value for 34 acres of prime land contiguous to Balboa Park and accessible to existing users of Balboa Park plus the cost of developing such lands as appropriate park lands. We are not qualified appraisers, but clearly the operative number based on recent transactions in the area could easily exceed several hundred million dollars.

Throughout the recent history of this long-duration dispute, SDUSD has consistently taken the position that City taxpayers are somehow obligated to bail out the SDUSD from the consequences of its decades of intentional breaches of the 1974 Lease. The City has no such obligation. Indeed, as

detailed below, a City bailout of SDUSD in the form of a bargain sale of lease of the Park Lands would be illegal.

Historical and Legal Background

SDHS has been located on the lands at issue since the 1880s.These were part of the original Park Lands of City Park [now Balboa Park] created in 1868. At the time the land was “free” to be used for the school, the Park was largely bare dirt, and State laws and local Charter protections for Park Lands were not yet in existence.

In the 1970s laws had changed, the Park had become the beloved Balboa Park, and conflicts arose.

SDUSD wanted to retain use and control of the land. It threatened to commence an Eminent Domain action, where a public entity may be able to acquire property for public purposes at fair market prices. The ability of the District to prevail in such an action was subject to a fair measure of doubt, as other lands suitable for the campus were very available and historic structures were in the process of demolition.

The City wanted to retain fee ownership of the land, and to return the now legally dedicated Park Lands to Park purposes.

A Letter to the Union Tribune of 5 February, 2016, gives valuable factual, legal and historical context to the dispute over the San Diego High School lease over 34 acres of dedicated Balboa Park Lands:

"Regarding “San Diego High’s land lease expires in 2024” (Feb. 1): The school district was given a lease in Balboa Park in 1974 to prevent the school district’s taxpayers from sustaining a large loss, give the district time to amortize its investment, plan for and acquire a replacement site outside the park, accommodate students, and build a new high school. The only significant compensation to San Diego taxpayers was its written commitment to remove itself from the park by the end of the lease. I know, I was there.

The idea was not that the district get free use for 50 years, and then ask for voter approval of another lease. That could have been done in 1974. The district and the city have different

functions. The district cannot give its property to the city for a park, and the city must use its assets for municipal purposes, such as maintaining our streets, police and fire. The present school site in the dedicated park should be redeveloped for park, not school, purposes.

Hal Valderhaug

La Mesa"

As stated by Mr. Valderhaug, an assistant San Diego City Attorney at the time, a compromise was achieved in the 1974 Lease. The District could retain use of the Park Lands for 50 years, at a total rent of $10,000, or $200 per year. At the end of this lease term, the Park Lands were to be vacated and returned to the City for use as dedicated Park Lands. During the 59 year Lease term, SDUSD was to locate and acquire new non-park lands for a new campus, and to establish and fund a reserve for the campus construction costs.

Rather than undertaking its agreed obligations under this 1974 Sweetheart Agreement [$200 a year in "rent" for 34 acres of prime Park Lands], the District simply waited, did nothing to locate a non-Park Lands site, took no steps over 42 years to reserve funds for a new campus, and now hopes to be released of all of these legal obligations. The District apparently has no intention of performing its written commitment to remove itself from the Park Lands by the end of the lease as agreed in 1974.

In his private capacity, Mr.Valderhaug wrote to the District in November of 2015:

“From: Hal and Marlee Valderhaug [mailto:olafv@cox.net]

Sent: Tuesday, November 3, 2015 3:08 PM

To: Donovan Andra <adonovan@sandi.net>

Subject: San Diego High School Lease Expiration

Good afternoon. As you may know, I have recently, and for several years, been trying to get your District to address the

issue of the upcoming expiration of the San Diego High School lease in 2024. I assume it takes at least 8 years to plan for and construct a new school.

The attitude of the staff I have contacted seems to be that there is no problem. There is a problem, and failure by the District to address the problem will likely, and unnecessarily, cost the taxpayers millions of dollars. Such waste can be avoided by responsible planning. Such planning seems non-existent at present.

Hopefully, your Mr. Dulgeroff and others have informed you of the lease issue. Any idea that the City can simply renew or extend the lease is incorrect. Since the school is in a dedicated public park, and since the District specifically gave up any further rights to claim a right of possession in exchange for the 50 year lease, any proposed extension will require a 2/3 vote of the electorate under Sec. 55 of the City's Charter.

The concept that the District would even ask for such a ballot measure is inconsistent with the clear promise of the District to relocate outside the park, which promise was the consideration for the 50 year lease.

In any case, someone needs to get moving, if your District wants to avoid significant extra costs to the taxpayers, which will clearly result from negligence and failure to plan ahead by the District.

If you have any comments on this, and are allowed to communicate them, please contact me. Thank you.

Hal Valderhaug “

The District’s legal counsel responded as follows:

“Dear Mr. Valderhaug,

I am aware of the situation and have (and will continue to) advise the District on this matter. At this point, our work remains privileged. For that reason, you should not expect to be informed of our strategy, nor to receive further responses from Mr. Dulgeroff.

Thank you for your anticipated courtesy in this matter.

Andra M. Donovan, Esq.

General Counsel

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San Diego, CA 92103

Tel: (619) 725-5630

Fax: (619) 725-5639

E-mail: adonovan@sandi.net

CONFIDENTIAL INFORMATION: DO NOT FORWARD Attorney-Client Privilege “

Mr. Valderhaug replied:

“From: Hal and Marlee Valderhaug olafv@cox.net

November 3, 2015 3:51:00 PM PST

To: Donovan Andra <adonovan@sandi.net>

Subject: Re: San Diego High School Lease Expiration

Oh, my! As far as I can tell, either the District has been asleep on the job on the SDHS issue, or it is not intending to comply with its covenant to leave, which was the primary consideration for the lease. You should inform your client that, having enjoyed the benefits of the lease, it should be ready to comply with its obligation. One of the more disgusting things I've seen is two taxpayer funded organizations, with taxpayer funded lawyers, fighting with each other.

Legal Counsel for the District, demonstrating the District’s arrogance and desire to work behind closed doors on this issue responded:

“Mr. Valderhaug,

Whether I refer to our work as a strategy or a process, it is not subject to disclosure. To my knowledge, I have never met you, so I am not sure why you think you have a basis to send me snide and accusatory communications; but the tone of your email is neither appropriate nor appreciated.

Andra M. Donovan, Esq.

General Counsel

The Current Dispute

BPHA believes the explicit terms of the Lease should be fully performed in good faith by both SDUSD and the City. The Park Lands must be returned to the City at the expiration of the Lease in 2024. That is required by both the Lease and the related Court Order approving the settlement agreement and related Lease. Any change in the existing Lease would require the Court's prior review and approval.

Park Lands protective provisions of California Public Resources Code sections 5401 (a) and 5405 must also be followed without exception. The City must take any legal steps necessary to aggressively and fully protect the City's and taxpayer's enforceable legal rights under the Lease.

The issue of the breach of the 1974 Lease of 34 acres of dedicated Park Lands in Balboa Park by the SDUSD reared its ugly head in dueling Opinion pieces in 2019:

https://www.sandiegouniontribune.com/opinion/story/2019-10-11/time-for-san-diego-high-to-relocate?

Mr. Valderhaug is correct. He urged the City and District to comply with their clear obligations under the 1974 Lease and applicable California law.

In a companion Opinion, the District's Mr. Barrera made no mention of the binding 1974 Lease between the City and the SDUSD, the outrageous intentional breaches of the Lease by the SDUSD, or the controlling provisions of Sections 5401 (a) and 5405 of the

California Public Resources Code that wisely prohibit City taxpayers from subsidizing the District with a gift or bargain lease of dedicated Park Lands for non-park uses.

The District of course wants decades more of free, non-park use of 34 acres of City Park Lands.

Not only is this an outrageous request, but it would be illegal for the City to do so. The City, its Attorney, its Mayor and Council are legally obligated to represent the best economic interests of its residents, voters and taxpayers. Available appropriate claims and litigation remedies must be evaluated objectively and pursued when in the best interests of the City. The City and its political leadership explicitly are prohibited from placing the interests of the SDUSD above those of the City, its taxpayers and park users.

The City should first sue the District for anticipatory breach of the 1974 Lease. The measure of damages may be the full fair market value of the use of the Park Land for 50 years: several million dollars.

The City should also seek injunctive relief--a judicial enforcement of the Lease terms requiring the District to vacate the land by 2024 and remove all improvements at the expense of SDUSD.

The Lease arose from a court -approved settlement between the SDUSD and City and related 1974 court order. The City should seek an new order finding the District both in anticipatory breach of the Lease and in contempt of the companion 1974 Court Order. The Court may then impose appropriate monetary and other sanctions against the SDUSD and its individual Board members for this contempt of court.

Any measures less than this full enforcement of the City's remedies for breach of the 1974 Lease would be an illegal gift to the SDUSD by the Mayor and Council.

The sole legal obligation of the City in this matter is to preserve, protect and maintain its dedicated Park Lands for the benefit of its voters, residents and visitors. It is neither the duty nor obligation of the City to manage or illegally subsidize the SDUSD by making a prohibited gift or approving an illegal bargain lease .

If the District wishes a brief extension of the 1974 Lease, it should be for a very short term at full fair market value to permit the SDUSD to promptly relocate the campus from dedicated Park Lands. This brief extension agreement should include explicit progress milestones demonstrating good faith efforts to promptly vacate the Park Lands in controversy. A failure to meet any milestone would give the City the immediate powers to promptly evict the SDUSD.

What is the full fair market value of 34 prime acres on Park Blvd at East Village under such a brief extension ? At least several million dollars a year. This income stream could be used to assist in funding the many long-deferred maintenance and restoration needs of Balboa Park.

Imagine if any other tenant of City-owned lands—perhaps a Hotel in Mission Bay Park--- refused to comply with its Lease, failed to pay rent, failed to surrender the property to the City and asked the City to convey fee ownership of the land for no consideration. The tax-paying public would rightly howl in protest.

This is precisely what the District is proposing.

BPHA opposes such a give-away of dedicated Balboa Park Lands. California law prohibits any give-away or bargain sale or lease of Park Lands.

Resolving the Lease Issues

The resolution of these Park Land Lease issues will affect Balboa Park for the next century and more. Children not yet born will decide if the wise decisions were made.

BPHA urges the City and SDUSD to work promptly and in good faith to resolve these issues, while fully safeguarding the best interests of Balboa Park and the next several generations of San Diego residents and visitors.

Such a resolution must require as its foundation the District's full recognition of all legal obligations under the Lease and California law, and the District's full and good-faith performance of all such obligations. The City cannot and should not simply ignore the Lease and the Park Land protective provisions of the California Public Resources Code to give away dedicated Balboa Park Lands worth hundreds of millions of dollars in the open market.

City leadership has done a remarkable job of ignoring Balboa Park's needs for the past thirty years and more. BPHA hopes that neglect will cease, and protecting the Park and providing for its needs will become a priority for City leaders.

[30-30-30]

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

Making Conservation a California Way of Life.

June 26, 2020

11-SD I-5
PM 15.8
NOP (SCH# 2020059044)
SDHS Site Modernization and Long-Range Facilities Plan

Mr. Paul Garcia
San Diego Unified District
4860 Ruffner Street
San Diego, CA 92111

Dear Mr. Garcia:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan near Interstate 5 (I-5). The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Local Development-Intergovernmental Review (LD-IGR) Program reviews land use projects and plans to ensure consistency with Caltrans' mission and state planning priorities.

Caltrans has the following comments:

Traffic

- A Vehicle Miles of Travel (VMT) based Traffic Impact Study (TIS) should be provided for this project. Caltrans references the Governor's Office of Planning and Research Guidance[1] to identify VMT related impacts.

- The TIS may also need to identify the proposed project's near-term and long-term safety or operational issues, on or adjacent any existing or proposed State facilities. Caltrans may request traffic operational analyses including the intersection of the I-5 on and off ramps at Park Boulevard, to understand operations at this intersection and potentially

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

identify any safety concerns. For such analyses please provide Synchro Version 10 files.

- The geographic area examined in the TIS should also include, at a minimum, all regionally significant arterial system segments and intersections, including State transportation facilities.

- The data used in the TIS should not be more than 2 years old.

- Early coordination with Caltrans is recommended.

Complete Streets and Mobility Network

Caltrans views all land development improvements that impact the transportation network as opportunities to improve safety, access and mobility for all travelers in California and recognizes bicycle, pedestrian and transit modes as integral elements of the transportation system. During the development of this project, please consider the following existing bicycle and pedestrian conditions as well as future proposed improvements within the project area.

Park Boulevard has a buffered Class II Bike Lane from Russ Boulevard to the I-5 on/off-ramps located next to the San Diego City College Soccer Field. North of the I-5 ramps, Park Boulevard is a Class III bicycle facility with shared-lane markings.

Based on information found on local plans, the Multi-Modal Programs branch recommends that the project applicant coordinate with the City to appropriately accommodate the proposed one-way Class IV Cycle Track facilities that will begin near the I-5 ramps and to find out the timeline of the implementation of the cycle tracks.

- The Downtown San Diego Mobility Plan (June 2016) proposes a one-way Class IV bicycle facility in each direction in this area: https://civicsd.com/wp-content/uploads/2018/03/Downtown-San-Diego-Mobility-Plan.pdf).
- The Downtown Community Plan also proposes a Class IV cycle track at this location: https://www.sandiego.gov/sites/default/files/downtown-comunity-plan-all-1.pdf).

Please consider including additional bicycle and pedestrian improvements on Russ Boulevard such as, but not limited to: signage, striping, and lighting.

Design

Regarding the San Diego High School's preliminary proposal to relocate their access point so that it is directly across from the I-5 southbound ramps, please see the Project Development Procedures Manual Chapter 27 Access Control Modification.

- https://dot.ca.gov/programs/design/manual-project-development-procedures-manual-pdpm

Although the access control for I-5 terminates as the ramps connect to Park Boulevard, Caltrans has the right to determine if an additional leg/access point at the intersection is in the best interest of the State and the interstate system.

Any proposal would require that the City of San Diego approve the proposed connection, and the City would also need to become the project sponsor. The connection would need to function as an at-grade roadway connection with all traffic movements addressed. This may also require that the City be given control over the roadway segment since Caltrans would need to have a maintenance agreement in place, and this can only be done with a public agency such as the City of San Diego.

Pease coordinate with Caltrans as a Project Report, an Environmental Document and a New Roadway Connection Report would be required to fully evaluate the proposed roadway connection to San Diego High School. In addition to Caltrans District 11, Caltrans Headquarters and the Federal Highway Administration (FHWA) would be involved in the review and approvals process. Provision of the Project Report, Environmental Document, and New Roadway Connection Report to Caltrans only generates review and consideration of the connection proposal, and does not imply or presume approval.

Right-of-Way

Any work performed within Caltrans' R/W will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans' R/W prior to construction. As part of the encroachment permit process, the applicant must provide an approved final environmental document including the California Environmental Quality Act (CEQA)

determination addressing any environmental impacts within the Caltrans' R/W, and any corresponding technical studies.

If you have any questions, please contact Roger Sanchez-Rangel, of the Caltrans Development Review Branch, at (619) 688-6494 or by e-mail sent to roger.sanchez-rangel@dot.ca.ca.

Sincerely,

electronically signed by

MAURICE EATON, Branch Chief
Local Development and Intergovernmental Review Branch

STATE OF CALIFORNIA Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

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June 1, 2020

Paul Garcia
San Diego Unified School District
4860 Ruffner Street
San Diego, CA 92111

Re: 2020059044, San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan Project, San Diego County

Dear Mr. Garcia:

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

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

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

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

AB 52

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

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

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

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

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

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

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

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

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

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

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

Some of SB 18's provisions include:

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

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

NAHC Recommendations for Cultural Resources Assessments

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

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

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

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

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

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

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

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

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

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

Sincerely,

Andrew Green

Andrew Green
Staff Services Analyst

cc: State Clearinghouse

San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan

Initial Study

Prepared for:
San Diego Unified School District
4860 Ruffner Street, Annex Room 5
San Diego, CA 92111

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

May 2020 | SDU-02.18

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
BMPs	Best Management Practices
BOE	Board of Education
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDC	California Department of Conservation
CEQA	California Environmental Quality Act
City	City of San Diego
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
GHG	greenhouse gas
HVAC	heating, ventilation, air conditioning
I-5	Interstate 5
IBC	International Building Code
IS	Initial Study
LRFMP	Long-Range Facilities Master Plan
MBTA	Migratory Bird Treaty Act
MHPA	Multi-Habitat Planning Area
MND	Mitigated Negative Declaration
MSCP	Multiple Species Conservation Program
ND	Negative Declaration
NOP	Notice of Preparation
O_3	ozone
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter

ACRONYMS AND ABBREVIATIONS (cont.)

PRC	Public Resources Code
PVC	polyvinyl chloride
RAQS	Regional Air Quality Strategy
SANDAG	San Diego Association of Governments
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDIA	San Diego International Airport
SDUSD	San Diego Unified School District or District
sf	square foot/feet
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resource Control Board
USEPA	U.S. Environmental Protection Agency
WSM	Whole Site Modernization

1.0 INTRODUCTION

1.1 INTRODUCTION AND REGULATORY GUIDANCE

The San Diego Unified School District (District), as the lead agency under the California Environmental Quality Act (CEQA), has prepared this initial study (IS) to evaluate the potential environmental impacts associated with the San Diego High School Whole Site Modernization (WSM) and Long-Range Facilities Master Plan (LRFMP; proposed project). The purpose of the IS is to help focus the scope of the environmental analysis for the Environmental Impact Report (EIR). The proposed project would result in campus upgrades at San Diego High School. Implementation of the proposed project would require approval by the City of San Diego (City) to approve a lease agreement followed by the District's Board of Education (BOE) for physical improvements. As part of the discretionary review process, the proposed project is required to undergo environmental review in accordance with CEQA.

Approval of the proposed project is a discretionary action and therefore is subject to the requirements of CEQA (Public Resources Code [PRC], Division 13, Sections 21000–21177) and the State CEQA Guidelines (California Code of Regulations [CCR], Title 14, Sections 15000–15387). An Initial Study/ Environmental Checklist is prepared to provide the basis for deciding whether to prepare an EIR, a Mitigated Negative Declaration (MND), or a Negative Declaration (ND) for a project subject to CEQA.

The content and format of this report are designed to meet the requirements of CEQA. This IS identifies the potential significant environmental impacts of the proposed project to support the decision to prepare an EIR. This report contains the following sections; Section 1, *Introduction*; Section 2, *Environmental Initial Study Checklist*; Section 3, *References*; and Section 4, *List of Preparers*.

1.2 INITIAL STUDY INFORMATION SHEET

1.	Project title:	San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan
2.	Lead agency name and address:	San Diego Unified School District Facilities Planning and Construction 4860 Ruffner Road San Diego, CA 92111
3.	Contact person and phone number:	Contact: Paul Garcia Phone: 619-913-2999
4.	Project location:	1405 Park Boulevard San Diego, CA 92101
5.	Project sponsor's name and address:	San Diego Unified School District Facilities Planning and Construction 4860 Ruffner Road San Diego, CA 92111
6.	General Plan designation:	Public/Civic and Existing Park/Open Space
7.	Zoning designation:	Centre City Planned District - Public/Civic (CCPD-PC) Centre City Planned District – Open Space (CCPD-OS)

8. Surrounding land uses and setting:

Surrounding Uses

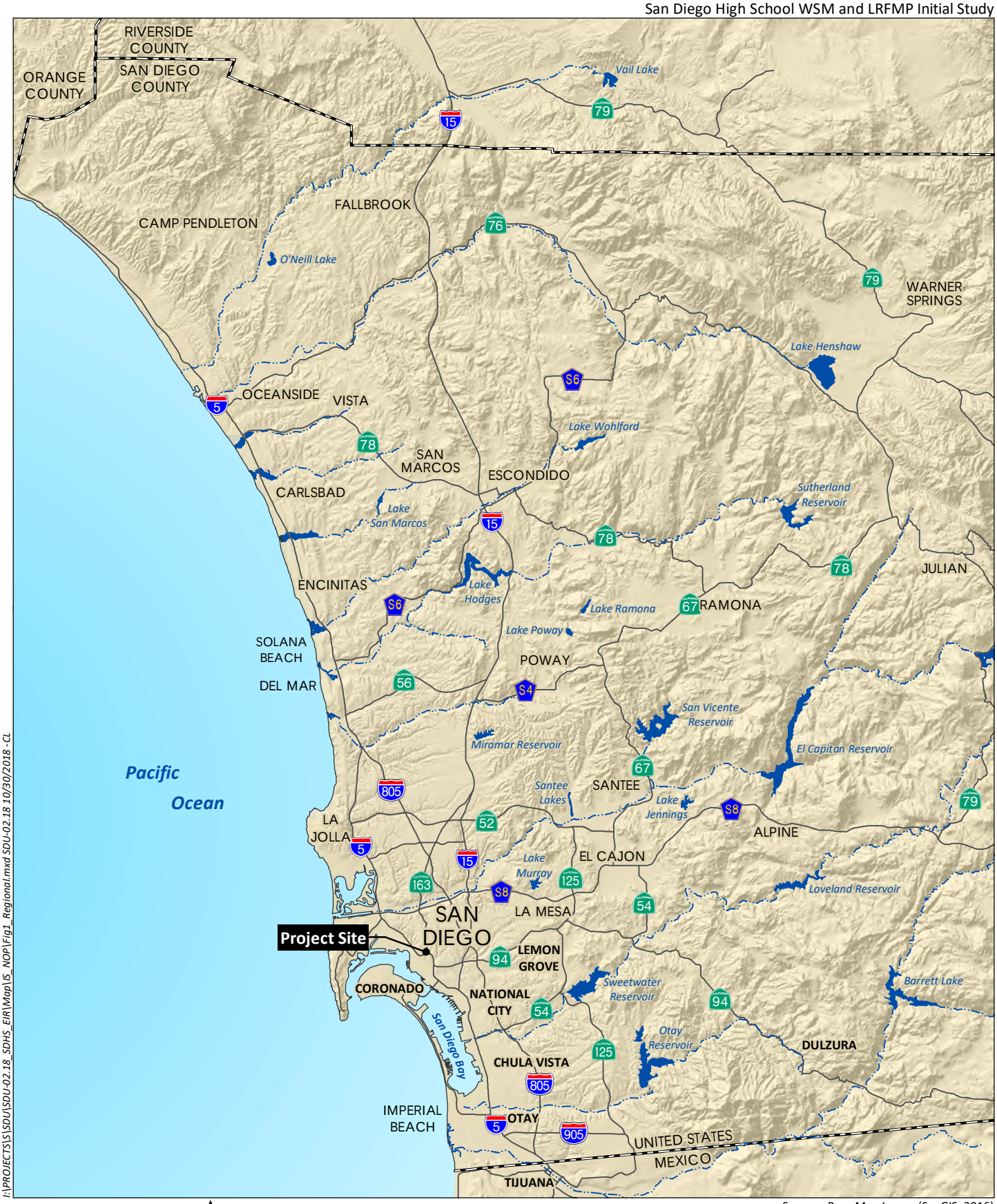
The proposed project is located on an existing, approximately 34-acre parcel at the current location of the San Diego High School campus, located at 1405 Park Boulevard in downtown San Diego. The campus is located in the northeast corner of the City's Downtown Community Plan Area within the northeast sub-district of the East Village neighborhood, which is characterized by multi-story residential, commercial, office, and institutional buildings. The project's location in San Diego County is depicted on Figure 1, *Regional Location*, while Figure 2, *Arial Photograph*, depicts an aerial view of the campus and immediately surrounding areas within downtown San Diego. Figure 3, *USGS Topography*, shows the local topography near the project. As shown, areas adjacent and south of the project site along Russ Boulevard between Park Boulevard and 16th Street include the San Diego City College, which comprises single- and multi-story buildings south of Russ Boulevard for several blocks until Broadway, a major east-west street. Areas further south include multi-story residential development in the East Village neighborhood. Areas east and north of the campus include Interstate 5 (I-5) as it loops around and adjacent to the campus; however, the school campus is separated from I-5 by an approximate 30-foot slope and occurs at a higher elevation than I-5. Further north on the opposite side of I-5 is the Naval Medical Center and the Air and Space Museum within Balboa Park. Areas south of the proposed project site include educational buildings associated with Garfield High School and San Diego City College, followed by State Route 163 (SR 163), located about 300 feet west of the project site.

Project Setting

The District currently holds a lease and an operating agreement for the project site from the City, which expires in the year 2024. A measure authorizing a lease of the property occupied by San Diego High School in Balboa Park (Measure I) was approved by 77.8 percent of voters in November 2016. The District is currently negotiating the terms of the lease with the City and it is assumed the lease will be for a term of 99 years to commence on or before the termination of the existing lease and the operating agreement currently set to expire in 2024. The campus serves students in grades 9 through 12 at San Diego High School, a traditional high school. The project site includes the existing high school campus and some portions of land not included within the legal boundaries of the High School including of Park Boulevard and the I-5 on-/off-ramp near the northern part of the campus.

The campus consists of several single- and multi-story buildings including 118 permanent classrooms, 8 portable classroom buildings, parking areas, hardcourt areas, ballfields, a football stadium (Balboa Stadium), and ornamental landscaping. San Diego High School generally includes 11 buildings (buildings 100 through 1100) and a student quad area in the southwest part of the campus. San Diego High School was originally constructed in 1906 and was incrementally developed between 1912 and 1950. Of the 13 buildings constructed during this time period, three remain, including buildings 500, 600, and 700. The remaining buildings were demolished between 1973 and 1976 to accommodate the construction of four new buildings, buildings 100, 200, 300, and 400. Between 1995 and 2011, 11 additional buildings were constructed.

Regional access to the site is provided via I-5 and SR 163 and local access is provided primarily from Russ Boulevard, where student drop-off and parking areas are located. A pedestrian bridge spans across I-5 from the northeastern part of the campus to a parking lot at the Naval Medical Center. Student and staff parking is available within several small parking lots on campus, including a few lots along Park



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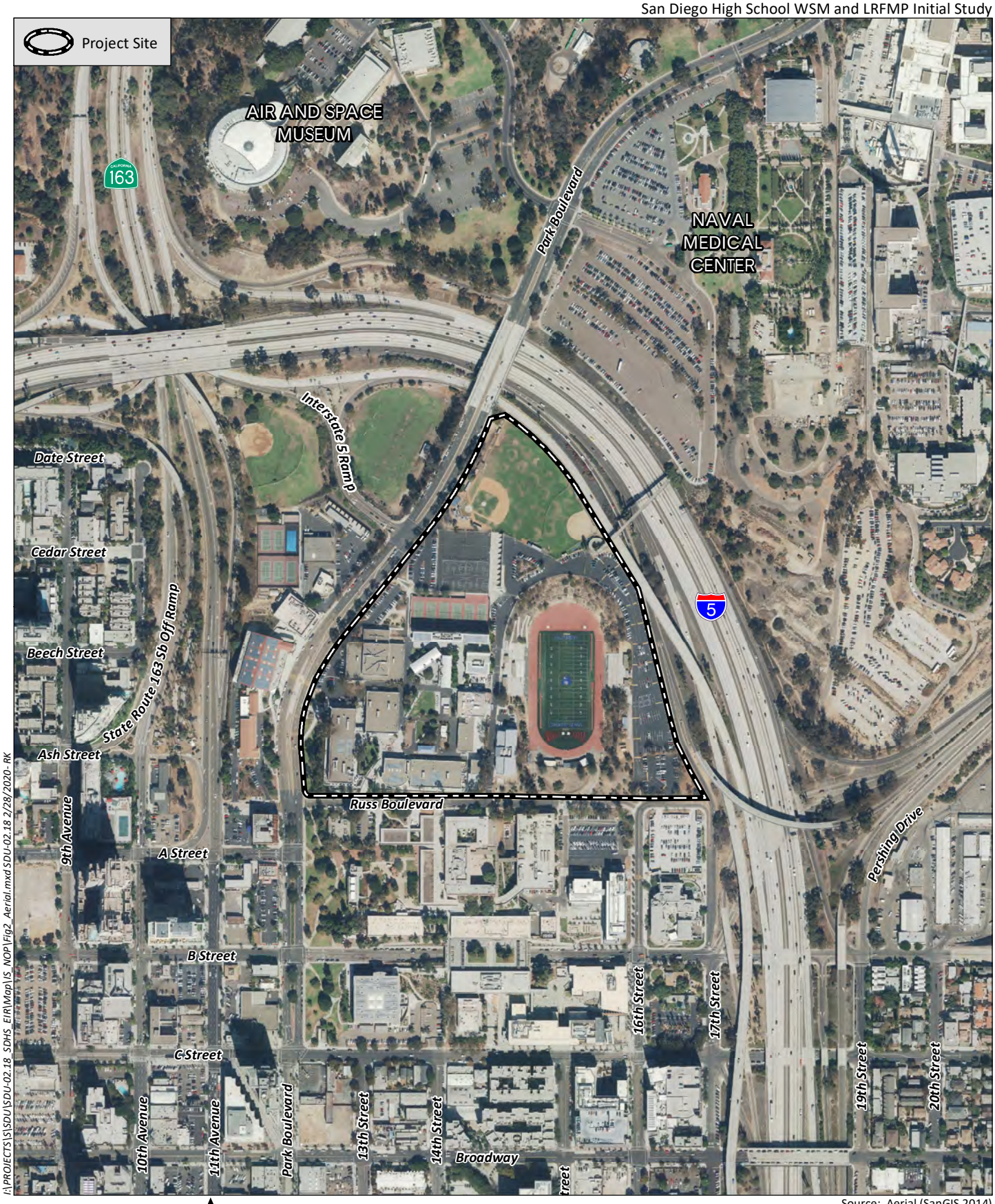
0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

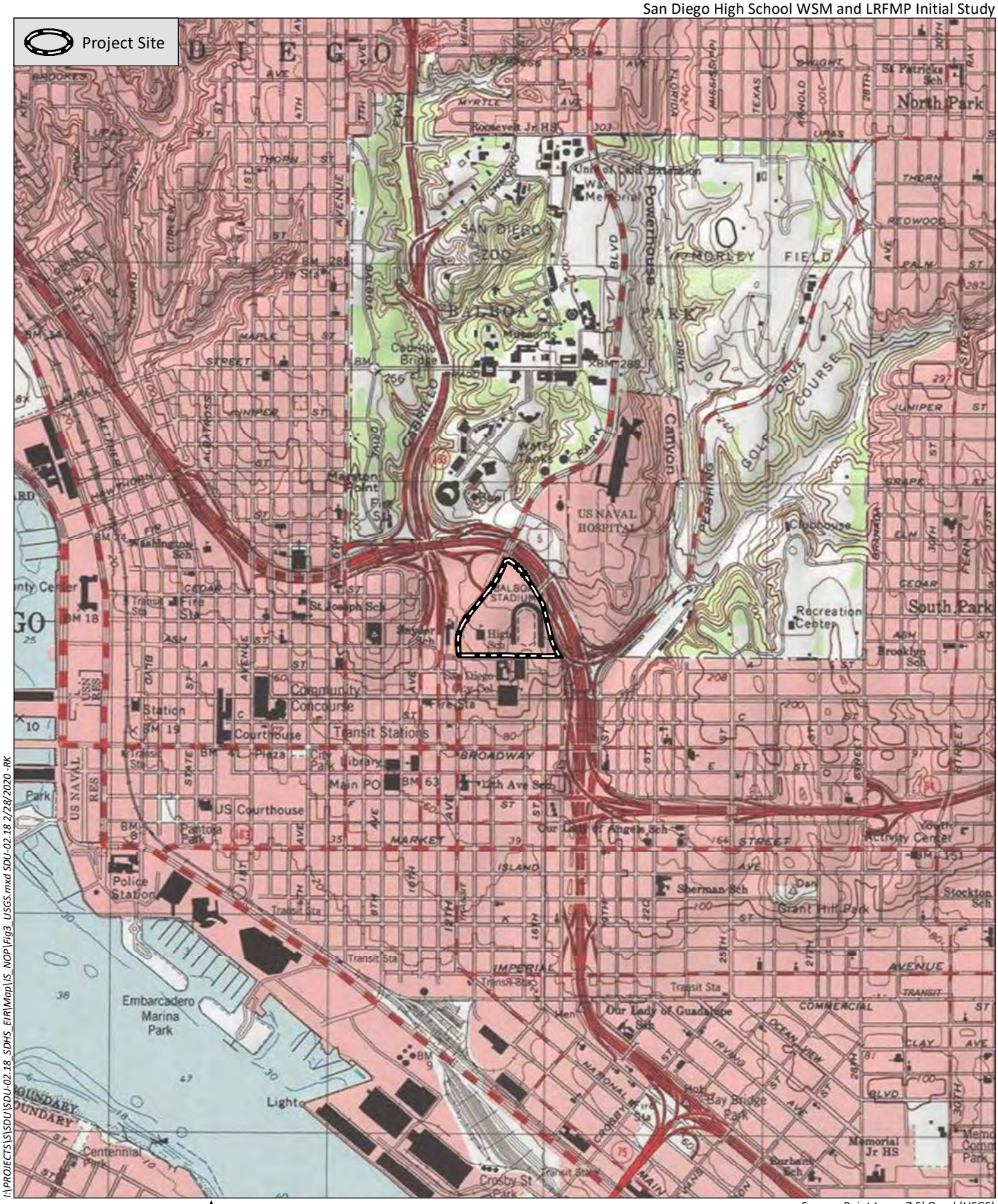
Figure 1



HELIX Environmental Planning

Aerial Photograph

Figure 2



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0 2,000 Feet

Source: Point Loma 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 3

Boulevard at the western edge of campus, in the northern part of the campus near the baseball and softball fields, and in the eastern part of campus near I-5, which includes a fence separating staff parking to the north and student parking to the south.

Existing enrollment at San Diego High School is estimated at 2,664 students (with a program capacity for up to 2,916 students) (SDUSD 2020). School is in session at San Diego High School from 7:30 a.m. to 2:30 p.m. on Mondays, Wednesdays, Thursdays, and Fridays, and from 7:30 a.m. to 1:25 p.m. on Tuesdays.

Description of Project

The proposed project involves a lease between the City and the District and upgrades to existing campus. The lease would extend the permission for the District to operate at the project site on or before the expiration of the existing lease and operating agreement in 2024 for up to an additional 99 years. Most of the existing San Diego High School campus was constructed between 1976 and 2001, and while the high school has been updated over the years, much of the site needs renovations, repairs, and/or upgrades. These improvements would occur as part of Propositions S and Z and Measure YY in the near-term (referred to as WSM improvements) and new structures and facilities in the long-term (referred to as LRFMP improvements).

The proposed project involves a lease between the City and the District, and WSM and LRFMP upgrades. The lease would extend the permission for the District to continue operations at the project site consistent with existing use for an additional 99 years from the date of the lease. The lease approval is expected to occur on or before 2024.

Campus-wide WSM improvements would generally involve interior and exterior improvements to existing school buildings. School buildings would be upgraded with plumbing, windows, lighting, painting, signage, and roof improvements, as well as new or replaced heating, ventilation, air conditioning (HVAC). Interior finish upgrades would consist of replacing interior flooring and base, painting walls, ceilings and doors, removing existing casework and providing movable storage, and new window blinds. Other WSM components include, but are not limited to, removal of excess relocatable classrooms, reconfiguration of the upper and lower quad including construction of new food kiosks, improvements to the east parking lot, and construction of new athletic field amenities.

The LRFMP improvements would involve the demolition of buildings 400, 600, and 700 and the construction of several new buildings and facilities on campus. Specifically, the LRFMP projects include the construction of a new two-story classroom building with a lower level parking area, new food service and custodial building, a new aquatic center, a new performing arts building with parking, auxiliary gymnasium, parking structure with tennis courts, and field house. Other LRFMP components to improve project circulation and access include the interior realignment of the existing driveway with I-5 near the new proposed performing arts center and the interior realignment of the 16th Street entrance into the project site. Completion of the WSM improvements and LRFMP improvements would not result in an increase in classroom capacity and are not anticipated to result in an increase in enrollment. Implementation of the LRFMP projects is dependent on the availability of funding.

Construction Activities

The anticipated construction timeline is currently undetermined; however, it would likely begin in the late fall or early winter of 2020. All construction areas and staging areas would be fenced off and isolated from the school. Additional details of construction activity will be provided in the EIR.

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

    - The Division of the State Architect is a reviewing agency that reviews the project design for compliance with the California Code of Regulations, Title 24.

    - City of San Diego (for approval of a lease agreement to allow the WSM and LRFMP improvements and encroachment permits, as required, for modifications within City Right-of-Way).

    - California Department of Transportation (Caltrans; for approval of an encroachment permit during implementation of the LRFMP).

10. 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, has this consultation begun?

Jamul Indian Village requested AB 52 consultation, and consultation was initiated by the District on October 25, 2018. Based on consultation, Jamul Indian Village requested a Kumeyaay Native American monitor for all ground disturbing activities during construction of the proposed project.

1.3 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that may require mitigation to reduce the impact from "Potentially Significant Impact" to "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages. Potential impacts and associated mitigation measures required will be addressed in the EIR.

An IS is conducted by a Lead Agency to determine if a project may have a potentially significant effect on the environment (CEQA Guidelines Section 15063). An EIR must be prepared if an IS indicates that further analysis is needed to determine whether a significant impact will occur or if there is substantial evidence in the record that a project may have a significant effect on the environment (CEQA Guidelines Section 15064(f)). The following environmental topics are identified to be evaluated further during preparation of the EIR.

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

1.4 DETERMINATION

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 "potential impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect I) 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 EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature _____ Date _____

Printed Name: _____ For: _____

2.0 ENVIRONMENTAL INITIAL STUDY CHECKLIST

The following checklist is used to evaluate the potential for significant environmental impacts caused by the proposed project. All responses must consider the project in its entirety and any actions involved (i.e., offsite as well as onsite impacts, cumulative as well as project-level impacts, indirect as well as direct impacts, and construction as well as operational impacts).

This checklist is adapted from the form provided in Appendix G of the 2019 State CEQA Guidelines. There are 21 CEQA subject categories to be considered, with this checklist organized as such. Each subject discussion includes an evaluation matrix, followed by a brief discussion explaining the evaluation rationale. As appropriate, each subject discussion may address more than one specific issue question if there is a salient interrelation.

The 21 CEQA subject categories—or environmental factors—that must be considered are presented below. Each category is scored according to the potential level of impact significance the proposed project may have on the environment. The levels of significance are indicated and described below.

A. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

B. "Less Than Significant with Mitigation" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).

C. "Less Than Significant Impact" applies where the project creates no significant impacts, only less than significant impacts.

D. "No Impact" applies where a project does not create an impact in that category. "No Impact" answers do not require an explanation if they are adequately supported by the information sources cited by the lead agency which show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project specific screening analysis).

I. AESTHETICS

AESTHETICS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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) 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?	☐	☐	■	☐

a) Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. A scenic vista is generally defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Scenic vistas are commonly identified in local planning documents but can also include public viewpoints not identified within an adopted regulatory document. Within the project vicinity in downtown San Diego, view corridors are identified on Figure 5-1 of the City's Downtown Community Plan towards the San Diego Bay along most east/west oriented streets west of Kettner Street. All of the view corridors are located west of Park Boulevard and the project site, and the proposed project does not occur along or west of any of the view corridors in the Downtown Community Plan. Areas north and west of the project site within Balboa Park, opposite of I-5, include grass and picnic areas with southern and western views towards the project site. While not designated as scenic vistas, these areas do provide views of downtown and San Diego Bay; however, the elevation of the project site is much lower than areas to the north within Balboa Park and the addition of new structures within the campus, as well as temporary construction activities, are not anticipated to result in significant impacts on a scenic vista. No further analysis is anticipated in the EIR.

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

Less Than Significant Impact. The County of San Diego has several designated and eligible state scenic highways, two of which occur near the project site including SR 163, a designated state scenic highway, and I-5, an eligible state scenic highway. There are no other designated or eligible state scenic highways within the vicinity of the project site. Both SR 163 and I-5 occur at a lower elevation than the project site and neither include prolonged views of the project site for motorists. Views of the proposed project components, including taller buildings, would not be expected to be visible or highly noticeable from a state scenic highway and no further analysis is anticipated in the EIR.

c) 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?

Less than Significant Impact. The project is located on an existing high school campus in an urban area in downtown San Diego. The project involves upgrades to an existing high school campus including construction of a performing arts center, auxiliary gymnasium, and parking structure and the demolition of several buildings on campus. While the project would not substantially alter the existing visual character of the campus, some visual changes would be noticeable from surrounding areas; however, these changes are not anticipated to be highly noticeable and would not substantially degrade the existing character of the school. Impacts are anticipated to be less than significant and additional analysis in the EIR is not anticipated.

d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Less Than Significant Impact. While the project would involve some additional lighting, improvements associated with the proposed addition of buildings, due to the project's location within an urban downtown area where there are numerous existing sources of light and glare, project-related impacts associated with additional sources of light and glare are not anticipated to be substantial. This would also be consistent with City of San Diego regulations for glare and lighting (Municipal Code Sections 142.0730 and 142.0740).

II. AGRICULTURE AND FORESTRY RESOURCES

AGRICULTURE AND FORESTRY RESOURCES: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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 l 2220(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?	☐	☐	☐	■

AGRICULTURE AND FORESTRY RESOURCES: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?	☐	☐	☐	■

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?

No Impact. The project is in an urbanized area where there is no farmland or agricultural resources. According to the California Department of Conservation's (CDC) San Diego County Important Farmland 2016 map, the project area is classified as "Urban and Built-Up Land," which does not contain agricultural uses or areas designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (CDC 2018). As such, the proposed project would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. Therefore, there would be no impact and no additional analysis will be included in the EIR.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. As discussed in item II.a, the project is within an urbanized area where there is no farmland or agricultural resources. The Williamson Act applies to parcels within an established agricultural preserve consisting of at least 20 acres of Prime Farmland or at least 40 acres of land not designated as Prime Farmland. The purpose of the act is to preserve agriculture and open space lands by discouraging premature and unnecessary conversion to urban uses. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land for use as agricultural or related open space.

The project area is classified as "Urban and Built-Up Land" by the CDC (CDC 2018). The project area is not zoned for agricultural use, nor are there Williamson Act contracts within the project area (CDC 2018). Additionally, there are no Williamson Act contract eligible lands in the project area. Therefore, the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract and no additional analysis will be included in the EIR.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact. The proposed project is in an urbanized area where there are no forestry resources. The project location is designated as "Urban and Built-Up Land" by the CDC (CDC 2018). The proposed project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland resources and no additional analysis will be included in the EIR.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The proposed project is in an urbanized area where there are no forestry resources. The project location is designated as "Urban and Built-Up Land" by the CDC (CDC 2018). The proposed project would not result in the loss of forest land or convert 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?

No Impact. Implementation of the proposed project would have no impact on agriculture and/or forestry resources. The project location is classified as "Urban and Built-Up Land," which does not contain any agricultural uses or areas designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (CDC 2018). Furthermore, there are no Williamson Act contracts or forest lands in the project area (CDC 2013). Implementation of the proposed project would not involve changes to the existing environment or result in the conversion of Farmland to non-agricultural use or forest land to non-forest use.

III. AIR QUALITY

AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?	☐	☐	☐	■

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

No Impact. The District is in the San Diego Air Basin (SDAB), which is commensurate with San Diego County. The San Diego Air Pollution Control District (SDAPCD) is required, pursuant to the federal and state Clean Air Acts, to reduce emissions of criteria pollutants for which the SDAB is in nonattainment. The SDAB is currently classified as a moderate nonattainment area for the federal 8-hour ozone (O_3) standard and attainment for all other federal pollutants. In addition, the SDAB is classified as a nonattainment area for state O_3, particulate matter (PM) less than 2.5 microns in diameter ($PM_{2.5}$), and PM less than 10 microns in diameter (PM_{10}) standards (SDAPCD 2018).

All areas designated as nonattainment are required to prepare plans that show how the areas would meet the state and federal air quality standards by their attainment dates. The San Diego Regional Air Quality Strategy (RAQS) is the region's applicable air quality plan for improving air quality in the region and attaining federal and state air quality standards. The RAQS relies on information from the California Air Resources Board (CARB) and the San Diego Association of Governments (SANDAG), including projected growth in the county, which is based, in part, on information from local general plans. Generally, projects that propose development that is consistent with the land use designations and growth anticipated by the local general plan and SANDAG are consistent with the RAQS.

Construction of the project elements would be required to comply with SDAPCD Rules and Regulations, including Rules 50, 51, and 55, which forbid visible emissions, forbid nuisance activities, and require fugitive dust control measures, respectively. Construction and operation activities that would be reasonably foreseeable with implementation of the proposed project could result in a temporary increase in emissions, including motor vehicle trips, energy consumption, and other sources, compared to existing conditions. However, the proposed project is not anticipated to result in emissions that would exceed existing general plan and SANDAG projections because no increase in operations or student enrollment and no expansion of the existing school campus is considered in this evaluation. Further, there would be no amendment to the any land use or zoning designations as the project site would continue to operate as a school of the same size. As a result, the proposed project would be consistent with local general plans and/or SANDAG's growth projections and no impacts are anticipated.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

Potentially Significant Impact. The project is in the San Diego Air Basin, which is classified as a nonattainment area for certain federal and state designated criteria pollutants, including PM_{10}, $PM_{2.5}$, and O_3. Construction activities that would be reasonably foreseeable with implementation of the proposed project would generate emissions of criteria pollutants, including PM_{10}, $PM_{2.5}$, and O_3 precursors. Once constructed, daytime school activities would continue similar to existing conditions; however, some additional campus operations would result from after-school events at the performing arts center, auxiliary gymnasium, and aquatic center and the project has the potential to cause a cumulatively considerable net increase in criteria pollutants, including those for which the region is in nonattainment. Therefore, further analysis will be provided in the EIR.

c) Expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impact. There are several sensitive receptors, including the high school campus itself, present throughout the project area that could be affected by construction and operational activities that would be reasonably foreseeable with implementation of the project. As such, the project has the potential to expose sensitive receptors to substantial pollutant concentrations, which would be a potentially significant impact, and further analysis will be provided in the EIR.

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

No Impact. According to the Air Quality and Land Use Handbook (California Environmental Protection Agency [CalEPA]/CARB 2005), land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting facilities,

refineries, landfills, dairies, and fiberglass molding facilities. The project is not within close proximity to these land uses that generate odors. Additionally, the renovation and development of school facilities on the existing campus would not create objectionable odors. Thus, the project would not generate or expose sensitive receptors to objectionable odors and further analysis in the EIR is not warranted.

IV. BIOLOGICAL RESOURCES

BIOLOGICAL RESOURCES: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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 US 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?	☐	☐	☐	■

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?

Less Than Significant Impact. The project site is completely developed as an operating school, and all areas on the campus are either paved or graded. However, the project site contains ornamental vegetation that provides potentially suitable nesting habitat for migratory birds and raptors protected under the federal MBTA and Sections 3503 and 3503.5 of the California Fish and Game Code, which prohibit the take or destruction of migratory birds and raptors, their nests, and/or eggs. Project

construction activities would involve noises in proximity to trees and vegetation that could affect nesting birds during the breeding season (January 15 to August 31) and may involve ornamental vegetation and tree removal. No protected tree species would be removed. During construction, the District would comply with federal and state environmental regulations, including but not limited to the MBTA. The District would retain a qualified biologist to conduct a pre-construction survey if removal of vegetation must occur at any of the project site during the breeding season. The purpose of the pre-construction surveys would be to determine the presence or absence of nesting birds in the proposed areas of disturbance. A pre-construction survey must be conducted within seven calendar days prior to the start of construction activities (including removal of vegetation). If nesting birds are detected the qualified biologist would set up appropriate avoidance construction buffers from the nest and visit the site weekly until it is determined that the fledglings are no longer dependent on the nest. Construction would be delayed or an appropriate buffer established until the end of the breeding season or until the fledglings are no longer dependent on the nest. Implementation of these standard operating procedures established by the District would reduce potential impacts to less than significant.

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

No Impact. The project site is completely developed as an operating school, and all areas on the campus are either paved or graded. As such, there is no sensitive or riparian habitat on the project site that may potentially be inhabited by federally or state-listed biological species and no impacts are anticipated.

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

No Impact. The project site is completely developed as an operating school, and all areas on the campus are either paved or graded. No federally protected wetlands are present within or adjacent to the project site and no impacts are anticipated.

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?

No Impact. The project site is currently developed as an operating school and is either paved or graded. The project site and surrounding area do not contain any streams or bodies of water that may be inhabited by any native resident or migratory fish species. Because the proposed project would occur on an existing developed school campus, the project site is not considered a migratory wildlife corridor. As such, the proposed project would not interfere with the movement of fish or wildlife and would not affect wildlife corridors.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The proposed project may involve the removal of ornamental trees from within the school campus to accommodate the proposed development; however, no trees would be removed along the adjacent roadway right-of-way. No protected tree species are present and the project site is not within or adjacent to any Multi-Habitat Planning Area (MHPA) as designated by the City. As a result,

construction and tree removal would not conflict with the City tree ordinances or regulations, such as the City's Environmentally Sensitive Lands Ordinance. Therefore, no impact would occur.

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?

No Impact. The project site is completely developed as an operating school and in urban area. In the City, local habitat, species, and biological resources are protected under the City's Multiple Species Conservation Program (MSCP), which is implemented through the MSCP Subarea Plan (City of San Diego 1997). San Diego High School is not within or adjacent to the City's MHPA. As such, the City's MHPA Land Use Adjacency Guidelines would not be applicable to the proposed project and construction and operation of the proposed project would not result in any direct or indirect impacts on the MHPA. Due to the developed nature of the school, no habitat, species, or resources protected under the MSCP are present within the project site and no impacts are anticipated.

V. CULTURAL RESOURCES

CULTURAL RESOURCES: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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 formal cemeteries?	■	☐	☐	☐

a-c) **Potentially Significant Impact.** Construction activities that are reasonably foreseeable with implementation of the project may impact cultural resources. A complete review of cultural resources will be included in the EIR, including an evaluation of historical, archeological, and human remains.

VI. ENERGY

ENERGY: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?	☐	☐	☐	■

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?

No Impact. The proposed project does not involve an expansion of the existing campus or an increase in enrollment related to the WSM and LRFMP improvements. In general, modernization improvements would improve the efficiency of energy use on the campus, such as new and more efficient HVAC systems and replacement building windows that would provide better insulation. As a result, energy use would not be wasteful or unnecessary nor would a state or local renewable energy plan be obstructed or conflicted and no further analysis is warranted in the EIR.

VII. GEOLOGY AND SOILS

GEOLOGY AND SOILS: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?	☐	☐	■	☐
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?	■	☐	☐	☐

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?

Potentially Significant Impact. The project area is in a known seismically active region where several known earthquake faults occur. Active faults in the project area include the Point Loma Fault and the Rose Canyon Fault. Portions of the project site are within a State of California Earthquake Fault Zone as indicated by the Alquist-Priolo Earthquake Fault Zoning Map (CDC 2018). A seismic event could cause significant ground shaking in the project area, and, while the potential for ground rupture due to faulting is considered low, lurching or cracking of the ground surface as a result of a nearby seismic event is possible. The project entails upgrading existing facilities and constructing a new performing arts building, parking structure, and auxiliary gymnasium. Construction of the proposed structures would follow existing guidelines set forth by the International Building Code (IBC) and the California Building Code (CBC); however, due to the seismic activity in the project area, additional evaluation will be included in the EIR related to fault rupture.

ii. Strong seismic ground shaking?

Potentially Significant Impact. The project area is in a known seismically active region where several known earthquake faults occur. Active faults in the project area include the Point Loma Fault and the Rose Canyon Fault. Portions of the project site are within a State of California Earthquake Fault Zone (CDC 2018). A seismic event could cause significant ground shaking in the project area. The project entails upgrading existing facilities and constructing a new performing arts building, parking structure, and auxiliary gymnasium. Construction of the proposed structures would follow existing guidelines set forth by the IBC and CBC. Incorporation of such guidelines into the design and construction of the project would minimize potentially significant impacts; however, additional evaluation will be included in the EIR related to seismic ground shaking.

iii. Seismic-related ground failure, including liquefaction?

Less than Significant Impact. According to the City's Seismic Safety Study, the project site is not located in an area where liquefaction is likely to occur during a seismic event (City of San Diego 2008). Additionally, construction of the proposed structures would follow existing guidelines set forth by the IBC and the CBC. Therefore, impacts would be less than significant.

iv. Landslides?

Less Than Significant Impact. According to the City's Seismic Safety Study, the project site is not located in an area where landslides are likely to occur (City of San Diego 2008). Additionally, construction of the proposed structures would follow existing guidelines set forth by the IBC and the CBC and impacts are anticipated to be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. The project would not result in impacts associated with soil erosion or loss of topsoil as it is in a previously disturbed area of the existing campus. Potential short-term erosion impacts from construction activities would be addressed through Best Management Practices (BMPs) in accordance with the California Stormwater Best Management Practices Handbook to control erosion and protect the quality of surface water runoff during project construction and impacts are expected to be less than significant.

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?

Less than Significant Impact. According to the California Geological Survey, the project site does not fall within an area with the potential for landslide or liquefaction occurrences, lateral spreading, subsidence, or collapse. However, construction and design of the proposed structures would incorporate the measures and recommendations proposed by the IBC and the CBC to accommodate potential geologic hazards. Based on the incorporation of applicable guidelines, potential impacts associated with a geologic unit or soil that is unstable would be less than significant.

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?

Less Than Significant Impact According to the California Geological Survey, the project site is not located on expansive soil as defined in Table 18-1-B of the Uniform Building Code. Therefore, impacts would be less than significant.

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?

No Impact. No septic tanks or alternative wastewater disposal systems would be installed as part of the proposed project and no impact would occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Potentially Significant Impact. Construction activities that are reasonably foreseeable with implementation of the project may impact paleontological resources. Further review will be included in the EIR.

VIII. GREENHOUSE GAS EMISSIONS

GREENHOUSE GAS EMISSIONS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	■	☐	☐	☐

a-b) **Potential Impact**. Construction and operation of the project would have the potential to generate greenhouse gas (GHG) emissions. Consequently, the project could directly or indirectly have a significant impact on the environment. Activities that would be reasonably foreseeable with implementation of the project could result in emissions that may conflict with state, regional, or local plans, policies, or regulations adopted for the purpose of reducing emissions. Therefore, potential impacts associated with greenhouse gas emissions will be further evaluated in the EIR.

IX. HAZARDS AND HAZARDOUS MATERIALS

HAZARDS AND HAZARDOUS MATERIALS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 which 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?	■	☐	☐	☐

HAZARDS AND HAZARDOUS MATERIALS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. The project would involve updating existing facilities and developing a performing arts center, auxiliary gymnasium, and parking structure on an existing high school campus. Construction that would be reasonably foreseeable with implementation of the proposed project would require the transport, use, and disposal of materials that are typically associated with construction activities, such as diesel fuels, hydraulic liquids, oils, solvents, and paints. This transport, use, and disposal of hazardous materials is regulated by federal, state, and local agencies and regulations, such as the U.S. Environmental Protection Agency's (USEPA's) Resource Conservation and Recovery Act of 1976, the U.S. Department of Transportation's Hazardous Materials Regulations, and the San Diego County Department of Environmental Health's regulations.

Operation and maintenance of school and administrative facilities would not require the use of hazardous materials or generate hazardous waste. Compliance with existing hazardous materials regulations is mandatory; therefore, the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials and impacts would be less than significant.

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?

Less Than Significant Impact. The project involves updating existing facilities and developing a performing arts center, auxiliary gymnasium, and parking structure on an existing high school campus. The project would comply with all existing hazardous material regulations, and impacts would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact. As mentioned previously, construction that would be reasonably foreseeable with implementation of the proposed project would require the use of typical materials associated with construction activities, including diesel fuel, gasoline, oil, hydraulic fluid, engine exhaust, solvent for welding, polyvinyl chloride (PVC), and paint. Any hazardous materials used during construction would be transported, used, and stored in accordance with state and federal regulations regarding hazardous materials, as noted in item VIII.a.

Schools typically do not generate hazardous materials or hazardous waste. As such, the project would not emit hazardous emissions or involve the handling of hazardous or acutely hazardous materials, substances, or waste on the existing school site or within 0.25 mile of an existing or proposed school. Construction and operational impacts would be less than significant.

d) Be located on a site which 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?

No Impact. The project is not located on a site included on a list of hazardous material sites pursuant to Government Code Section 65962.5 and does not appear in the State Water Resource Control Board's (SWRCB) Geotracker database (October 2018) or the Department of Toxic Substances Control (DTSC) Envirostor database (October 2018). 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?

Potentially Significant Impact. The San Diego International Airport (SDIA) is located approximately two miles west of the project site. The airport has an Airport Land Use Compatibility Plan (ALUCP) which applies to all projects within the SDIA Influence Area. The basic function of an ALUCP is to promote compatibility between airports and the land uses that surround them. The project is located within the SDIA Influence Area and may require review by the Airport Land Use Commission (ALUC) prior to construction. Construction activities that would be reasonably foreseeable with implementation of the proposed project could include the use of large pieces of construction equipment, such as cranes, or the construction of buildings taller than existing conditions. Therefore, a potentially significant impact could occur, and further analysis is warranted in the EIR.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. Emergency management services for the high school are provided by the San Diego Fire-Rescue Department via Park Boulevard. Construction activities that would be reasonably foreseeable with implementation of the proposed project would have the potential to temporarily restrict access for emergency vehicles traveling to the school. However, construction would be required to comply with the County of San Diego's Emergency Operations Plan, and it is anticipated that construction would not result in the full closure of roadways or other means of emergency access. New operations associated with the project would not impair or interfere with implementation of adopted emergency response plans or evacuation plans. As such, implementation of the project would not impair or physically interfere with an emergency response, and impacts would be less than significant.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Less Than Significant Impact. State law requires all local governments to identify any Very High Fire Hazard Severity Zone within their jurisdiction (California Government Code Sections 51175–51189). Inclusion within these zones is based on vegetation density, slope severity, and other relevant factors that contribute to fire severity. According to the Very High Fire Hazard Severity Zone maps prepared by the City in collaboration with the California Department of Forestry and Fire Protection, the project is

not located in an area identified as a wildland fire hazard area (City of San Diego 2009). Additionally, the project is in an urban area not associated with wildland fires. Impacts are anticipated to be less than significant.

X. HYDROLOGY AND WATER QUALITY

HYDROLOGY AND WATER QUALITY: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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 resources of polluted runoff?	☐	☐	■	☐
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?	☐	☐	☐	■

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

Less Than Significant Impact. The proposed project involves internal improvements at the San Diego High School campus in an urbanized area of the City. During construction, excavation activities and exposed soil have the potential to temporarily increase the amount of sediment runoff that would enter the existing storm drain system during a rain event. However, the project would comply with the standards and regulations established by the SWRCB. The SWPPP would require the implementation of BMPs throughout the construction period. Stormwater BMPs would limit erosion, minimize

sedimentation, and control stormwater runoff water quality during construction activities. Compliance with the SWPPP would not degrade local water quality or exceed waste discharge requirements. During project operations, the amount of stormwater runoff from the site would not change substantially after implementation of the proposed project and impacts would be less than significant.

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

Less Than Significant Impact. The improvements associated with the proposed project would not deplete groundwater supplies or interfere substantially with groundwater recharge. The project site is within an established urban community serviced by the City, Public Utilities Department, and the project does not involve the use of groundwater during construction or operation. Additionally, all project improvements would occur within the existing developed school footprint. Any expansion of impervious areas, which could interfere with groundwater recharge, would be minimal. Therefore, the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge, and impacts would be less than significant.

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?

Less Than Significant Impact. The project site is currently developed as an operating school within an urbanized area and is almost entirely paved with asphalt or concrete. The project would not result in a substantial alteration of the existing drainage patterns. Additionally, no stream or river courses exist within the immediate vicinity of the school site that could be affected by the project, either through direct modification or from stormwater runoff from the project site. During construction, BMPs would be implemented in compliance with the SWPPP, which would adequately address erosion and siltation issues. Therefore, impacts would be less than significant.

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

Less Than Significant Impact. The project site is currently developed as a high school campus within an urbanized area and is almost entirely paved with asphalt or concrete. While internal campus improvements would occur, the project is not expected to substantially alter the existing drainage pattern of the site. Construction BMPs would be implemented in compliance with the SWPPP and the project would not substantially increase the rate or amount of surface runoff or result on- or off-site flooding. Impacts related to changes to existing drainage patterns are expected to be less than significant.

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

Less Than Significant Impact. The project would comply with the SWPPP, which would implement water quality standards and waste discharge requirements. Additionally, the project would not substantially alter the existing drainage pattern of the site and therefore, would not result in a substantial increase in the rate or amount of stormwater runoff from the site. Stormwater runoff from the site during school

operations would continue to be accommodated by the existing stormwater drainage system currently serving the school property. Moreover, BMPs and the existing storm drainage system would adequately provide stormwater detention for the project site. As such, the proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; therefore, no impact is anticipated.

iv. Impede or redirect flood flows?

Less Than Significant Impact. The project site is currently developed as an operating school within an urbanized area and is almost entirely paved with asphalt or concrete. While internal campus improvements would occur, the project is not expected to substantially alter flooding on the site. Construction BMPs would be implemented in compliance with the SWPPP and the project would not substantially impede or redirect flood flows. Impacts are expected to be less than significant.

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

No Impact. The project site is not located downstream of or adjacent to any major water bodies, including lakes or rivers, that could contribute to impacts associated with inundation by seiche or mudflows. The closest water body to the project site is San Diego Bay, which is approximately 1.3 miles southwest of the school. The San Diego Bay would not pose a flooding hazard to the project site due to the substantial distance. Additionally, the likelihood of the project site being inundated by a tsunami is extremely low due to its elevation. Therefore, the proposed project would not contribute to inundation by seiche, tsunami, or mudflow and no significant environmental impacts are anticipated.

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

No Impact. There are no known water quality control plans or sustainable groundwater management plans that apply to the project site and no impact is expected.

XI. LAND USE AND PLANNING

LAND USE AND PLANNING: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?	☐	☐	■	☐

a) Physically divide an established community?

No Impact. All development resulting from the project would occur within the boundaries of the existing school site. Therefore, the project would not physically divide an established community and no significant environmental impacts are anticipated.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. The redevelopment and execution of a lease between the City and the District is not expected to result in a conflict with a planning document that was adopted for the purpose of avoiding or mitigating an environmental effect and no further discussion is warranted in the EIR.

XII. MINERAL RESOURCES

MINERAL RESOURCES: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?	☐	☐	☐	■

a-b) **No Impact.** The project site is previously developed and not known to contain mineral resources that would be of value to the region or state. According to the Conservation Element of the City of San Diego's General Plan, the project site is mapped as urban land where no mineral deposits are present. Therefore, no mineral resources that would be of value to the region or the residents of the state would be lost as a result of the project.

XIII. NOISE

NOISE: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project 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?	■	☐	☐	☐

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

Potentially Significant Impact. Construction and operational activities that would be reasonably foreseeable with implementation of the project could increase noise levels. A noise report will be prepared for the proposed project and further analysis will be provided in the EIR.

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

Potentially Significant Impact. Construction activities that would be reasonably foreseeable with implementation of the project would have the potential to expose persons to or generate excessive groundborne vibration or groundborne noise. While adherence to applicable standards and regulations for groundborne vibration and noise would likely reduce impacts to less than significant, further evaluation will be included in a noise report to be prepared for the project and the results will be provided in the EIR.

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?

Potentially Significant Impact. There are no private airstrips in the project area; however, SDIA is located less than two miles west of the project area. A portion of the project area lies within a noise contour that exceeds a 24-hour average of 70 dBA (A-weighted decibels), according to the ALUCP (SDIA Land Use Compatibility Plan 2014). Therefore, a potentially significant impact could occur and further analysis will be included in the EIR.

XIV. POPULATION AND HOUSING

POPULATION AND HOUSING: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?	☐	☐	☐	■

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)?

No Impact. The proposed project would not involve the construction of any new homes or businesses and would not induce population growth. The project would involve improving campus facilities and

would not induce population growth. Development activities that would be reasonably foreseeable with implementation of the proposed project would result in the generation of temporary construction jobs; however, the additional jobs are expected to be filled by individuals currently residing in the San Diego region. Therefore, the proposed project would not directly or indirectly induce substantial population growth and no impacts are anticipated.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The project site is a high school campus in an existing urban environment and does not contain any housing units nor would the project involve the construction of replacement housing. No impacts are anticipated.

XV. PUBLIC SERVICES

PUBLIC SERVICES: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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:				
a) Fire protection?	☐	☐	☐	■
b) Police protection?	☐	☐	☐	■
c) Schools?	☐	☐	☐	■
d) Parks?	☐	☐	☐	■
e) Other public facilities?	☐	☐	☐	■

a-e) **No Impact**. The project involves upgrading and expanding the facilities at an existing high school, and substantial physical effects associated with the project are evaluated throughout this Initial Study. The project would not result in an increase in student enrollment nor would the project contribute to population growth. As such, no additional public services would be required to serve the proposed project site at San Diego High School and no impacts would occur.

XVI. RECREATION

RECREATION: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) 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?	☐	☐	☐	■
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?	☐	☐	☐	■

a) 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?

No Impact. An increase in the use of existing parks and recreational facilities typically results from an increase in the number of housing units or residents in an area. The project would not result in an increased number of housing units or residents within the project area because it would promote the expansion of the school campus and enrollment would not increase as a result of the project. The project involves upgrading and expanding the facilities at an existing high school to continue serving current enrollment and public uses consistent with the Civic Center Act, which permits public rental and use of school facilities. As such, the project would not result in an increase in the use of other existing recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated.

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?

No Impact. The project involves upgrades to existing facilities on the campus and constructing a performing arts center, auxiliary gym, and parking structure with tennis courts. These facilities would serve the existing and future school populations and their potential to result in physical environmental impacts is analyzed throughout this Initial Study. Proposed campus improvements would be constructed on the existing campus, which is a developed site in an urban environment, with the exception of the I-5 ramp improvements adjacent and west of the campus. Therefore, the project is not anticipated to have an impact on the environment as it relates to the construction of recreational facilities.

XVII. TRANSPORTATION AND TRAFFIC

TRANSPORTATION AND TRAFFIC: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	■	☐	☐	☐
b) Would the project 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?	■	☐	☐	☐

a-d) **Potentially Significant Impact.** A comprehensive traffic report will be completed for the proposed project and will evaluate the potential significance of traffic impacts associated with the project, including project actions associated with the I-5 off-ramp. Further traffic analysis will be provided in the EIR.

XVIII. TRIBAL CULTURAL RESOURCES

TRIBAL CULTURAL RESOURCES: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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:				
i. 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	■	☐	☐	☐
ii. 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.	■	☐	☐	☐

a) 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:

   i. 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)?

   ii. 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Potentially Significant Impact. Pursuant to AB 52, California Native American tribes that are traditionally and culturally affiliated with the area can request notification of projects in their traditional cultural territory. Jamul Indian Village requested AB 52 consultation with the District on future projects; and consultation was initiated by the District on October 25, 2018. No other California Native American tribes are on the District's consultation list for AB 52.

Based on consultation, Jamul Indian Village requested a Kumeyaay Native American monitor for all ground disturbing activities. Further analysis of Tribal Cultural Resources will be provided in the EIR.

XIX. UTILITIES AND SERVICE SYSTEMS

UTILITIES AND SERVICE SYSTEMS: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Require or result in the relocation or construction of new or expanded water or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction 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 wastewater 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?	☐	☐	■	☐

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

Less Than Significant Impact. The project would not result in an increase in student enrollment that could necessitate greater demand for new or expanded water or wastewater treatment and future demands on water and wastewater are not expected as a result of the proposed project. Similarly, existing storm water drainage infrastructure at the campus is not expected to be relocated or expanded on the campus. Lastly, electric power, natural gas, and telecommunications facilities are not expected to be relocated or expanded and existing facilities would continue to serve San Diego High School. Impacts would be less than significant.

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

Less Than Significant Impact. Construction of the project would require the use of water for activities such as dust suppression and the mixing of concrete; however, any water usage during construction would be minimal and temporary. Implementation of the project would not increase student capacity. Therefore, the demand for water would not be any greater than what currently exists at the site and impacts are expected to remain less than significant.

c) Result in a determination by the wastewater 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?

Less Than Significant Impact. Implementation of the project would not increase student capacity. Therefore, the demand for wastewater would not be any greater than what currently exists at the site and impacts would remain less than significant.

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?

Less Than Significant Impact. All non-recyclable solid waste generated during construction would be taken to a landfill with sufficient permitted capacity. The proposed project would not increase student capacity at the school. As such, the amount of solid waste generated by the school would be similar to existing conditions. Therefore, the school would continue to comply with federal, state, and local regulations related to solid waste upon the completion of the project and impacts would be less than significant.

XX. WILDFIRE

WILDFIRE: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?	☐	☐	☐	■

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. Emergency management services for the high school are provided by the San Diego Fire-Rescue Department via Park Boulevard. Construction activities that would be reasonably foreseeable with implementation of the proposed project would have the potential to temporarily restrict access for emergency vehicles traveling to the school. However, construction would be required to comply with the County of San Diego's Emergency Operations Plan, and it is anticipated that construction would not result in the full closure of roadways or other means of emergency access. New operations associated with the project would not impair or interfere with implementation of adopted emergency response plans or evacuation plans. As such, implementation of the project would not impair or physically interfere with an emergency response, and impacts would be less than significant.

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?

No Impact. The proposed project is in a highly urbanized area of downtown San Diego and would not be directly affected by wildfires or the uncontrolled spread of a wildfire. As a result, wildfire impacts, including those associated with exposing people or structures to significant risks, would not occur with the proposed project.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

MANDATORY FINDINGS OF SIGNIFICANCE: Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
The lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur. Where prior to commencement of the environmental analysis a project proponent agrees to MMs or project modifications that would avoid any significant effect on the environment or would mitigate the significant environmental effect, a lead agency need not prepare an EIR solely because without mitigation the environmental effects would have been significant (per Section 15065 of the State CEQA Guidelines):				
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 significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and 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?

Potentially Significant Impact. The project site is located in an urban area and completely developed as an operating school. No impacts on habitat or plant or animal communities are anticipated; however, additional analysis related to California history and prehistory will be provided in the EIR.

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

Less Than Significant Impact. State CEQA Guidelines Section 15130 requires a discussion of the cumulative impacts of a project when the project's incremental effect is "cumulatively considerable," meaning that the project's incremental effects are considerable when viewed in connection with the effects of past, current, and probable future projects. Cumulative impacts of the project would be less than significant, but further analysis of the project's potential contribution to cumulative impacts will be provided in the EIR.

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

Less Than Significant Impact. As discussed under Section VIII, *Hazards and Hazardous Materials*, substantial adverse effects on human beings from the project are anticipated to be less than significant. However, the EIR will further analyze the necessary issue areas to determine the scope of their impact on human beings, either directly or indirectly.

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EIR Appendix B

Air Quality and Greenhouse Gas Emissions Technical Report

HELIX Environmental Planning

San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan

Air Quality and Greenhouse Gas Emissions Technical Report

December 2020 | SDU-02.18

Prepared for:

San Diego Unified School District
4860 Ruffner Street, Annex Room 5
San Diego, CA, 92111

Prepared by:

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

San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan

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ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
ADT	average daily trips
APCD	air pollution control district
AR4	Fourth Assessment Report
AR5	Fifth Assessment Report
BMPs	best management practices
C_2F_6	hexafluoroethane
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CF_4	tetraflouromethane
CFC	chlorofluorocarbon
CH_4	methane
City	City of San Diego
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	San Diego County
District	San Diego Unified School District
DPM	diesel particulate matter
EO	Executive Order
°F	Fahrenheit
GHG	greenhouse gas
GWP	global warming potential

ACRONYMS AND ABBREVIATIONS (cont.)

H_2S	hydrogen sulfide
HAP	hazardous air pollutant
HFC	hydrofluorocarbon
HRA	health risk assessment
IEM	Iowa Environmental Mesonet
IPCC	Intergovernmental Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LRFMP	Long-Range Facilities Master Plan
mg/m^3	milligrams per cubic meter
MMT	million metric tons
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization
MT	metric ton
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_X	nitrogen oxides
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
Pb	lead
PFC	perfluorocarbon
PM	particulate matter
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
ppm	parts per million
ROG	reactive organic gas
RTP	Regional Transportation Plan

ACRONYMS AND ABBREVIATIONS (cont.)

SANDAG	San Diego Association of Governments
SAR	Second Assessment Report
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxides
SRF	State Revolving Fund
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
UNFCCC	United Nations Framework Convention on Climate Change
URF	unit risk factor
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOC	volatile organic compound
WRCC	Western Regional Climate Center
WSM	Whole Site Modernization
ZEV	zero emissions vehicle

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality and greenhouse gas (GHG) emission impacts during construction and operation of the San Diego Unified School District's (District's) proposed San Diego High School Whole Site Modernization (WSM) and Long-Range Facilities Master Plan (LRFMP) (project). The proposed project involves the renewal of a lease between the City and the District and upgrades to the existing school campus buildings and facilities. The lease renewal would extend the permission for the District to operate at the project site beyond 2024 for an additional 99 years. The short-term WSM improvements would generally include minor improvements and reconfigurations of existing school buildings, parking areas, and quad areas, as well as improvements to existing athletic fields. The long-term LRFMP improvements would involve the removal and addition of school buildings and structures, as well as a new entrance into the campus from the I-5 off-ramp.

The project would result in emissions of criteria air pollutants during construction and operation. Construction emission sources would include fugitive dust, heavy construction equipment exhaust, and vehicle trips associated with workers and haul trucks. Construction of the project would comply with San Diego Air Pollution Control District (SDAPCD) Rule 55, *Fugitive Dust*. Operational emissions would be similar to existing conditions, with the exception of operational emissions generated by the proposed aquatic center. Operational emissions associated with the aquatic center would include pollutants primarily associated with energy use and increased vehicular traffic. Project emissions of criteria pollutants during general construction activities would not exceed SDAPCD significance thresholds. Operational emissions would be below the SDAPCD significance thresholds.

Construction and operation of the project would not result in exposure of sensitive receptors to significant quantities of toxic air contaminants (TACs), including diesel particulate matter from heavy equipment exhaust. Odor emissions from construction and operational activities would not adversely affect a substantial number of people.

Construction sources of GHG emissions would include the use of heavy construction equipment. Operational sources of GHG emissions generated by the aquatic center would include area, energy, solid waste, mobile (transportation), and water use. The project-related construction activities are estimated to generate a total of 38.6 metric tons (MT) of carbon dioxide equivalent (CO_2e) during WSM improvements and 456.7 MT CO_2e during LRFMP improvements. Construction emissions are amortized over 30 years, such that the proposed construction activities would contribute an average of 3.3 MT per year of CO_2e emissions for WSM improvements and an average of 15.2 MT per year of CO_2e emissions for LRFMP improvements. The project-related operational and amortized construction GHG emissions are estimated to generate 121.6 MT CO_2e per year. Project emissions would remain below the SDAPCD threshold applied to this analysis. The project would not conflict with regional and statewide GHG reduction plans.

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1.0 INTRODUCTION

This report presents an assessment of potential air quality and greenhouse gas (GHG) emissions impacts during construction and operation of the proposed San Diego Unified School District (District) San Diego High School Whole Site Modernization (WSM) and Long-Range Facilities Master Plan (LRFMP; project). The analysis has been prepared to support environmental review under the California Environmental Quality Act (CEQA).

1.1 PROJECT LOCATION

The approximately 34-acre project site is located at 1405 Park Boulevard, in the northeast corner of the intersection of Russ Boulevard and Park Boulevard in the City of San Diego (City). Regional access to the site is provided via I-5 and SR-163 and local access is provided primarily from Russ Boulevard, where student drop-off and parking areas are located. Parking lots located in the western portion of the site are also accessible via Park Boulevard. The project site has a General Plan designation of Public/Civic and Existing Park/Open Space, and is zoned as CCPD-PC (Public/Civic) and CCPD-OS (Open Space). See Figure 1, *Regional Location*, and Figure 2, *Project Vicinity*.

1.1.1 Existing Site Conditions

The District currently holds a lease from the City to operate San Diego High School on the site that expires in 2024. The high school serves students in grades 9 through 12 and generally consists of 11 permanent buildings (buildings 100 through 1100) in the southwest part of the campus that surround a student quad area. Balboa Stadium occupies most of the eastern part of campus along with a large paved parking lot along the eastern campus boundary adjacent to I-5. Paved hardtop areas, parking, and ballfields, as well as 10 relocatables that are not in use and previously were a part of East Village High School, occupy the northern part of the campus. See Figure 3, *Existing Campus Layout*. Enrollment at San Diego High School for the 2019-2020 school year is estimated at 2,644 students and has a capacity for up to 2,759 students (SDUSD 2019). School is in session from 7:30 a.m. to 2:30 p.m. on Mondays, Wednesdays, Thursdays, and Fridays, and from 7:30 a.m. to 1:25 p.m. on Tuesdays.

1.2 PROJECT COMPONENTS

The proposed project involves the renewal of a lease between the City and the District and upgrades to the existing school campus buildings and facilities. The lease renewal would extend the permission for the District to operate at the project site beyond 2024 for an additional 99 years. The campus upgrades would include near-term improvements (referred to as WSM improvements) and long-term improvements (referred to as LRFMP improvements). The WSM improvements would generally include minor improvements and reconfigurations of existing school buildings, parking areas, and quad areas, as well as improvements to existing sports fields. The LRFMP improvements would involve the removal and addition of school buildings and structures, as well as a new entrance into the campus from the I-5 off-ramp. The individual components of the proposed project are described in more detail below.

1.2.1 Whole Site Modernization Improvements

The WSM improvements would occur upon the execution of a lease agreement between the City and the District. Campus-wide updates would involve interior and exterior improvements and

reconfigurations of school buildings, the addition of building identification graphics, a public address system for emergency use, surveillance cameras, and interior and exterior lighting improvements. The WSM improvements would also include the addition of approximately 700 square feet onto an existing school building, and the demolition and reconstruction of a new paved student quad. The existing quad is approximately 61,430 square feet in size and approximately two-thirds is paved. Changes in enrollment or student capacity are not anticipated as a result of the proposed WSM improvements.

1.2.2 Long-Range Facilities Master Plan Improvements

The LRFMP identifies future improvements over the life of the proposed lease renewal, which would grant the District permission to continue to utilize the project site for school use for an additional 99 years. The timing and phasing of the LRFMP projects are not known and the details of the proposed improvements are conceptual; however, no change in enrollment or student capacity is anticipated with the proposed LRFMP improvements. The LRFMP improvements would primarily involve the demolition of three school buildings: buildings 400, 600, and 700. The square footages of the buildings to be demolished are listed below:

- Building 400: 29,459 square feet
- Building 600: 7,284 square feet
- Building 700: 4,633 square feet

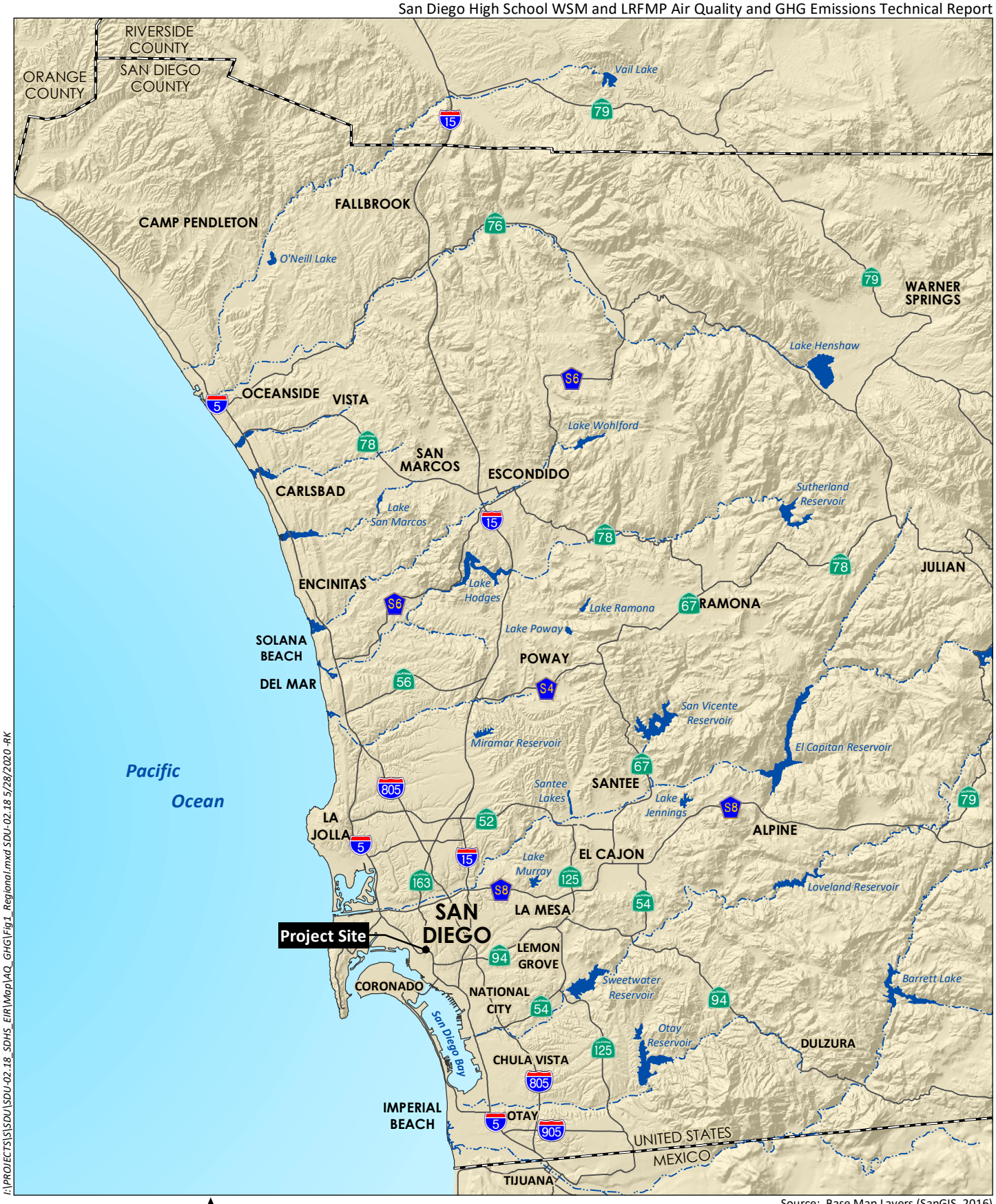
The LRFMP improvements also include the construction of seven school buildings: the performing arts building, parking structure, auxiliary gymnasium, new classroom building 400, food service and custodial building, field house, and aquatic center. The square footages of the buildings to be constructed are listed below:

- Performing arts building: 30,000 square feet
- Parking structure: 35,914 square feet
- Auxiliary gymnasium: 11,000 square feet
- New classroom building 400: 29,459 square feet
- Food service and custodial building: 4,633 square feet
- Field house: 17,500 square feet
- Aquatic center: 10,000 square feet

Other improvements would involve upgrades at Balboa Stadium, new campus entrances/exits via Park Boulevard and Russ Boulevard, and site enhancements consisting of landscape and hardscape improvements, west of building 100 near the corner of Russ Boulevard and Park Boulevard. See Figure 4, *Site Plan (Long-Range Facilities Master Plan)*.

1.3 PROJECT CONSTRUCTION

Construction of the WSM improvements is anticipated to begin as early as late 2020 and be completed by the end of 2023, and exterior WSM construction activities are estimated to occur over the summer break period between June and August 2021 to avoid conflicts with students (e.g., the student quad



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0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

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Regional Location

Figure 1



Source: Aerial (SanGIS 2014)

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Project Vicinity

Figure 2



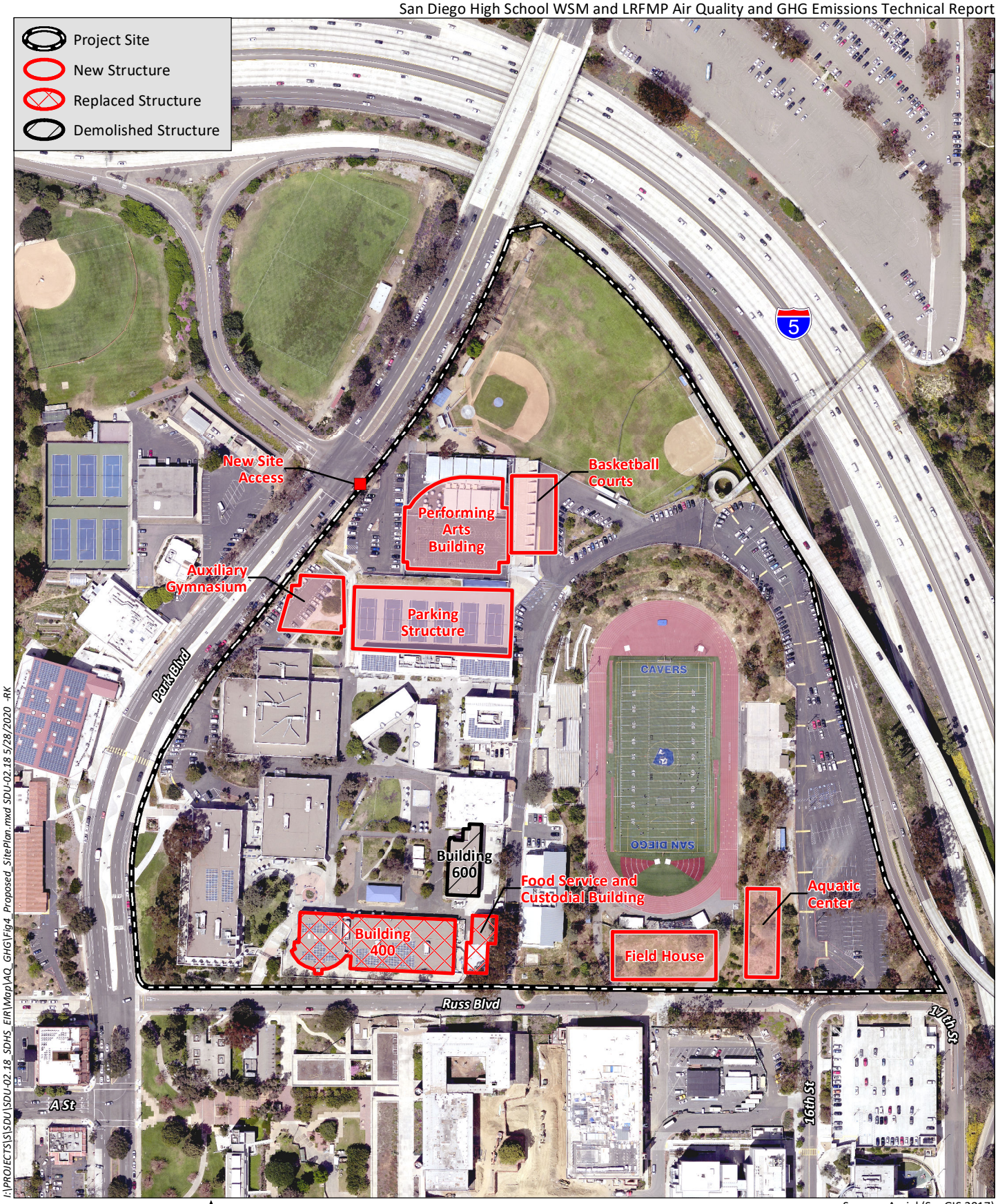
0 250 Feet

Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Existing Campus Layout

Figure 3



Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Site Plan (Long-Range Facilities Master Plan)

Figure 4

areas that connect student classrooms would not be replaced during the school year). Construction timing for the LRFMP improvements is uncertain; however, they would likely occur between the years of 2024 and 2035. All construction activities and staging would occur within the boundaries of the project site, with the exception of the proposed campus entrance/exit as part of the LRFMP implementation, which would involve some construction within Park Boulevard at the I-5 off-ramp within the California Department of Transportation (Caltrans) right-of-way.

Construction may occur during the school year. Construction on non-school days would be limited to the hours of 7 a.m. to 7 p.m. to comply with the City's noise ordinance. If construction must occur when school is in session, the hours for construction activities may be limited to between 2 p.m. and 7 p.m. to avoid disruptions to students and faculty or require the installation of 1/2-inch thick plywood sound barriers to reduce noise impacts to students and staff. Notices would be disseminated to surrounding educational uses prior to construction activities to inform staff and students of construction timing and protocols to leave windows and doors shut, as feasible, during noisy construction events.

1.3.1 Construction Equipment

Construction of both the WSM and LRFMP improvements would involve the use of a wide variety of heavy construction equipment onsite. The majority of the equipment and vehicles would be associated with the site preparation and grading, structural, and paving phases of construction. Large construction equipment, including backhoes, cement mixers, industrial saws, cranes, excavators, forklifts, graders, loaders, pavers, and rollers would be used during the construction phases of the proposed project.

2.0 REGULATORY SETTING

2.1 AIR QUALITY

2.1.1 Air Pollutants of Concern

2.1.1.1 Criteria Pollutants

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. Criteria air pollutants include the following compounds:

- Ozone (O_3)
- Reactive organic gases (ROGs) or volatile organic compounds (VOCs)[1]
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Particulate matter (PM) which is further divided into coarse particulate matter less than 10 microns (PM_{10}) and fine particulate matter less than 2.5 microns ($PM_{2.5}$)

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

- Sulfur dioxide (SO_2)
- Lead (Pb)

Air pollutants are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Primary criteria pollutants are: CO; SO_2; PM_{10}; $PM_{2.5}$; and lead. Secondary pollutants are formed in the atmosphere through chemical and photochemical reactions of pollutant precursors. Secondary criteria pollutants are ozone, NO_2, PM_{10}, and $PM_{2.5}$ formed by reactions of the principal pollutant precursors ROG, nitrogen oxides (NO_X), and sulfur oxides (SO_X). Note that PM_{10} and $PM_{2.5}$ can be both primary pollutants and secondary pollutants.

The descriptions of sources and general health effects for each of the criteria air pollutants are shown in Table 1, *Summary of Common Sources and Human Health Effects of Criteria Air Pollutants,* based on information provided by the California Air Pollution Control Officers Association (CAPCOA; 2018). Specific adverse health effects to individuals or population groups induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individuals [e.g., age, gender]). Criteria pollutant precursors (ROG and NO_X) affect air quality on a regional scale, typically after significant delay and distance from the pollutant source emissions. Health effects related to ozone, NO_2, and secondary PM are the product of emissions generated by numerous sources throughout a region. Emissions of primary criteria pollutants from vehicles traveling to or from the project site (i.e., PM_{10}, and $PM_{2.5}$) are distributed nonuniformly in location and time throughout the region, wherever the vehicles may travel. As such, specific health effects from these criteria pollutant emissions cannot be directly correlated to the incremental contribution from a single project.

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

Pollutant	Major Man-Made Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to climate change and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrogen oxides (NO_X) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.

Table 1 (cont.)
SUMMARY OF COMMON SOURCES AND HUMAN HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS

Pollutant	Major Man-Made Sources	Human Health Effects
Particulate Matter (PM_{10} & $PM_{2.5}$)	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and other sources. Also formed by a chemical reaction between reactive organic gases (ROGs) and sulfur oxides (SO_X).	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned, when gasoline is extracted from oil, or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2018

Other pollutants known as greenhouse gases (GHGs; e.g., carbon dioxide [CO_2]), have been linked to climate change. Unlike criteria air pollutants, there are no regulated concentration limits for GHGs. The regulatory setting for GHG emissions is discussed in subsection 2.2.

2.1.1.2 Toxic Air Contaminants

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

2.1.2 Federal Air Quality Regulations

2.1.2.1 Federal Clean Air Act

Air quality is defined by ambient air concentrations of specific pollutants identified by the U.S. Environmental Protection Agency (USEPA) to be of concern with respect to health and welfare of the

public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA), first enacted in 1963 and amended numerous times in subsequent years (1965, 1967, 1970, 1977, and 1990). The CAA mandates the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several criteria pollutants, which are introduced above. Table 2, *Ambient Air Quality Standards*, shows the federal and state ambient air quality standards for these pollutants.

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

Table 2
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Primary Federal Standards [1]	Secondary Federal Standards [2]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
SO_2	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	–	–

Table 2 (cont.)
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Primary Federal Standards [1]	Secondary Federal Standards [2]
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	Same as Primary
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	No Federal Standards	No Federal Standards
Sulfates	24 Hour	25 µg/m^3	No Federal Standards	No Federal Standards
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	No Federal Standards	No Federal Standards
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	No Federal Standards	No Federal Standards

Source: CARB 2016
Notes:
[1] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.
[2] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
AAM = Annual Arithmetic Mean; CO = carbon monoxide; km = kilometer; mg/m^3 = milligrams per cubic meter; NO_2 = nitrogen dioxide; O_3 = ozone; ppm = parts per million; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less; SO_2 = sulfur dioxide; – = No Standard; µg/m^3 = micrograms per cubic meter

The USEPA has classified air basins (or portions thereof) as being in "attainment," "nonattainment," or "unclassified" for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. The project site is located within the San Diego Air Basin (SDAB) and, as such, is in an area designated a nonattainment area for certain pollutants that are regulated under the CAA. Table 3, *San Diego Air Basin Attainment Status*, lists the federal and state attainment status of the SDAB for the criteria pollutants. The SDAB currently falls under a national "maintenance plan" for CO, following a 1998 re-designation as a CO attainment area (SDAPCD 2010). The SDAB is currently classified as a moderate nonattainment area for the 8-hour 2015 NAAQS for ozone and as a nonattainment area under the CAAQS for ozone, PM_{10}, and $PM_{2.5}$ (CARB 2018; USEPA 2019).

Table 3
SAN DIEGO AIR BASIN ATTAINMENT STATUS

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

Source: CARB 2018; USEPA 2019
O_3 = ozone; CO = carbon monoxide; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide

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

2.1.3 California Air Quality Regulations

2.1.3.1 California Clean Air Act

The federal CAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California EPA (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts. The state standards attainment status for the SDAB is listed in Table 3, above.

2.1.3.2 Toxic Air Contaminants

California's air toxics control program began in 1983 with the passage of the Toxic Air Contaminant Identification and Control Act, better known as Assembly Bill (AB) 1807 or the Tanner Bill. When a compound becomes listed as a TAC under the Tanner process, CARB normally establishes minimum statewide emission control measures to be adopted by local air pollution control districts (APCDs).

Later legislative amendments (AB 2728) required CARB to incorporate all 189 federal hazardous air pollutants (HAPs) into the state list of TACs.

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

On August 27, 1998, CARB formally identified diesel particulate matter (DPM) emitted by diesel-fueled engines as a TAC (CARB 2010). The particles emitted by diesel engines are coated with chemicals, many of which have been identified by the USEPA as HAPs and by CARB as TACs. CARB's Scientific Advisory Committee has recommended a unit risk factor (URF) of 300 in 1 million over a 70-year exposure period for diesel particulate. In September 2000, CARB approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Diesel Risk Reduction Plan; CARB 2000). The Diesel Risk Reduction Plan outlined a comprehensive and ambitious program that included the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). These requirements are now enforced on a statewide basis.

2.1.4 Local Regulations

2.1.4.1 San Diego Air Pollution Control District

The project is located in San Diego County (County). Air quality in the County is regulated by the SDAPCD. As a regional agency, the SDAPCD works directly with local governments and cooperates actively with all federal and state government agencies. The SDAPCD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary.

2.1.4.2 Air Quality Plans

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

2.1.4.3 Rules

The project would incorporate best management practices (BMPs) during construction to reduce emissions of fugitive dust. SDAPCD Rule 55 – Fugitive Dust Control states that no dust and/or dirt shall leave the property line, as follows (SDAPCD 2009):

1. **Airborne Dust Beyond the Property Line:** No person shall engage in construction or demolition activity subject to this rule in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.

2. **Track-Out/Carry-Out:** Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall:

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

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

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

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

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

2.2 GREENHOUSE GAS EMISSIONS

2.2.1 Climate Change Overview

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

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

The temperature record shows a decades-long trend of warming, with 2018 ranked as the fourth warmest year on record with an increase of 1.5 degrees Fahrenheit compared to the 1951-1980 average. Globally, 2018's temperatures rank behind the three warmest years on record—2016, 2017

and 2015 (National Aeronautics and Space Administration [NASA] 2019). GHG emissions from human activities are the most significant driver of observed climate change since the mid-20th century (Intergovernmental Panel on Climate Change [IPCC] 2013). The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The statistical models show a "high confidence" that temperature increase caused by anthropogenic GHG emissions could be kept to less than two degrees Celsius relative to pre-industrial levels if atmospheric concentrations are stabilized at about 450 parts per million (ppm) carbon dioxide equivalent (CO_2e) by the year 2100 (IPCC 2014).

2.2.2 Types of Greenhouse Gases

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

Carbon Dioxide. CO_2 is the most important and common anthropogenic GHG. CO_2 is an odorless, colorless GHG. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of CO_2 include burning fuels, such as coal, oil, natural gas, and wood. Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. The atmospheric CO_2 concentration in 2010 was 390 ppm, 39 percent above the concentration at the start of the Industrial Revolution (approximately 280 ppm in 1750). As of February 2020, the CO_2 concentration exceeded 413 ppm, a 48 percent increase since 1750 (National Oceanic and Atmospheric Administration [NOAA], Earth System Research Laboratory 2020).

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

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

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

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

GHGs have long atmospheric lifetimes that range from one year to several thousand years. Long atmospheric lifetimes allow for GHG emissions to disperse around the globe. Because GHG emissions vary widely in the power of their climatic effects, climate scientists have established a unit called global

warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO_2. For example, a gas with a GWP of 10 is 10 times more potent than CO_2 over 100 years. Because methane and N_2O are approximately 25 and 298 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO_2 has a GWP of 1). CO_2e is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO_2e.

Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (SAR). In 2007, IPCC updated the GWP values based on the latest science at the time in its Fourth Assessment Report (AR4). The updated GWPs in the IPCC AR4 have begun to be used in recent GHG emissions inventories. In 2013, IPCC again updated the GWP values based on the latest science in its Fifth Assessment Report (AR5) (IPCC 2013). However, United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines for national inventories require the use of GWP values from the AR4. To comply with international reporting standards under the UNFCCC, official emission estimates for California and the U.S. are reported using AR4 GWP values. Therefore, statewide and national GHG emissions inventories have not yet updated their GWP values to the AR5 values. By applying the GWP ratios, project-related CO_2e emissions can be tabulated in metric tons per year. Typically, the GWP ratio corresponding to the warming potential of CO_2 over a 100-year period is used as a baseline. The atmospheric lifetime and GWP of selected GHGs are summarized in Table 4, *Global Warming Potentials and Atmospheric Lifetimes*.

Table 4
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES

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

Source: IPCC 2007
HFC: hydrofluorocarbon; PFC: perfluorocarbon

2.2.3 Federal Greenhouse Gas Regulations

2.2.3.1 Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency* that CO_2 is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, HFC, PFC, and SF_6) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA). The standards were established on April 1, 2010 for 2012 through 2016 model year vehicles

and on October 15, 2012 for 2017 through 2025 model year vehicles (USEPA 2017; USEPA and NHTSA 2012).

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

The USEPA and the NHTSA worked together on developing a national program of regulations to reduce GHG emissions and to improve fuel economy of light-duty vehicles. The USEPA established the first-ever national GHG emissions standards under the CAA, and the NHTSA established Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025.

On August 2, 2018, the agencies released a notice of proposed rulemaking—the Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule). The purpose of the SAFE Vehicles Rule is "to correct the national automobile fuel economy and greenhouse gas emissions standards to give the American people greater access to safer, more affordable vehicles that are cleaner for the environment." The direct effect of the rule is to eliminate the standards that were put in place to gradually raise average fuel economy for passenger cars and light trucks under test conditions from 37 miles per gallon (mpg) in 2020 to 50 mpg in 2025. By contrast, the new SAFE Vehicles Rule freezes the average fuel economy level standards indefinitely at the 2020 levels. The new SAFE Vehicles Rule also results in the withdrawal of the waiver previously provided to California for that state's GHG and zero emissions vehicle (ZEV) programs under section 209 of the CAA. The combined USEPA GHG emissions standards and NHTSA CAFE standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards.

2.2.4 California Greenhouse Gas Regulations

2.2.4.1 California Code of Regulations, Title 24, Part 6

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

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The project would be required to comply with the 2019 Title 24. The Energy Efficiency Standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards–the energy budgets–that vary by climate zone (of which there are 16 in California) and building type; thus, the Energy Efficiency Standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that provide a recipe or a checklist compliance approach.

2.2.4.2 California Green Building Standards Code

The CALGreen Building Standards Code (CCR Title 24, Part 11) is a code with mandatory requirements for new residential and nonresidential buildings throughout California. The development of CALGreen is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

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

2.2.4.3 Executive Order S-3-05

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

2.2.4.4 Assembly Bill 32 – Global Warming Solution Act of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that CARB develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed by AB 32 to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

2.2.4.5 Executive Order B-30-15

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

2.2.4.6 Senate Bill 32

Senate Bill (SB) 32 (Amendments to the California Global Warming Solutions Action of 2006) extends California's GHG emissions reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32

codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EO B-30-15 of 80 percent below 1990 emissions levels by 2050.

2.2.4.7 Assembly Bill 197

A condition of approval for SB 32 was the passage of AB 197. AB 197 requires that CARB consider the social costs of GHG emissions and prioritize direct reductions in GHG emissions at mobile sources and large stationary sources. AB 197 also gives the California legislature more oversight over CARB through the addition of two legislatively appointed members to the CARB Board and the establishment a legislative committee to make recommendations about CARB programs to the legislature.

2.2.4.8 Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal CAFE rules for passenger vehicles (CARB 2013). In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2013).

2.2.4.9 Assembly Bill 341

The state legislature enacted AB 341 (California Public Resource Code Section 42649.2), increasing the diversion target to 75 percent statewide. AB 341 requires all businesses and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place. The final regulation was approved by the Office of Administrative Law on May 7, 2012 and went into effect on July 1, 2012.

2.2.4.10 Executive Order S-01-07

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

2.2.4.11 Senate Bill 350

Approved by Governor Brown on October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of

Renewables Portfolio Standard eligible resources, including solar, wind, biomass, and geothermal. In addition, large utilities are required to develop and submit Integrated Resource Plans to detail how each entity will meet their customers resource needs, reduce GHG emissions, and increase the use of clean energy.

2.2.4.12 Senate Bill 375

SB 375 aligns regional transportation planning efforts, regional GHG emission reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPOs' Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy categorized as "transit priority projects" would receive incentives to streamline CEQA processing.

2.2.4.13 Senate Bill 100

Approved by Governor Brown on September 10, 2018, SB 100 extends the renewable electricity procurement goals and requirements of SB 350. SB 100 requires that all retail sale of electricity to California end-use customers be procured from 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

2.2.4.14 California Air Resources Board: Climate Change Scoping Plan

On December 11, 2008, the CARB adopted the Climate Change Scoping Plan (Scoping Plan; CARB 2008) as directed by AB 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by AB 32. Measures applicable to development projects include those related to energy-efficiency building and appliance standards, the use of renewable sources for electricity generation, regional transportation targets, and green building strategy. Relative to transportation, the Scoping Plan includes nine measures or recommended actions related to reducing vehicle miles traveled (VMT) and vehicle GHG emissions through fuel and efficiency measures. These measures would be implemented statewide rather than on a project-by-project basis.

In response to EO B-30-15 and SB 32, all state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the Scoping Plan to reflect the 2030 target (CARB 2014). The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue driving down emissions. In December 2017, CARB adopted the *2017 Climate Change Scoping Plan Update, the Strategy for Achieving California's 2030 Greenhouse Gas Target,* to reflect the 2030 target set by EO B-30-15 and codified by SB 32 (CARB 2017a).

2.2.5 Local Regulations

2.2.5.1 San Diego Association of Governments: Climate Action Strategy

The San Diego Association of Governments (SANDAG) Climate Action Strategy serves as a guide to help policymakers address climate change as they make decisions to meet the needs of growing populations, as well as to maintain and enhance quality of life and promote economic stability (SANDAG 2010). The purpose of the strategy is to identify land use, transportation, and other related

policy measures that could reduce GHG emissions from passenger cars and light-duty trucks as part of the development of the SCS for the 2050 RTP in compliance with SB 375. Additional policy measures are identified for buildings and energy use, protecting transportation and energy infrastructures from climate impacts, and assisting SANDAG and other local agencies in reducing GHG emissions from their operations.

3.0 EXISTING CONDITIONS

3.1 CLIMATE AND METEOROLOGY

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

The predominant wind direction in the vicinity of the project is from the west and the average wind speed is approximately 7 miles per hour (mph; Iowa Environmental Mesonet [IEM] 2019). The annual average maximum temperature in the project area is approximately 70 degrees Fahrenheit (°F), and the average minimum temperature is approximately 57°F. Total precipitation in the project area averaged approximately 10.1 inches between 1939 and 2016. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center [WRCC] 2020).

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

3.2 EXISTING AIR QUALITY

3.2.1 Existing Criteria Pollutants

3.2.1.1 Attainment Designations

Attainment designations are discussed in subsection 2.1 and Table 3. The SDAB is classified as a moderate nonattainment area for the 8-hour NAAQS for ozone. The SDAB is currently classified as a nonattainment area under the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. The SDAB is an attainment (maintenance) area for CO, and an attainment area or unclassified for all other criteria pollutants.

3.2.1.2 Monitored Air Quality

The SDAPCD operates a network of ambient air monitoring stations throughout the County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The nearest monitoring

station to the project site that has been recording data in recent years with similar climatic conditions is the Chula Vista monitoring station, approximately 8 miles southeast of the project site. Table 5, *Air Quality Monitoring Data*, presents a summary of the most recent ambient pollutant concentrations monitored at the Chula Vista air quality monitoring station from 2016 through 2018.

Table 5
AIR QUALITY MONITORING DATA

Pollutant Standards	2016	2017	2018
Ozone (O_3)			
Maximum concentration 1-hour period (ppm)	0.073	0.085	0.076
Maximum concentration 8-hour period (ppm)	0.068	0.074	0.064
Days above 1-hour state standard (>0.09 ppm)	0	0	0
Days above 8-hour state/federal standard (>0.070 ppm)	0	1	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.054	0.057	0.052
Days above state 1-hour standard (0.18 ppm)	0	0	0
Days above federal 1-hour standard (0.100 ppm)	0	0	0
Annual average (ppm)	0.009	*	0.009
Exceed annual federal standard (0.053 ppm)	No	No	No
Exceed annual state standard (0.030 ppm)	No	No	No
Suspended Particulates (PM_{10})			
Maximum 24-hour concentration (µg/m^3)	48.0	61.0	45.0
Measured Days above 24-hr state standard (>50 µg/m^3)	0	1	0
Measured Days above 24-hr federal standard (>150 µg/m^3)	0	0	0
Annual average (µg/m^3)	21.8	21.7	*
Exceed state annual standard (20 µg/m^3)	Yes	Yes	*
Suspended Particulates ($PM_{2.5}$)			
Maximum 24-hour concentration (µg/m^3)	23.9	42.7	41.9
Days above 24-hour federal standard (>35 µg/m^3)	0	1	1
Annual average (µg/m^3)	8.7	*	10.0
Exceed state and federal annual standard (12 µg/m^3)	No	*	No

Source: CARB 2020. Data collected at the Chula Vista air quality monitoring station.
ppm = parts per million; µg/m^3 = micrograms per cubic meter; * = insufficient data

As shown in Table 5, monitoring data at the Chula Vista station showed acceptable levels of the criteria air pollutant NO_2 from 2016 to 2018. Violations of the state standard for PM_{10} and federal 8-hour standard for ozone occurred in 2017. Additionally, the federal 24-hour standard for $PM_{2.5}$ was exceeded in 2017 and 2018. The annual average PM_{10} standard was exceeded in 2016 and 2017 while the state 24-hour standard was exceeded once in 2017.

3.2.2 Existing GHG Emissions

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

For 2014, total GHG emissions worldwide were estimated at 48,892 MMT CO_2e (World Resources Institute 2020). The U.S. contributed the second largest portion of GHG emissions (behind China) at

13 percent of global emissions, with 6,319 MMT CO_2e in 2014. On a national level in 2013, approximately 27 percent of GHG emissions are associated with transportation and about 31 percent are associated with electricity generation (USEPA 2015).

CARB performs statewide GHG inventories. The inventory is divided into six broad sectors; agriculture and forestry, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in MMT CO_2e. Table 6, *California Greenhouse Gas Emissions by Sector*, shows the estimated statewide GHG emissions for the years 1990, 2000, 2010, and 2017.

Table 6
CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	1990 Emissions (MMT CO_2e)	2000 Emissions (MMT CO_2e)	2010 Emissions (MMT CO_2e)	2017 Emissions (MMT CO_2e)
Agriculture and Forestry	18.9 (4%)	32.0 (7%)	34.6 (8%)	32.4 (8%)
Commercial	14.4 (3%)	14.3 (3%)	20.1 (5%)	23.3 (5%)
Electricity Generation	110.5 (26%)	105.4 (23%)	90.6 (20%)	62.6 (15%)
Industrial	105.3 (24%)	104.6 (22%)	101.1 (23%)	101.1 (24%)
Residential	29.7 (7%)	31.2 (7%)	31.3 (7%)	30.4 (7%)
Transportation	150.6 (35%)	179.5 (38%)	168.1 (38%)	174.3 (41%)
Unspecified Remaining	1.3 (<1%)	0.4 (<1%)	0.3 (<1%)	0.0 (0%)
TOTAL	**433.3**	**467.2**	**446.1**	**424.1**

Source: CARB 2007 and CARB 2019
MMT = million metric tons; CO_2e = carbon dioxide equivalent

As shown in Table 6, statewide GHG emissions totaled 433 MMT CO_2e in 1990, 467 MMT CO_2e in 2000, 446 MMT CO_2e in 2010, and 424 MMT CO_2e in 2017. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

The City of San Diego CAP 2018 Annual Report Appendix provides a community-wide GHG emissions inventory by sector for the year 2017, as shown in Table 7, *City of San Diego Greenhouse Gas Emissions by Sector* (City 2018). Similar to the state inventory, transportation was the largest source of GHG emissions in San Diego.

Table 7
CITY OF SAN DIEGO GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	2017 Emissions (MT CO_2e)
On-Road Transportation	5,525,000 (54.4%)
Electricity	2,187,000 (21.5%)
Natural Gas	2,095,000 (20.6%)
Wastewater and Solid Waste	285,000 (2.8%)
Water	67,000 (0.7%)
TOTAL	**10,158,000**

Source: City 2018
MT = metric tons; CO_2e = carbon dioxide equivalent

As described in Section 1.1, the approximately 34-acre project site is home to an existing high school serving an estimated 2,644 students in grades 9 through 12. A GHG emissions inventory by sector for the existing use was compiled using the California Emissions Estimator Model as described in

Section 4.0, below. As shown in Table 8, *Existing San Diego High School Greenhouse Gas Emissions by Sector*, as with other inventories presented previously, transportation is the largest source of GHG emissions for the school.

Table 8
EXISTING SAN DIEGO HIGH SCHOOL GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	2020 Emissions (MT CO_2e)
On-Road Transportation	3,642 (51.7%)
Electricity	2,545 (36.1%)
Natural Gas	471 (6.7%)
Solid Waste	226 (3.2%)
Water	163 (2.3%)
TOTAL	**7,047**

Source: CalEEMod
Model out puts provided in Appendix A
MT = metric tons; CO_2e = carbon dioxide equivalent

3.3 SENSITIVE RECEPTORS

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005, OEHHA 2015). Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers.

The closest existing sensitive receptor to the project site is San Diego City College, located approximately 80 feet south of the project site across Russ Boulevard. Additionally, the site itself is a school and is therefore considered a sensitive receptor.

4.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.1 METHODOLOGY

Criteria pollutant and precursor and GHG emissions for project construction and operation were calculated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. The model was developed for CAPCOA in collaboration with the California air districts. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices A, D, and E (CAPCOA 2017). The input data and subsequent construction and operation emission estimates for the proposed project are discussed below. CalEEMod output files for the project are included in Appendix A to this report.

4.1.1 Construction Emissions

As described above, construction emissions for both WSM and LRFMP improvements were estimated using CalEEMod. The model uses OFFROAD2011 and EMFAC2014 emission factors from CARB's models for off-road equipment and on-road vehicles, respectively. The construction analyses for the two sets of improvements included modeling of the projected construction equipment that would be used during each construction activity and quantities of earth and debris to be moved. The model calculates emissions of CO, PM_{10}, $PM_{2.5}$, SO_2, the ozone precursors ROG and NO_X, and the GHGs CO_2, CH4 and N_2O (as well as the total CO_2e).

Construction input data for CalEEMod include, but are not limited to, (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; (3) areas to be excavated and graded; and (4) volumes of materials to be exported from and imported to the project area. The analysis assessed total annual emissions from individual construction activities. Construction activities for the WSM improvements include demolition, site preparation, grading, building construction, paving, and architectural coatings. Construction activities for the LRFMP improvements include demolition, site preparation, grading, building construction, paving, and architectural coatings. Construction equipment estimates are based CalEEMod defaults, adjusted for anticipated project-specific site improvement activities. Table 9, *WSM Improvements Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each phase of construction during WSM improvements.

Table 9
WSM IMPROVEMENTS CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Phase	Equipment	Number
Demolition	Concrete/Industrial Saws	1
	Rubber Tired Dozers	1
	Tractors/Loaders/Backhoes	3
Site Preparation	Graders	1
	Rubber Tired Dozers	1
	Tractors/Loaders/Backhoes	1
Grading	Rubber Tired Dozers	1
	Graders	1
	Tractors/Loaders/Backhoes	1
Building Construction	Cranes	1
	Forklifts	1
	Generator Sets	1
	Tractors/Loaders/Backhoes	1
	Welders	3
Paving	Cement and Mortar Mixers	1
	Pavers	1
	Rollers	1
	Tractors/Loaders/Backhoes	1
	Paving Equipment	1
Architectural Coating	Air Compressors	1

Source: CalEEMod
Note: Output data, including equipment horsepower, is provided in Appendix A
WSM = Whole Site Modernization

The construction schedule for the WSM improvements is anticipated to begin as early as late 2020 and end in late 2023; however, construction involving demolition, site preparation, grading, building construction, paving, and architectural coating are estimated to occur when school is not in session. As a result construction emission estimates are based on CalEEMod defaults, adjusted to fit within the estimated summer season. For modeling purposes, it was conservatively assumed all WSM improvements would be completed within the first summer season, therefore, the estimated start date was set to June 1, 2021 and the completion date was set to August 30, 2021, as shown in Table 10, *Anticipated WSM Improvements Construction Schedule*.

Table 10
ANTICIPATED WSM IMPROVEMENTS CONSTRUCTION SCHEDULE

Construction Activity	Construction Period Start	Construction Period End	Construction Period Number of Working Days
Demolition	6/1/2021	6/7/2021	5
Site Preparation	6/8/2021	6/14/2021	5
Grading	6/15/2021	6/21/2021	5
Building Construction	6/22/2021	8/16/2021	40
Paving	8/17/2021	8/23/2021	5
Architectural Coating	8/24/2021	8/30/2021	5

Source: CalEEMod
Note: Output data is provided in Appendix A.
WSM = Whole Site Modernization

Table 11, *LRFMP Improvements Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each phase of construction during the LRFMP improvements.

Table 11
LRFMP IMPROVEMENTS CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Phase	Equipment	Number
Demolition	Concrete/Industrial Saws	1
	Excavators	3
	Rubber Tired Dozers	2
Site Preparation	Rubber Tired Dozers	3
	Tractors/Loaders/Backhoes	4
Grading	Rubber Tired Dozers	1
	Excavators	1
	Graders	1
	Tractors/Loaders/Backhoes	3
Building Construction	Cranes	1
	Forklifts	3
	Generator Sets	1
	Tractors/Loaders/Backhoes	3
	Welders	1
Paving	Cement and Mortar Mixers	2
	Pavers	1
	Paving Equipment	2
	Rollers	2
	Tractors/Loaders/Backhoes	1
Architectural Coating	Air Compressors	1

Source: CalEEMod
Note: Output data, including equipment horsepower, is provided in Appendix A
LRFMP = Long-Range Facilities Master Plan

As previously stated, construction timing for the LRFMP improvements is uncertain; however, they would occur after the WSM improvements, between the years of 2024 and 2035. Therefore, the construction schedule for the LRFMP improvements was based on CalEEMod defaults, with the start date set to January 1, 2024. As shown in Table 12, *Anticipated LRFMP Improvements Construction Schedule*, project development would be complete by the end of 2025; however, construction of the LRFMP improvements may not occur concurrently, and may occur anytime between the years of 2024 and 2035.

Table 12
ANTICIPATED LRFMP IMPROVEMENTS CONSTRUCTION SCHEDULE

Construction Activity	Construction Period Start	Construction Period End	Construction Period Number of Working Days
Demolition	1/1/2024	1/26/2024	20
Site Preparation	1/27/2024	2/2/2024	5
Grading	2/3/2024	2/14/2024	8
Building Construction	2/15/2024	1/1/2025	230
Paving	1/2/2025	1/27/2025	18
Architectural Coating	1/28/2025	2/20/2025	18

Source: CalEEMod
Note: Output data is provided in Appendix A.
LRFMP = Long-Range Facilities Master Plan

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

CalEEMod has the capability to calculate reductions in construction emissions from the effects of dust control, diesel-engine classifications, and other selected emissions reduction measures. Emissions calculations assume application of water on all exposed areas during construction in compliance with SDAPCD Rule 55, *Fugitive Dust Control*. Based on CalEEMod version 2016.3.2, the control efficiency for watering two times per day is 55 percent. Additionally, the emissions calculations for the architectural coatings phase assume the use of Low-VOC coatings in compliance with Rule 67, *Architectural Coatings*.

4.1.2 Operation Emissions

Operational use of the proposed project would be similar to existing conditions as there would be no net change to student enrollment on campus. The only project component that would differ from existing operational emissions would the addition of the aquatic center during the LRFMP improvements. Therefore, the only operational impacts analyzed were the operational emissions associated with the aquatic center. Operational impacts were estimated using CalEEMod, as discussed above. Model output data sheets are included in Appendix A. Modeled operational sources of pollutant emissions include area, energy, mobile (transportation), solid waste, and water and wastewater. The sources and assumption used in the modeling are described below.

Area Sources – Operational emissions from area sources include pump tank emissions from the pool maintenance equipment. CalEEMod default values were used for area sources.

Energy Sources – Operational emissions of criteria pollutants from energy sources include the use of natural gas for hot water and building heat. Additionally, the project use of electricity would result in GHG emissions. CalEEMod default values were used for energy sources.

Mobile Sources – Operational emissions from mobile sources are associated with project-related vehicle trip generation and trip length. Per the project Trip Generation Memorandum, the total project trip generation would be approximately 140 average daily trips (ADT; Kimley Horn 2020). The CalEEMod default trip distances were used.

Solid Waste – Operational emissions of GHGs from solid waste sources are associated with emissions from the decomposition of waste in landfills. CalEEMod default values were used for solid waste sources.

Water and Wastewater – Operation emissions of GHGs would result from the use of water and generation of wastewater. The aquatic center was assumed to be approximately 10,000 square feet. CalEEMod defaults were utilized for the water and wastewater sources.

4.2 SIGNIFICANCE CRITERIA

4.2.1 Air Quality

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

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

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

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

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

To determine whether a project would (a) result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, or (b) result in a cumulatively considerable net increase of PM_{10} or exceed quantitative thresholds for ozone precursors (i.e., NO_X and VOCs), project emissions may be evaluated based on screening thresholds established by the SDAPCD. For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality. The screening thresholds are included in Table 13, *Screening-level Thresholds for Air Quality Impact Analysis*.

Table 13
SCREENING-LEVEL THRESHOLDS FOR AIR QUALITY IMPACT ANALYSIS

Pollutant		Total Emissions	
Construction Emissions (Pounds per Day)			
Respirable Particulate Matter (PM_{10})		100	
Fine Particulate Matter ($PM_{2.5}$)		55	
Oxides of Nitrogen (NO_X)		250	
Oxides of Sulfur (SO_X)		250	
Carbon Monoxide (CO)		550	
Volatile Organic Compounds (VOCs)		75	
Operational Emissions	**Pounds per Hour**	**Pounds per Day**	**Tons per Year**
Respirable Particulate Matter (PM_{10})	---	100	15
Fine Particulate Matter ($PM_{2.5}$)	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOC)	---	75	13.7
Toxic Air Contaminant Emissions			
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT		
Non-Cancer Hazard	1.0		

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

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

4.2.2 GHG Emissions

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

(1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

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

The State CEQA Guidelines do not prescribe a particular threshold of significance or method for determining significance of GHG emissions in CEQA documents, but instead allow lead agencies to

adopt thresholds and methods that are previously adopted or recommended by other public agencies or recommended by experts [State CEQA Guidelines Sections 15064.4(a) and 15064.7(c)].

The District has not yet formally adopted specific thresholds of significance with regard to GHG emissions, nor has the District adopted a qualified plan, policy, or regulation to reduce GHG emissions that qualifies for tiering in CEQA documents [per State CEQA Guidelines Section 15183.5(a)]. For this analysis, the most appropriate threshold is the 900-MT CO_2e annual threshold provided by the California Air Pollution Control Officers Association (CAPCOA) in a report titled "CEQA and Climate Change" (CAPCOA 2008). The 900-MT CO_2e threshold was established to meet the year 2020 statewide emissions targets as mandated by AB 32 and was used by the County for projects before 2020. CAPCOA has not proposed revised thresholds to account for GHG reduction targets beyond 2020. Accordingly, a threshold reduced by 4.98 percent each year between 2020 and 2030 would meet to mandates of SB 32 for a 40 percent reduction in emissions by 2030. Beyond 2030, a 5.34 percent reduction each year between 2030 and 2050 would meet the target of an 80 percent reduction in emissions by 2050 proposed by EO S-3-05. The first full year of operations is anticipated to be in 2035; therefore, a threshold of 410 MT CO_2e per year is used in this analysis. Project emissions below this level are considered less than cumulatively considerable, and project emissions above this level require additional analysis. Moreover, projects that result in a net benefit by reducing GHG emissions are determined to have a less-than-significant impact related to GHG emissions. In accordance with the State CEQA Guidelines and scientific consensus regarding the cumulative nature of GHGs,[2] the analysis herein includes a cumulative, rather than project-level, evaluation of GHG impacts.

5.0 AIR QUALITY IMPACT ANALYSIS

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

5.1 CONSISTENCY WITH AIR QUALITY PLANS

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

The SDAPCD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SDAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the Attainment Plan and SIP, prepared by the SDAPCD for the region. Both the Attainment Plan and SIP are based on SANDAG population projections, as well as land use designations and population projections included in general plans for those communities located within the County. Population growth is typically associated with the construction of residential units or large employment centers.

A project would be inconsistent with the Attainment Plan/SIP if it results in population and/or employment growth that exceed growth estimates for the area. The purpose of the project is to provide improvements to an existing school campus. Implementing the project would not increase school capacity or result in population growth. In addition, construction jobs for the project would

[2] Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors), which are primarily pollutants of regional and local concern. Given their long atmospheric lifetimes, GHGs tend to accumulate in the atmosphere. Therefore, GHG impacts are inherently cumulatively considerable.

likely recruit from the local pool of labor and would not create conditions for employment growth that exceeds growth estimates for the area.

Because the project would not generate population and employment growth, the project would be consistent with the Attainment Plan/SIP. In addition, the project would comply with all existing and new rules and regulations as they are implemented by the SDAPCD, CARB, and/or USEPA related to emissions generated during construction and operation. Furthermore, as demonstrated in subsection 5.2, below, the project would not result in emissions in excess of the SDAPCD screening levels, which are designed to achieve/maintain air quality attainment for the NAAQS and CAAQS. Therefore, the project would not conflict with or obstruct implementation of the applicable air quality plan and the impact would be less than significant.

5.2 CONFORMANCE TO FEDERAL AND STATE AIR QUALITY STANDARDS

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 project would generate criteria pollutants in the short-term during construction and the long-term during operation. Operational emissions would be similar to the existing conditions, with the exception of the addition of an aquatics center. To determine whether a project would result in emissions that would violate an air quality standard or contribute substantially to an existing or projected air quality violation, a project's emissions are evaluated based on the quantitative emission thresholds established by the SDAPCD.

5.2.1 Construction

Construction of the project would result in temporary increases in air pollutant emissions during both WSM and LRFMP improvements. These emissions would be generated in the form of fugitive dust emissions (PM_{10} and $PM_{2.5}$) and ozone precursor emissions (NO_X and ROG). The project's construction emissions were estimated using CalEEMod as described in subsection 4.1. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

The results of the calculations for construction of the WSM improvements are shown in Table 14, *WSM Improvements Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the thresholds.

Table 14
WSM IMPROVEMENTS CONSTRUCTION EMISSIONS

Construction Phase	ROG*	NO_X*	CO*	SO_X*	PM_{10}*	$PM_{2.5}$*
Demolition	2.3	27.6	16.8	<0.1	4.7	1.6
Site Prep	1.6	17.4	7.8	<0.1	3.4	2.1
Grading	2.9	68.1	20.4	0.2	6.8	2.9
Building Construction	1.8	13.6	12.9	<0.1	0.7	0.7
Paving	0.8	7.8	9.2	<0.1	0.5	0.4
Architectural Coating	3.5	1.5	1.8	<0.1	0.1	0.1
Maximum Daily Emissions	**3.5**	**68.1**	**20.4**	**0.2**	**6.8**	**2.9**
Threshold	*75*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
* Maximum Daily Pollutant Emissions (pounds per day)
WSM = Whole Site Modernization; ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 14, emissions of criteria pollutants and precursors related to construction of the WSM improvements would be below the significance thresholds. Therefore, impacts from criteria pollutants and precursors generated during construction of the WSM improvements would be less than significant and no mitigation would be required.

The results of the calculations for construction of the LRFMP improvements are shown in Table 15, *LRFMP Improvements Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the thresholds.

Table 15
LRFMP IMPROVEMENTS CONSTRUCTION EMISSIONS

Construction Phase	ROG*	NO_X*	CO*	SO_X*	PM_{10}*	$PM_{2.5}$*
Demolition	2.3	22.4	20.6	<0.1	2.2	1.1
Site Prep	2.7	27.2	18.7	<0.1	9.5	5.6
Grading	1.7	17.1	15.1	<0.1	3.8	2.2
Building Construction	1.6	15.3	17.9	<0.1	1.3	0.8
Paving	0.9	7.6	12.6	<0.1	0.5	0.4
Architectural Coating	71.5	1.2	2.0	<0.1	0.2	<0.1
Maximum Daily Emissions	**71.5**	**27.2**	**20.6**	**<0.1**	**9.5**	**5.6**
Threshold	*75*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
* Maximum Daily Pollutant Emissions (pounds per day)
LRFMP = Long-Range Facilities Master Plan; ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 15, emissions of criteria pollutants and precursors related to construction of the LRFMP improvements would be below the significance thresholds. Therefore, impacts from criteria pollutants and precursors generated during construction of the LRFMP improvements would be less than significant and no mitigation would be required.

5.2.2 Operation

The operational emissions associated with the project's aquatic center were estimated using CalEEMod as described in subsection 4.1. Operational emission calculations and model outputs are provided in Appendix A. Table 16, *Aquatic Center Operational Criteria Pollutant and Precursor Emissions*, presents the summary of operational emissions for the aquatic center.

Table 16
AQUATIC CENTER OPERATIONAL CRITERIA POLLUTANT AND PRECURSOR EMISSIONS

Category	ROG*	NO_X*	CO*	SO_X*	PM_{10}*	$PM_{2.5}$*
Area	0.3	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	0.1	0.5	1.1	<0.1	0.5	0.1
TOTAL DAILY EMISSIONS[1]	**0.4**	**0.5**	**1.1**	**<0.1**	**0.5**	**0.1**
Threshold	*75*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
1 Totals may not sum due to rounding.
* Pollutant Emissions (pounds per day)
ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 16, emissions of criteria pollutants and precursors during long-term operation of the aquatic center would not exceed the daily thresholds. Emissions of criteria pollutants and precursors during long-term operation of the other project components would be similar to existing conditions, and would not cause significant impacts related to emission of criteria pollutants. Therefore, impacts from criteria pollutants generated during project operation would be less than significant and no mitigation would be required.

5.3 IMPACTS TO SENSITIVE RECEPTORS

Would the project expose sensitive receptors to substantial pollutant concentrations?

5.3.1 Toxic Air Contaminants

Project construction would generate DPM emissions from the use of off-road diesel equipment required for demolition, site grading, excavation, and other construction activities. DPM is the primary toxic air contaminant that would be emitted during construction. Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. The amount to which the receptors could be exposed, which is a function of concentration and duration of exposure, is the primary factor used to determine health risk. The generation of TAC emissions during construction would be variable and sporadic due to the nature of the project. The most intense use of construction equipment would be during the site preparation/ grading activities of each construction component, which is a small portion of the overall construction process (refer to Tables 10 and 12). Additionally, all of the construction activities are not anticipated to occur concurrently; construction of the WSM improvements would occur between 2020 and 2023, and the LRFMP improvements would occur intermittently between 2024 and 2035. Furthermore, the improvements would occur throughout the campus and would not be concentrated along Russ

Boulevard, adjacent to the closest sensitive receptors. Onsite students of San Diego High School would not be affected because construction would largely occur outside of school hours. Therefore, due to the intermittent nature of construction activities, and due to the highly dispersive properties of DPM, project-related TAC emission impacts during construction would not expose sensitive receptors to substantial pollutant concentrations and the impact would be less than significant, no mitigation is required.

5.3.2 CO Hotspots

Vehicle exhaust is the primary source of CO in California. In an urban setting, the highest CO concentrations are generally found in close proximity to congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as distance from the emissions source (i.e., congested intersection) increases. Project-generated traffic has the potential of contributing to localized "hot spots" of CO off-site. Because CO is a byproduct of incomplete combustion, exhaust emissions are worse when fossil-fueled vehicles are operated inefficiently, such as in stop-and-go traffic or through heavily congested intersections.

SANDAG's Transportation Forecast Information Center website includes estimates of traffic volumes along the portions of Park Boulevard and Russ Boulevard for the year 2020. Near the project site, the forecast volumes for Park Boulevard range from 13,100 ADT to 16,900 ADT, and the forecast volumes for Russ Boulevard range from 1,200 ADT to 1,400 ADT (SANDAG 2013). The net increase in daily trips associated with daily operation of the project would be nominal compared to these traffic volumes (approximately 140 additional trips per day). Therefore, the project would neither cause new severe congestion nor significantly worsen existing congestion. There would be no potential for a CO hotspot or exposure of sensitive receptors to substantial, project-generated, local CO emissions. The impact would be less than significant.

5.4 OTHER EMISSIONS

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

Implementation of the project would have the potential to generate objectionable odors through construction activities and during operation, as discussed below.

5.4.1 Construction

CARB's Air Quality and Land Use Handbook includes a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. Construction activities are not a typical source of nuisance odors, although construction could result in minor amounts of odorous compounds associated with diesel heavy equipment exhaust or evaporation of volatile compounds within paint or other coatings. The smell of diesel exhaust is due in most part to the presence of sulfur and the creation of hydrocarbons during combustion (Nett Technologies 2018). As shown in Table 14 and Table 15, construction emissions would not result in significant emissions of sulfur oxides. Additionally, construction equipment associated with the project would be operating at various locations throughout the project site and pipe installation locations and would not take place all at once. Odorous hydrocarbons emissions would dissipate beyond the emissions sources and would

only affect receptors in the immediate vicinity of the construction site. Construction-related operations would also be temporary in nature and would cease at the completion of construction. Therefore, construction activities would not result in nuisance odors. Odor impacts associated with construction would be less than significant.

5.4.2 Operation

The proposed aquatic center would not be a significant source of nuisance odors. The maintenance equipment associated with the pool would be a minor source of odors, but such emissions would be minimal. As discussed in subsection 3.3, the closest existing sensitive receptor to the project site is San Diego City College, located approximately 80 feet south of the project site across Russ Boulevard. The minimal odors generated by the aquatic center would not be a nuisance at such distance. Additionally, as previously discussed, the remaining project components would function similar to existing conditions and would not be a new source of objectionable odors in the area. Therefore, long-term operation of the project would not result in other emissions (such as odors) adversely affecting a substantial number of people. The impact would be less than significant.

6.0 GREENHOUSE GAS IMPACT ANALYSIS

This section evaluates potential impacts of the project related to the generation of GHG emissions. Complete modeling results are included as Appendix A of this report.

6.1 GREENHOUSE GAS EMISSIONS

6.1.1 Construction Emissions

Project construction GHG emissions were estimated using CalEEMod model as described in subsection 4.1. Project-specific input was based on general information provided in Section 1.0 and default model settings to estimate reasonably conservative conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

Emissions of GHGs related to the construction of both the WSM and LRFMP improvements would be temporary. As shown in Table 17, *WSM Improvements Construction GHG Emissions*, the total estimated GHG emissions associated with construction of the WSM improvements would be 98.6 MT CO_2e. To be conservative in accounting for all project sources of GHG emissions, the construction period GHG emissions were amortized (i.e., averaged) over 30 years and added to operational emissions. Averaged over 30 years, the proposed WSM improvements construction activities would contribute approximately 3.3 MT CO_2e emissions per year.

Table 17
WSM IMPROVEMENTS CONSTRUCTION GHG EMISSIONS

Construction Phase	Emissions (MT CO_2e)
Demolition	11.3
Site Prep	4.0
Grading	42.9
Building Construction	36.6
Paving	3.2
Architectural Coating	0.6
TOTAL[1]	**38.6**
Amortized Construction Emissions[2]	*3.3*

Source: CalEEMod (output data is provided in Appendix A).
[1] Totals may not sum due to rounding.
[2] Construction emissions are amortized over 30 years.
WSM = Whole Site Modernization; MT = metric ton; CO_2e = carbon dioxide equivalent

As shown in Table 18, *LRFMP Improvements Construction GHG Emissions*, the total estimated GHG emissions associated with construction of the LRFMP improvements would be 456.7 MT CO_2e. To be conservative in accounting for all project sources of GHG emissions, the construction period GHG emissions were amortized (i.e., averaged) over 30 years and added to operational emissions. Averaged over 30 years, the proposed LRFMP improvements construction activities would contribute approximately 15.2 MT CO_2e emissions per year.

Table 18
LRFMP IMPROVEMENTS CONSTRUCTION GHG EMISSIONS

Year	Emissions (MT CO_2e)
Demolition	42.0
Site Prep	8.7
Grading	10.9
Building Construction	376.2
Paving	15.9
Architectural Coating	2.9
TOTAL[1]	**456.7**
Amortized Construction Emissions[2]	*15.2*

Source: CalEEMod (output data is provided in Appendix A).
[1] Totals may not sum due to rounding.
[2] Construction emissions are amortized over 30 years.
LRFMP = Long-Range Facilities Master Plan; MT = metric ton; CO_2e = carbon dioxide equivalent

6.1.2 Operational Emissions

The project's net increase in operational GHG emissions, consisting of the operational emissions generated by the proposed aquatic center and the amortized annual construction emissions, are shown in Table 19, *Operational GHG Emissions*. The CalEEMod output files are included in Appendix A to this report.

Table 19
OPERATIONAL GHG EMISSIONS

Emission Sources	Emissions ($MT CO_2e$)
Area	<0.1
Energy	0.0
Mobile	77.9
Solid Waste	21.5
Water and Wastewater	3.7
Operational Subtotal	**103.1**
WSM Construction (Annualized over 30 years)	*3.3*
LRFMP Construction (Annualized over 30 years)	*15.2*
TOTAL OPERATIONAL EMISSIONS	**121.6**
Screening Threshold	*410*
Exceed Threshold?	*No*

Source: CalEEMod (output data is provided in Appendix A)
Note: Totals may not sum due to rounding
MT = metric ton; CO_2e = carbon dioxide equivalent; WSM = Whole Site Modernization; LRFMP = Long-Range Facilities Master Plan

As shown in Table 19, the project would result in an increase in annual GHG emissions of 121.6 MT CO_2e which would not exceed the adjusted annual screening threshold of 410 MT CO_2e per year. Therefore, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The impact would be less than significant, no mitigation would be required.

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

There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is AB 32 and SB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. SB 32 would require further reductions of 40 percent below 1990 levels by 2030. Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the LCFS, and regulations requiring an increasing proportion of electricity to be generated from renewable sources are being implemented at the statewide level; as such, compliance at the project level is not addressed. Therefore, the proposed project does not conflict with those plans and regulations.

As previously discussed, the increase in GHG emissions would be less than the adopted significance threshold being applied to this analysis. Therefore, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. The impact would be less than significant, no mitigation would be required.

7.0 LIST OF PREPARERS

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Aaron Brownwood	Project Manager

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Appendix A

CalEEMod Output

SDU-02.18 SDHS Existing Use

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	2,466.00	Student	34.00	1,481,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land Use based on Project Description

Construction Phase - Operational inventory

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	35.00	0.00
tblConstructionPhase	PhaseEndDate	5/16/2023	3/28/2023
tblLandUse	LandUseSquareFeet	327,141.97	1,481,000.00
tblLandUse	LotAcreage	7.51	34.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.0441	0.0441	1.2000e-004	0.0000	0.0470
Energy											0.0000	3,004.0481	3,004.0481	0.1111	0.0297	3,015.6743
Mobile											0.0000	3,637.1603	3,637.1603	0.2004	0.0000	3,642.1697
Waste											91.3561	0.0000	91.3561	5.3990	0.0000	226.3308
Water											3.4462	147.6431	151.0893	0.3599	9.5900e-003	162.9439
Total											**94.8023**	**6,788.8956**	**6,883.6979**	**6.0704**	**0.0393**	**7,047.1658**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.0441	0.0441	1.2000e-004	0.0000	0.0470
Energy											0.0000	3,004.0481	3,004.0481	0.1111	0.0297	3,015.6743
Mobile											0.0000	3,637.1603	3,637.1603	0.2004	0.0000	3,642.1697
Waste											91.3561	0.0000	91.3561	5.3990	0.0000	226.3308
Water											3.4462	147.6431	151.0893	0.3599	9.5900e-003	162.9439
Total											**94.8023**	**6,788.8956**	**6,883.6979**	**6.0704**	**0.0393**	**7,047.1658**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/29/2023	3/28/2023	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,221,500; Non-Residential Outdoor: 740,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	124.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2023

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

3.2 Architectural Coating - 2023

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	3,637.1603	3,637.1603	0.2004	0.0000	3,642.1697
Unmitigated											0.0000	3,637.1603	3,637.1603	0.2004	0.0000	3,642.1697

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	4,216.86	1,504.26	616.50	8,679,227	8,679,227
Total	4,216.86	1,504.26	616.50	8,679,227	8,679,227

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	2,536.1798	2,536.1798	0.1021	0.0211	2,545.0258
Electricity Unmitigated											0.0000	2,536.1798	2,536.1798	0.1021	0.0211	2,545.0258
NaturalGas Mitigated											0.0000	467.8683	467.8683	8.9700e-003	8.5800e-003	470.6486
NaturalGas Unmitigated											0.0000	467.8683	467.8683	8.9700e-003	8.5800e-003	470.6486

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High School	8.76752e+006											0.0000	467.8683	467.8683	8.9700e-003	8.5800e-003	470.6486
Total												**0.0000**	**467.8683**	**467.8683**	**8.9700e-003**	**8.5800e-003**	**470.6486**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High School	8.76752e+006											0.0000	467.8683	467.8683	8.9700e-003	8.5800e-003	470.6486
Total												**0.0000**	**467.8683**	**467.8683**	**8.9700e-003**	**8.5800e-003**	**470.6486**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	7.76044e+006	2,536.1798	0.1021	0.0211	2,545.0258
Total		**2,536.1798**	**0.1021**	**0.0211**	**2,545.0258**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	7.76044e+006	2,536.1798	0.1021	0.0211	2,545.0258
Total		**2,536.1798**	**0.1021**	**0.0211**	**2,545.0258**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	0.0441	0.0441	1.2000e-004	0.0000	0.0470
Unmitigated											0.0000	0.0441	0.0441	1.2000e-004	0.0000	0.0470

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	0.0441	0.0441	1.2000e-004	0.0000	0.0470
Total											**0.0000**	**0.0441**	**0.0441**	**1.2000e-004**	**0.0000**	**0.0470**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	0.0441	0.0441	1.2000e-004	0.0000	0.0470
Total											**0.0000**	**0.0441**	**0.0441**	**1.2000e-004**	**0.0000**	**0.0470**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	151.0893	0.3599	9.5900e-003	162.9439
Unmitigated	151.0893	0.3599	9.5900e-003	162.9439

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	10.8626 / 27.9325	151.0893	0.3599	9.5900e-003	162.9439
Total		**151.0893**	**0.3599**	**9.5900e-003**	**162.9439**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	10.8626 / 27.9325	151.0893	0.3599	9.5900e-003	162.9439
Total		**151.0893**	**0.3599**	**9.5900e-003**	**162.9439**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	91.3561	5.3990	0.0000	226.3308
Unmitigated	91.3561	5.3990	0.0000	226.3308

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	450.05	91.3561	5.3990	0.0000	226.3308
Total		**91.3561**	**5.3990**	**0.0000**	**226.3308**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	450.05	91.3561	5.3990	0.0000	226.3308
Total		**91.3561**	**5.3990**	**0.0000**	**226.3308**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

SDU-02.18 SDHS WSM Improvements

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	0.70	1000sqft	1.40	700.00	0
Other Asphalt Surfaces	0.50	1000sqft	0.01	500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The building addition to building 100 is 700 SF, and the quad is 61,430 SF (or 1.41 acres)

Construction Phase - 1 week of demo, 1 week of site prep, 1 week of grading, 8 weeks of building construction, 1 week of paving, 1 week of coating

Grading -

Demolition - 2/3 of the 61,430 SF quad to be demolished is concrete (150 lbs/cubic foot). At 6" thick, there would be 3,071,500 lbs, or 1535.75 tons.

Vehicle Trips - Capacity would not increase with WSM improvements.

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation -

SDU-02.18 SDHS WSM Improvements - San Diego County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	4.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	PhaseEndDate	12/10/2021	8/30/2021
tblConstructionPhase	PhaseEndDate	11/12/2021	8/16/2021
tblConstructionPhase	PhaseEndDate	1/28/2021	6/7/2021
tblConstructionPhase	PhaseEndDate	2/5/2021	6/21/2021
tblConstructionPhase	PhaseEndDate	11/26/2021	8/23/2021
tblConstructionPhase	PhaseEndDate	2/1/2021	6/14/2021
tblConstructionPhase	PhaseStartDate	11/27/2021	8/24/2021
tblConstructionPhase	PhaseStartDate	2/6/2021	6/22/2021
tblConstructionPhase	PhaseStartDate	1/1/2021	6/1/2021
tblConstructionPhase	PhaseStartDate	2/2/2021	6/15/2021
tblConstructionPhase	PhaseStartDate	11/13/2021	8/17/2021
tblConstructionPhase	PhaseStartDate	1/29/2021	6/8/2021
tblGrading	MaterialExported	0.00	4,315.00
tblGrading	MaterialImported	0.00	4,000.00
tblLandUse	LotAcreage	0.02	1.40
tblVehicleTrips	ST_TR	4.37	0.00
tblVehicleTrips	SU_TR	1.79	0.00
tblVehicleTrips	WD_TR	12.89	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0640	0.5804	0.3971	1.0900e-003	0.0552	0.0216	0.0768	0.0194	0.0205	0.0399	0.0000	98.2626	98.2626	0.0152	0.0000	98.6413
Maximum	**0.0640**	**0.5804**	**0.3971**	**1.0900e-003**	**0.0552**	**0.0216**	**0.0768**	**0.0194**	**0.0205**	**0.0399**	**0.0000**	**98.2626**	**98.2626**	**0.0152**	**0.0000**	**98.6413**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0640	0.5804	0.3971	1.0900e-003	0.0310	0.0216	0.0525	0.0104	0.0205	0.0309	0.0000	98.2626	98.2626	0.0152	0.0000	98.6413
Maximum	**0.0640**	**0.5804**	**0.3971**	**1.0900e-003**	**0.0310**	**0.0216**	**0.0525**	**0.0104**	**0.0205**	**0.0309**	**0.0000**	**98.2626**	**98.2626**	**0.0152**	**0.0000**	**98.6413**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**43.84**	**0.00**	**31.54**	**46.31**	**0.00**	**22.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**4-1-2021**	**6-30-2021**	0.3479	0.3479
3	**7-1-2021**	**9-30-2021**	0.2935	0.2935
		Highest	0.3479	0.3479

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.6000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	2.0000e-005	2.0000e-004	1.7000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.4199	1.4199	5.0000e-005	1.0000e-005	1.4254
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.1847	0.0000	0.1847	0.0109	0.0000	0.4576
Water						0.0000	0.0000		0.0000	0.0000	7.3700e-003	0.3159	0.3233	7.7000e-004	2.0000e-005	0.3487
Total	**3.6200e-003**	**2.0000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.1921**	**1.7358**	**1.9279**	**0.0117**	**3.0000e-005**	**2.2317**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.6000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	2.0000e-005	2.0000e-004	1.7000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.4199	1.4199	5.0000e-005	1.0000e-005	1.4254
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.1385	0.0000	0.1385	8.1900e-003	0.0000	0.3432
Water						0.0000	0.0000		0.0000	0.0000	5.9000e-003	0.2527	0.2586	6.2000e-004	2.0000e-005	0.2789
Total	**3.6200e-003**	**2.0000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.1444**	**1.6726**	**1.8171**	**8.8600e-003**	**3.0000e-005**	**2.0476**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**24.81**	**3.64**	**5.75**	**24.53**	**0.00**	**8.25**

3.0 Construction Detail

Construction Phase

SDU-02.18 SDHS WSM Improvements - San Diego County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2021	6/7/2021	5	5	
2	Site Preparation	Site Preparation	6/8/2021	6/14/2021	5	5	
3	Grading	Grading	6/15/2021	6/21/2021	5	5	
4	Building Construction	Building Construction	6/22/2021	8/16/2021	5	40	
5	Paving	Paving	8/17/2021	8/23/2021	5	5	
6	Architectural Coating	Architectural Coating	8/24/2021	8/30/2021	5	5	

Acres of Grading (Site Preparation Phase): 2.5

Acres of Grading (Grading Phase): 1.88

Acres of Paving: 0.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,050; Non-Residential Outdoor: 350; Striped Parking Area: 30 (Architectural Coating – sqft)

OffRoad Equipment

SDU-02.18 SDHS WSM Improvements - San Diego County, Annual

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	152.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	1,039.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0166	0.0000	0.0166	2.5200e-003	0.0000	2.5200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9800e-003	0.0492	0.0362	6.0000e-005		2.6000e-003	2.6000e-003		2.4300e-003	2.4300e-003	0.0000	5.2678	5.2678	1.3500e-003	0.0000	5.3015
Total	**4.9800e-003**	**0.0492**	**0.0362**	**6.0000e-005**	**0.0166**	**2.6000e-003**	**0.0192**	**2.5200e-003**	**2.4300e-003**	**4.9500e-003**	**0.0000**	**5.2678**	**5.2678**	**1.3500e-003**	**0.0000**	**5.3015**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.7000e-004	0.0199	4.9000e-003	6.0000e-005	1.3000e-003	6.0000e-005	1.3600e-003	3.6000e-004	6.0000e-005	4.1000e-004	0.0000	5.7883	5.7883	5.2000e-004	0.0000	5.8014
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	8.0000e-005	8.1000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2277	0.2277	1.0000e-005	0.0000	0.2278
Total	**6.8000e-004**	**0.0199**	**5.7100e-003**	**6.0000e-005**	**1.5600e-003**	**6.0000e-005**	**1.6200e-003**	**4.3000e-004**	**6.0000e-005**	**4.8000e-004**	**0.0000**	**6.0160**	**6.0160**	**5.3000e-004**	**0.0000**	**6.0292**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.4900e-003	0.0000	7.4900e-003	1.1300e-003	0.0000	1.1300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9800e-003	0.0492	0.0362	6.0000e-005		2.6000e-003	2.6000e-003		2.4300e-003	2.4300e-003	0.0000	5.2678	5.2678	1.3500e-003	0.0000	5.3015
Total	**4.9800e-003**	**0.0492**	**0.0362**	**6.0000e-005**	**7.4900e-003**	**2.6000e-003**	**0.0101**	**1.1300e-003**	**2.4300e-003**	**3.5600e-003**	**0.0000**	**5.2678**	**5.2678**	**1.3500e-003**	**0.0000**	**5.3015**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.7000e-004	0.0199	4.9000e-003	6.0000e-005	1.3000e-003	6.0000e-005	1.3600e-003	3.6000e-004	6.0000e-005	4.1000e-004	0.0000	5.7883	5.7883	5.2000e-004	0.0000	5.8014
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	8.0000e-005	8.1000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2277	0.2277	1.0000e-005	0.0000	0.2278
Total	**6.8000e-004**	**0.0199**	**5.7100e-003**	**6.0000e-005**	**1.5600e-003**	**6.0000e-005**	**1.6200e-003**	**4.3000e-004**	**6.0000e-005**	**4.8000e-004**	**0.0000**	**6.0160**	**6.0160**	**5.3000e-004**	**0.0000**	**6.0292**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0145	0.0000	0.0145	7.3800e-003	0.0000	7.3800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8900e-003	0.0436	0.0189	4.0000e-005		1.9100e-003	1.9100e-003		1.7600e-003	1.7600e-003	0.0000	3.7796	3.7796	1.2200e-003	0.0000	3.8102
Total	**3.8900e-003**	**0.0436**	**0.0189**	**4.0000e-005**	**0.0145**	**1.9100e-003**	**0.0164**	**7.3800e-003**	**1.7600e-003**	**9.1400e-003**	**0.0000**	**3.7796**	**3.7796**	**1.2200e-003**	**0.0000**	**3.8102**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1401	0.1401	0.0000	0.0000	0.1402
Total	**7.0000e-005**	**5.0000e-005**	**5.0000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1401**	**0.1401**	**0.0000**	**0.0000**	**0.1402**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.5200e-003	0.0000	6.5200e-003	3.3200e-003	0.0000	3.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8900e-003	0.0436	0.0189	4.0000e-005		1.9100e-003	1.9100e-003		1.7600e-003	1.7600e-003	0.0000	3.7796	3.7796	1.2200e-003	0.0000	3.8102
Total	**3.8900e-003**	**0.0436**	**0.0189**	**4.0000e-005**	**6.5200e-003**	**1.9100e-003**	**8.4300e-003**	**3.3200e-003**	**1.7600e-003**	**5.0800e-003**	**0.0000**	**3.7796**	**3.7796**	**1.2200e-003**	**0.0000**	**3.8102**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1401	0.1401	0.0000	0.0000	0.1402
Total	**7.0000e-005**	**5.0000e-005**	**5.0000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1401**	**0.1401**	**0.0000**	**0.0000**	**0.1402**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0129	0.0000	0.0129	6.4000e-003	0.0000	6.4000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2200e-003	0.0358	0.0158	4.0000e-005		1.5900e-003	1.5900e-003		1.4700e-003	1.4700e-003	0.0000	3.0959	3.0959	1.0000e-003	0.0000	3.1210
Total	**3.2200e-003**	**0.0358**	**0.0158**	**4.0000e-005**	**0.0129**	**1.5900e-003**	**0.0145**	**6.4000e-003**	**1.4700e-003**	**7.8700e-003**	**0.0000**	**3.0959**	**3.0959**	**1.0000e-003**	**0.0000**	**3.1210**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.9000e-003	0.1357	0.0335	4.0000e-004	8.8900e-003	4.1000e-004	9.3000e-003	2.4400e-003	3.9000e-004	2.8300e-003	0.0000	39.5662	39.5662	3.5700e-003	0.0000	39.6555
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1401	0.1401	0.0000	0.0000	0.1402
Total	**3.9700e-003**	**0.1357**	**0.0340**	**4.0000e-004**	**9.0500e-003**	**4.1000e-004**	**9.4600e-003**	**2.4800e-003**	**3.9000e-004**	**2.8700e-003**	**0.0000**	**39.7063**	**39.7063**	**3.5700e-003**	**0.0000**	**39.7957**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.7900e-003	0.0000	5.7900e-003	2.8800e-003	0.0000	2.8800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2200e-003	0.0358	0.0158	4.0000e-005		1.5900e-003	1.5900e-003		1.4700e-003	1.4700e-003	0.0000	3.0959	3.0959	1.0000e-003	0.0000	3.1209
Total	**3.2200e-003**	**0.0358**	**0.0158**	**4.0000e-005**	**5.7900e-003**	**1.5900e-003**	**7.3800e-003**	**2.8800e-003**	**1.4700e-003**	**4.3500e-003**	**0.0000**	**3.0959**	**3.0959**	**1.0000e-003**	**0.0000**	**3.1209**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.9000e-003	0.1357	0.0335	4.0000e-004	8.8900e-003	4.1000e-004	9.3000e-003	2.4400e-003	3.9000e-004	2.8300e-003	0.0000	39.5662	39.5662	3.5700e-003	0.0000	39.6555
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1401	0.1401	0.0000	0.0000	0.1402
Total	**3.9700e-003**	**0.1357**	**0.0340**	**4.0000e-004**	**9.0500e-003**	**4.1000e-004**	**9.4600e-003**	**2.4800e-003**	**3.9000e-004**	**2.8700e-003**	**0.0000**	**39.7063**	**39.7063**	**3.5700e-003**	**0.0000**	**39.7957**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0363	0.2727	0.2580	4.4000e-004		0.0137	0.0137		0.0132	0.0132	0.0000	36.3095	36.3095	6.4800e-003	0.0000	36.4716
Total	**0.0363**	**0.2727**	**0.2580**	**4.4000e-004**		**0.0137**	**0.0137**		**0.0132**	**0.0132**	**0.0000**	**36.3095**	**36.3095**	**6.4800e-003**	**0.0000**	**36.4716**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1401	0.1401	0.0000	0.0000	0.1402
Total	**7.0000e-005**	**5.0000e-005**	**5.0000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1401**	**0.1401**	**0.0000**	**0.0000**	**0.1402**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0363	0.2727	0.2580	4.4000e-004		0.0137	0.0137		0.0132	0.0132	0.0000	36.3095	36.3095	6.4800e-003	0.0000	36.4715
Total	**0.0363**	**0.2727**	**0.2580**	**4.4000e-004**		**0.0137**	**0.0137**		**0.0132**	**0.0132**	**0.0000**	**36.3095**	**36.3095**	**6.4800e-003**	**0.0000**	**36.4715**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1401	0.1401	0.0000	0.0000	0.1402
Total	**7.0000e-005**	**5.0000e-005**	**5.0000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1401**	**0.1401**	**0.0000**	**0.0000**	**0.1402**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9300e-003	0.0194	0.0221	3.0000e-005		1.0400e-003	1.0400e-003		9.6000e-004	9.6000e-004	0.0000	2.9412	2.9412	9.3000e-004	0.0000	2.9646
Paving	1.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.9400e-003**	**0.0194**	**0.0221**	**3.0000e-005**		**1.0400e-003**	**1.0400e-003**		**9.6000e-004**	**9.6000e-004**	**0.0000**	**2.9412**	**2.9412**	**9.3000e-004**	**0.0000**	**2.9646**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	8.0000e-005	8.1000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2277	0.2277	1.0000e-005	0.0000	0.2278
Total	**1.1000e-004**	**8.0000e-005**	**8.1000e-004**	**0.0000**	**2.6000e-004**	**0.0000**	**2.6000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2277**	**0.2277**	**1.0000e-005**	**0.0000**	**0.2278**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9300e-003	0.0194	0.0221	3.0000e-005		1.0400e-003	1.0400e-003		9.6000e-004	9.6000e-004	0.0000	2.9412	2.9412	9.3000e-004	0.0000	2.9646
Paving	1.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.9400e-003**	**0.0194**	**0.0221**	**3.0000e-005**		**1.0400e-003**	**1.0400e-003**		**9.6000e-004**	**9.6000e-004**	**0.0000**	**2.9412**	**2.9412**	**9.3000e-004**	**0.0000**	**2.9646**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	8.0000e-005	8.1000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2277	0.2277	1.0000e-005	0.0000	0.2278
Total	**1.1000e-004**	**8.0000e-005**	**8.1000e-004**	**0.0000**	**2.6000e-004**	**0.0000**	**2.6000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2277**	**0.2277**	**1.0000e-005**	**0.0000**	**0.2278**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	8.2900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**8.8400e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	8.2900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**8.8400e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122
Other Asphalt Surfaces	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.1987	1.1987	5.0000e-005	1.0000e-005	1.2029
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.1987	1.1987	5.0000e-005	1.0000e-005	1.2029
NaturalGas Mitigated	2.0000e-005	2.0000e-004	1.7000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2211	0.2211	0.0000	0.0000	0.2225
NaturalGas Unmitigated	2.0000e-005	2.0000e-004	1.7000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2211	0.2211	0.0000	0.0000	0.2225

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High School	4144	2.0000e-005	2.0000e-004	1.7000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2211	0.2211	0.0000	0.0000	0.2225
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**2.0000e-005**	**2.0000e-004**	**1.7000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2211**	**0.2211**	**0.0000**	**0.0000**	**0.2225**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High School	4144	2.0000e-005	2.0000e-004	1.7000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2211	0.2211	0.0000	0.0000	0.2225
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**2.0000e-005**	**2.0000e-004**	**1.7000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2211**	**0.2211**	**0.0000**	**0.0000**	**0.2225**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	3668	1.1987	5.0000e-005	1.0000e-005	1.2029
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**1.1987**	**5.0000e-005**	**1.0000e-005**	**1.2029**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	3668	1.1987	5.0000e-005	1.0000e-005	1.2029
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**1.1987**	**5.0000e-005**	**1.0000e-005**	**1.2029**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.6000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	3.6000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**3.6000e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**3.6000e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.2586	6.2000e-004	2.0000e-005	0.2789
Unmitigated	0.3233	7.7000e-004	2.0000e-005	0.3487

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	0.0232433 / 0.0597683	0.3233	7.7000e-004	2.0000e-005	0.3487
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.3233**	**7.7000e-004**	**2.0000e-005**	**0.3487**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	0.0185946 / 0.0478147	0.2586	6.2000e-004	2.0000e-005	0.2789
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.2586**	**6.2000e-004**	**2.0000e-005**	**0.2789**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1385	8.1900e-003	0.0000	0.3432
Unmitigated	0.1847	0.0109	0.0000	0.4576

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	0.91	0.1847	0.0109	0.0000	0.4576
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.1847**	**0.0109**	**0.0000**	**0.4576**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	0.6825	0.1385	8.1900e-003	0.0000	0.3432
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.1385**	**8.1900e-003**	**0.0000**	**0.3432**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

SDU-02.18 SDHS WSM Improvements

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	0.70	1000sqft	1.40	700.00	0
Other Asphalt Surfaces	0.50	1000sqft	0.01	500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

SDU-02.18 SDHS WSM Improvements - San Diego County, Winter

Project Characteristics -

Land Use - The building addition to building 100 is 700 SF, and the quad is 61,430 SF (or 1.41 acres)

Construction Phase - 1 week of demo, 1 week of site prep, 1 week of grading, 8 weeks of building construction, 1 week of paving, 1 week of coating

Grading -

Demolition - 2/3 of the 61,430 SF quad to be demolished is concrete (150 lbs/cubic foot). At 6" thick, there would be 3,071,500 lbs, or 1535.75 tons.

Vehicle Trips - Capacity would not increase with WSM improvements.

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation -

SDU-02.18 SDHS WSM Improvements - San Diego County, Winter

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	4.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	PhaseEndDate	12/10/2021	8/30/2021
tblConstructionPhase	PhaseEndDate	11/12/2021	8/16/2021
tblConstructionPhase	PhaseEndDate	1/28/2021	6/7/2021
tblConstructionPhase	PhaseEndDate	2/5/2021	6/21/2021
tblConstructionPhase	PhaseEndDate	11/26/2021	8/23/2021
tblConstructionPhase	PhaseEndDate	2/1/2021	6/14/2021
tblConstructionPhase	PhaseStartDate	11/27/2021	8/24/2021
tblConstructionPhase	PhaseStartDate	2/6/2021	6/22/2021
tblConstructionPhase	PhaseStartDate	1/1/2021	6/1/2021
tblConstructionPhase	PhaseStartDate	2/2/2021	6/15/2021
tblConstructionPhase	PhaseStartDate	11/13/2021	8/17/2021
tblConstructionPhase	PhaseStartDate	1/29/2021	6/8/2021
tblGrading	MaterialExported	0.00	4,315.00
tblGrading	MaterialImported	0.00	4,000.00
tblLandUse	LotAcreage	0.02	1.40
tblVehicleTrips	ST_TR	4.37	0.00
tblVehicleTrips	SU_TR	1.79	0.00
tblVehicleTrips	WD_TR	12.89	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.5329	68.0764	20.3824	0.1722	8.8458	1.0659	9.6501	3.5737	0.9954	4.3197	0.0000	18,695.8471	18,695.8471	2.0466	0.0000	18,747.0117
Maximum	**3.5329**	**68.0764**	**20.3824**	**0.1722**	**8.8458**	**1.0659**	**9.6501**	**3.5737**	**0.9954**	**4.3197**	**0.0000**	**18,695.8471**	**18,695.8471**	**2.0466**	**0.0000**	**18,747.0117**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.5329	68.0764	20.3824	0.1722	6.0138	1.0659	6.8182	2.1650	0.9954	2.9111	0.0000	18,695.8471	18,695.8471	2.0466	0.0000	18,747.0117
Maximum	**3.5329**	**68.0764**	**20.3824**	**0.1722**	**6.0138**	**1.0659**	**6.8182**	**2.1650**	**0.9954**	**2.9111**	**0.0000**	**18,695.8471**	**18,695.8471**	**2.0466**	**0.0000**	**18,747.0117**

SDU-02.18 SDHS WSM Improvements - San Diego County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**32.01**	**0.00**	**29.35**	**39.42**	**0.00**	**32.61**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0197	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.6000e-004	2.6000e-004	0.0000		2.8000e-004
Energy	1.2000e-004	1.1100e-003	9.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.3357	1.3357	3.0000e-005	2.0000e-005	1.3436
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0198**	**1.1100e-003**	**1.0500e-003**	**1.0000e-005**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**8.0000e-005**		**1.3360**	**1.3360**	**3.0000e-005**	**2.0000e-005**	**1.3439**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0197	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.6000e-004	2.6000e-004	0.0000		2.8000e-004
Energy	1.2000e-004	1.1100e-003	9.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.3357	1.3357	3.0000e-005	2.0000e-005	1.3436
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0198**	**1.1100e-003**	**1.0500e-003**	**1.0000e-005**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**8.0000e-005**		**1.3360**	**1.3360**	**3.0000e-005**	**2.0000e-005**	**1.3439**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2021	6/7/2021	5	5	
2	Site Preparation	Site Preparation	6/8/2021	6/14/2021	5	5	
3	Grading	Grading	6/15/2021	6/21/2021	5	5	
4	Building Construction	Building Construction	6/22/2021	8/16/2021	5	40	
5	Paving	Paving	8/17/2021	8/23/2021	5	5	
6	Architectural Coating	Architectural Coating	8/24/2021	8/30/2021	5	5	

Acres of Grading (Site Preparation Phase): 2.5

Acres of Grading (Grading Phase): 1.88

Acres of Paving: 0.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,050; Non-Residential Outdoor: 350; Striped Parking Area: 30 (Architectural Coating – sqft)

OffRoad Equipment

SDU-02.18 SDHS WSM Improvements - San Diego County, Winter

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	152.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	1,039.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6549	0.0000	6.6549	1.0078	0.0000	1.0078			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715		2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**6.6549**	**1.0409**	**7.6958**	**1.0078**	**0.9715**	**1.9793**		**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2319	7.8597	2.0264	0.0230	0.5312	0.0243	0.5555	0.1456	0.0232	0.1688		2,526.4504	2,526.4504	0.2346		2,532.3144
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0328	0.3241	1.0000e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		99.3912	99.3912	2.8600e-003		99.4626
Total	**0.2829**	**7.8925**	**2.3505**	**0.0240**	**0.6380**	**0.0250**	**0.6630**	**0.1739**	**0.0239**	**0.1978**		**2,625.8416**	**2,625.8416**	**0.2374**		**2,631.7770**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9947	0.0000	2.9947	0.4535	0.0000	0.4535			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715	0.0000	2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**2.9947**	**1.0409**	**4.0356**	**0.4535**	**0.9715**	**1.4250**	**0.0000**	**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2319	7.8597	2.0264	0.0230	0.5312	0.0243	0.5555	0.1456	0.0232	0.1688		2,526.4504	2,526.4504	0.2346		2,532.3144
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0328	0.3241	1.0000e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		99.3912	99.3912	2.8600e-003		99.4626
Total	**0.2829**	**7.8925**	**2.3505**	**0.0240**	**0.6380**	**0.0250**	**0.6630**	**0.1739**	**0.0239**	**0.1978**		**2,625.8416**	**2,625.8416**	**0.2374**		**2,631.7770**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041		1,666.5174	1,666.5174	0.5390		1,679.9920
Total	**1.5558**	**17.4203**	**7.5605**	**0.0172**	**5.7996**	**0.7654**	**6.5650**	**2.9537**	**0.7041**	**3.6578**		**1,666.5174**	**1,666.5174**	**0.5390**		**1,679.9920**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6098	0.0000	2.6098	1.3292	0.0000	1.3292			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041	0.0000	1,666.5174	1,666.5174	0.5390		1,679.9920
Total	**1.5558**	**17.4203**	**7.5605**	**0.0172**	**2.6098**	**0.7654**	**3.3752**	**1.3292**	**0.7041**	**2.0333**	**0.0000**	**1,666.5174**	**1,666.5174**	**0.5390**		**1,679.9920**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

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

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.1490	0.0000	5.1490	2.5611	0.0000	2.5611			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869		1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**5.1490**	**0.6379**	**5.7869**	**2.5611**	**0.5869**	**3.1480**		**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5851	53.7255	13.8515	0.1575	3.6310	0.1660	3.7970	0.9951	0.1588	1.1539		17,269.6185	17,269.6185	1.6033		17,309.7019
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0314	0.0202	0.1995	6.1000e-004	0.0657	4.5000e-004	0.0662	0.0174	4.2000e-004	0.0179		61.1638	61.1638	1.7600e-003		61.2077
Total	**1.6165**	**53.7457**	**14.0510**	**0.1581**	**3.6968**	**0.1664**	**3.8632**	**1.0125**	**0.1592**	**1.1718**		**17,330.7823**	**17,330.7823**	**1.6051**		**17,370.9096**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3171	0.0000	2.3171	1.1525	0.0000	1.1525			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869	0.0000	1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**2.3171**	**0.6379**	**2.9550**	**1.1525**	**0.5869**	**1.7394**	**0.0000**	**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5851	53.7255	13.8515	0.1575	3.6310	0.1660	3.7970	0.9951	0.1588	1.1539		17,269.6185	17,269.6185	1.6033		17,309.7019
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0314	0.0202	0.1995	6.1000e-004	0.0657	4.5000e-004	0.0662	0.0174	4.2000e-004	0.0179		61.1638	61.1638	1.7600e-003		61.2077
Total	**1.6165**	**53.7457**	**14.0510**	**0.1581**	**3.6968**	**0.1664**	**3.8632**	**1.0125**	**0.1592**	**1.1718**		**17,330.7823**	**17,330.7823**	**1.6051**		**17,370.9096**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**		**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.9200e-003	2.5200e-003	0.0249	8.0000e-005	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		7.6455	7.6455	2.2000e-004		7.6510
Total	**3.9200e-003**	**2.5200e-003**	**0.0249**	**8.0000e-005**	**8.2100e-003**	**6.0000e-005**	**8.2700e-003**	**2.1800e-003**	**5.0000e-005**	**2.2300e-003**		**7.6455**	**7.6455**	**2.2000e-004**		**7.6510**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**	**0.0000**	**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.9200e-003	2.5200e-003	0.0249	8.0000e-005	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		7.6455	7.6455	2.2000e-004		7.6510
Total	**3.9200e-003**	**2.5200e-003**	**0.0249**	**8.0000e-005**	**8.2100e-003**	**6.0000e-005**	**8.2700e-003**	**2.1800e-003**	**5.0000e-005**	**2.2300e-003**		**7.6455**	**7.6455**	**2.2000e-004**		**7.6510**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7739	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830		1,296.8664	1,296.8664	0.4111		1,307.1442
Paving	5.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7791**	**7.7422**	**8.8569**	**0.0135**		**0.4153**	**0.4153**		**0.3830**	**0.3830**		**1,296.8664**	**1,296.8664**	**0.4111**		**1,307.1442**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0328	0.3241	1.0000e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		99.3912	99.3912	2.8600e-003		99.4626
Total	**0.0510**	**0.0328**	**0.3241**	**1.0000e-003**	**0.1068**	**7.4000e-004**	**0.1075**	**0.0283**	**6.8000e-004**	**0.0290**		**99.3912**	**99.3912**	**2.8600e-003**		**99.4626**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7739	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830	0.0000	1,296.8664	1,296.8664	0.4111		1,307.1442
Paving	5.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7791**	**7.7422**	**8.8569**	**0.0135**		**0.4153**	**0.4153**		**0.3830**	**0.3830**	**0.0000**	**1,296.8664**	**1,296.8664**	**0.4111**		**1,307.1442**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0328	0.3241	1.0000e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		99.3912	99.3912	2.8600e-003		99.4626
Total	**0.0510**	**0.0328**	**0.3241**	**1.0000e-003**	**0.1068**	**7.4000e-004**	**0.1075**	**0.0283**	**6.8000e-004**	**0.0290**		**99.3912**	**99.3912**	**2.8600e-003**		**99.4626**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.3140					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**3.5329**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.3140					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**3.5329**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122
Other Asphalt Surfaces	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.2000e-004	1.1100e-003	9.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.3357	1.3357	3.0000e-005	2.0000e-005	1.3436
NaturalGas Unmitigated	1.2000e-004	1.1100e-003	9.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.3357	1.3357	3.0000e-005	2.0000e-005	1.3436

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
High School	11.3534	1.2000e-004	1.1100e-003	9.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.3357	1.3357	3.0000e-005	2.0000e-005	1.3436
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.2000e-004**	**1.1100e-003**	**9.3000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**1.3357**	**1.3357**	**3.0000e-005**	**2.0000e-005**	**1.3436**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
High School	0.0113534	1.2000e-004	1.1100e-003	9.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.3357	1.3357	3.0000e-005	2.0000e-005	1.3436
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.2000e-004**	**1.1100e-003**	**9.3000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**1.3357**	**1.3357**	**3.0000e-005**	**2.0000e-005**	**1.3436**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0197	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.6000e-004	2.6000e-004	0.0000		2.8000e-004
Unmitigated	0.0197	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.6000e-004	2.6000e-004	0.0000		2.8000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0152					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.6000e-004	2.6000e-004	0.0000		2.8000e-004
Total	**0.0197**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.6000e-004**	**2.6000e-004**	**0.0000**		**2.8000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0152					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.6000e-004	2.6000e-004	0.0000		2.8000e-004
Total	**0.0197**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.6000e-004**	**2.6000e-004**	**0.0000**		**2.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

SDU-02.18 SDHS LRFMP Improvements

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	138.51	1000sqft	3.18	138,506.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2035
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Demolition - Buildings demolished: 400, 600, and 700.

Vehicle Trips - Not increasing capacity at the school.

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation -

Architectural Coating - Use of low-VOC paint in compliance with SDAPCD Rule 67.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LandUseSquareFeet	138,510.00	138,506.00
tblVehicleTrips	ST_TR	4.37	0.00
tblVehicleTrips	SU_TR	1.79	0.00
tblVehicleTrips	WD_TR	12.89	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.2308	2.1102	2.3575	4.9000e-003	0.1664	0.0864	0.2528	0.0616	0.0811	0.1427	0.0000	434.0877	434.0877	0.0845	0.0000	436.2004
2025	0.6525	0.0857	0.1401	2.3000e-004	2.6200e-003	3.9200e-003	6.5300e-003	7.0000e-004	3.6600e-003	4.3600e-003	0.0000	20.3813	20.3813	5.0900e-003	0.0000	20.5086
Maximum	**0.6525**	**2.1102**	**2.3575**	**4.9000e-003**	**0.1664**	**0.0864**	**0.2528**	**0.0616**	**0.0811**	**0.1427**	**0.0000**	**434.0877**	**434.0877**	**0.0845**	**0.0000**	**436.2004**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.2308	2.1102	2.3575	4.9000e-003	0.1158	0.0864	0.2022	0.0388	0.0811	0.1199	0.0000	434.0873	434.0873	0.0845	0.0000	436.2000
2025	0.6525	0.0857	0.1401	2.3000e-004	2.6200e-003	3.9200e-003	6.5300e-003	7.0000e-004	3.6600e-003	4.3600e-003	0.0000	20.3813	20.3813	5.0900e-003	0.0000	20.5086
Maximum	**0.6525**	**2.1102**	**2.3575**	**4.9000e-003**	**0.1158**	**0.0864**	**0.2022**	**0.0388**	**0.0811**	**0.1199**	**0.0000**	**434.0873**	**434.0873**	**0.0845**	**0.0000**	**436.2000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**29.93**	**0.00**	**19.51**	**36.57**	**0.00**	**15.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2024	3-31-2024	0.6640	0.6640
2	4-1-2024	6-30-2024	0.5509	0.5509
3	7-1-2024	9-30-2024	0.5570	0.5570
4	10-1-2024	12-31-2024	0.5580	0.5580
5	1-1-2025	3-31-2025	0.7073	0.7073
		Highest	0.7073	0.7073

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7015	1.0000e-005	1.2700e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6300e-003
Energy	4.4200e-003	0.0402	0.0338	2.4000e-004		3.0500e-003	3.0500e-003		3.0500e-003	3.0500e-003	0.0000	280.9444	280.9444	0.0104	2.7800e-003	282.0317
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	36.5506	0.0000	36.5506	2.1601	0.0000	90.5525
Water						0.0000	0.0000		0.0000	0.0000	1.4591	62.5112	63.9703	0.1524	4.0600e-003	68.9895
Total	**0.7060**	**0.0402**	**0.0350**	**2.4000e-004**	**0.0000**	**3.0500e-003**	**3.0500e-003**	**0.0000**	**3.0500e-003**	**3.0500e-003**	**38.0097**	**343.4581**	**381.4678**	**2.3229**	**6.8400e-003**	**441.5763**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7015	1.0000e-005	1.2700e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6300e-003
Energy	4.4200e-003	0.0402	0.0338	2.4000e-004		3.0500e-003	3.0500e-003		3.0500e-003	3.0500e-003	0.0000	280.9444	280.9444	0.0104	2.7800e-003	282.0317
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	27.4129	0.0000	27.4129	1.6201	0.0000	67.9143
Water						0.0000	0.0000		0.0000	0.0000	1.1673	50.0090	51.1763	0.1219	3.2500e-003	55.1916
Total	**0.7060**	**0.0402**	**0.0350**	**2.4000e-004**	**0.0000**	**3.0500e-003**	**3.0500e-003**	**0.0000**	**3.0500e-003**	**3.0500e-003**	**28.5802**	**330.9559**	**359.5361**	**1.7524**	**6.0300e-003**	**405.1403**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**24.81**	**3.64**	**5.75**	**24.56**	**11.84**	**8.25**

3.0 Construction Detail

Construction Phase

SDU-02.18 SDHS LRFMP Improvements - San Diego County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2024	1/26/2024	5	20	
2	Site Preparation	Site Preparation	1/27/2024	2/2/2024	5	5	
3	Grading	Grading	2/3/2024	2/14/2024	5	8	
4	Building Construction	Building Construction	2/15/2024	1/1/2025	5	230	
5	Paving	Paving	1/2/2025	1/27/2025	5	18	
6	Architectural Coating	Architectural Coating	1/28/2025	2/20/2025	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 207,759; Non-Residential Outdoor: 69,253; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

SDU-02.18 SDHS LRFMP Improvements - San Diego County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	188.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	58.00	23.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0206	0.0000	0.0206	3.1200e-003	0.0000	3.1200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0224	0.2088	0.1971	3.9000e-004		9.6000e-003	9.6000e-003		8.9200e-003	8.9200e-003	0.0000	33.9961	33.9961	9.5100e-003	0.0000	34.2338
Total	**0.0224**	**0.2088**	**0.1971**	**3.9000e-004**	**0.0206**	**9.6000e-003**	**0.0302**	**3.1200e-003**	**8.9200e-003**	**0.0120**	**0.0000**	**33.9961**	**33.9961**	**9.5100e-003**	**0.0000**	**34.2338**

3.2 Demolition - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.7000e-004	0.0150	5.6800e-003	7.0000e-005	1.6100e-003	3.0000e-005	1.6400e-003	4.4000e-004	3.0000e-005	4.7000e-004	0.0000	6.7783	6.7783	6.1000e-004	0.0000	6.7937
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	2.8000e-004	3.0100e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9353	0.9353	2.0000e-005	0.0000	0.9359
Total	**9.1000e-004**	**0.0153**	**8.6900e-003**	**8.0000e-005**	**2.8100e-003**	**4.0000e-005**	**2.8500e-003**	**7.6000e-004**	**4.0000e-005**	**8.0000e-004**	**0.0000**	**7.7136**	**7.7136**	**6.3000e-004**	**0.0000**	**7.7295**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.2800e-003	0.0000	9.2800e-003	1.4100e-003	0.0000	1.4100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0224	0.2088	0.1971	3.9000e-004		9.6000e-003	9.6000e-003		8.9200e-003	8.9200e-003	0.0000	33.9960	33.9960	9.5100e-003	0.0000	34.2338
Total	**0.0224**	**0.2088**	**0.1971**	**3.9000e-004**	**9.2800e-003**	**9.6000e-003**	**0.0189**	**1.4100e-003**	**8.9200e-003**	**0.0103**	**0.0000**	**33.9960**	**33.9960**	**9.5100e-003**	**0.0000**	**34.2338**

3.2 Demolition - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.7000e-004	0.0150	5.6800e-003	7.0000e-005	1.6100e-003	3.0000e-005	1.6400e-003	4.4000e-004	3.0000e-005	4.7000e-004	0.0000	6.7783	6.7783	6.1000e-004	0.0000	6.7937
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	2.8000e-004	3.0100e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9353	0.9353	2.0000e-005	0.0000	0.9359
Total	**9.1000e-004**	**0.0153**	**8.6900e-003**	**8.0000e-005**	**2.8100e-003**	**4.0000e-005**	**2.8500e-003**	**7.6000e-004**	**4.0000e-005**	**8.0000e-004**	**0.0000**	**7.7136**	**7.7136**	**6.3000e-004**	**0.0000**	**7.7295**

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6500e-003	0.0679	0.0458	1.0000e-004		3.0700e-003	3.0700e-003		2.8300e-003	2.8300e-003	0.0000	8.3643	8.3643	2.7100e-003	0.0000	8.4319
Total	**6.6500e-003**	**0.0679**	**0.0458**	**1.0000e-004**	**0.0452**	**3.0700e-003**	**0.0482**	**0.0248**	**2.8300e-003**	**0.0277**	**0.0000**	**8.3643**	**8.3643**	**2.7100e-003**	**0.0000**	**8.4319**

3.3 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	9.0000e-005	9.0000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2806	0.2806	1.0000e-005	0.0000	0.2808
Total	**1.3000e-004**	**9.0000e-005**	**9.0000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2806**	**0.2806**	**1.0000e-005**	**0.0000**	**0.2808**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0203	0.0000	0.0203	0.0112	0.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6500e-003	0.0679	0.0458	1.0000e-004		3.0700e-003	3.0700e-003		2.8300e-003	2.8300e-003	0.0000	8.3643	8.3643	2.7100e-003	0.0000	8.4319
Total	**6.6500e-003**	**0.0679**	**0.0458**	**1.0000e-004**	**0.0203**	**3.0700e-003**	**0.0234**	**0.0112**	**2.8300e-003**	**0.0140**	**0.0000**	**8.3643**	**8.3643**	**2.7100e-003**	**0.0000**	**8.4319**

3.3 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	9.0000e-005	9.0000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2806	0.2806	1.0000e-005	0.0000	0.2808
Total	**1.3000e-004**	**9.0000e-005**	**9.0000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2806**	**0.2806**	**1.0000e-005**	**0.0000**	**0.2808**

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6500e-003	0.0681	0.0590	1.2000e-004		2.9000e-003	2.9000e-003		2.6700e-003	2.6700e-003	0.0000	10.4256	10.4256	3.3700e-003	0.0000	10.5099
Total	**6.6500e-003**	**0.0681**	**0.0590**	**1.2000e-004**	**0.0262**	**2.9000e-003**	**0.0291**	**0.0135**	**2.6700e-003**	**0.0161**	**0.0000**	**10.4256**	**10.4256**	**3.3700e-003**	**0.0000**	**10.5099**

3.4 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.1000e-004	1.2100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3741	0.3741	1.0000e-005	0.0000	0.3743
Total	**1.8000e-004**	**1.1000e-004**	**1.2100e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3741**	**0.3741**	**1.0000e-005**	**0.0000**	**0.3743**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0118	0.0000	0.0118	6.0600e-003	0.0000	6.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6500e-003	0.0681	0.0590	1.2000e-004		2.9000e-003	2.9000e-003		2.6700e-003	2.6700e-003	0.0000	10.4256	10.4256	3.3700e-003	0.0000	10.5099
Total	**6.6500e-003**	**0.0681**	**0.0590**	**1.2000e-004**	**0.0118**	**2.9000e-003**	**0.0147**	**6.0600e-003**	**2.6700e-003**	**8.7300e-003**	**0.0000**	**10.4256**	**10.4256**	**3.3700e-003**	**0.0000**	**10.5099**

3.4 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.1000e-004	1.2100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3741	0.3741	1.0000e-005	0.0000	0.3743
Total	**1.8000e-004**	**1.1000e-004**	**1.2100e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3741**	**0.3741**	**1.0000e-005**	**0.0000**	**0.3743**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1685	1.5393	1.8511	3.0900e-003		0.0702	0.0702		0.0661	0.0661	0.0000	265.4672	265.4672	0.0628	0.0000	267.0366
Total	**0.1685**	**1.5393**	**1.8511**	**3.0900e-003**		**0.0702**	**0.0702**		**0.0661**	**0.0661**	**0.0000**	**265.4672**	**265.4672**	**0.0628**	**0.0000**	**267.0366**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.6400e-003	0.1980	0.0603	6.7000e-004	0.0175	2.3000e-004	0.0177	5.0500e-003	2.2000e-004	5.2700e-003	0.0000	66.0589	66.0589	4.4600e-003	0.0000	66.1705
Worker	0.0197	0.0126	0.1334	4.6000e-004	0.0533	3.5000e-004	0.0536	0.0142	3.3000e-004	0.0145	0.0000	41.4075	41.4075	1.0300e-003	0.0000	41.4331
Total	**0.0253**	**0.2105**	**0.1937**	**1.1300e-003**	**0.0707**	**5.8000e-004**	**0.0713**	**0.0192**	**5.5000e-004**	**0.0198**	**0.0000**	**107.4663**	**107.4663**	**5.4900e-003**	**0.0000**	**107.6036**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1685	1.5393	1.8511	3.0900e-003		0.0702	0.0702		0.0661	0.0661	0.0000	265.4669	265.4669	0.0628	0.0000	267.0363
Total	**0.1685**	**1.5393**	**1.8511**	**3.0900e-003**		**0.0702**	**0.0702**		**0.0661**	**0.0661**	**0.0000**	**265.4669**	**265.4669**	**0.0628**	**0.0000**	**267.0363**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.6400e-003	0.1980	0.0603	6.7000e-004	0.0175	2.3000e-004	0.0177	5.0500e-003	2.2000e-004	5.2700e-003	0.0000	66.0589	66.0589	4.4600e-003	0.0000	66.1705
Worker	0.0197	0.0126	0.1334	4.6000e-004	0.0533	3.5000e-004	0.0536	0.0142	3.3000e-004	0.0145	0.0000	41.4075	41.4075	1.0300e-003	0.0000	41.4331
Total	**0.0253**	**0.2105**	**0.1937**	**1.1300e-003**	**0.0707**	**5.8000e-004**	**0.0713**	**0.0192**	**5.5000e-004**	**0.0198**	**0.0000**	**107.4663**	**107.4663**	**5.4900e-003**	**0.0000**	**107.6036**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8000e-004	6.2300e-003	8.0400e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.5000e-004	2.5000e-004	0.0000	1.1596	1.1596	2.7000e-004	0.0000	1.1664
Total	**6.8000e-004**	**6.2300e-003**	**8.0400e-003**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**1.1596**	**1.1596**	**2.7000e-004**	**0.0000**	**1.1664**

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	8.5000e-004	2.6000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2867	0.2867	2.0000e-005	0.0000	0.2872
Worker	8.0000e-005	5.0000e-005	5.4000e-004	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1735	0.1735	0.0000	0.0000	0.1736
Total	**1.0000e-004**	**9.0000e-004**	**8.0000e-004**	**0.0000**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.4602**	**0.4602**	**2.0000e-005**	**0.0000**	**0.4608**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8000e-004	6.2300e-003	8.0400e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.5000e-004	2.5000e-004	0.0000	1.1596	1.1596	2.7000e-004	0.0000	1.1664
Total	**6.8000e-004**	**6.2300e-003**	**8.0400e-003**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**1.1596**	**1.1596**	**2.7000e-004**	**0.0000**	**1.1664**

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	8.5000e-004	2.6000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2867	0.2867	2.0000e-005	0.0000	0.2872
Worker	8.0000e-005	5.0000e-005	5.4000e-004	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1735	0.1735	0.0000	0.0000	0.1736
Total	**1.0000e-004**	**9.0000e-004**	**8.0000e-004**	**0.0000**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.4602**	**0.4602**	**2.0000e-005**	**0.0000**	**0.4608**

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.3800e-003	0.0678	0.1096	1.7000e-004		3.1700e-003	3.1700e-003		2.9300e-003	2.9300e-003	0.0000	14.7404	14.7404	4.6300e-003	0.0000	14.8562
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.3800e-003**	**0.0678**	**0.1096**	**1.7000e-004**		**3.1700e-003**	**3.1700e-003**		**2.9300e-003**	**2.9300e-003**	**0.0000**	**14.7404**	**14.7404**	**4.6300e-003**	**0.0000**	**14.8562**

3.6 Paving - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	3.1000e-004	3.3700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0770	1.0770	3.0000e-005	0.0000	1.0776
Total	**5.1000e-004**	**3.1000e-004**	**3.3700e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.0770**	**1.0770**	**3.0000e-005**	**0.0000**	**1.0776**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.3800e-003	0.0678	0.1096	1.7000e-004		3.1700e-003	3.1700e-003		2.9300e-003	2.9300e-003	0.0000	14.7404	14.7404	4.6300e-003	0.0000	14.8562
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.3800e-003**	**0.0678**	**0.1096**	**1.7000e-004**		**3.1700e-003**	**3.1700e-003**		**2.9300e-003**	**2.9300e-003**	**0.0000**	**14.7404**	**14.7404**	**4.6300e-003**	**0.0000**	**14.8562**

3.6 Paving - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	3.1000e-004	3.3700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0770	1.0770	3.0000e-005	0.0000	1.0776
Total	**5.1000e-004**	**3.1000e-004**	**3.3700e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.0770**	**1.0770**	**3.0000e-005**	**0.0000**	**1.0776**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6420					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5400e-003	0.0103	0.0163	3.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	2.2979	2.2979	1.3000e-004	0.0000	2.3011
Total	**0.6435**	**0.0103**	**0.0163**	**3.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.3000e-004**	**0.0000**	**2.3011**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	1.9000e-004	2.0200e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.7000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.6462	0.6462	2.0000e-005	0.0000	0.6466
Total	**3.1000e-004**	**1.9000e-004**	**2.0200e-003**	**1.0000e-005**	**8.7000e-004**	**1.0000e-005**	**8.7000e-004**	**2.3000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.6462**	**0.6462**	**2.0000e-005**	**0.0000**	**0.6466**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6420					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5400e-003	0.0103	0.0163	3.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	2.2979	2.2979	1.3000e-004	0.0000	2.3011
Total	**0.6435**	**0.0103**	**0.0163**	**3.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.3000e-004**	**0.0000**	**2.3011**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	1.9000e-004	2.0200e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.7000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.6462	0.6462	2.0000e-005	0.0000	0.6466
Total	**3.1000e-004**	**1.9000e-004**	**2.0200e-003**	**1.0000e-005**	**8.7000e-004**	**1.0000e-005**	**8.7000e-004**	**2.3000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.6462**	**0.6462**	**2.0000e-005**	**0.0000**	**0.6466**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.617626	0.036451	0.176904	0.096837	0.011340	0.005282	0.018425	0.026503	0.001944	0.001632	0.005548	0.000800	0.000709

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	237.1885	237.1885	9.5500e-003	1.9800e-003	238.0158
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	237.1885	237.1885	9.5500e-003	1.9800e-003	238.0158
NaturalGas Mitigated	4.4200e-003	0.0402	0.0338	2.4000e-004		3.0500e-003	3.0500e-003		3.0500e-003	3.0500e-003	0.0000	43.7560	43.7560	8.4000e-004	8.0000e-004	44.0160
NaturalGas Unmitigated	4.4200e-003	0.0402	0.0338	2.4000e-004		3.0500e-003	3.0500e-003		3.0500e-003	3.0500e-003	0.0000	43.7560	43.7560	8.4000e-004	8.0000e-004	44.0160

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High School	819956	4.4200e-003	0.0402	0.0338	2.4000e-004		3.0500e-003	3.0500e-003		3.0500e-003	3.0500e-003	0.0000	43.7560	43.7560	8.4000e-004	8.0000e-004	44.0160
Total		**4.4200e-003**	**0.0402**	**0.0338**	**2.4000e-004**		**3.0500e-003**	**3.0500e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**43.7560**	**43.7560**	**8.4000e-004**	**8.0000e-004**	**44.0160**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High School	819956	4.4200e-003	0.0402	0.0338	2.4000e-004		3.0500e-003	3.0500e-003		3.0500e-003	3.0500e-003	0.0000	43.7560	43.7560	8.4000e-004	8.0000e-004	44.0160
Total		**4.4200e-003**	**0.0402**	**0.0338**	**2.4000e-004**		**3.0500e-003**	**3.0500e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**43.7560**	**43.7560**	**8.4000e-004**	**8.0000e-004**	**44.0160**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	725771	237.1885	9.5500e-003	1.9800e-003	238.0158
Total		**237.1885**	**9.5500e-003**	**1.9800e-003**	**238.0158**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	725771	237.1885	9.5500e-003	1.9800e-003	238.0158
Total		**237.1885**	**9.5500e-003**	**1.9800e-003**	**238.0158**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7015	1.0000e-005	1.2700e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6300e-003
Unmitigated	0.7015	1.0000e-005	1.2700e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1605					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5409					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2000e-004	1.0000e-005	1.2700e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6300e-003
Total	**0.7016**	**1.0000e-005**	**1.2700e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.4700e-003**	**2.4700e-003**	**1.0000e-005**	**0.0000**	**2.6300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1605					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5409					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2000e-004	1.0000e-005	1.2700e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6300e-003
Total	**0.7016**	**1.0000e-005**	**1.2700e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.4700e-003**	**2.4700e-003**	**1.0000e-005**	**0.0000**	**2.6300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	51.1763	0.1219	3.2500e-003	55.1916
Unmitigated	63.9703	0.1524	4.0600e-003	68.9895

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	4.59917 / 11.8264	63.9703	0.1524	4.0600e-003	68.9895
Total		**63.9703**	**0.1524**	**4.0600e-003**	**68.9895**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	3.67934 / 9.46116	51.1763	0.1219	3.2500e-003	55.1916
Total		**51.1763**	**0.1219**	**3.2500e-003**	**55.1916**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	27.4129	1.6201	0.0000	67.9143
Unmitigated	36.5506	2.1601	0.0000	90.5525

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	180.06	36.5506	2.1601	0.0000	90.5525
Total		**36.5506**	**2.1601**	**0.0000**	**90.5525**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	135.045	27.4129	1.6201	0.0000	67.9143
Total		**27.4129**	**1.6201**	**0.0000**	**67.9143**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

SDU-02.18 SDHS LRFMP Improvements

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	138.51	1000sqft	3.18	138,506.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2035
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Demolition - Buildings demolished: 400, 600, and 700.

Vehicle Trips - Not increasing capacity at the school.

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation -

Architectural Coating - Use of low-VOC paint in compliance with SDAPCD Rule 67.

SDU-02.18 SDHS LRFMP Improvements - San Diego County, Winter

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LandUseSquareFeet	138,510.00	138,506.00
tblVehicleTrips	ST_TR	4.37	0.00
tblVehicleTrips	SU_TR	1.79	0.00
tblVehicleTrips	WD_TR	12.89	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	2.7214	27.2107	20.5896	0.0465	18.2141	1.2303	19.4444	9.9699	1.1319	11.1018	0.0000	4,589.1308	4,589.1308	1.1958	0.0000	4,617.1205
2025	71.5401	14.2584	17.7071	0.0365	0.6322	0.5326	1.1648	0.1712	0.5010	0.6722	0.0000	3,557.8889	3,557.8889	0.6537	0.0000	3,574.2312
Maximum	**71.5401**	**27.2107**	**20.5896**	**0.0465**	**18.2141**	**1.2303**	**19.4444**	**9.9699**	**1.1319**	**11.1018**	**0.0000**	**4,589.1308**	**4,589.1308**	**1.1958**	**0.0000**	**4,617.1205**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	2.7214	27.2107	20.5896	0.0465	8.2777	1.2303	9.5080	4.5080	1.1319	5.6399	0.0000	4,589.1308	4,589.1308	1.1958	0.0000	4,617.1205
2025	71.5401	14.2584	17.7071	0.0365	0.6322	0.5326	1.1648	0.1712	0.5010	0.6722	0.0000	3,557.8889	3,557.8889	0.6537	0.0000	3,574.2312
Maximum	**71.5401**	**27.2107**	**20.5896**	**0.0465**	**8.2777**	**1.2303**	**9.5080**	**4.5080**	**1.1319**	**5.6399**	**0.0000**	**4,589.1308**	**4,589.1308**	**1.1958**	**0.0000**	**4,617.1205**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**52.72**	**0.00**	**48.21**	**53.86**	**0.00**	**46.39**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.8447	1.3000e-004	0.0141	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0303	0.0303	8.0000e-005		0.0323
Energy	0.0242	0.2202	0.1850	1.3200e-003		0.0167	0.0167		0.0167	0.0167		264.2886	264.2886	5.0700e-003	4.8500e-003	265.8592
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.8690**	**0.2204**	**0.1991**	**1.3200e-003**	**0.0000**	**0.0168**	**0.0168**	**0.0000**	**0.0168**	**0.0168**		**264.3190**	**264.3190**	**5.1500e-003**	**4.8500e-003**	**265.8915**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.8447	1.3000e-004	0.0141	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0303	0.0303	8.0000e-005		0.0323
Energy	0.0242	0.2202	0.1850	1.3200e-003		0.0167	0.0167		0.0167	0.0167		264.2886	264.2886	5.0700e-003	4.8500e-003	265.8592
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.8690**	**0.2204**	**0.1991**	**1.3200e-003**	**0.0000**	**0.0168**	**0.0168**	**0.0000**	**0.0168**	**0.0168**		**264.3190**	**264.3190**	**5.1500e-003**	**4.8500e-003**	**265.8915**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2024	1/26/2024	5	20	
2	Site Preparation	Site Preparation	1/27/2024	2/2/2024	5	5	
3	Grading	Grading	2/3/2024	2/14/2024	5	8	
4	Building Construction	Building Construction	2/15/2024	1/1/2025	5	230	
5	Paving	Paving	1/2/2025	1/27/2025	5	18	
6	Architectural Coating	Architectural Coating	1/28/2025	2/20/2025	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 207,759; Non-Residential Outdoor: 69,253; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

SDU-02.18 SDHS LRFMP Improvements - San Diego County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	188.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	58.00	23.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0618	0.0000	2.0618	0.3122	0.0000	0.3122			0.0000			0.0000
Off-Road	2.2437	20.8781	19.7073	0.0388		0.9602	0.9602		0.8922	0.8922		3,747.4228	3,747.4228	1.0485		3,773.6345
Total	**2.2437**	**20.8781**	**19.7073**	**0.0388**	**2.0618**	**0.9602**	**3.0220**	**0.3122**	**0.8922**	**1.2044**		**3,747.4228**	**3,747.4228**	**1.0485**		**3,773.6345**

3.2 Demolition - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0474	1.4874	0.5820	6.6900e-003	0.1643	2.8300e-003	0.1671	0.0450	2.7100e-003	0.0477		739.6313	739.6313	0.0686		741.3459
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0289	0.3003	1.0200e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		102.0768	102.0768	2.5300e-003		102.1401
Total	**0.0978**	**1.5162**	**0.8823**	**7.7100e-003**	**0.2875**	**3.6300e-003**	**0.2911**	**0.0777**	**3.4500e-003**	**0.0811**		**841.7081**	**841.7081**	**0.0711**		**843.4860**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9278	0.0000	0.9278	0.1405	0.0000	0.1405			0.0000			0.0000
Off-Road	2.2437	20.8781	19.7073	0.0388		0.9602	0.9602		0.8922	0.8922	0.0000	3,747.4228	3,747.4228	1.0485		3,773.6345
Total	**2.2437**	**20.8781**	**19.7073**	**0.0388**	**0.9278**	**0.9602**	**1.8880**	**0.1405**	**0.8922**	**1.0327**	**0.0000**	**3,747.4228**	**3,747.4228**	**1.0485**		**3,773.6345**

3.2 Demolition - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0474	1.4874	0.5820	6.6900e-003	0.1643	2.8300e-003	0.1671	0.0450	2.7100e-003	0.0477		739.6313	739.6313	0.0686		741.3459
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0289	0.3003	1.0200e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		102.0768	102.0768	2.5300e-003		102.1401
Total	**0.0978**	**1.5162**	**0.8823**	**7.7100e-003**	**0.2875**	**3.6300e-003**	**0.2911**	**0.0777**	**3.4500e-003**	**0.0811**		**841.7081**	**841.7081**	**0.0711**		**843.4860**

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381		1.2294	1.2294		1.1310	1.1310		3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**2.6609**	**27.1760**	**18.3356**	**0.0381**	**18.0663**	**1.2294**	**19.2956**	**9.9307**	**1.1310**	**11.0617**		**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

3.3 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0347	0.3603	1.2300e-003	0.1479	9.6000e-004	0.1488	0.0392	8.9000e-004	0.0401		122.4922	122.4922	3.0400e-003		122.5681
Total	**0.0605**	**0.0347**	**0.3603**	**1.2300e-003**	**0.1479**	**9.6000e-004**	**0.1488**	**0.0392**	**8.9000e-004**	**0.0401**		**122.4922**	**122.4922**	**3.0400e-003**		**122.5681**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381		1.2294	1.2294		1.1310	1.1310	0.0000	3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**2.6609**	**27.1760**	**18.3356**	**0.0381**	**8.1298**	**1.2294**	**9.3592**	**4.4688**	**1.1310**	**5.5998**	**0.0000**	**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

3.3 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0347	0.3603	1.2300e-003	0.1479	9.6000e-004	0.1488	0.0392	8.9000e-004	0.0401		122.4922	122.4922	3.0400e-003		122.5681
Total	**0.0605**	**0.0347**	**0.3603**	**1.2300e-003**	**0.1479**	**9.6000e-004**	**0.1488**	**0.0392**	**8.9000e-004**	**0.0401**		**122.4922**	**122.4922**	**3.0400e-003**		**122.5681**

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.6617	17.0310	14.7594	0.0297		0.7244	0.7244		0.6665	0.6665		2,873.0541	2,873.0541	0.9292		2,896.2842
Total	**1.6617**	**17.0310**	**14.7594**	**0.0297**	**6.5523**	**0.7244**	**7.2768**	**3.3675**	**0.6665**	**4.0340**		**2,873.0541**	**2,873.0541**	**0.9292**		**2,896.2842**

3.4 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0289	0.3003	1.0200e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		102.0768	102.0768	2.5300e-003		102.1401
Total	**0.0504**	**0.0289**	**0.3003**	**1.0200e-003**	**0.1232**	**8.0000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**102.0768**	**102.0768**	**2.5300e-003**		**102.1401**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9486	0.0000	2.9486	1.5154	0.0000	1.5154			0.0000			0.0000
Off-Road	1.6617	17.0310	14.7594	0.0297		0.7244	0.7244		0.6665	0.6665	0.0000	2,873.0541	2,873.0541	0.9292		2,896.2842
Total	**1.6617**	**17.0310**	**14.7594**	**0.0297**	**2.9486**	**0.7244**	**3.6730**	**1.5154**	**0.6665**	**2.1818**	**0.0000**	**2,873.0541**	**2,873.0541**	**0.9292**		**2,896.2842**

3.4 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0289	0.3003	1.0200e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		102.0768	102.0768	2.5300e-003		102.1401
Total	**0.0504**	**0.0289**	**0.3003**	**1.0200e-003**	**0.1232**	**8.0000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**102.0768**	**102.0768**	**2.5300e-003**		**102.1401**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0508	1.7105	0.5503	5.7900e-003	0.1557	2.1000e-003	0.1578	0.0448	2.0100e-003	0.0468		626.4208	626.4208	0.0442		627.5265
Worker	0.1950	0.1117	1.1611	3.9600e-003	0.4765	3.1000e-003	0.4796	0.1264	2.8500e-003	0.1292		394.6969	394.6969	9.7900e-003		394.9416
Total	**0.2458**	**1.8222**	**1.7114**	**9.7500e-003**	**0.6322**	**5.2000e-003**	**0.6374**	**0.1712**	**4.8600e-003**	**0.1761**		**1,021.1177**	**1,021.1177**	**0.0540**		**1,022.4681**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0508	1.7105	0.5503	5.7900e-003	0.1557	2.1000e-003	0.1578	0.0448	2.0100e-003	0.0468		626.4208	626.4208	0.0442		627.5265
Worker	0.1950	0.1117	1.1611	3.9600e-003	0.4765	3.1000e-003	0.4796	0.1264	2.8500e-003	0.1292		394.6969	394.6969	9.7900e-003		394.9416
Total	**0.2458**	**1.8222**	**1.7114**	**9.7500e-003**	**0.6322**	**5.2000e-003**	**0.6374**	**0.1712**	**4.8600e-003**	**0.1761**		**1,021.1177**	**1,021.1177**	**0.0540**		**1,022.4681**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0492	1.6858	0.5391	5.7500e-003	0.1557	2.0400e-003	0.1577	0.0448	1.9500e-003	0.0468		622.6714	622.6714	0.0437		623.7642
Worker	0.1866	0.1030	1.0834	3.8000e-003	0.4765	3.0500e-003	0.4795	0.1264	2.8100e-003	0.1292		378.7432	378.7432	9.0300e-003		378.9690
Total	**0.2358**	**1.7887**	**1.6224**	**9.5500e-003**	**0.6322**	**5.0900e-003**	**0.6372**	**0.1712**	**4.7600e-003**	**0.1760**		**1,001.4145**	**1,001.4145**	**0.0527**		**1,002.7331**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0492	1.6858	0.5391	5.7500e-003	0.1557	2.0400e-003	0.1577	0.0448	1.9500e-003	0.0468		622.6714	622.6714	0.0437		623.7642
Worker	0.1866	0.1030	1.0834	3.8000e-003	0.4765	3.0500e-003	0.4795	0.1264	2.8100e-003	0.1292		378.7432	378.7432	9.0300e-003		378.9690
Total	**0.2358**	**1.7887**	**1.6224**	**9.5500e-003**	**0.6322**	**5.0900e-003**	**0.6372**	**0.1712**	**4.7600e-003**	**0.1760**		**1,001.4145**	**1,001.4145**	**0.0527**		**1,002.7331**

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8197	7.5321	12.1778	0.0189		0.3524	0.3524		0.3259	0.3259		1,805.3926	1,805.3926	0.5673		1,819.5741
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8197**	**7.5321**	**12.1778**	**0.0189**		**0.3524**	**0.3524**		**0.3259**	**0.3259**		**1,805.3926**	**1,805.3926**	**0.5673**		**1,819.5741**

3.6 Paving - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0355	0.3736	1.3100e-003	0.1643	1.0500e-003	0.1654	0.0436	9.7000e-004	0.0446		130.6011	130.6011	3.1100e-003		130.6790
Total	**0.0643**	**0.0355**	**0.3736**	**1.3100e-003**	**0.1643**	**1.0500e-003**	**0.1654**	**0.0436**	**9.7000e-004**	**0.0446**		**130.6011**	**130.6011**	**3.1100e-003**		**130.6790**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8197	7.5321	12.1778	0.0189		0.3524	0.3524		0.3259	0.3259	0.0000	1,805.3926	1,805.3926	0.5673		1,819.5741
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8197**	**7.5321**	**12.1778**	**0.0189**		**0.3524**	**0.3524**		**0.3259**	**0.3259**	**0.0000**	**1,805.3926**	**1,805.3926**	**0.5673**		**1,819.5741**

3.6 Paving - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0355	0.3736	1.3100e-003	0.1643	1.0500e-003	0.1654	0.0436	9.7000e-004	0.0446		130.6011	130.6011	3.1100e-003		130.6790
Total	**0.0643**	**0.0355**	**0.3736**	**1.3100e-003**	**0.1643**	**1.0500e-003**	**0.1654**	**0.0436**	**9.7000e-004**	**0.0446**		**130.6011**	**130.6011**	**3.1100e-003**		**130.6790**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	71.3306					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**71.5015**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0386	0.0213	0.2242	7.9000e-004	0.0986	6.3000e-004	0.0992	0.0262	5.8000e-004	0.0267		78.3607	78.3607	1.8700e-003		78.4074
Total	**0.0386**	**0.0213**	**0.2242**	**7.9000e-004**	**0.0986**	**6.3000e-004**	**0.0992**	**0.0262**	**5.8000e-004**	**0.0267**		**78.3607**	**78.3607**	**1.8700e-003**		**78.4074**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	71.3306					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**71.5015**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0386	0.0213	0.2242	7.9000e-004	0.0986	6.3000e-004	0.0992	0.0262	5.8000e-004	0.0267		78.3607	78.3607	1.8700e-003		78.4074
Total	**0.0386**	**0.0213**	**0.2242**	**7.9000e-004**	**0.0986**	**6.3000e-004**	**0.0992**	**0.0262**	**5.8000e-004**	**0.0267**		**78.3607**	**78.3607**	**1.8700e-003**		**78.4074**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.617626	0.036451	0.176904	0.096837	0.011340	0.005282	0.018425	0.026503	0.001944	0.001632	0.005548	0.000800	0.000709

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0242	0.2202	0.1850	1.3200e-003		0.0167	0.0167		0.0167	0.0167		264.2886	264.2886	5.0700e-003	4.8500e-003	265.8592
NaturalGas Unmitigated	0.0242	0.2202	0.1850	1.3200e-003		0.0167	0.0167		0.0167	0.0167		264.2886	264.2886	5.0700e-003	4.8500e-003	265.8592

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
High School	2246.45	0.0242	0.2202	0.1850	1.3200e-003		0.0167	0.0167		0.0167	0.0167		264.2886	264.2886	5.0700e-003	4.8500e-003	265.8592
Total		**0.0242**	**0.2202**	**0.1850**	**1.3200e-003**		**0.0167**	**0.0167**		**0.0167**	**0.0167**		**264.2886**	**264.2886**	**5.0700e-003**	**4.8500e-003**	**265.8592**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
High School	2.24645	0.0242	0.2202	0.1850	1.3200e-003		0.0167	0.0167		0.0167	0.0167		264.2886	264.2886	5.0700e-003	4.8500e-003	265.8592
Total		**0.0242**	**0.2202**	**0.1850**	**1.3200e-003**		**0.0167**	**0.0167**		**0.0167**	**0.0167**		**264.2886**	**264.2886**	**5.0700e-003**	**4.8500e-003**	**265.8592**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.8447	1.3000e-004	0.0141	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0303	0.0303	8.0000e-005		0.0323
Unmitigated	3.8447	1.3000e-004	0.0141	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0303	0.0303	8.0000e-005		0.0323

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8794					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9640					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2900e-003	1.3000e-004	0.0141	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0303	0.0303	8.0000e-005		0.0323
Total	**3.8447**	**1.3000e-004**	**0.0141**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0303**	**0.0303**	**8.0000e-005**		**0.0323**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8794					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9640					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2900e-003	1.3000e-004	0.0141	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0303	0.0303	8.0000e-005		0.0323
Total	**3.8447**	**1.3000e-004**	**0.0141**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0303**	**0.0303**	**8.0000e-005**		**0.0323**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

SDU-02.18 SDHS - Aquatics Center

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Recreational Swimming Pool	10.00	1000sqft	0.23	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2035
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Aquatics Center only.

Land Use -

Construction Phase - This model run is for operations only.

Vehicle Trips - 140 ADT per the Traffic Report.

Energy Use -

Water Mitigation -

Waste Mitigation -

SDU-02.18 SDHS - Aquatics Center - San Diego County, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	0.00
tblConstructionPhase	PhaseEndDate	1/17/2024	1/15/2024
tblVehicleTrips	ST_TR	9.10	14.00
tblVehicleTrips	SU_TR	13.60	14.00
tblVehicleTrips	WD_TR	33.82	14.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0507	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0191	0.0934	0.2047	8.3000e-004	0.0953	4.4000e-004	0.0958	0.0255	4.1000e-004	0.0259	0.0000	77.7978	77.7978	3.9400e-003	0.0000	77.8964
Waste						0.0000	0.0000		0.0000	0.0000	11.5705	0.0000	11.5705	0.6838	0.0000	28.6654
Water						0.0000	0.0000		0.0000	0.0000	0.1876	3.8329	4.0205	0.0194	4.9000e-004	4.6513
Total	**0.0698**	**0.0934**	**0.2048**	**8.3000e-004**	**0.0953**	**4.4000e-004**	**0.0958**	**0.0255**	**4.1000e-004**	**0.0259**	**11.7581**	**81.6309**	**93.3890**	**0.7072**	**4.9000e-004**	**111.2133**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0507	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0191	0.0934	0.2047	8.3000e-004	0.0953	4.4000e-004	0.0958	0.0255	4.1000e-004	0.0259	0.0000	77.7978	77.7978	3.9400e-003	0.0000	77.8964
Waste						0.0000	0.0000		0.0000	0.0000	8.6779	0.0000	8.6779	0.5129	0.0000	21.4990
Water						0.0000	0.0000		0.0000	0.0000	0.1501	3.0663	3.2164	0.0155	3.9000e-004	3.7211
Total	**0.0698**	**0.0934**	**0.2048**	**8.3000e-004**	**0.0953**	**4.4000e-004**	**0.0958**	**0.0255**	**4.1000e-004**	**0.0259**	**8.8280**	**80.8643**	**89.6923**	**0.5323**	**3.9000e-004**	**103.1167**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**24.92**	**0.94**	**3.96**	**24.72**	**20.41**	**7.28**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/16/2024	1/15/2024	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2024

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

3.2 Grading - 2024

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0191	0.0934	0.2047	8.3000e-004	0.0953	4.4000e-004	0.0958	0.0255	4.1000e-004	0.0259	0.0000	77.7978	77.7978	3.9400e-003	0.0000	77.8964
Unmitigated	0.0191	0.0934	0.2047	8.3000e-004	0.0953	4.4000e-004	0.0958	0.0255	4.1000e-004	0.0259	0.0000	77.7978	77.7978	3.9400e-003	0.0000	77.8964

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Recreational Swimming Pool	140.00	140.00	140.00	253,019	253,019
Total	140.00	140.00	140.00	253,019	253,019

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Recreational Swimming Pool	0.617626	0.036451	0.176904	0.096837	0.011340	0.005282	0.018425	0.026503	0.001944	0.001632	0.005548	0.000800	0.000709

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0507	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Unmitigated	0.0507	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0116					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0391					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Total	**0.0507**	**0.0000**	**9.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0116					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0391					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Total	**0.0507**	**0.0000**	**9.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.2164	0.0155	3.9000e-004	3.7211
Unmitigated	4.0205	0.0194	4.9000e-004	4.6513

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Recreational Swimming Pool	0.591431 / 0.36249	4.0205	0.0194	4.9000e-004	4.6513
Total		**4.0205**	**0.0194**	**4.9000e-004**	**4.6513**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Recreational Swimming Pool	0.473145 / 0.289992	3.2164	0.0155	3.9000e-004	3.7211
Total		**3.2164**	**0.0155**	**3.9000e-004**	**3.7211**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.6779	0.5129	0.0000	21.4990
Unmitigated	11.5705	0.6838	0.0000	28.6654

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Recreational Swimming Pool	57	11.5705	0.6838	0.0000	28.6654
Total		**11.5705**	**0.6838**	**0.0000**	**28.6654**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Recreational Swimming Pool	42.75	8.6779	0.5129	0.0000	21.4990
Total		**8.6779**	**0.5129**	**0.0000**	**21.4990**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

SDU-02.18 SDHS - Aquatics Center

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Recreational Swimming Pool	10.00	1000sqft	0.23	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2035
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Aquatics Center only.

Land Use -

Construction Phase - This model run is for operations only.

Vehicle Trips - 140 ADT per the Traffic Report.

Energy Use -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	0.00
tblConstructionPhase	PhaseEndDate	1/17/2024	1/15/2024
tblVehicleTrips	ST_TR	9.10	14.00
tblVehicleTrips	SU_TR	13.60	14.00
tblVehicleTrips	WD_TR	33.82	14.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.2509	0.0000	0.0000	0.2397	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.2509**	**0.0000**	**0.0000**	**0.2397**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.2509	0.0000	0.0000	0.2397	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.2509**	**0.0000**	**0.0000**	**0.2397**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2776	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.1078	0.5104	1.1430	4.5300e-003	0.5363	2.4200e-003	0.5387	0.1433	2.2500e-003	0.1455		465.8536	465.8536	0.0242		466.4593
Total	**0.3854**	**0.5104**	**1.1440**	**4.5300e-003**	**0.5363**	**2.4200e-003**	**0.5387**	**0.1433**	**2.2500e-003**	**0.1455**		**465.8558**	**465.8558**	**0.0242**	**0.0000**	**466.4617**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2776	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.1078	0.5104	1.1430	4.5300e-003	0.5363	2.4200e-003	0.5387	0.1433	2.2500e-003	0.1455		465.8536	465.8536	0.0242		466.4593
Total	**0.3854**	**0.5104**	**1.1440**	**4.5300e-003**	**0.5363**	**2.4200e-003**	**0.5387**	**0.1433**	**2.2500e-003**	**0.1455**		**465.8558**	**465.8558**	**0.0242**	**0.0000**	**466.4617**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/16/2024	1/15/2024	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2024

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

3.2 Grading - 2024

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1078	0.5104	1.1430	4.5300e-003	0.5363	2.4200e-003	0.5387	0.1433	2.2500e-003	0.1455		465.8536	465.8536	0.0242		466.4593
Unmitigated	0.1078	0.5104	1.1430	4.5300e-003	0.5363	2.4200e-003	0.5387	0.1433	2.2500e-003	0.1455		465.8536	465.8536	0.0242		466.4593

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Recreational Swimming Pool	140.00	140.00	140.00	253,019	253,019
Total	140.00	140.00	140.00	253,019	253,019

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Recreational Swimming Pool	0.617626	0.036451	0.176904	0.096837	0.011340	0.005282	0.018425	0.026503	0.001944	0.001632	0.005548	0.000800	0.000709

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2776	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3300e-003
Unmitigated	0.2776	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0635					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2140					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.0000e-005	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3300e-003
Total	**0.2776**	**1.0000e-005**	**1.0200e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**		**2.3300e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0635					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2140					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.0000e-005	1.0000e-005	1.0200e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3300e-003
Total	**0.2776**	**1.0000e-005**	**1.0200e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**		**2.3300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EIR Appendix C

Cultural Resources Technical Report

HELIX Environmental Planning

San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan

Cultural Resources Technical Report

November 2020 | SDU-02.18.01

Prepared for:

San Diego Unified School District
4860 Ruffner Street, Annex Room 5
San Diego, CA 92111

Prepared by:

Stacie Wilson
Senior Archaeologist

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

San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan

Cultural Resources Technical Report

Prepared for:

San Diego Unified School District
4860 Ruffner Street, Annex Room 5
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November 2020 | SDU-02.18.01

National Archaeological Database Information

Authors:	Annie McCausland, M.A., Theodore Cooley, M.A., RPA, Stacie Wilson, M.S., RPA, and Doug Mengers, M.A. RPA,
Firm:	HELIX Environmental Planning, Inc. and PanGIS, Inc.
Client/Project:	San Diego Unified School District / San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan
Report Date:	October 2020
Report Title:	Cultural Resources Technical Report for the San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan Project, San Diego, California
Type of Study:	Cultural Resources Technical Report
New Resources:	San Diego High School: buildings 100-400; building 500; building 600; building 700; Balboa Stadium; Balboa Stadium terracing; gargoyle planter; Gray Castle courtyard fountain; World War I memorial; World War II plaque; SDHS landscaping; Gray Castle doors
Updated Sites:	None
USGS Quad:	Point Loma 7.5' Quadrangle
Acreage:	Approximately 34 acres
Key Words:	San Diego County; Township 17 South, Range 3 West; Pueblo Lands of San Diego; City of San Diego; Park Boulevard; San Diego High School; Balboa Stadium; Richard George Wheeler; Frank Lewis Hope Jr.; Quayle Brothers; Gray Castle; Russ Auditorium

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ADA	Americans with Disabilities Act
AMSL	above mean sea level
BP	before present
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CHRID	California Historical Resources Inventory Database
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
CSDHRR	City of San Diego Historical Resources Register
DPR	Department of Parks and Recreation
EIR	Environmental Impact Report
HELIX	HELIX Environmental Planning, Inc.
HRB	San Diego Historic Review Board
HRG	Historical Resources Guidelines
HRR	Historical Resources Regulations
HVAC	heating, ventilation, and air conditioning
LDM	Land Development Manual
LRFMP	Long-Range Facilities Master Plan
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NPS	National Park Service
NRB	National Register Bulletin
NRHP	National Register of Historic Places
OHP	Office of Historic Preservation
PanGIS	PanGIS, Inc.
PRC	Public Resources Code
PWA	Public Works Administration
SCIC	South Coastal Information Center
SDG&E	San Diego Gas & Electric
SDHC	San Diego History Center
SDHS	San Diego High School
SDMC	San Diego Municipal Code
SDUSD	San Diego Unified School District

ACRONYMS AND ABBREVIATIONS (cont.)

SERA	State Emergency Relief Administration
SR	State Route
TCP	Traditional Cultural Properties
TCR	Tribal Cultural Resources
USGS	U.S. Geological Survey
WPA	Works Progress Administration
WSM	San Diego High School Whole Site Modernization

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EXECUTIVE SUMMARY

HELIX Environmental Planning, Inc. (HELIX) was contracted by San Diego Unified School District (District) to assess potential cultural resource impacts for the District's proposed San Diego High School (SDHS) Whole Site Modernization (WSM) and Long-Range Facilities Master Plan (LRFMP) (project). The proposed project involves the renewal of a lease between the City and the District and upgrades to the existing school campus buildings and facilities. The lease renewal would extend the permission for the District to operate at the project site beyond 2024 for an additional 99 years. The short term WSM improvements would generally include minor improvements and reconfigurations of existing school buildings, parking areas, and quad areas, as well as improvements to existing athletic fields. The long term LRFMP improvements would involve the removal and addition of school buildings and structures, as well as a new entrance into the campus from the combined State Route (SR) 163 off-ramp and Interstate (I-) 5 on-ramp.

The records search conducted at the Southern Coastal Information Center (SCIC) on December 4, 2019, indicated that 53 previous cultural resources studies have been conducted within one quarter mile of the project area, including one study within the project area. The records search results also indicated that a total of 45 cultural resources have been previously recorded within one quarter mile of the project area; however, no resources have been recorded within the project site prior to this survey. An archaeological pedestrian survey within the 34-acre campus was conducted by a HELIX archaeologist and a Native American monitor on January 20, 2020. The survey did not result in the identification of any archaeological resources within the project area. A Sacred Lands File search was also conducted, as well as Native American outreach, as detailed in this report.

SDHS was established in 1888 and has a complex architectural history. The current campus contains eight buildings and structures over 45 years in age, including Balboa Stadium, constructed in 1978, which will become 45 years in age during the proposed Project timeline. There are seven historic features located on campus as well. All 15 built-environment resources were surveyed by subconsultant PanGIS, Inc. (PanGIS). HELIX architectural historian, Annie McCausland, M.A. and Doug Mengers, M.A., RPA, with PanGIS, evaluated resource historical significance and eligibility. This report details the methods and results of the cultural resources study and has been prepared to comply with the California Environmental Quality Act (CEQA) and the City of San Diego Historical Resources Guidelines (HRG).

None of the documented historic resources meet the Criteria for inclusion in the California Register of Historical Resources (CRHR) nor the National Register of Historic Places (NRHP). However, eight resources are recommended eligible for listing in the City of San Diego Historical Resources Register (CSDHRR) and as such, are considered historical resources for the purposes of CEQA. Historical resources buildings 600 and 700 are proposed for demolition. Demolition of a historical resource under CEQA is an unmitigable significant impact. Alternatives to demolition should be considered during the environment review process. Alternatives may include retaining the buildings and adhering to the Secretary of the Interior's Standards for the Treatment of Historic Properties for any proposed changes or alterations. If alternatives to demolition are not feasible, impacts to the loss of these resources would be partially mitigated through implementation of Historic American Buildings Survey (HABS)-level of documentation of these resources, including additional historic research, measured drawings, photographs, and other documentation. Interpretive and educational projects may also be included in a mitigation strategy to partially mitigate impacts.

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1.0 INTRODUCTION

HELIX Environmental Planning, Inc. (HELIX) was contracted by the San Diego Unified School District (District) to provide a cultural resources assessment for the proposed San Diego High School (SDHS) Whole Site Modernization (WSM) and Long-Range Facilities Master Plan (LRFMP) Project (project) in the City of San Diego (City), California. A cultural resources study that included a records search, Sacred Lands File search, Native American outreach, archival research, and archaeological and historic built-environment pedestrian surveys was conducted for the project. This report details the methods and results of the cultural resources study and has been prepared to comply with the California Environmental Quality Act (CEQA).

1.1 PROJECT LOCATION

SDHS is located at 1405 Park Boulevard in the City of San Diego in the southwestern portion of the County of San Diego (Figure 1, *Regional Location*). The campus is located within an unsectioned portion (Pueblo Lands of San Diego) of Township 17 South, Range 3 West, on the U.S. Geological Survey (USGS) 7.5' Point Loma quadrangle (Figure 2, *USGS Topography*). The approximately 34-acre project site is bordered by Park Boulevard to the west and Russ Boulevard to the south (Figure 3, *Project Vicinity*). Regional access to the project site is provided by Interstate (I-) 5, which occurs north of and adjacent to the project site and includes a freeway on/off-ramp at Park Boulevard near the northwest corner of the high school campus, and via State Route (SR) 163, which becomes 11th Avenue as it enters downtown one block (about 300 feet) west of the project. The campus is in the northeast corner of the downtown area of the city within the East Village neighborhood, which is characterized by multi-story residential, commercial, office, and institutional buildings.

1.2 PROJECT DESCRIPTION

The proposed project involves the renewal of a lease between the City and the District and upgrades to existing school campus buildings and facilities (Figure 4, *Existing Campus Layout*). The lease would extend the permission for the District to operate at the project site on or before the expiration of the existing lease and operating agreement for up to an additional 99 years. Most of the existing SDHS campus was constructed between 1975 and 2001, and while the high school has been updated over the years, much of the site needs renovations, repairs, and/or upgrades. These improvements would occur as part of Propositions S and Z and Measure YY in the near-term (referred to as WSM improvements), and new structures and facilities would be developed in the long-term (referred to as LRFMP improvements). The lease approval is expected to occur on or before 2024.

The WSM improvements generally would include minor improvements and reconfigurations of existing school buildings, parking areas, and quad areas, as well as improvements to existing sports fields. The conceptual improvements associated with the LRFMP include the demolition and construction of various campus buildings, site enhancements, and a new entrance into the campus from the combined SR 163 off-ramp and I-5 on-ramp.

1.2.1 Whole Site Modernization Improvements

The WSM improvements would occur upon the execution of a lease agreement between the City and the District. Campus-wide updates would involve interior and exterior improvements and

reconfigurations of school buildings, the addition of building identification graphics, a public address system for emergency use, surveillance cameras, and interior and exterior lighting improvements.

The WSM improvements would generally involve interior and exterior modifications/improvements to several existing school buildings. Interior finish upgrades would consist of replacing flooring, ceiling tiles, doors, classroom storage cabinets, lighting, room signage, clocks and speakers, and window blinds. Exterior upgrades would include window replacement, graphic signage additions to buildings, lighting improvements, and the addition of surveillance cameras and a public address system to be used during emergencies. Also, several buildings would receive new or replaced heating, ventilation, and air conditioning (HVAC) units. Proposed HVAC improvements would involve new or replaced equipment on building rooftops.

Other WSM components include, but are not limited to, the demolition and replacement of two outdoor student quad areas, improvements to the east parking lot, and baseball and softball athletic field upgrades, including the construction of new athletic field amenities. Each quad would include new ramps, stairs, lighting, signage, food kiosks, landscaping, irrigation, and underground storm drain and sewer lines.

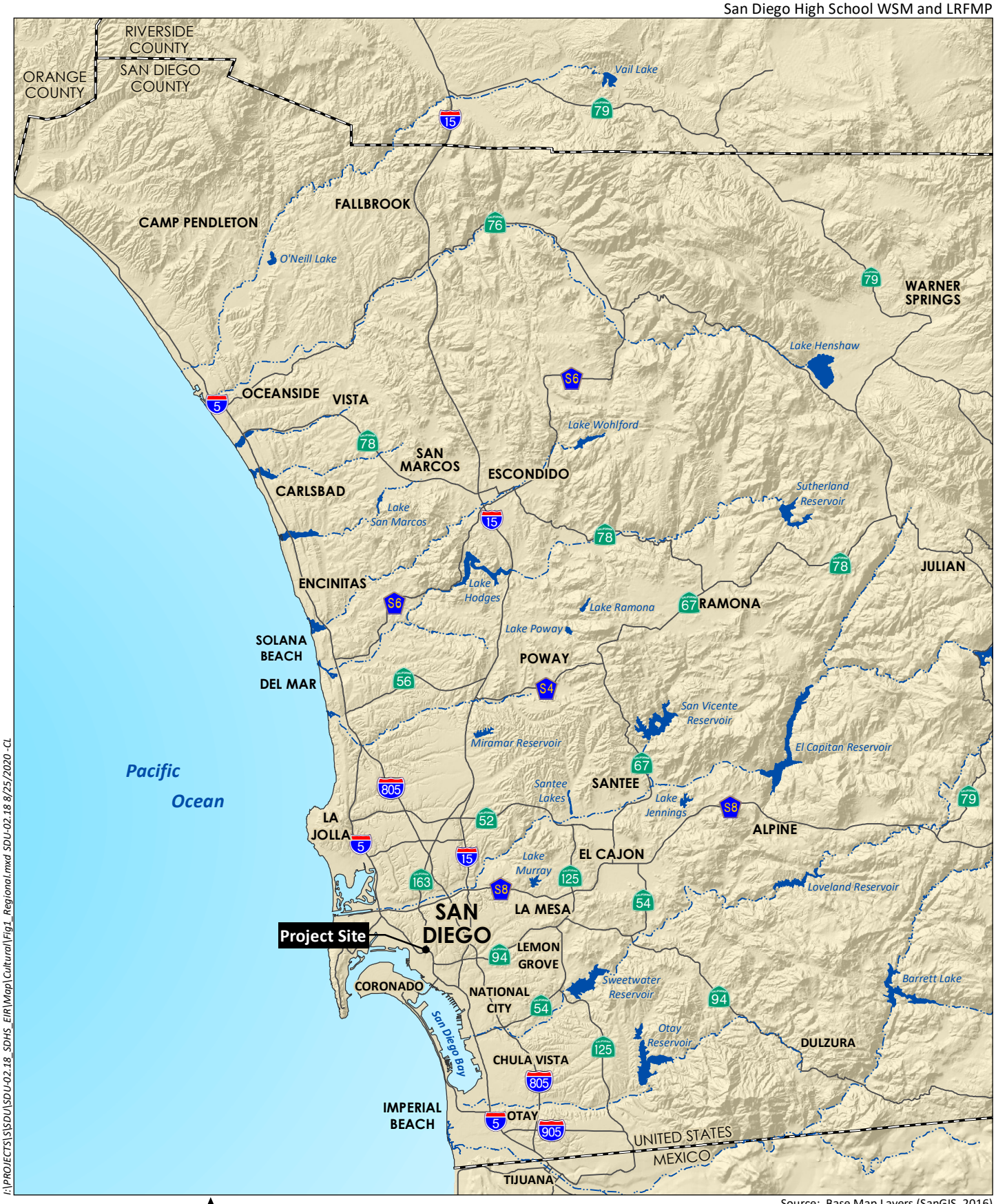
1.2.2 Long-Range Facilities Master Plan Improvements

The LRFMP identifies future improvements over the life of the proposed lease renewal, which would grant the District permission to continue to utilize the project site for school use for an additional 99 years. The timing and phasing of the LRFMP projects are not known, and the details of the proposed improvements are conceptual; however, no change in enrollment or student capacity is anticipated with the proposed LRFMP improvements. The LRFMP improvements would primarily involve the demolition of three school buildings: 400, 600, and 700 (Figure 5, *Site Plan [Long-Range Facilities Master Plan]*). The LRFMP improvements also include the construction of seven new school buildings: the performing arts building, parking structure, auxiliary gymnasium, new classroom building 400, food service and custodial building, field house, and aquatic center. Other improvements would involve upgrades at Balboa Stadium, new campus entrances/exits via Park Boulevard and Russ Boulevard, and site enhancements consisting of landscape and hardscape improvements west of building 100 near the corner of Russ Boulevard and Park Boulevard.

1.3 REGULATORY FRAMEWORK

1.3.1 California Environmental Quality Act

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. Significant resources are those resources which have been found eligible to the California Register of Historical Resources (CRHR), the National Register of Historic Places (NRHP), and any local register as applicable. The City of San Diego Historical Resources Register (CSDHRR) is the applicable local register for this project.



I:\PROJECTS\SJSDU\SDU-02.18_SDHS_EIR\Map\Cultural\Fig1_Regional.mxd SDU-02.18 8/25/2020 -CL

0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



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HELIX Environmental Planning

USGS Topography

Figure 2



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0 500 Feet

Source: Aerial (SanGIS 2014)

HELIX Environmental Planning

Project Vicinity

Figure 3



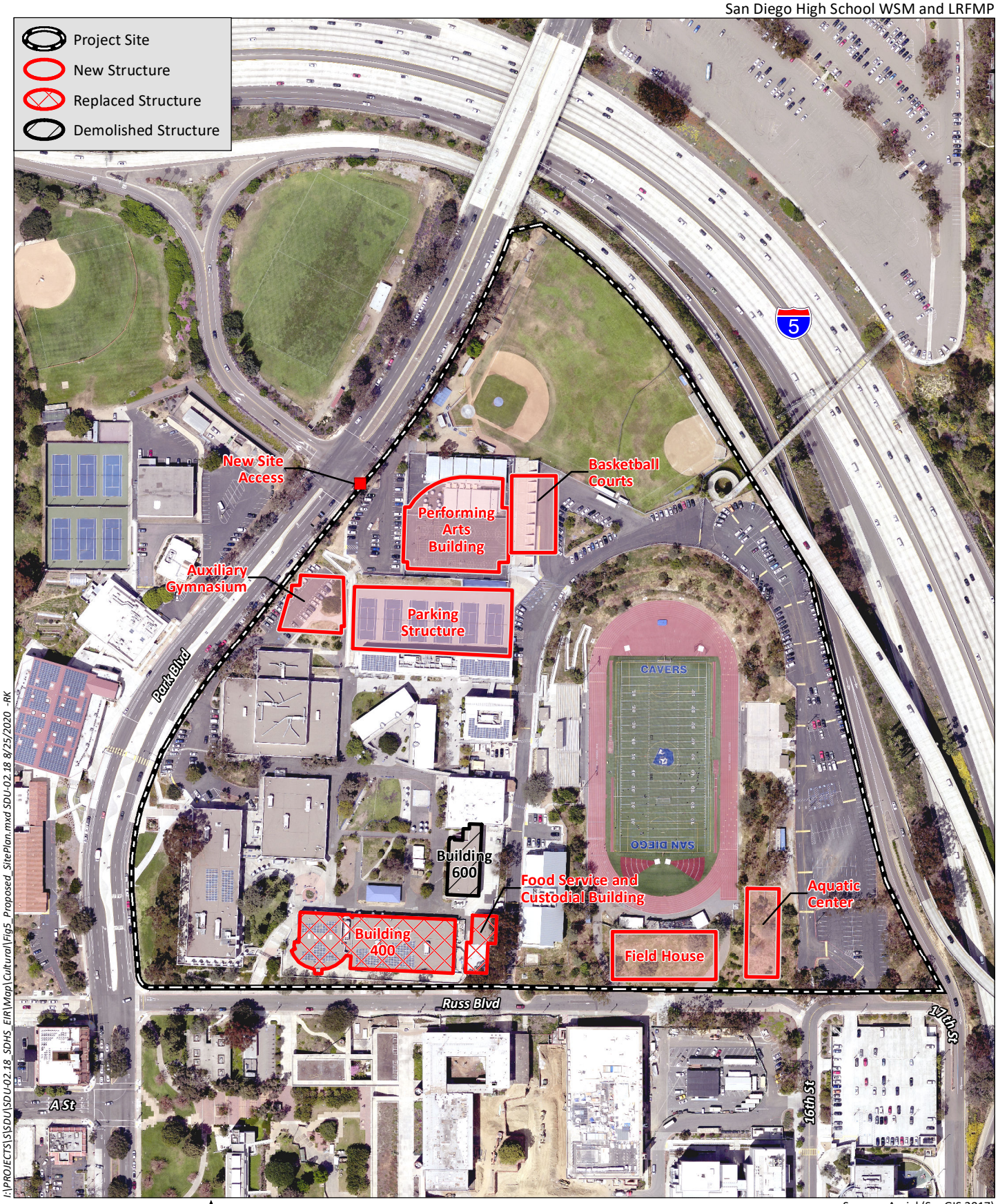
0 250 Feet

Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Existing Campus Layout

Figure 4



Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Site Plan (Long-Range Facilities Master Plan)

Figure 5

CEQA, Public Resources Code (PRC) 21084.1, and State CEQA Guidelines Section 15064.5, address determining the significance of impacts to archaeological and historic resources and discuss significant cultural resources as "historical resources," which are defined as:

- Resource(s) listed or determined eligible by the State Historical Resources Commission for listing in the CRHR (14 CCR Section 15064.5[a][1]);

- Resource(s) either listed in the NRHP or in a "local register of historical resources" or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, unless "the preponderance of evidence demonstrates that it is not historically or culturally significant" (14 CCR Section 15064.5[a][2]); or

- Resources determined by the Lead Agency to meet the Criteria for listing on the CRHR (14 CCR Section 15064.5[a][3]).

It is important to note under 14 CCR Section 15064.5(a)(4), a resource may also be considered an "historical resource" for the purposes of CEQA at the discretion of the lead agency, despite ineligibility recommendations.

1.3.2 NRHP Criteria

In order to qualify for the NRHP, a property must be significant at the local, state, or national level, under one or more of four Criteria. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects:

A. That are associated with events that have made a significant contribution to the broad patterns of our history;

B. That are associated with the lives of persons significant in our past;

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one of more of the above Criteria, a NRHP-eligible property must also retain sufficient integrity to convey its significance and be at least 50 years of age or of extraordinary importance. Integrity is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the particular Criteria under which it is proposed for nomination.

1.3.2.1 Criteria Considerations

Certain kinds of historic properties are not usually considered for listing in the NRHP including religious properties, moved properties, birthplaces and graves, cemeteries, reconstructed properties, commemorative properties, and properties achieving significance within the past 50 years. These properties can be eligible for listing, however, if they meet special requirements, called Criteria Considerations, in addition to meeting the regular requirements (that is, being eligible under one or more of the four Criteria and possessing integrity) (NPS 1995). The seven Criteria considerations include the following:

1. Religious property deriving primary significance from architectural or artistic distinction or historical importance;

2. Building or structure removed from its original location, but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event;

3. Birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his or her productive life;

4. Cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, from association with historic events;

5. Reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived;

6. Property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

7. Property achieving significance within the past 50 years if it is of exceptional importance.

1.3.3 CRHR Criteria

The Criteria for listing in the CRHR are consistent with the NRHP Criteria. In order to qualify for the CRHR, an historical resource must be significant at the local, state, or national level, under one or more of the following four Criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2. It is associated with the lives of persons important to local, California, or national history;

3. It embodies the distinctive characteristics of a type, period, region, or method or construction, or represents the work of a master, or possesses high artistic values; or

4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition to meeting one or more of the above Criteria, a CRHR-eligible property must also retain sufficient integrity to convey its significance. Unlike the NRHP, a CRHR-eligible property need not be 50 years of age to be eligible if it can be demonstrated that sufficient time has passed to understand its historical importance.

1.3.4 Integrity

In addition to establishing significance, resources must have historical integrity. Integrity is defined as the ability of a resource to convey its significance through the property's physical features and how those features relate to the property's significance within its period of significance. For historic resources, a period of significance is the date or span of time which reflects the significance of the architecture; or within which significant events transpired or significant individuals made their important contributions in relation to the resource in question.

The CRHR and NRHP recognize location, design, setting, materials, workmanship, feeling, and association as the seven aspects of historical integrity (NRB 15). Although not all seven aspects of integrity need to be present for a property to be eligible, the property must retain enough physical and design characteristics to reflect the property's significance. The seven aspects of historical integrity are:

- **Location** is the place where a resource was constructed or where an event occurred;
- **Design** results from intentional decisions made during the conception and planning of a resource. Design includes form, plan, space, structure, and style of a property;
- **Setting** applies to a physical environment, the character of a resource's location, and a resource's relationship to the surrounding area;
- **Materials** comprise the physical elements combined or deposited in a particular pattern or configuration to form a property;
- **Workmanship** consists of the physical evidence of crafts employed by a particular culture, people, or artisan, which includes traditional, vernacular, and high styles;
- **Feeling** relies on present physical features of a property to convey and evoke an aesthetic or historic sense of past time and place;
- **Association** directly links a historic property with a historic event, activity, or person of past time and place; and requires the presence of physical features to convey the property's historic character.

1.3.5 City's Historical Resources Regulations

The purpose of the City's Historical Resources Regulations (HRR; San Diego Municipal Code [SDMC] Chapter 14, Article 3, Division 2) is to protect, preserve and, where damaged, restore the historical resources of San Diego, which include historical buildings, historical structures, or historical objects, important archaeological sites, historical districts, historical landscapes, and traditional cultural properties (City 2018). These regulations are intended to assure that development occurs in a manner that protects the overall quality of historical resources. It is further the intent of these regulations to protect the educational, cultural, economic, and general welfare of the public, while employing

regulations that are consistent with sound historical preservation principles and the rights of private property owners.

The regulations apply to proposed development when the following historical resources are present on the site, whether or not a Neighborhood Development Permit or Site Development Permit is required: designated historical resources; historical buildings; historical districts; historical landscapes; historical objects; historical structures; important archaeological sites; and traditional cultural properties. Where any portion of a premises contains historical resources, the regulations shall apply to the entire premises.

1.3.5.1 City of San Diego Historical Resources Guidelines

The purpose and intent of the City's Historical Resources Guidelines (HRG) located in the City's Land Development Manual (LDM; City 2001), is to protect, preserve and, where damaged, restore the historical resources of San Diego. These guidelines are designed to implement the City's HRRs in compliance with applicable local, state, and federal policies and mandates, including, but not limited to, the City's General Plan, CEQA, and Section 106 of the National Historic Preservation Act (NHPA). The intent of the guidelines is to ensure consistency in the management of the City's historical resources, including identification, evaluation, preservation/mitigation, and development. The HRG states that if a project will potentially impact a resource 45 years or older, the resource's significance must be determined, even if it is not listed in or previously considered eligible for the California Register or a local register (LDM Section II.D.5).

In order to be designated as historic and potentially listed in the CSDHRR, one or more of the following Criteria must be met:

A. Exemplifies or reflects special elements of the City's, a community's, or a neighborhood's historical, archaeological, cultural, social, economic, political, aesthetic, engineering, landscaping or architectural development;

B. Is identified with persons or events significant in local, state, or national history;

C. Embodies distinctive characteristics of a style, type, period, or method of construction or is a valuable example of the use of indigenous materials or craftsmanship;

D. Is representative of the notable work of a master builder, designer, architect, engineer, landscape architect, interior designer, artist, or craftsman;

E. Is listed or has been determined eligible by the National Park Service (NPS) for listing on the NRHP or is listed or has been determined eligible by the California State Office of Historic Preservation (OHP) for listing on the CRHR; and/or

F. Is a finite group of resources related to one another in a clearly distinguishable way or is a geographically definable area or neighborhood containing improvements which have a special character, historical interest, or aesthetic value or which represent one or more architectural periods or styles in the history and development of the City.

In addition to meeting one or more of the above Criteria, a SCDHRR-eligible resource must also retain sufficient integrity to convey its significance. Although the City's municipal code does use a 45-year

threshold to review resources which may be adversely impacted by development, a resource need not be 45 years of age to be eligible for listing on the City's register.

Eligible resources, which may include an improvement, building, structure, sign, interior element and fixture, feature, site, place, district, area, or object, are designated to the City's Register of Designated Historical Resources by the City's Historical Resources Board (HRB) at a publicly noticed hearing. The City's HRG also states that if a project will potentially impact a resource, the resource's significance must be determined, even if it is not listed in or previously considered eligible for the CRHR or a local register (LDM Section II.D.5). The City has established baseline archaeological resource significance criteria based upon CEQA as follows:

> An archaeological site must consist of at least three associated artifacts/ecofacts (within a 50-square meter area) or a single feature and must be at least 45 years of age. Archaeological sites containing only a surface component are generally considered not significant, unless demonstrated otherwise. Such site types may include isolated finds, bedrock milling stations, sparse lithic scatters, and shellfish processing stations. All other archaeological sites are considered potentially significant. The determination of significance is based on a number of factors specific to a particular site including site size, type and integrity; presence or absence of a subsurface deposit, soil stratigraphy, features, diagnostics, and datable material; artifact and ecofact density; assemblage complexity; cultural affiliation; association with an important person or event; and ethnic importance (City 2001:15).

Non-significant resources are addressed in Section II.D.6 in the LDM as including sites with no subsurface component, such as isolates, lithic scatters, isolated bedrock milling stations, and shellfish processing stations.

1.3.5.2 Historic Districts

The City's historic preservation program provides for the designation of individually significant resources as well as historic districts (City 2001). A historic district is defined by the City's municipal code as *"a significant concentration, linkage, or continuity of sites, buildings, structures, or objects that are united historically, geographically, or aesthetically by plan or physical development and that have a special character, historical interest, cultural or aesthetic value, or that represent one or more architectural periods or styles in the history and development of the City*" (SDMC §113.0103).

1.3.6 Native American Heritage Values

California State Assembly Bill 52 (AB 52) revised PRC Section 21074 to include Tribal Cultural Resources (TCRs) as an area of CEQA environmental impact analysis. As a general concept, a TCR is similar to the federally defined termed Traditional Cultural Properties (TCP); however, it incorporates consideration of local and state significance and required mitigation under CEQA. According to Patricia L. Parker and Thomas F. King (1998), "Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is derived from the role the property plays in a community's historically rooted beliefs, customs, and practices.

A TCR may be considered significant if it is (i) included in a local or state register of historical resources; (ii) determined by the lead agency to be significant pursuant to criteria set forth in PRC Section 5024.1;

(iii) a geographically defined cultural landscape that meets one or more of these criteria; (iv) a historical resource described in PRC Section 21084.1 or a unique archaeological resource described in PRC Section 21083.2; or (v) a non-unique archaeological resource if it conforms with the above criteria.

1.4 PROJECT PERSONNEL

HELIX architectural historian, Annie McCausland, M.A. served as the principal investigator for architectural history. Ms. McCausland was the primary report author and provided senior historian review for PanGIS, Inc. (PanGIS). Doug Mengers, M.A., RPA, of PanGIS, who also meets the Secretary of Interior's Standards and Guidelines for architectural history, and PanGIS Research Associate, Kris Reinicke, M.A., RPA, conducted the historic pedestrian surveys. Ms. McCausland and Mr. Mengers conducted archival research and evaluated the significance and eligibility of the historic resources documented within SDHS. Ms. Reinicke also provided research and technical support.

Stacie Wilson, M.S., RPA served as the archaeological principal investigator. Ms. Wilson meets the qualifications of the Secretary of Interior's Standards and Guidelines for archaeology. HELIX field director, Julie Roy, B.A., conducted the archaeological field survey. Shuuluk Linton (Kumeyaay Native American monitor) from Red Tail Environmental participated in the pedestrian survey. This report was co-authored by Ms. McCausland, Theodore Cooley, M.A., RPA, Mr. Mengers, and Ms. Wilson. Mary Robbins-Wade, M.A., RPA provided senior technical review. Resumes for key project personnel are presented in Appendix A.

2.0 PROJECT SETTING

2.1 NATURAL SETTING

The project area is located within the coastal plain of western San Diego County, where the climate is characterized as semi-arid steppe, with warm, dry summers and cool, moist winters (Hall 2007; Pryde 2004). The project location is situated on San Diego Mesa, a remnant of an ancient wave-cut marine terrace, with the San Diego River valley located to the north and the San Diego Bay to the west. The elevation ranges from approximately 125 feet above mean sea level (AMSL) along the southwestern boundary of the project area, to a maximum of approximately 175 feet AMSL in the northernmost portion of the project area.

Geologically, the project area is underlain by the middle to late Pliocene age San Diego Formation (Kennedy 1975a) containing marine and nonmarine sedimentary rocks consisting of yellowish–brown and gray, fine- to medium-grained, poorly indurated fossiliferous marine sandstone and reddish-brown, transitional marine and nonmarine pebble and cobble conglomerate (Kennedy 1975b; Kennedy and Tan 2008:10). This formation is also exposed in most of the adjacent canyons and ravines (Kennedy 1975a). On the mesa-top areas to the north, east, and south of the project area, the early to middle Pleistocene age Lindavista Formation predominates (Kennedy 1975a) consisting of near-shore marine and nonmarine sediments deposited on the 10-kilometer-wide wave-cut Linda Vista terrace platform (Kennedy 1975b:29). These sediments are formed of reddish brown "interfingered strandline, beach, estuarine and colluvial deposits composed of siltstone, sandstone and conglomerate" (Kennedy and Tan 2008:8). Immediately to the south of the project area is the late Pleistocene age Bay Point Formation (Kennedy 1975a). composed mostly of "marine and nonmarine, poorly consolidated, fine- and medium-grained, pale brown fossiliferous sandstone" (Kennedy 1975b:29).

The project area is characterized predominantly by urban development. The areas within and immediately surrounding the project area include transportation infrastructure, residential, commercial, and industrial development. As a result, in addition to the geologic units discussed above, large portions of the area are underlain by artificial fill as a result of buildings and infrastructure development, with the soils on mesa areas having been altered to create level building sites or streets (Bowman 1973). The natural soil association mapped for most of the intact mesa-top areas is Huerhuero-Stockpen association. In a natural state, these soils generally consist of moderately well-drained loams to gravelly clay loams that have a subsoil of clay or gravelly clay: 0 to 9 percent slopes (Bowman 1973). Within the project area, the soil series present is the Huerhuero-urban land complex, 2 to 9 percent slopes, which occurs on marine terraces, at elevations from sea level to 400 feet AMSL. The landscape in this series "has been altered through cut and fill operations and leveling for building sites. Before cut and fill operations and leveling, the slope was 2 to 9 percent" (Bowman 1973: 55). While several soil series are present within the eroded drainages adjacent to the project area, the most commonly occurring are the Gaviota series of fine sandy loam, 30 to 50 percent slopes (Bowman 1973:50); the Redding cobbly loam series, 9 to 30 percent slopes, consisting of a soil strongly sloping to moderately steep, 10 to 20 inches deep, occurring over a hardpan (Bowman 1973:72); and the Terrace escarpments series, terrain consists of steep to very steep escarpments and escarpment-like landscapes. In most areas these soils consist of 8 to 10 inches of loamy or gravelly sediments over soft sandstone, shale, or gravelly sediments (Bowman 1973:79).

Prior to development, the Huerhuero series likely comprised the majority of the natural soils found on the mesa top in the project area. The Huerhuero series soils, which consist of moderately well-drained loams that have a clay subsoil, developed on sandy marine sediments; uncultivated, these soils support vegetation of mainly tarweed, wild oats, star-thistle, red brome, Russian-thistle, and annual grasses and forbs (Bowman 1973:54). The Gaviota series, 30 to 50 percent slopes, occurs within eroded drainage areas and is composed of well-drained, shallow fine sandy loams that formed from marine sandstone; this soil mainly supports chamise, cactus, scrub oak, sumac, flattop buckwheat, and annual forbs and grasses (Bowman 1973:50). The moderately steep terrain of the Redding cobbly loam series, 9 to 30 percent slopes, which also occurs within eroded drainage areas, generally contains mainly chamise, flattop buckwheat, sumac, scrub oak, and annual forbs and grasses (Bowman 1973:71). Terrace escarpment lands occur in the highly eroded areas along the ravines and canyon walls of some of the drainages adjacent to the project area. Natural vegetation in these areas ranges from a sparse cover of brush and annual forbs and grasses on south-facing slopes, to a fairly dense cover on north-facing slopes (Bowman 1973:79).

Prior to historic and modern activities, the project area vicinity would have consisted of grassland communities and coastal sage scrub on the mesa, with stands of riparian vegetation within the more well-watered drainages in some of the larger canyons and river valleys, and a natural marsh habitat surrounding the San Diego Bay (Beauchamp 1986; Schoenherr 1992). Native grassland plants include *Stipa, Elymus, Poa,* and *Muhlenbergia*), while plants of the coastal sage scrub community, include California sagebrush (*Artemisia californica*), white sage *(Salvia apiana*), flat-top buckwheat (*Eriogonum fasciculatum*), broom baccharis (*Baccharis sarothroides*), wild onion (*Allium haematochiton*), laurel sumac (*Malosma laurina*), San Diego sunflower (*Bahiopsis laciniata*), golden-yarrow (*Eriophyllum confertiflorum*), sawtooth goldenbush (*Hazardia squarrosa*), yucca (*Yucca schidigera*, *Hesperoyucca whipplei*), prickly pear cactus (*Opuntia* sp.), and scrub oak (*Quercus dumosa*). The riparian community would have consisted of plants such as sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), coast live oak (*Quercus agrifolia*) and willow (*Salix* sp.) (Beauchamp 1986; Munz 1974).

Major wildlife species found in this environment prehistorically were coyote (*Canis latrans*); mule deer (*Odocoileus hemionus*); grizzly bear (*Ursus arctos*); mountain lion (*Felis concolor*); rabbit (*Sylvilagus audubonii*); jackrabbit (*Lepus californicus*); and various rodents, the most notable of which are the valley pocket gopher (*Thomomys bottae*), California ground squirrel (*Ostospermophilus beecheyi*), and dusky footed woodrat (*Neotoma fuscipes*) (Head 1972). Acorns and grass seeds were staple food resources in the Late Prehistoric Period in Southern California (Luomala 1978). Rabbits, jackrabbits, and rodents were very important to the prehistoric diet as well; deer were somewhat less significant for food but were an important source of leather, bone, and antler. In addition, many of the plant species naturally occurring in the project area and vicinity are known to have been used by native populations for medicine, tools, ceremonial, and other uses (Christenson 1990; Hedges and Beresford 1986; Luomala 1978).

2.2 CULTURAL SETTING

The cultural history in San Diego County presented below is based on documentation from both the archaeological and ethnographic records and represents a continuous human occupation in the region spanning the last 12,000 years. While this information comes from the scientific reconstructions of the past, it does not necessarily represent how the Kumeyaay see themselves. While the material culture of the Kumeyaay is contained in the archaeological record, their history, beliefs and legends have persevered and are retained in the songs and stories passed down through the generations. It is important to note that Native American aboriginal lifeways did not cease at European contact. Protohistoric refers to the chronological trend of continued Native American aboriginal lifeways at the cusp of the recorded historic period in the Americas.

2.2.1 Ethnohistory

The Ethnohistoric Period, sometimes referred to as the ethnographic present, commences with the earliest European arrival in what is now San Diego and continued through the Spanish and Mexican periods and into the American period. The founding of Mission San Diego de Alcalá in 1769 brought about profound changes in the lives of the Kumeyaay people. The coastal Kumeyaay died from introduced diseases or were brought into the mission system. Earliest accounts of Native American life in what is now San Diego were recorded as a means to salvage scientific knowledge of native lifeways. These accounts were often based on limited interviews or biased data collection techniques. Later researchers and local Native Americans began to uncover and make public significant contributions in the understanding of native culture and language. These studies have continued to the present day, and involve archaeologists and ethnographers working in conjunction with Native Americans to address the continued cultural significance of sites and landscapes across San Diego County. The Kumeyaay are the Most Likely Descendants for all Native American human remains found in the City of San Diego.

The project area is located within the traditional territory of the Kumeyaay, also known as Ipai, Tipai, or Diegueño (named for Mission San Diego de Alcalá). At the time of Spanish contact, Yuman-speaking Kumeyaay bands occupied southern San Diego and southwestern Imperial counties and northern Baja California. The Kumeyaay are a group of exogamous, patrilineal territorial bands that lived in semi-sedentary, politically autonomous villages or rancherias. Most rancherias were the seat of a clan, although it is thought that, aboriginally, some clans had more than one rancheria and some rancherias contained more than one clan (Luomala 1978). Several sources indicate that large Kumeyaay villages or rancherias were in river valleys and along the shoreline of coastal estuaries (Luomala 1978; Kroeber 1925). They subsisted on a hunting and foraging economy, exploiting the region's diverse ecology throughout the year; coastal bands exploited marine resources while inland bands might move from the

desert, ripe with agave and small game, to the acorn- and pine nut-rich mountains in the fall (Cline 1984; Kroeber 1925; Luomala 1978).

At the time of Spanish colonization in the late 1700s, several major Kumeyaay villages were located in proximity to the project area. To the north, was the village of *Cosoy*, located approximately 3.7 miles to the northwest of the project area, along the south side of the San Diego River near the location of the San Diego Presidio and the first location of the Mission de Alcalá. Another nearby village to the north was the village of *Jamo* (Rinconada) located approximately 6.7 miles to the northwest of the project area, along west side of Rose Canyon, where the Rose Canyon drainage enters into Mission Bay (Carrico 1977, 1998; Cooley et al. 1992; Winterrowd and Cardenas 1987). These village locations were documented as inhabited at the inception of Spanish colonization when they were visited by the Spanish during the Portolá expedition in 1769 (Carrico 1977). A third nearby village to the north was the village of *Nipaquay,* located upriver along the north side of the San Diego River, at the second and final location of the San Diego Mission de Alcalá, approximately 5.2 miles to the northeast of the project area (Brodie 2013; Carrico 1998). A fourth nearby village, indicated by Kroeber (1925) to also be located along the lower San Diego River, was the village of *Sinyeweche* to the east of the village of *Nipaquay*. To the south, the village of *Ehpaa* (Las Chollas) was located at the mouth of Las Chollas Creek, along San Diego Bay, approximately 2.7 miles southeast of the project area (Carrico 1998). The presence of some of these Kumeyaay villages at, or near, the locations of early Spanish facilities (e.g., *Cosoy* and *Nipaquay*) was not accidental. The Spaniards chose these locations because there were native villages present in proximity (Carrico 1998). Some native speakers referred to river valleys as *oon-ya*, meaning trail or road, describing one of the main routes linking the interior of San Diego with the coast. For example, the floodplain from the San Diego Mission de Alcalá to the ocean was *hajir* or *qajir* (Harrington 1925). It is likely that the Kumeyaay people used the San Diego River valley and other significant east-west trending water courses as travel corridors from interior coastal plain areas to and from villages located along, and at the mouth of, the river, such as *Cosoy, Jamo, Nipaguay*, and *Sinyeweche,* as well as other villages along the coast to the north and south of the river and the project area, including *Ystagua*, *Onap*, *Peñasquitos*, *Pawai/Pawaii/Paguay*, *Apusquel*, and *Chiap* (Carrico 1998; Trafzer and Carrico 1992:53).

2.2.2 Archaeological Record

The earliest well-documented sites in the San Diego area belong to the San Dieguito Tradition, dating to over 9,000 years ago (Warren 1967, 1968; Warren et al. 1998; Warren and Ore 2011). The San Dieguito Tradition is thought by most researchers to have a subsistence system with an emphasis on hunting (Warren 1967, 1968). Diagnostic artifact types and categories associated with the San Dieguito Tradition, in coastal contexts, include elongated bifaces; scraping tools; crescentics; and leaf-shaped projectile points (Rogers 1929, 1938, 1966; Warren 1966, 1967, 1968).

In the southern coastal region, the traditional view of San Diego prehistory has the San Dieguito Tradition followed by complexes and traditions during the Archaic Period, dating from circa 8600 Before Present (BP) to circa 1300 BP (Warren et al. 1998). Many archaeological site assemblages dating to this period have been identified at a range of coastal and inland sites. These assemblages, designated as the La Jolla/Pauma complexes, are considered part of Warren's (1968) "Encinitas Tradition" and Wallace's (1955) "Early Milling Stone Horizon." The Encinitas Tradition is generally "recognized by millingstone assemblages in shell middens, often near sloughs and lagoons" (Moratto 1984:147) and brings a shift toward a more generalized economy and an increased emphasis on seed resources, small game, and shellfish (Warren 1968, 2012). The local cultural manifestations of the Archaic period are called the La Jolla complex along the coast and the Pauma complex inland. Pauma complex sites lack the evidence of

marine food resources such as shellfish that dominates many La Jolla complex site assemblages. Sites dating to the Archaic Period are most numerous along the coast, near-coastal valleys, and around estuaries. In the inland foothill areas of San Diego County, sites associated with, and radiocarbon dated to the Archaic Period, while not absent (e.g., Cooley 1995; Cooley and Barrie 2004; Raven-Jennings and Smith 1999), are less common relative to the Late Prehistoric complexes that follow them (McDonald 1995:14). The La Jolla/Pauma complex tool assemblage is dominated by manos and metates, rough cobble tools, especially choppers, scraper planes, and scrapers, but also includes flexed burials, doughnut stones, discoidals, stone balls, plummets, biface points, beads, bone tools, and terrestrial and marine mammal remains (Moriarty 1966; True 1958, 1980; Warren 1968; Warren et al. 1998).

While there has been considerable debate about whether San Dieguito and La Jollan patterns might represent the same people using different environments and subsistence techniques, or whether they are separate cultural patterns (e.g., Bull 1983; Ezell 1987; Gallegos 1987; Warren et al. 1998), abrupt shifts in subsistence and new tool technologies are seen to occur in the archeological record defining the onset of the Late Prehistoric Period (1500 BP to AD 1769). The Late Prehistoric period is characterized by higher population densities and intensification of social, political, and technological systems. The Late Prehistoric period is represented by the San Luis Rey complex in the northern portion of San Diego County and the Cuyamaca complex in the southern portion of the county. Late Prehistoric artifactual material is characterized by Tizon Brownware pottery, various cobble-based tools (e.g., scrapers, choppers, and hammerstones), arrow shaft straighteners, pendants, manos and metates, and mortars and pestles (McDonald and Eighmey 1998). The arrow point assemblage is dominated by the Desert Side-notched and Cottonwood Triangular points, but the Dos Cabezas Serrated type also occurs (McDonald and Eighmey 1998). Ethnographic data suggest that subsistence during at least the latter part of the Late Prehistoric Period was focused on the utilization of acorns and grass seeds, with small game serving as a primary protein resource and big game as a secondary resource. Fish and shellfish were also secondary resources, except immediately adjacent to the coast, where they assumed primary importance (Luomala 1978). The settlement system is characterized by seasonal villages where people used a central-based collecting subsistence strategy.

Based on ethnographic data, including the areas defined for the Hokan-based Yuman-speaking peoples (Kumeyaay) and the Takic-speaking peoples (Luiseño) at the time of contact, it is generally accepted that the Cuyamaca complex is associated with the Kumeyaay and the San Luis Rey complex with the Luiseño (Meighan 1954; True 1970). Agua Hedionda Creek is often described as the division between the territories of the Luiseño and the Kumeyaay people (Bean and Shipek 1978; Luomala 1978), although various archaeologists and ethnographers use slightly different boundaries.

2.2.3 Historical Background

2.2.3.1 Spanish Period

While Juan Rodriguez Cabrillo visited San Diego briefly in 1542, the beginning of the historic period in the San Diego area is generally given as 1769. In the mid-eighteenth century, Spain had escalated its involvement in California from exploration to colonization (Weber 1992), and in that year, a Spanish expedition headed by Gaspar de Portolá and Junípero Serra established the Royal Presidio of San Diego. A small pueblo, now known as Old Town San Diego, developed below the presidio. Portolá then traveled north from San Diego seeking suitable locations to establish military presidios and religious missions in order to extend the Spanish Empire into Alta California.

Initially, both a mission and a military presidio were located on Presidio Hill overlooking the San Diego River. The Mission San Diego de Alcalá was constructed in its current location five years later. The missions and presidios stood, literally and figuratively, as symbols of Spanish colonialism, importing new systems of labor, demographics, settlement, and economies to the area. Cattle ranching, animal husbandry, and agriculture were the main pursuits of the missions.

2.2.3.2 Mexican Period

Although Mexico gained its independence from Spain in 1821, Spanish patterns of culture and influence remained for a time. The missions continued to operate as they had in the past, and laws governing the distribution of land were also retained in the 1820s. Following secularization of the missions in 1834, large ranchos were granted to prominent and well-connected individuals, ushering in the Rancho Era, with the society making a transition from one dominated by the church and the military to a more civilian population, with people living on ranchos or in pueblos. With the numerous new ranchos in private hands, cattle ranching expanded and prevailed over agricultural activities. These ranches put new pressures on California's native populations, as grants were made for inland areas still occupied by the Kumeyaay, forcing them to acculturate or relocate farther into the back-country. In rare instances, former mission neophytes were able to organize pueblos and attempt to live within the new confines of Mexican governance and culture. The most successful of these was the Pueblo of San Pasqual, located inland along the San Dieguito River Valley, founded by Kumeyaay who were no longer able to live at the Mission San Diego de Alcalá (Carrico 2008; Farris 1994).

Land was also granted to pueblos with locally elected town councils. In 1833, San Diego submitted a petition to Governor Figueroa asking for formal recognition as a pueblo, and in 1834, was granted permission to establish a municipal government. However, partially due to the establishment of the ranchos in the back-county areas and the subsequent population shift to the ranchos, the pueblo's population shrunk from nearly 500 people in 1834 to 150 people in 1841 (Crane 1991). Consequently, the town council was replaced by a justice of the peace in 1838. A few years later, in 1845, the town was allowed a governor-appointed sub-prefect, Santiago Arguello, who commissioned a survey of the pueblo lands; the resulting map was signed by Governor Pio Pico in 1846, establishing the pueblo as over 48,000 acres of land.

2.2.3.3 American Period

American governance began in 1848, when Mexico signed the Treaty of Guadalupe Hidalgo, ceding California to the United States at the conclusion of the Mexican–American War. A great influx of settlers to California and the San Diego region occurred during the American Period, resulting from several factors, including the discovery of gold in the state in 1848, the end of the Civil War, the availability of free land through passage of the Homestead Act, and later, the importance of San Diego County as an agricultural area supported by roads, irrigation systems, and connecting railways. The increase in American and European populations quickly overwhelmed many of the Spanish and Mexican cultural traditions, and greatly increased the rate of population decline among Native American communities.

While the American system required that the newly acquired land be surveyed prior to settlement, the Treaty of Guadalupe Hidalgo bound the United States to honor the land claims of Mexican citizens who were granted ownership of ranchos by the Mexican government. The Land Act of 1851 established a board of commissioners to review land grant claims, and land patents for the land grants were issued throughout the following years. In 1874, San Diego received a land patent for 47,323 acres, which was

slightly less than the size of the original pueblo lands, due to 1,233 acres within Point Loma being assigned as a military reservation (Crane 1991).

In the early years of the American Period, Old Town remained the center of civic life in the area; however, the San Diego River was prone to major floods, and in the 1870s, downtown San Diego, then known as Horton's Addition, became the urban center (AECOM 2015). The San Diego River, however, remained a main source of water for the growing town (Papageorge 1971). While the first attempt to build a dike to route the San Diego River into what was then known as "False Bay" (now known as Mission Bay) occurred in the 1850s, it was not until the 1870s that a more permanent channel was constructed (Brodie 2013).

The 1880s saw "boom and bust" cycles that brought thousands of people to the area of San Diego County; however, by the end of the decade, many of the newcomers had left, although some remained to form the foundations of small communities based on dry farming, orchards, dairies, and livestock ranching. During the late nineteenth and early twentieth centuries, rural areas of San Diego County developed small agricultural communities centered on one-room schoolhouses. Such rural farming communities consisted of individuals and families tied together through geographical boundaries, a common schoolhouse, and a church.

The influence of military development, beginning in 1916 and 1917 during World War I, moved much of the population away from this life, and the need to fight a two-ocean war during World War II resulted in substantial development in infrastructure and industry to support the military and accommodate soldiers, sailors, and defense industry workers.

2.2.3.4 Development of Downtown San Diego and Balboa Park

On May 26, 1868, 1,400-acres of pueblo land was set aside for a public park by the City of San Diego Board of Trustees. The trustees included Alonzo E. Horton and Ephraim W. Morse. For much of the remainder of the nineteenth century, the area then known as "City Park" remained a mostly wild land preserve of hilltops, canyons, and arroyos, forever preserved for future generations of San Diegans and visitors. However, encroachments on the park land began in the 1870s and 1880s (City 1992). San Diego's population was growing, and the City saw a need for another school. The Board of Trustees decided to use a portion of the park land for a new school. Russ School, named after the Joseph Russ, who donated the wood to construct the school, was completed in 1882. Today, SDHS is located on the same lot and is the oldest school in San Diego (City 2020a).

In 1892, Kate O. Sessions, San Diego's patron saint of horticulture, asked City officials to lease 30 acres of the park land to her for a nursery. She was granted the lease and in return, she planted 100 trees per year throughout the park and donated trees to the city for planting elsewhere. Kate Session transformed the parkland into a lush, designed landscape with tree shaded lawns, flower gardens, and hillside nature paths (City 1992).

In 1902, a landscape architect, Samuel Parsons, was hired to prepare a comprehensive plan for the public park. Funds were raised for his plan and planting development continued, and by 1910 the parkland began to look much as it does today. The name "Balboa" was selected during a naming contest, in honor of the famous Spanish explorer, Vasco Nunez de Balboa. The continued development of Balboa Park owes much to the two world fairs of the early twentieth century, the Panama-California Exposition of 1915-1916, and the California Pacific International Exposition of 1935-36. These two

events marked the beginning and the continued development of Balboa Park's cultural center that exists today (City 2020b).

3.0 SAN DIEGO HIGH SCHOOL HISTORIC CONTEXTS

The SDHS campus covers approximately 32 acres in downtown San Diego, east of Cortez Hill and north of East Village. The terrain is gently sloping to the south and is entirely developed. The project area is bounded on the north and east by I-5 and Balboa Park, on the south by San Diego City College, and on the west by SR 163 and high-density multi-family housing.

The following historic contexts are focused on the modern American period relevant to the existing structures within SDHS and are drawn primarily from Richard Amero's *San Diego High School District and Balboa Park* (Amero n.d.) and Timothy Yates' *Modern San Diego Public School Development* (Yates 2014), commissioned by the District. Archival research conducted for this study is summarized in Section 4.2, *Archival Research*. Resource specific contexts are provided with detailed resource descriptions in Section 6.3, *SDHS Historic Buildings and Structures*.

3.1 RUSS PUBLIC SCHOOL/SAN DIEGO HIGH SCHOOL

SDHS is the oldest school in San Diego (City 2020a).It began as the Russ School in August 1882, an elementary school named after Joseph Russ, whose Russ Lumber Company donated the wood for construction of the school. A high school program was established at Russ School in 1888. The school became entirely a high school in 1893, known as Russ High School. The original Russ School building (1882) was moved several hundred feet in 1906 to accommodate new school building construction commissioned by the Board of Education (Amero n.d.). The Board planned to rehabilitate the old Russ School building but it burned to the ground in 1911 (Amero n.d.). In its place, a new main school building was constructed, known as the "Gray Castle" (Plate 1).

Opened in 1907, the Gray Castle was designed by architect Frank Shaver Allen in the Gothic Revival style and constructed of granite veneer over brick (Amero n.d.). Three additional buildings which housed home economics, fine arts, and technology classrooms were designed by the Quayle Brothers and their partner Charles Cressey in the Gothic Revival style (Amero n.d.).These buildings were completed in 1913. Balboa Stadium also designed by the Quayle Brothers and Cressey opened during the Panama-California Exposition in May 1915. The 1920s saw the addition of boys' and girls' gymnasiums (1923), Russ Auditorium (1926), and the Main Gymnasium (1928). These buildings were also designed in the Gothic Revival style and were parts of the SDHS campus commonly known as the Gray Castle (Plate 2).

The campus resembled on old European castle, with ivy-covered towers and turrets, hence the nickname. The Gray Castle created a magical setting for students and faculty and was cherished by students, alumni, and faculty while it was extant during most of the twentieth century (Williamson 1976). SDHS yearbooks during the early and mid-twentieth century used the popular nickname for the school, Gray Castle, as the annual title. SDHS yearbooks also commonly featured medieval imagery and motifs which further promoted the aesthetic embodiment of the Gray Castle (Plates 3 and 4).

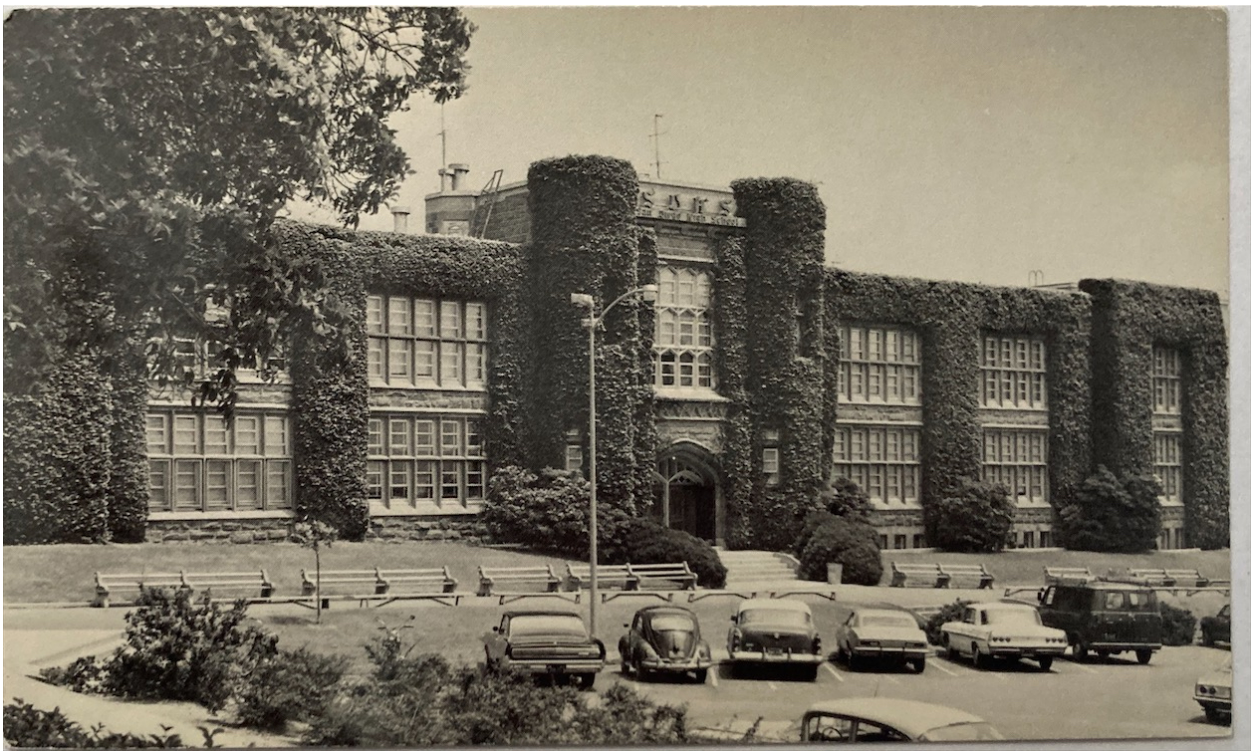


Plate 1. Gray Castle main building, circa 1970. Courtesy of the SDHS Alumni Association.

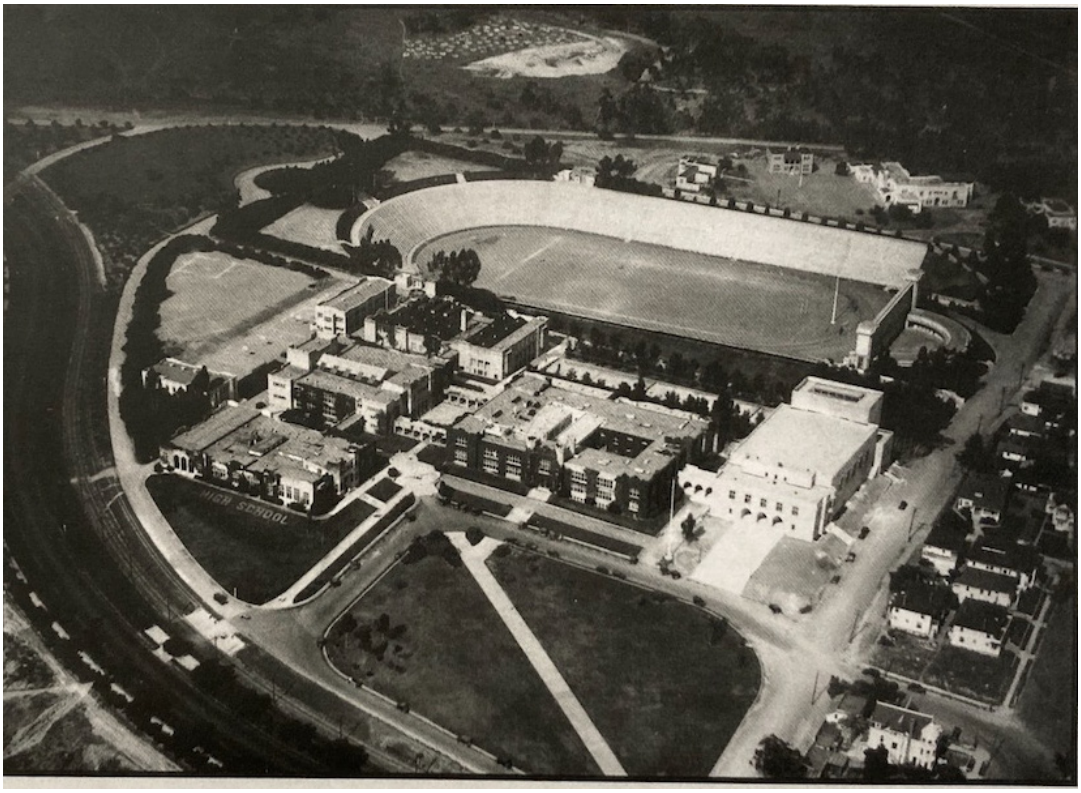


Plate 2. SDHS (Gray Castle) and Balboa Stadium, 1926. Courtesy of the SDHS Alumni Association.



Plate 3. SDHS yearbook covers from 1928 (left) and 1960 (right). Courtesy of Classmates.com.

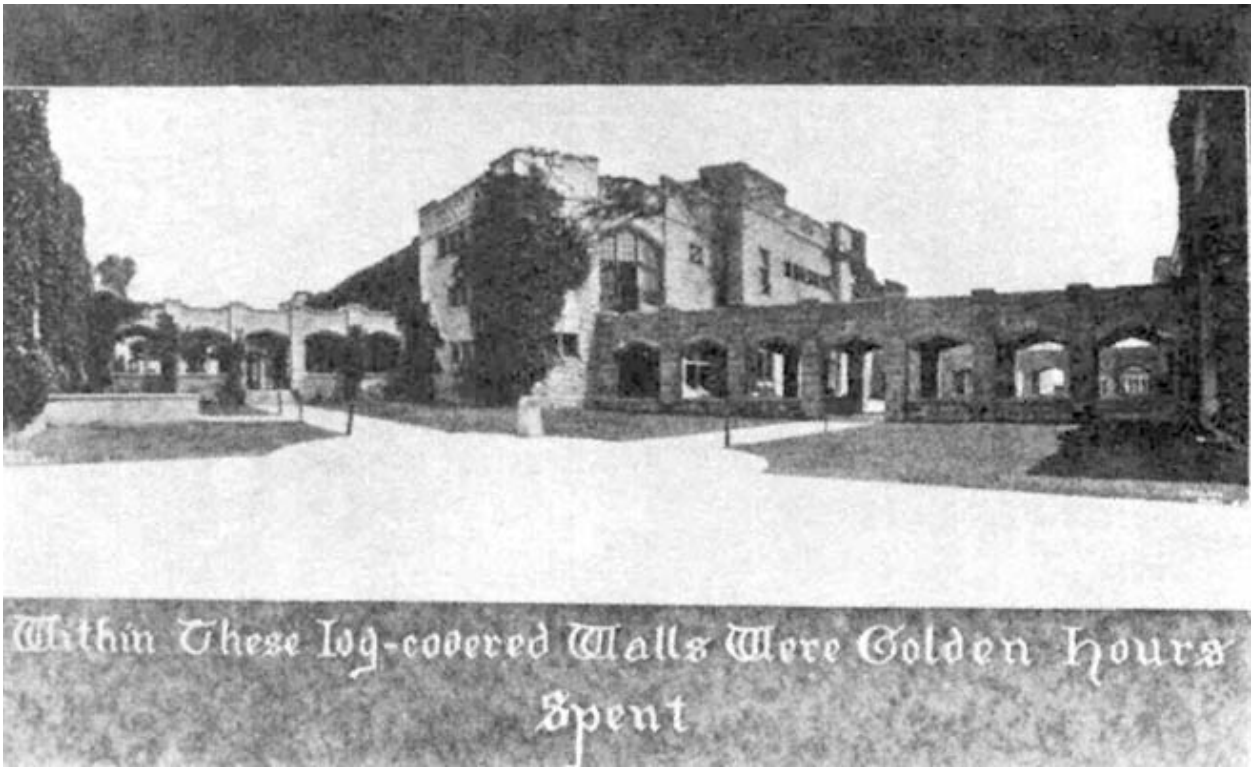


Plate 4. "Within These Ivy-covered Walls Were Golden Hours Spent" reads the caption for the photo above which appeared in a 1927 school yearbook. Courtesy of the SDHC.

Additional classrooms (buildings 500, 600, and 700) were built between 1938 and 1950, and an upper deck was added to Balboa Stadium in 1960, bringing its capacity to 40,000. The 1933 Long Beach earthquake damaged or destroyed many school buildings in southern California, prompting the passing of the Field Act, which established earthquake safety standards for new construction. However, renovation of pre-1933 structures was spotty until the San Fernando earthquake of 1971 (Amero n.d.). At SDHS, demolition of pre-Field Act structures began with the Russ Auditorium in 1973 and proceeded to the Gray Castle main building. Replacement buildings 100 to 400 were constructed in 1975 to 1976. Balboa Stadium was demolished and replaced with a much smaller venue in 1978. The new campus was designed by local architect Richard George Wheeler.

Students, alumni, and faculty fought to preserve Gray Castle which had served SDHS for over 65 years (Williamson 1976). When the Gray Castle was demolished, pieces of the gray granite walls were collected by students as souvenirs (*San Diego Union* 1975: 13). The new campus was designed by local architect Richard George Wheeler, an SDHS alumni from the Class of 1935 (Williamson 1976). Wheeler stated in a newspaper article in 1976 that his team tried to "give the new buildings a feeling of strength and solidarity like the old school had. We tried to build a strong, contemporary school and give it the appearance of sitting on a pedestal with a wall around it, resulting in the appearance of a castle" (Williamson 1976). Wheeler, like other alumni, also cherished Gray Castle and paid homage to it in his redevelopment design of the campus.

Artifacts from the Gray Castle campus were intentionally preserved and incorporated into the new campus. These artifacts included the gargoyles from Russ Auditorium, the fountain from a Gray Castle courtyard, the primary entry doors from the Gray Castle main building, and a few Torrey Pine trees (Williamson 1976). Other artifacts preserved and incorporated into the new campus included a World War I stone memorial and a World War II plaque designed by Isabelle Shultz Churchman. These preserved artifacts from the Gray Castle campus which were incorporated into the new campus represent an intentional act of preservation that was enacted by the SDHS community, not required by any preservation laws. These artifacts are the last remnants of the Gray Castle which are still extant today in 2020.

Other additions to SDHS campus have occurred since 1976. New classrooms (building 800) and second story walkways were added in 1995, more new classrooms (buildings 900 and 1000) in 2003, and the campus entrance was switched from Park Boulevard to Russ Boulevard. In 2004, SDHS was reorganized into six autonomous small schools on a single campus (SDUSD 2020). Additional classrooms (building 1100) were constructed in 2011 (Figure 4).

3.2 ARCHITECTURAL CONTEXTS

The following architectural context is taken primarily from the City of San Diego's *San Diego Modernism Historic Context Statement* (City 2007) and Virginia McAlester's *A Field Guide to American Houses* (McAlester 2013). Biographies of architects are derived from the City of San Diego Historical Resources Board's *Biographies of Established Masters* (City 2011), the City of San Diego's *San Diego Modernism Historic Context Statement* (City 2007), and the Modern San Diego database (York 2020).

3.2.1 San Diego Schools

During the Depression era, the Works Progress Administration (WPA) and Public Works Administration (PWA) focused most of their San Diego efforts on curriculum development and murals by local artists

(WPA Curriculum Project of the San Diego City Schools), rather than on school building construction (as was required in Los Angeles after the 1933 Long Beach earthquake). The little that was built in the early 1940s tended to be Modernist in style. Prior to World War II, there was much more influence from the Streamline Moderne than the International substyle. Examples include the Franklin School in Kensington (1940-41) and several Linda Vista schools (Linda Vista Elementary, Carson Elementary, and Kearny Junior-Senior High School, all constructed 1941-1942) (Yates 2014).

To meet the demands of the post-World War II population increase, San Diego Unified became the first school district in the nation to use portable classrooms. Most new permanent construction during this period occurred in the suburbs and combined new progressive education ideas with International style buildings. This includes designs by Lloyd Ruoco, Frank Hope and Associates, and especially Clyde Hofbauer. Along with the SDUSD Board of Education Center in University Heights (built in 1953 and considered the finest local example of International style), Hofbauer's prolific designs include 8 high schools, 16 junior high schools, and 63 elementary schools in the District (Yates 2014).

3.2.2 Modernism in San Diego

To address the wealth of modern architectural resources in San Diego, the City of San Diego commissioned the development of the *San Diego Modernism Historic Context Statement* (City 2007). This context reflects the local expression of a wider architectural and cultural movement. As such, it is tied to specific local events and patterns of physical development that influenced the character of those resources between 1935 and 1970. The *San Diego Modernism Historic Context Statement* includes a historic context, a discussion of modern-era sub-styles, a list of contributing designers in the San Diego area, and guidelines for the evaluation of modern-era resources in San Diego. These guidelines, based on those of the NRHP, CRHR, and CSDHRR, have been relied on extensively for the following SDHS resource evaluations (City 2007).

A detailed description of Modern architecture as expressed in the San Diego region is included in the *San Diego Modernism Historic Context Statement*. In general, all Modern architecture exhibits a forward-looking attitude, honest expression of structure, use of new materials and techniques, expansive glass, integration of indoor-outdoor spaces, functional floor plans, and easy maintenance features. Modernism sub-styles consistently share these themes, but do not all share a uniform set of design motifs. Sub-styles represent distinct variations of Modernism, but frequently overlap in a single piece of architecture. Details of Modern sub-styles are included in the *San Diego Modernism Historic Context Statement* (City 2007). A summary of the sub-styles present on the SDHS campus is included below.

3.2.2.1 International Style

The International style was a major world-wide architectural trend of the 1920s and 1930s and reflects the formative decades of Modernism prior to World War II. Although the International style originated in Western Europe, it transcended any national or regional identity because International style architecture made no reference to local vernaculars or traditional building forms. The style quickly migrated to the United States as architects from Europe fled prior to World War II. In Los Angeles, immigrant architects Rudolph Schindler and Richard Neutra were instrumental in popularizing the International style. The emergence of International style architecture in San Diego came later with most examples built after 1935 (City 2007).

The International style is characterized by a radical simplification of form and a complete rejection of ornament. Common features of International style architecture include square and rectangular building footprints, simple cubic or extruded rectangular forms, horizontal bands of windows, and strong right angles. Predominant building materials include concrete, smooth stucco, brick, and glass. Significant San Diego examples include the California Department of Transportation building in Old Town by C.J. Padererski (1953) and the SDUSD Board of Education Center in University Heights by Clyde Haufbauer (1953) (City 2007).

3.2.2.2 Brutalism

The name *brutalism* originates from *béton brut*, French for "raw concrete". The style was largely influenced by Swiss architect Le Corbusier. Brutalist buildings are generally strikingly blockish, geometric, and composed of repetitive shapes. The predominant building material is concrete, frequently revealing the intentional textures of the wood formwork. The concrete is intended to be fully expressed as both the primary structural material and finish. Critics of the style argued that it disregarded the social environment, making such structures inhuman, stark, and out of place.

Brutalism was most popular in San Diego between 1965 and 1975, generally later than elsewhere. The most prominent San Diego examples include San Diego County Credit Union Stadium (formerly Qualcomm Stadium/Jack Murphy Stadium) by Frank Hope & Associates (1965), the Salk Institute by Louis Kahn (1959-66), and many buildings on the University of California San Diego campus including Geisel Library by William Pereira (1970), McGill Hall by Frank Hope (1969), Galbraith Hall by Deems & Lewis (1958), the Humanities and Social Sciences building by Richard George Wheeler (1969), and the Applied Physics and Mathematics building by Mosher & Drew (1969) (City 2007).

3.2.2.3 Frank Lewis Hope, Jr.

Frank Lewis Hope, Jr. (1901-1994) is included on the San Diego HRB's list of Master Architects (City 2011). He arrived in San Diego in 1913 and attended SDHS prior to working as an architect for the Navy during World War I. After attending the University of California and Carnegie, Hope worked in the San Diego offices of Richard Requa, Herbert Jackson, Lillian Rice, and William H. Wheeler through the mid-1920s (York 2020).

In 1928 he launched Frank L. Hope & Associates, Architects & Engineers. Early commissions consisted of residential and commercial structures, as well as several churches for the San Diego Roman Catholic Diocese, including St. Didacus (1927), St. Patrick's (1928), and the Carmelite Monastery in Normal Heights (1930). Designs for educational institutions included Grossmont Union High School Auditorium-Gymnasium (WPA, 1935-37), Dana Junior High School (1941), San Diego State College Sciences building and Music building, and Kearny Mesa Junior College (1961). Other civic designs included the Timken Museum in Balboa Park (1962-65) and the Cabrillo National Monument Visitors Center (1966). Hope retired in 1966 and passed the business on to his sons Frank Hope III (architect) and Charles Hope (structural engineer) (York 2020).

3.2.2.4 Quayle Brothers Architects (Charles and Edward Quayle)

Quayle Brothers Architects (Charles and Edward Quayle) are included on the San Diego HRB's list of Master Architects (City 2011). The firm was founded by William Quayle in Peoria, Illinois, about 1880, and was in Denver in the 1890s. Both sons, Charles and Edward, trained under their father on civic projects in Denver. William and Edward relocated to San Diego about 1904, and Charles followed in

1907. William died in 1906, and his sons, Charles, and Edward, continued to operate the business in San Diego through the 1930s (City 2011).

In 1915 architect Charles Cressey partnered with the Quayle Brothers and worked on several projects with them, including Gray castle campus buildings (200, 300, and 400) in 1911 and Balboa Stadium in 1914. The partnership appears to have ended in 1916 when Cressey was drafted into the military during World War I (Darlington 2020).

The Quayle Brothers designed a variety of buildings in San Diego, including the San Diego County Jail (1913), the Salt Lake and Union Pacific building at the Panama-California Exposition (1914), the Balboa Stadium at SDHS (1914), the North Park Theater (Historic Review Board Landmark 245 constructed in 1928), the San Diego Police Department (1939), and at least 10 additional buildings listed on the local register (HRB, City of San Diego 2011).

3.2.2.5 Richard George Wheeler

Richard George Wheeler (1917-1990) was the son of prominent San Diego architect William Henry Wheeler. Richard attended SDHS and San Diego State College before receiving his degree in architecture from UC Berkeley in 1941. After service in World War II, he worked under his father at Wheeler & McGowan until receiving his architectural license and opening his own firm in 1947. Richard G. Wheeler, AIA, and Associates began with residential designs, including contributions to the Clairemont master planned community in the early 1950s. They soon added commercial and medical buildings and became one of the largest architectural firms in San Diego (City 2007).

Wheeler's San Diego projects include the Legler Benbough Medical building in Bankers Hill, topped by Mister A's restaurant (1953); Point Loma Doctor's Hospital, now Sharp Cabrillo Hospital, in Point Loma (1959); Shelter Island Hotel, now Best Western Island Palms Hotel (1960); the Westgate Plaza Hotel, 1055 2nd Avenue, San Diego (1970); San Diego Gas & Electric (SDG&E) Company headquarters in downtown San Diego (1968); and the Humanities and Social Science building at University of California San Diego (1969).

None of Richard George Wheeler's designs are listed on the CSDHRR, and he is not listed in the HRB's Biographies of Established Masters (City 2011). However, he is listed in the *San Diego Modernism Historic Context Statement* as a Contributing Designer of Modern San Diego. Many of Wheeler's designs are only just reaching historic age, and it is likely that review by the HRB would consider him a Master Architect.

3.2.2.6 San Diego High School

Based on District maps and aerial photographs, the campus currently consists of classroom buildings 100-1100; various sports facilities including a stadium, baseball fields, and tennis courts; quads, courtyards, and connecting sidewalks; and parking lots and landscaping.

As described in Section 3.1 *Russ Public School/San Diego High School History* above, most of the campus buildings were demolished and reconstructed in 1975-1976, except for those buildings constructed post-Field Act (buildings 500, 600, and 700). Architectural plans were provided by the District for these three buildings. Building 700 was designed by Quayle Brothers Architects (Charles and Edward Quayle) of San Diego as the Choral and English building and was constructed in 1938. Building 600 was designed by San Diego architect Frank Lewis Hope, Jr. as the Technical Arts building and was constructed in 1940.

Building 500, the Science/ROTC (Reserve Officer Training Corps) building, was also designed by Frank Lewis Hope, Jr. and was constructed in 1950. The Quayle Brothers and Frank Lewis Hope, Jr. are recognized as Master Architects by the San Diego HRB (City 2011).

The remaining core of the campus consists of buildings 100, 200, 300, 400, and Balboa Stadium. These were designed by Richard George Wheeler and constructed in 1975-1976 (Amero n.d.). Balboa Stadium, originally designed by the Quayle Brothers and their partner Charles Cressey in 1914, was reconstructed in 1978, as designed by Wheeler. Mr. Wheeler is not recognized by the HRB as a Master Architect but is identified as a Contributing Designer of Modern San Diego in the *San Diego Modernism Historic Context Statement* (City 2007).

Remaining campus buildings are all modern additions, including buildings 800 (1995), 900 and 1000 (2002-2003), and 1100 (2011). All of the recreational facilities, quads, connecting sidewalks, and most of the landscaping appear to date to the mid-1970s reconstruction of campus, based on analysis of historic aerial photographs (NETROnline 2020). Exceptions are noted below in Section 6.4, *SDHS Historic Campus Features*. Portions of Gray Castle campus buildings were either relocated or incorporated into the 1975-1976 construction, including the wooden entry doors on building 100, the gargoyles on the adjacent planter, the fountain from the Gray Castle courtyard, the World War I memorial, and the World War II plaque. Detailed resource descriptions are provided in Section 6.4.

4.0 ARCHIVAL RESEARCH AND CONTACT PROGRAM

4.1 RECORDS SEARCH

HELIX staff conducted a record search of the California Historical Resources Information System (CHRIS) at the South Coastal Information Center (SCIC) on December 4, 2019. The records search covered a quarter-mile radius around the project area and included the identification of previously recorded cultural resources and locations and citations for previous cultural resources studies. The CRHR, the California State OHP historic properties directories, and the CSDHRR, were also reviewed for the project area. The records search summary and map are included as Appendix B (Confidential Appendices, bound separately).

4.1.1 Previous Studies

The records search results identified 53 previous cultural resource studies within the record search limits, one of which (Loftus 2013 [SD-16102]) occurred within the project area (Table 1, *Previous Studies within One Quarter-Mile of the Project Area*). The 2013 Loftus study was a records search and survey conducted for the construction of an AT&T facility within the SDHS campus. The other 52 studies include cultural reports of resource inventories, record searches, site visits, archaeological surveys, historical resource investigations, architectural evaluations, archaeological monitoring, and environmental impact reports and negative declarations. None of the studies identified resources within the project area.

Table 1
PREVIOUS STUDIES WITHIN ONE-QUARTER MILE OF THE PROJECT AREA

Report No.	Report Title	Author, Date
SD-01854	Starlight Bowl	Hector, n.d.
SD-02628	Historic Properties Inventory Report for the Mission Valley Water Reclamation Project, San Diego, California	Carrico, Clevenger, Cooper, and Gallegos, 1990
SD-03683	Results of the Historic Building Assessment for 1128 Oliver Avenue, San Diego, California	Alter, 1999
SD-03921	El Cortez	Various, n.d.
SD-04604	Public Notice of Draft Environmental Impact Report House of Charm Reconstruction	City of San Diego, 1993
SD-04805	Historical Hazardous Materials Audit Proposed Civic Center San Diego, California	Tetra Tech Inc, 1989
SD-06392	Negative Declaration and Notice to Public of Request for Release of Community Development Block Grant Funds	City of San Diego, 1995
SD-06560	Historic American Buildings Survey: Graham Memorial Presbyterian Church	U.S. Department of Interior, 1975
SD-07204	Public Notice of Proposed Draft Revised Negative Declaration Plaza of the Founders-Sixth Avenue Mesa, Balboa Park	City of San Diego, 1999
SD-07621	Record Search Results for IT, 1125 9th Street Project	Holson, 2001
SD-08363	Public Notice of a Proposed Mitigated Negative Declaration for Water and Sewer Group Job 536	City of San Diego, 2001
SD-08366	Public Notice of a Proposed Negative Declaration - West Arcade	City of San Diego, 2001
SD-08450	Historic Resources Inventory for Uptown Area, San Diego, California	Brandes, 1981
SD-08451	Historic Resources Inventory for Middletown Area, San Diego, California Completed by the University of San Diego	Brandes, 1981
SD-08882	Historic Resources Inventory Update of the Core Area for Centre City Development Corporation	Moomjian, 2003
SD-08971	Historical Assessment of the Commercial Building Located at 1045 Tenth Avenue San Diego, California	Crawford, 2004
SD-09189	Report on Archaeological Monitoring: K. Hovnanian at Cortez Hill	Robbins-Wade, 2004
SD-09324	Historic Site Inventory of El Cortez	Lia, Carrico, and Brandes, 1989
SD-09614	Historical Evaluation Report for the Hamilton Apartments, 941 Eleventh Avenue, San Diego	Ni Ghabhlain, 2005
SD-09680	An Archaeological Report for the Mitigation, Monitoring, and Reporting Program at the Aloft on Cortez Hill Project	Clowery and Smith, 2005
SD-09962	Historic Property Survey Report and Finding of No Adverse Effect with Standard Conditions for the Implementation of Two Transportation Enhancement Landscaping Projects within the Cabrillo Freeway Historic District on State Route 163 in Balboa	Rosen, 2006
SD-10526	Ford Building	Various, n.d.

Table 1 (cont.)
PREVIOUS STUDIES WITHIN ONE-QUARTER MILE OF THE PROJECT AREA

Report No.	Report Title	Author, Date
SD-10527	San Diego Aerospace Museum Expansion of Educational Facilities	Donaldson, 1995
SD-10528	Misc. File Folder for Balboa Park; Buildings and HSB Documents	Various, n.d.
SD-10546	Centre City Development Corporation Downtown San Diego African American Heritage Study	Carrico and Jordan, 2004
SD-10649	Mitigation Monitoring Report for the Vantage Pointe Project	Smith and Rosenberg, 2007
SD-10714	Mitigation Monitoring Report for the Smart Corner Project	Rosenberg and Smith, 2006
SD-10733	Mitigation Monitoring Report for the Aria Project, Centre City Development Corporation	Smith and Greene, 2007
SD-10841	Report for the Cabrillo Freeway/State Route 163	Lortie, 1996
SD-11123	Cultural Resource Study for the City College Master Plan San Diego, California	Kyle, 2007
SD-11508	John Ginty House - National Register of Historic Places Registration Form	Crawford and Burke Lia, 2006
SD-11609	Historical Assessment of the 1330, 1330 1/2 & 1138-1342 8th Avenue Buildings, San Diego, California	Moomjian, 2007
SD-11815	Cultural Resources Report for the Historical and Architectural Building Evaluation of 1037 15th Street, San Diego, California	Alter, 2008
SD-11842	Results of The Archaeological Monitoring of the Ten Fifty B Street, San Diego, California	Potter, 2008
SD-12200	Draft Environmental Impact Report for the Master Storm Water System Maintenance Program (MSWSMP)	City of San Diego, 2009
SD-12367	Archaeological Resource Report Form: Mitigation Monitoring of the Group 3000 Project, San Diego, California	Pierson, 2009
SD-12565	"A Leading Place Among Lawyers:" Archaeological Discoveries at the Residence of Major Levi Chase, Block H29 (CA-SDI-17,667), San Diego.	Schaefer, 2009
SD-13006	Master Storm Water System Maintenance Program - Draft Recirculated Program Environmental Impact Report	City of San Diego, 2011
SD-13130	Results of Archaeological Monitoring at the 10th Avenue Parking Lot Project, City of San Diego, California	Smith, 2011
SD-13160	7712 Hillside Drive, La Jolla, California	Crawford, 2011
SD-13321	Historic Property Survey Report for the Cabrillo Freeway Historic District Rehabilitation Transportation Enhancement Project Phase II, San Diego County, California	Tsunoda, 2011
SD-13538	Cultural Resource Monitoring Report for the Sewer Group 753 Project	Hoff and Stropes, 2012
SD-13799	Addendum to Mitigated Negative Declaration No. 255100, Sewer and Water Group 957	City of San Diego, 2011

Table 1 (cont.)
PREVIOUS STUDIES WITHIN ONE QUARTER MILE OF THE PROJECT AREA

Report No.	Report Title	Author, Date
SD-14119	Cultural Resource Monitoring Report for the Salvation Army Vehicle Storage Area Demolition Project	Stropes, 2011
SD-15458	Cultural Resource Assessment and Monitoring Plan for the 13th Street and C Street Project, City of San Diego, California	Pigniolo, 2015
SD-15683	Cultural Resource Monitoring Report for the Sherman Heights Block 8b, Jobs 1 & 2 Utilities Undergrounding Project, City of San Diego, California	Baksh and Murphy, 2015
*SD-16102	Cultural Resource Records Search and Site Survey AT&T Site SD-0268 San Diego High School 1405 Park Boulevard San Diego, San Diego County, California	Loftus, 2013
SD-16180	Cultural Resource Monitoring Report for the Park Boulevard Median Improvements Project San Diego, California	Smith and Goralogia, 2015
SD-16427	Archie Moore Home, 3517 E Street, San Diego, California	Mikesell, 1987
SD-16531	W.G. Reinhardt Multi-Family Residence, 1425 &1431 C Street, San Diego, California	Crawford, 2015
SD-16749	Mitigation Monitoring Report for the Blue-Sky San Diego Project City of San Diego	Kraft, Smith, and Hahnlen, 2016
SD-17220	Archaeological Monitoring for Gas Service Line Replacement at 1165 19th St., San Diego, San Diego County, California	Foglia, 2017
SD-17233	San Diego 129 Project, San Diego County, California	Brunzell, 2017

* Within project area.

4.1.2 Previously Recorded Resources

The SCIC has a record of 45 previously recorded cultural resources within a quarter-mile radius of the project, but none have been recorded within the project area (Table 2, *Previously Recorded Resources within One-Quarter Mile of the Project Area)*. In general, the cultural resources recorded within the record search limits consist of 33 historic built-environment resources (historic addresses), 10 historic archaeological sites or isolates, a historic object, and a historic district. No prehistoric resources have been recorded within the record search limits. The historic archaeological sites variously consist of at or below ground features such as cisterns, foundations, privies, and wells, often accompanied by trash scatters or deposits, and the isolates consist of individual refuse items. The historic district consists of the Cabrillo Freeway National Register Historic District (P-37-016279) and an element within the historical landmark of Balboa Park (P-37-028239). The historic object, P-37-016659, is a portion of the San Diego flume system, dated from 1886 to 1906.

Table 2
PREVIOUSLY RECORDED RESOURCES WITHIN ONE-QUARTER MILE OF THE PROJECT AREA

Resource Number	Resource Number	Age and Resources Present	Description	Recorder, Date
P-37-016279	----	Historic District	Cabrillo Freeway National Register Historic District (P-37-016279) and an element within the historical landmark of Balboa Park (P-37-028239).	Lortie, 1996; Bietz, 2013
P-37-016659	----	Historic Object	B Street Flume. Part of the San Diego flume system. Dated from 1886 to 1906.	Tinsley and Hermann, 1998
P-37-018264	----	Historic Building	San Diego Consolidated Gas & Electric Storage-Service Building. Industrial style with Spanish Eclectic Influences. Constructed in 1930.	University of San Diego, 1980; Lia/Brandes Team, 1989; Office of Marie Burke Lia, 1998
P-37-021073	----	---	Resource subsumed by P-37-023768; DPR form not provided by SCIC.	---
P-37-021075	----	Historic Building	Fox Theatre Building. Commercial Moderne style. Constructed in 1928-1929.	University of San Diego, 1980
P-37-021202	----	Historic Building	Young Women's Christian Association (YWCA). Transitional Roman Truscan style. Constructed in 1925.	University of San Diego, 1980
P-37-021282	----	Historic Building	Residence. Vernacular Italianate/Greek style. Constructed in 1880.	University of San Diego, 1980
P-37-021396	----	Historic Building	YMCA. Italian Renaissance style. Constructed in 1913.	University of San Diego, 1980
P-37-021397	----	Historic Building	Apartment building. Mission Revival style. Constructed in 1912 or 1924.	University of San Diego, 1980; Office of San Diego County, 1989
P-37-021398	----	Historic Building	Kroenert House. Transitional/Colonial style. Constructed in 1899.	University of San Diego, 1980
P-37-021399	----	Historic Building	Comodore Apartments (historic name), Broadmoor Apartments (common name). Mission Revival style. Constructed in 1913.	University of San Diego, 1980
P-37-021400	----	Historic Building	George B. Madden House (historic name). Originally utilized as a single-family residence. Currently utilized as a multiple residence. Colonial Revival style. Constructed in 1905.	Lia/Brandes Team, 1989

Table 2 (cont.)
PREVIOUSLY RECORDED RESOURCES WITHIN ONE-QUARTER MILE OF THE PROJECT AREA

Resource Number	Resource Number	Age and Resources Present	Description	Recorder, Date
P-37-021403	----	Historic Building	YMCA Building (historic name). Pacific Tel & Tel Co. Building (common name). Originally utilized for recreation/education. Presently utilized for commercial. Secondary Renaissance style. Constructed in 1926.	University of San Diego, 1980
P-37-021404	----	Historic Building	Nichols Rental (common name). Italianate Cottage style. Constructed in 1895.	University of San Diego, 1980
P-37-021405	----	Historic Building	James Simpson House (historic name). Wilson Apartments (common name). Originally utilized as a single-family residence. Presently utilized as apartments. Italianate style. Constructed in 1885.	University of San Diego, 1980
P-37-021406	----	Historic Building	Apartments (historic and common name unreadable). Transitional/Colonial style. Constructed in 1912.	University of San Diego, 1980
P-37-021414	----	Historic Building	Residential. Colonial Revival style. Constructed in 1899.	University of San Diego, 1980
P-37-021415	----	Historic Building	Residence. Originally utilized as a single residence. Currently utilized as a multiple residence. Greek Revival style. Constructed in 1890.	University of San Diego, 1980
P-37-021416	----	Historic Building	Seton Arms Apartments (historic and common name). Spanish Colonial Revival style. Constructed in 1927.	University of San Diego, 1980
P-37-021417	----	Historic Building	Dre House (historic name). Common name unknown. Originally utilized as a residence. Presently utilized as a residential duplex. Stick style. Constructed in 1900.	University of San Diego, 1980
P-37-021418	----	Historic Building	Dye Villa Apartments (historic name). Bristol Manor Apartments (common name). Eastlake style. Constructed in 1893.	University of San Diego, 1980
P-37-021419	----	Historic Building	Davis Rentals (common name). Historic name unknown. Craftsman Bungalows. Constructed in 1916.	University of San Diego, 1980
P-37-021424	----	Historic Building	Lesinsky House (historic name). Queen Apartments (common name). Colonial Revival style. Constructed in 1904.	University of San Diego, 1980

Table 2 (cont.)
PREVIOUSLY RECORDED RESOURCES WITHIN ONE-QUARTER MILE OF THE PROJECT AREA

Resource Number	Resource Number	Age and Resources Present	Description	Recorder, Date
P-37-021428	----	Historic Building	Lowell-Taylor House (historic name). Britton House (common name). Italianate style. Constructed in 1901.	University of San Diego, 1980
P-37-021429	----	Historic Building	The Riviera Apartment Hotel. Italian Renaissance Revival style. Constructed in 1927.	University of San Diego, 1980; May , 2001
P-37-021439	----	Historic Building	Residence. Queen Anne cottage style of Victorian architecture. Constructed in 1886.	University of San Diego, 1980; Tinsley, 2001
P-37-021440	----	Historic Building	Mathieson House (historic name). Social Worker Party House (common name). Originally utilized as residential. Presently utilized as commercial. Colonial Revival style. Constructed in 1904.	University of San Diego, 1980
P-37-021441	----	Historic Building	Marvin Sloben Photography Studio (common name). Originally utilized as residential. Presently utilized as commercial/residential. Queen Anne style. Constructed in 1890.	University of San Diego, 1980
P-37-023887	----	Historic Building	Anderson House. Queen Anne and Foursquare Classical/Free Classic style types. Constructed between 1900 and 1905. Designated as Site No. 461, in the Historic Landmarks by the Historical Resources Board.	University of San Diego, 1980; Tinsley, 2016
P-37-023918	----	Historic Building	Central Fire Alarm Telegraph Building. Spanish Colonial/Mediterranean style. Constructed between 1927 and 1929.	The City of San Diego Property Department, n.d.
P-37-025770	CA-SDI-17141	Historic Site	Trash scatter. Dated to the early twentieth century.	Murray, 2004
P-37-026982	CA-SDI-17667	Historic Site	Privies, wells/cisterns, trash scatter. Dated from late 1800s to 1945.	Schaefer, 2004; Brian F. Smith & Assoc., 2005
P-37-028104	CA-SDI-18289	Historic Site	Privies, well/cistern, trash deposits. Dated from late 1800s to 1945.	Moreno, 2007
P-37-028152	CA-SDI-18314	Historic Site	Cistern, privies, trash deposits. Dated from late 1800s to 1945.	Rosenberg, 2007
P-37-028242	----	Historic Building	Clinton & Hannah Marie Lester Residence (historic name). Lester Residence (common name). Craftsman style. Constructed in 1909.	Lia/Brandes Team, 1989
P-37-028243	----	Historic Building	Kirby Apartments. Italianate residence. Constructed in 1923.	Lia/Brandes Team, 1989

Table 2 (cont.)
PREVIOUSLY RECORDED RESOURCES WITHIN ONE-QUARTER MILE OF THE PROJECT AREA

Resource Number	Resource Number	Age and Resources Present	Description	Recorder, Date
P-37-028245	----	Historic Building	El Roberto Apartments. Mediterranean style. Constructed in 1928.	Lia/Brandes Team, 1989
P-37-029479	----	Historic Building	Two legal parcels with three buildings and two single-family residential structures. Eclectic, craftsmanesque, and art moderne style.	Moomjian, 2007
P-37-029921	CA-SDI-19118	Historic Site	Cistern, rectangular feature, foundation associated with automobile repair building, burn ash pits. Dated from late 1800s to 1945.	Potter, 2008
P-37-032128	CA-SDI-20360	Historic Site	Retaining wall, basement associated with a demolished building, trash scatter. Dated from 1880 to post 1945.	Meriwether et al., 2011
P-37-035131	CA-SDI-21739	Historic Site	Trash scatters and deposits. Basement remains and cisterns associated with the house constructed in 1875 for noted pioneer bee-keeper John Harbison. Dated from late 1800s to 1945.	Serr, 2015
P-37-035865	CA-SDI-21872	Historic Site	Cisterns, well, trash scatters and deposits. Dated mid-1800s to early 1900s.	Hahnlen, 2016
P-37-036882	----	Historic Site	Isolates (railroad spike, nail, glass insulator fragment). Insulator fragment is dated between 1908 and 1918. No approximate date given for other isolates.	Mengers, 2017
P-37-037011	----	Historic Building	Two apartment buildings. Prairie style. Constructed in 1908 and 1912.	Crawford/Office of Marie Burke Lia, 2015
P-37-037615	CA-SDI-22454	Historic Site	Trash scatters. Possibly associated with the Capron House constructed in 1872. Dated 1920s and 1930s.	James, 2018

4.2 ARCHIVAL RESEARCH

Aerial photographs and topographic maps of the campus were consulted including historic aerials from 1953, 1964, 1966, and 1972, and modern aerials covering 1980-2016 (NETROnline 2020). Architectural diagrams, demolition plans, and as-built diagrams for buildings 100 through 700 and Balboa Stadium were provided by the District for review (Hope 1940; Hope 1950; Libby 1980; Quayle Bros Architects 1938; Wheeler 1974a, 1974b, 1974c, 1974d, 1976a, 1976b).

Archival research was conducted through the San Diego History Center (SDHC) Research Archives, the SDHS Alumni Association, and online sources. Due to Covid-19, the SDHC Research Archives was not open for public research. Instead, SDHC Documents Archivist Renato Rodriguez conducted research

in-house in June and September 2020 specifically for SDHS sources, as well as sources related to architect Frank L. Hope, Jr. and artist Isabelle Schultz Churchman. A summary report and document and photograph scans were provided to HELIX. Research was also conducted at the SDHS Alumni Association archives, located in building 300 at SDHS. Doug Mengers met with Alumni Association Historian Yvette Porter Moore at the archives on August 11, 2020 to review the Association's collection of historic photographs, yearbooks, and ephemera. Historic newspaper articles from the *San Diego Union* were accessed using Genealogy Bank and digitized SDHS yearbooks were accessed using Classmates.com.

4.3 NATIVE AMERICAN CONTACT PROGRAM

HELIX contacted the Native American Heritage Commission (NAHC) on April 28, 2020 for a Sacred Lands File search and list of Native American contacts for the project area. The NAHC indicated in a response dated May 7, 2020 that no known sacred lands or Native American cultural resources are within the project area, but that the absence of specific site information in the Sacred Lands File does not indicate the absence of cultural resources at a project site. Letters were sent on May 29, 2020 to Native American representatives and interested parties identified by the NAHC. One response has been received to date. The San Pasqual Band of Mission Indians responded on June 12, 2020 that the project area is within the boundaries of the territory that the tribe considers its Traditional Use Area. They request to be kept informed of the project and request to be on the receiving list for project updates, reports of investigations, and/or any documentation that is generated regarding known or newly identified cultural resources. Additionally, the Tribe may recommend monitoring pending the results of the pedestrian survey and records search results of this current study. If any additional responses are received, they will be forwarded to District staff. Native American correspondence is included as Appendix C (Confidential Appendices, bound separately).

Per AB 52, a CEQA lead agency must consult with any California Native American tribe that requests consultation and that is traditionally and culturally affiliated with the geographic area of a proposed project to identify resources of cultural or spiritual value to the tribe, even if such resources are already eligible as historical resources as a result of cultural resources studies. The District has initiated consultation with the registered tribe(s); the consultation results will be addressed in the Environmental Impact Report (EIR) for the project.

5.0 METHODS

5.1 ARCHAEOLOGICAL SURVEY METHODOLOGY

A pedestrian survey of the project site was conducted on January 20, 2020 by HELIX archaeologist Julie Roy and Kumeyaay Native American monitor Shuuluk Linton (Red Tail Environmental). The survey focused on the undeveloped portion of the project area, including the stadium terracing, ball fields, along sidewalks, and within the landscaping around the campus. Where feasible within the undeveloped areas, transects spaced approximately 3 meters apart were employed.

The SDHS campus is built on a gentle south-facing slope. It is terraced to provide a common level for interior courtyard access for buildings 100 through 1000. This main terrace is supported by retaining walls and a landscaped slope at the southeast corner of campus. To the east of the main terrace, the stadium sits in a depression, with raised parking areas to the east and north. To the north of the main terrace are upper terraces containing sport courts and athletic fields.

Vegetation on the slopes of the earthen terracing surrounding the stadium was thick, and visibility in this area was very limited (Plate 5). Concrete chunks and pipe were observed on the east slope; this material was most likely from the original concrete seating for the stadium which was dismantled in 1978. More details about the Balboa Stadium terracing are provided in Section 6.4.7, *Former Balboa Stadium Terracing*. In much of the area along Russ Boulevard the grass was too dense to observe the ground surface (Plate 6); there was no visibility along this road except for small patches of back dirt from rodent disturbance towards the east end and a recently disturbed area from underground utility work. Soils were moist, and in areas of vegetation they were moderate- to well-sorted brown sand; in areas of disturbance the soils were yellow-brown terrace material.



Plate 5. Slopes surrounding the campus stadium, view to the northeast.



Plate 6. Project area along Russ Boulevard, view to the north.

Although the ball fields and landscaped areas allowed for some ground visibility, grass and mulch covered a good portion of the ground (Plate 7). The soils were inspected in cleared areas on the ball field, landscaped areas with mowed grass, barren areas with a limited amount of mulch, and raised boxes for shrubs and trees. The soils were light brown, moderately sorted sands with gravel and decomposing granite mixed in. Within the ball fields the ground was highly compacted and disturbed

due to human activities, and the grass was cut low and covered most of the activity area. Within the fenced ball fields the soils were moist, light to medium brown sand with gravel and cobbles observed along the fence line. Also noted eroding out of the ground along Park Boulevard were cobbles of the native San Diego formation. The cobbles were inspected for usage; however, none appeared culturally modified. No cultural resources were observed around the school yards.



Plate 7. Landscaped area along Park Boulevard, view to the south

The parking areas to the east of the school were paved, and the only ground visible for inspection was along the edges of the lots along the fencing. Leaf duff was dense under the trees; as such, visibility was also limited. Soils appeared to be light brown sands with cobbles and pebbles. No prehistoric archaeological resources were observed during the field survey. The former Balboa Stadium terracing is treated as a historic built-environment resource in this study because it associated with the built-environment history of SDHS. Further description of the terracing is provided in Section 6.4.7, *Former Balboa Stadium Terracing*.

5.2 HISTORIC BUILT ENVIRONMENT SURVEY METHODOLOGY

The historic built environment surveys were conducted by Doug Mengers and Kris Reinicke of PanGIS. The surveys occurred on January 20, 2020, April 3, 2020, and August 11, 2020. Field investigation consisted of examination and photography of the exterior of the buildings, structures, features, and landscaping within SDHS campus. Field notes included resource descriptions, details of architectural style and sub-style, modern modifications and additions, and information on current condition and integrity.

5.3 DOCUMENTATION

Cultural resources identified during the field surveys were recorded on appropriate Department of Parks and Recreation (DPR) 523 forms. All completed DPR site forms were submitted to the SCIC and are provided in Appendix D.

6.0 RESULTS

6.1 ARCHAEOLOGICAL SURVEY

No archaeological material was observed within the project area; as noted above, the project area is underlain by fill soils and has been developed, with little to no native ground surface remaining. No previously recorded archaeological resources exist within the campus, and the results of the search of the Sacred Lands File by the NAHC was returned with negative results. The former Balboa Stadium terracing is treated as a historic built-environment resource in this study, because it is associated with the built-environment history of SDHS. Further description of the terracing is provided in Section 6.4.7, *Former Balboa Stadium Terracing*.

6.2 HISTORIC BUILT ENVIRONMENT SURVEY

In total, SDHS currently contains 11 buildings (buildings 100-1100) (Figure 4). There are four modern buildings on campus which are not included in this study because they are not 45 years or older, nor are they approaching 45 years in age. Modern buildings on SDHS campus include building 800 constructed in 1995, building 900 constructed in 2003, building 1000 constructed in 2003, and building 1100 constructed in 2011. Other modern structures and features not included in this study are athletic facilities including tennis courts, handball courts, and baseball fields; and various parking lots, sidewalks, and connecting landscaping (Figure 4).

A total of seven historic buildings, one structure, and seven historic features were documented within the project area (Table 3, *Historic Buildings, Structures, and Features within SDHS*). All buildings, structures, and features documented in this study are over 45 years in age except Balboa Stadium and possibly the gargoyle planter. The current Balboa Stadium was constructed in 1978 and is 42 years old. It also appears that the gargoyle planter was constructed circa 1976. An exact date of construction was not confirmed during research. Balboa Stadium and the gargoyle planter were included in this study due to the long-term nature of the proposed project. Maps of the project area and historical resource locations are provided in Figure 6, *San Diego High School Historic Resources.* The DPR forms for the historic resources are included in Appendix D.

No evaluation was conducted for the remainder of the modern buildings or features, including buildings 800, 900, 1000, and 1100, athletic facilities, parking lots, sidewalks, and connecting landscaping.

Table 3
HISTORIC BUILDINGS, STRUCTURES, AND FEATURES WITHIN SDHS

Resource Name	Construction Date	Style	Architect/Artist
Building 100	1974-1975	Brutalist	Richard George Wheeler
Building 200	1974-1975	Brutalist	Richard George Wheeler
Building 300	1974-1975	Brutalist	Richard George Wheeler
Building 400	1974-1975	Brutalist	Richard George Wheeler
Building 500	1950	International sub-style	Frank Lewis Hope, Jr.
Building 600	1940	International sub-style	Frank Lewis Hope, Jr.
Building 700	1938	International sub-style	Quayle Brothers Architects
Balboa Stadium	1978	Vernacular	Richard George Wheeler
Gargoyle Planter (Feature 1)	Gargoyles circa 1926 on Russ Auditorium/ installed on current planter circa 1976	Gothic Revival	Unknown
Gray Castle Courtyard Fountain (Feature 2)	Circa 1907 within Gray Castle Courtyard/ moved to current location circa 1975-1976	Gothic Revival	Unknown
World War I Memorial (Feature 3)	1919-1922/moved to current location circa 1975-1976	N/A	Unknown
Gray Castle Doors (Feature 4)	1907 on Gray Castle/ moved to building 100 circa 1975-1976	Gothic Revival	Frank Shaver Allen (Gray Castle)/Richard George Wheeler (building 100)
Landscaping (Feature 5)	Circa 1902-1990s	N/A	Unknown
World War II Plaque (Feature 6)	1948-1949/moved to current location circa 1975-1976	WPA	Isabelle Schultz Churchman/ San Diego Board of Education
Balboa Stadium Terracing (Feature 7)	1914	N/A	Quayle Brothers Architects and Charles Cressey

6.3 SDHS HISTORIC BUILDINGS AND STRUCTURES

This section includes detailed descriptions of buildings, structures, and features on the SDHS campus, with a focus on those with a historic component that are evaluated for eligibility for listing on the NRHP, CRHR, and CSDHRR later in this report.

6.3.1 Building 100

Building 100 forms the southwest corner of campus. It was designed by Richard George Wheeler and constructed in 1974 to 1975. It was originally called building A and houses administration offices and classrooms. Building 100 is a Brutalist style, two-story rectangular structure with three exterior, partially recessed staircases. Cladding consists of predominantly fluted concrete blocks with cast-in-place concrete slabs above slender bays of recessed windows and doors. The roof is flat with a short parapet.



Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

San Diego High School Historic Resources

Figure 6

The primary entrance faces Park Boulevard and is located in an alcove on the northwest corner of the building. The entrance alcove is dominated by a wall of cobalt blue glazed rectangular tiles located immediately south of the entry doors (Plate 8). The main entry doors are from the Gray Castle main building built in 1907 and demolished in the 1970s (Amero n.d.). These consist of two pairs of carved wooden doors with bronze hardware, in the same Gothic style of the structure from which they were removed. They are addressed in detail in Section 6.4.4, *Feature 4 – Gray Castle Doors* below. A massive, two-story irregular hexagonal pillar with fluted concrete block cladding stands diagonally across from the entryway and extends to the roof.



Plate 8. Building 100 entrance, facing east (100-14, 4/3/2020).

Two-foot rectangular openings are cut into the concrete slabs abutting the building in between bays of windows. Fig vines were planted in these, and through at least the early 1980s the façade was covered with foliage, referencing the Gray Castle (Wheeler 1982). The west and south façades are surrounded by a wide concrete walk on top of a concrete retaining wall. The retaining wall cladding mimics the façade of the building with a wider ribbed pattern. A second-story bridge on the east façade connects to the library, at building 300.

Other features include drinking fountains with blue square tile splashes. Post-construction additions or modifications include a marquee awning above the student store entrance, galvanized steel duct plenums on the east façade for kitchen exhaust, and two metal roll-up doors (Plate 9). The exterior condition of the building is excellent, and it appears to have been continually maintained.



Plate 9. Building 100 east façade showing roll-up doors, awning, and water fountain, facing southwest (100-46, 4/3/2020).

6.3.2 Building 200

Building 200 (gymnasium) forms the northwest corner of the student quad area, north of building 100 and building 300. It was designed by Richard George Wheeler and constructed in 1974. Originally named building D, it is a Brutalist style single-story building with a simple, rectangular ground plan with a projection on the north façade. Cladding is predominantly fluted concrete blocks with cast-in-place concrete slabs above slender bays of recessed windows and doors. The roof is flat with a short parapet and a raised central portion of tilt-up concrete panels to account for the height of an indoor basketball court (Plate 10).



Plate 10. Building 200, northeast corner, showing raised central portion and catwalk (4/3/2020).

The primary entrance to the Gymnasium is on the south façade and consists of sets of metal doors leading to a foyer. On a concrete panel above the east doors is a mural which reads “San Diego High School” painted on a blue ribbon with a depiction of the original Gray Castle school building (Plate 11). To the right of this entrance is a single ticket window and counter and a doorway to the girls’ locker room obscured by a tall concrete block wall. To the left of the foyer entrance is a drinking fountain with blue square tile splash and a doorway to the boys’ locker room obscured by a tall concrete block wall.



Plate 11. Building 200 main entrance, showing mural and ticket window (4/3/2020).

The north and west façades are surrounded by a concrete walk on top of a concrete retaining wall with a metal and wood banister. Single and double doors along the west, north, and east façades provide access to wrestling and gymnastics rooms, equipment storage rooms, and vestibules off the indoor ballcourt. Most of the building is surrounded by blacktop, with some landscaping on the southeast and northwest, and a parking lot below the concrete walk on the west façade.

Other features include a metal catwalk bridge connecting the eastern and northern roof sections (Plate 10), metal ladders providing access to the central roof section, various styles of exterior lighting fixtures, drinking fountains with blue square tile splashes, and metal benches near the southeast corner. Post-construction additions or modifications include security cameras at the roof line, utility connections, and metal signage. The exterior condition of the building is excellent, and it appears to have been continually maintained.

6.3.3 Building 300

Building 300 forms the west side of the student quad area. It was designed by Richard George Wheeler and constructed in 1974. It was originally called building B and houses the library, the Innovation Center, and the cafeteria. Building 300 is a Brutalist style, two-story rectangular structure constructed on a west-facing slope with a staircase each on its north, west, and south-facing façades. Cladding is predominantly fluted concrete blocks with cast-in-place concrete slabs above slender bays of recessed windows and doors. The roof is flat with a short parapet. Two massive, two-story irregular hexagonal pillars with fluted concrete block cladding stand on the building's southeast and southwest corners and extend to the roof (Plate 12). The south façade has two elevators that project from the building. The original elevator is centered on the façade and is clad in fluted concrete. The newer Americans with Disabilities Act (ADA)-compliant elevator is to the west of the original and was constructed from concrete block between 2006 and 2007 (Google Earth 2020).



Plate 12. Building 300 south façade, showing corner column, elevator shafts, and quad (4/3/2020).

The main entrance to the building is on the upper story of the south façade, with double metal doors in a wall of floor-to-ceiling windows. Other doors in this recessed walkway lead to restrooms and classrooms, and the walkway forms a bridge that connects to building 100 (Plate 13). The lower floor of the south façade is a recessed loggia with two large cafeteria windows with rolling window gates, windows to the counseling offices, and two sets of metal double doors to counseling offices and entrance/ egress from the elevators and staircase serving the library on the second floor of the building. Several narrow fluted concrete columns support the second story walkway and bridge.



Plate 13. Building 300 lower level, showing cafeteria windows and bridge to building 100 (4/3/2020).

The north end of the east façade has a recessed ticket counter with marquee above (Plate 14). The remainder of the east, north, and west façades include exterior and subterranean concrete staircases and metal doors giving access to upper and lower floor classrooms and offices. Other features include drinking fountains with blue square tile splashes and various styles of exterior lighting fixtures. Post-construction additions or modifications include utility connections; metal utility boxes in chain link enclosures; security cameras at the roof line; and metal signage. The entire building is surrounded by blacktop or concrete, with no landscaping. The exterior condition of the building is excellent, and it appears to have been continually maintained.



Plate 14. Building 300 northeast corner, showing ticket counter and subterranean staircase (4/3/2020).

6.3.4 Building 400

Building 400 forms the south side of the student quad area, east of building 100 and west of building 700. It was designed by Richard George Wheeler and constructed in 1974. Originally named building C, it is a Brutalist-style, single-story rectangular structure with a semi-circular theater attached to the west façade by a vestibule. Cladding is predominantly fluted concrete blocks with cast-in-place concrete slabs above slender bays of recessed windows and doors. The roof is flat with a short parapet. The primary entrance is through the connecting vestibule and faces north onto the student quad (Plate 15). Two sets of metal double doors, each with glass glazing, lead into the vestibule. There is a 4.5-inch metal accordion separation joint between the vestibule and the rectangular classroom building. The entryway is covered by a tattered, blue canvas Bostonian awning with the words, “Lois Perkins Performing Arts Theatre.”



Plate 15. Building 400 main entrance and mural, facing southwest (1/20/2020).

The north façade of the theater has a blue horizontal rolling security gate to the scene shop and an adjacent metal door to a dressing room. The west façade of the theater has a set of double metal doors to a corridor behind the stage and a single metal door leading to a dressing room. The theater has a semi-circular footprint to accommodate the audience seating. Two single metal doors on the west façade lead to different levels of the seating area and are mirrored by doors on the other side of the audience seating leading to the vestibule (Plate 16). Two-foot rectangular openings are cut into the concrete slabs abutting the building along the façade of the semi-circle. Vine plants are growing in the westernmost opening, and the façade was once covered with foliage (Wheeler 1982). A small 16-foot by 13-foot control room is off the south façade of the theater. There are double metal and glass doors on the south side of the vestibule between the theater and the arts building.



Plate 16. Building 400, west façade, showing mural and vines (4/3/2020).

The south façade of the arts building has a concrete ramp leading to a single metal door to the music room. There are four evenly spaced, recessed bays along the façade, the two western bays having narrow windows and the two eastern bays having single metal doors. The east facade has five sets of metal double doors, one set in the middle and two adjacent sets on the northern and southern side of the façade. Two concrete block enclosed patios on the northern and southern side of the façade are original (in as-builts). The northern enclosure has a gas kiln affixed to the northeast corner of the building. The north façade has four recessed bays, two with windows and two with doorways. There are several metal utility fixtures and pipes on the eastern side of the façade.

A mural covers the upper portion of the north and west sides of the theater (Plate 17). The mural is acrylic paint applied directly onto the fluted concrete exterior of the building in such a way that two different images are visible, depending on the viewer's point of view, centered on the northwest corner of the building. The mural, measuring 140 feet wide by 15 feet high, is titled "Multicultural Motion" and was designed by muralist Lorena Loaiza of Mexico City (SDHS and Young at Art 1992). It was painted by Loaiza and more than 40 SDHS art students from 1991-1992, with funding provided by SDHS Young at Art Program, the Maxwell H. Gulk Foundation, the Pastel Society of San Diego, and other donors. It was dedicated on May 28, 1992 (SDHS and Young at Art 1992).



Plate 17. Building 400, northwest corner, showing mural and entrances (4/3/2020).

Other features include a student-produced art project affixed to the building along the eastern portion of the south façade (Plate 18). The thin wood board installation reads, “Feel the Future. I said, young man.... feel good. I could not say happy because I will lie. Graduating 17. Control Greed; Why won't daddy say he's sorry. Guardian John Saul Gotta get some! Music is a pathway to yourself. PEACE MAN! The real me. Men Are Back”. The exterior condition of the building is excellent, and it appears to have been continually maintained.



Plate 18. Building 400 south façade, showing student art project (4/3/2020).

6.3.5 Building 500

Building 500 sits on the north end of the east side of the student quad area (Plate 19). It was designed by San Diego architect Frank Lewis Hope, Jr., as the Technical Arts building and was constructed in 1950 (City 2007). The two-story building has a nearly rectangular floorplan, with the main entrance on the second floor of the north side (Plate 20). The building has all the primary character-defining features of the International sub-style with a flat roof, minimal applied ornamentation, horizontal bands of flush windows, and asymmetrical façades, and some of the secondary features such as square corners and concrete exterior.

The north end of the east façade is a small loading dock or maintenance access area. It has two wide metal roll-up doors behind a chain link fence and an aluminum shade covering half of the area (Plate 21). The west half of the south façade is flush with building 600; the remaining half forms a rear courtyard shared by building 500 and building 600.

Modern additions include the stairs and a connecting ramp on the north side (Plate 21) and exterior utilities including lighting, electrical, and security. Replacements include all second floor and some first-floor windows and doors (Plate 20). Some adjacent concrete sidewalks and stairs are likely original. The exterior condition is excellent, and the building appears to have been continually maintained.



Plate 19. Building 500 west façade, showing original windows on lower floor and modern replacements on upper (1/20/2020).



Plate 20. Building 500, north side, facing southeast (SDHS-15, 1/20/2020).



Plate 21. Building 500, east façade, showing loading/maintenance area (1/20/2020).

6.3.6 Building 600

Building 600 is situated on the south end of the east side of the student quad area. Designed by Frank Lewis Hope, Jr., as the Science/ROTC building, it was constructed in 1940 (SDUSD 2020). The two-story building has a nearly rectangular floorplan, with the main entrance on the second floor of the north side where it connects to building 500 (Plate 22).



Plate 22. Building 500 and 600 connection, facing east (SDHS-23, 1/20/2020).

The building has all the primary character-defining features of the International sub-style with a flat roof, minimal applied ornamentation, horizontal bands of flush windows, and asymmetrical façades, and some of the secondary features such as square corners and concrete exterior. The building's exterior detailing, including banding and corner bevels, matches the adjacent building 500, which was designed by the same architect a decade later (Plates 23 and 24) (Hope 1940; Hope 1950).

The north façade is flush with building 500. The east façade of building 500 and the south façade of building 600 form a rear courtyard shared by both buildings (Plate 25).

Modern additions or replacements include all doors and windows on the first and second floors, hand railings, and exterior utilities including lighting, electrical, and security fixtures. At least some adjacent concrete sidewalks and stairs are likely original. The exterior condition is excellent, and the building appears to have been continually maintained.



Plate 23. Building 600, southwest corner, showing south entrance and modern replacement windows (1/20/2020).



Plate 24. Building 600, southeast corner, showing International-style detailing (1/20/2020).



Plate 25. Courtyard formed by rear of building 500 (left) and building 600 (right), facing north (1/20/2020).

6.3.7 Building 700

Building 700 lies at the southeast corner of the student quad area. It was designed by Quayle Brothers Architects (Charles and Edward Quayle) of San Diego as the Choral and English building and was constructed in 1938 (Quayle Bros Architects 1938; SDUSD 2020). The floorplan consists of two offset rectangles, both of poured concrete construction. The building's southern portion is a tall single story with an end gable roof. Main entrances are on the east façade and northwest corner (Plate 26). Tall narrow windows are separated by wide mullions on the west, south, and east façades, giving the appearance of a chapel (Plate 27).

The northern portion is two stories with a flat roof (Plate 28). Exterior staircases lead to entrances on each floor. Combined, the building portions possess the primary character-defining features of the International sub-style, with a flat roof, minimal applied ornamentation, horizontal bands of flush windows, and asymmetrical façades, and some of the secondary features such as square corners and concrete exterior. However, some features are mixed or less developed, including the southern gabled roof and single windows instead of bands.

Modern additions include metal stairs on the northern portion, railings, and exterior utilities including lighting, electrical, and security fixtures. Most doors and windows in both portions have been replaced. At least some adjacent concrete sidewalks and stairs are likely original, along with the glass block windows on the west side of the building's southern portion (Plate 29). The exterior condition is excellent, and the building appears to have been continually maintained.



Plate 26. Building 700, east façade, showing east entrance and eastern staircases (1/20/2020).



Plate 27. Building 700, southeast corner, facing northwest (SDHS-45, 1/20/2020).



Plate 28. Building 700, northeast corner, facing southwest (SDHS-43, 1/20/2020).



Plate 29. Building 700, southwest corner, showing original glass block windows on west façade (1/20/2020).

6.3.8 Balboa Stadium

Balboa Stadium sits on the east side of campus, separated from I-5 by an asphalt parking lot. It was designed by Richard George Wheeler to replace the original 1914 Balboa Stadium on the same site and was constructed in 1978. The stadium is composed of seven permanent structures, a football field, track, and two sets of concrete bleachers (Plate 30).



Plate 30. Balboa Stadium overview, facing south (1/20/2020).

The structures are all very simple in design and construction and are of a vernacular style. The cladding throughout is cream colored stucco over wire mesh and wood frame construction. The roofs are mostly flat or shed roofs with a very low pitch and wood facia. All doors are metal and painted a deep cobalt blue. The west concourse is the Home side, and the east concourse is the Visitor side. Each concourse has a landing that is 20 feet wide, made of several 4-inch-thick concrete slabs. The Home side has concrete ADA-compliant ramps that were added between 2003 and 2005 (NETROnline 2020). One 75-foot long ramp with one switch-back connects the access road west of the stadium to the Home concourse, and a second, longer ramp of 415 feet goes from the concourse to the field level with three switchbacks (Plate 31).



Plate 31. Balboa Stadium, view facing Home side, showing switchback ramp from concourse to field level (1/20/2020).

The restroom buildings on both the Home and Visitor sides are rectangular (15 feet by 50 feet) and have stucco cladding with wood facia (Plate 32). The roofs are flat with a wide, 3-foot eave on the front elevation only. Men's restrooms on both sides of the field have four stalls and urinals, and the women's restroom has four stalls on the Visitor side and six on the Home side. Women's and men's restrooms are separated by the custodian and garden storage room. On the Home side, the doors are facing the field, to the east; on the Visitor side, doors face to the west. There are two sets of original, tiled splash drinking fountains on the front elevations between the recessed doorways into the women's and men's restrooms.



Plate 32. Balboa Stadium, Home side restrooms (1/20/2020).

The concession stands on both the Home and Visitor sides are rectangular (10 feet by 24 feet) and have stucco cladding with wood facia (Plate 33). The roofs are flat with a wide, 5-foot eave on the front elevation only. Three, blue rolling metal security shutters cover the openings over the sales counter. Both have a single metal door on the south façade.

The press box is located on the Home side and is a rectangular building (8 feet by 52 feet) and has stucco cladding with wood facia (Plate 34). The roof is flat with a wide, 3-foot eave on the front elevation and about 1 foot on the rear. There are six rolling metal security shutters over a counter facing the field. Two coaches' boxes (8 feet by 10 feet) on the north and south side flank a larger room in the center for press. There are three single metal doors on the west elevation for access to the coaches and press rooms.

There are small ticket booths on the Home and Visitor sides that are roughly square (6 feet by 8 feet) and have stucco cladding with wood facia (Plate 35). The roofs are flat with a wide, 3-foot eave on the front elevation only. Each has two ticket windows with rolling metal security shutters over counters. A single metal door is on the back façade.

The bleachers on both the Home and Visitor sides are concrete. The Home side has three bays of bleachers with 19 rows and a total of 2,280 seats (Plate 31). Two imperial staircases (with 5 steps) start at field level and lead up between the bays of bleachers. The Visitor side has two bays of bleachers with 18 rows and a total of 1,440 seats (Plate 35). One imperial staircase leads to the staircase between the bays of seats.

Other features include stadium lighting (installed in 1984 according to a dedication plaque on the Home concession stand); tall chain link fences surrounding the stadium area, with pedestrian and vehicle gates; goal posts, turf, and other field improvements; a scoreboard and flagpole at the south end of the field; and fenced storage areas (Plate 36).



Plate 33. Balboa Stadium, Home concession booth, building 900 in background (1/20/2020).



Plate 34. Balboa Stadium press box and Home side seating (1/20/2020).



Plate 35. Balboa Stadium, Visitors side seating, showing restrooms, ticket booth, and concession (4/3/2020).



Plate 36. Balboa Stadium scoreboard and fenced storage areas (4/3/2020).

6.4 SAN DIEGO HIGH SCHOOL HISTORIC CAMPUS FEATURES

Several extant features on SDHS campus are over 45 years in age or will become 45 years in age in the near future. Detailed descriptions of the planter with Russ Auditorium gargoyles, Gray Castle courtyard fountain, Gray Castle doors, World War I memorial, World War II plaque, landscaping elements, and Balboa Stadium terracing remnants are provided in this section. Figure 6, *San Diego High School Historic Resources*, provides the locations of each feature based on the corresponding feature number.

6.4.1 Gargoyle Planter (Feature 1)

The gargoyle planter is located along Park Boulevard, near the main entrance doors to building 100 (Plate 37). The gargoyles were originally decorative elements above the window line of the Russ Auditorium (Plate 38). During campus redevelopment in 1975-1976, a conceptual design was planned for the gargoyles which were salvaged from the Russ Auditorium, prior to its demolition in 1973. The gargoyles were to be installed on a new fountain designed by Richard George Wheeler (Plate 39). A full page in the SDHS 1976 yearbook showcased the design for the conceptual "Alumni Fountain" which was estimated to cost $10,000 in donations (SDHS 1976: 221). It appears that this design never came to fruition, probably due to a lack of funding. By 1981 the gargoyles were installed on the current planter based on a photograph from the SDHS 1981 yearbook which clearly illustrates the concrete structure as a planter and not a fountain (Plate 40). Richard Amero's historic context, *San Diego High School District and Balboa Park*, credits Paul Roel Construction Co. for the construction of the planter and installation of the gargoyles (Amero n.d.: 13). The construction date of the planter is unclear based on the available sources, but it appears to have been circa 1976.



Plate 37. Gargoyle planter along Park Boulevard, facing southwest (1/20/2020).



Plate 38. Russ Auditorium (1926-1973), showing concrete gargoyle figures above window line, 1953. Courtesy of the SDHS Alumni Association.

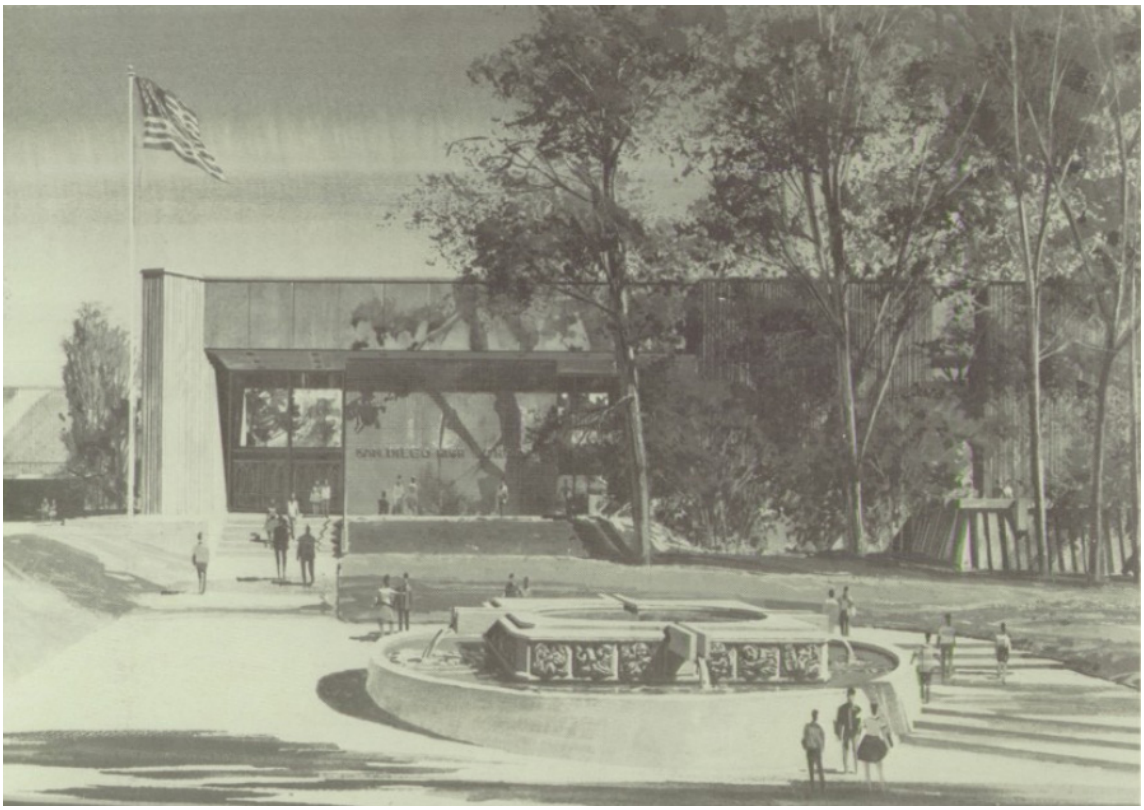


Plate 39. Conceptual drawing by Richard George Wheeler illustrating the proposed "Alumni Fountain" with the preserved gargoyles in the 1976 SDHS yearbook. Courtesy of Classmates.com (SDHS 1976: 221).



Plate 40. Photograph of gargoyle planter from the 1981 SDHS Yearbook (SDHS 1981: 8-9).

The cast concrete gargoyles depict academic subjects including geography, mathematics, and writing, and are anchored by baseball and football athletes on the corners. The gargoyles are mounted to a modern poured concrete planter surrounded by non-native landscaping. They are in fair to poor condition, with a covering of lichen and some extremities missing.

6.4.2 Gray Castle Courtyard Fountain (Feature 2)

This resource is a concrete fountain on a concrete base, enclosed by a metal railing. It is situated in a round brick patio between buildings 300 and 400 on the southeast side of campus (Plate 41). The fountain has two tiers, each of which has a concrete bowl atop a square pillar, with the upper tier smaller in scale than the lower. The fountain sits on a round concrete base set within a diamond shape pool, approximately 6 feet by 6 feet and currently dry. The pool is surrounded by a circular planter approximately 15 feet in diameter, divided by 12-inch-wide concrete crib walls. The planter is surrounded by a three-foot-high painted metal railing.

The fountain, and possibly the diamond-shaped enclosure, appear to be original. The fountain was originally constructed in the early twentieth century, likely as part of the original construction of the Gray Castle in 1907. Early photographs show it as the centerpiece of “Fountain Court,” in the interior courtyard of the main Gray Castle building (Plates 42 and 43). Here, the fountain and diamond-shaped pool were surrounded by a rectangular pool approximately 15 feet by 20 feet. The fountain was moved approximately 100 feet west to its current location when the campus was reconstructed in 1975-1976 and the crib walls, railing, and brick surround were added (Wheeler 1976a).

In both locations, the fountain has been a popular gathering spot for students as illustrated by the photographs in Plates 44 and 45. The concrete fountain is in poor condition, with significant portions of the upper pillar spalled off, exposing rusted iron interior piping and rendering the fountain inoperative. The fountain water basin has also been filled in with dirt. However, it was operational for some time after being moved to its current location, as shown in archival photos from the 1980s (Plate 45).



Plate 41. Fountain, facing southeast (8/11/2020).



Plate 42. Fountain in original setting in Gray Castle courtyard circa 1960s.
Courtesy of the SDHS Alumni Association.

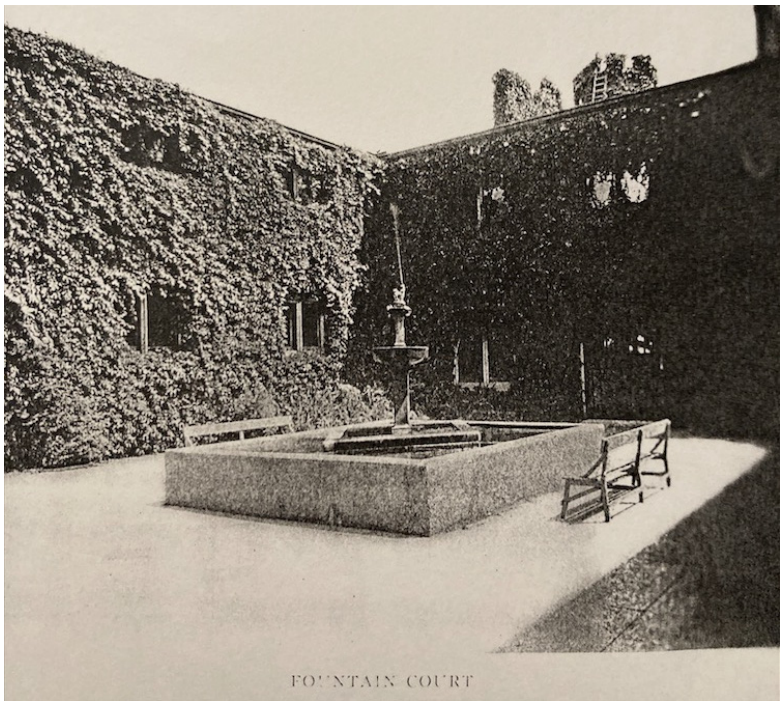


Plate 43. Fountain in original setting in Gray Castle courtyard, circa 1920s.
Courtesy of the SDHS Alumni Association.

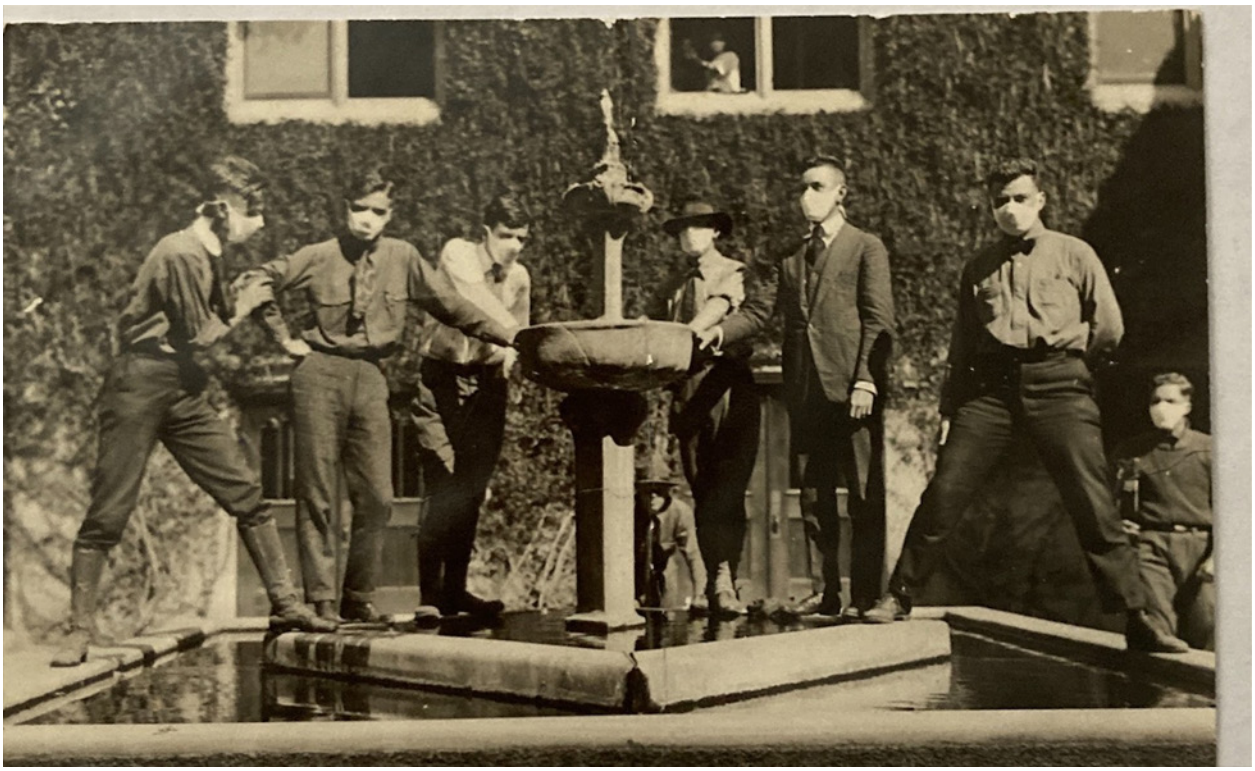


Plate 44. Photograph of fountain with students in 1918, during the Spanish Flu epidemic.
Courtesy of the SDHS Alumni Association.



Plate 45. Fountain in current location and operational, circa 1980.
Courtesy of the SDHS Alumni Association.

6.4.3 World War I Memorial (Feature 3)

The World War I memorial is located on the northwest side of the student quad area, adjacent to a southwest-northeast sidewalk. It consists of a granite obelisk, approximately 18 inches square and three feet high, resting on a poured concrete base (Plate 46). The southeast facing side of the memorial is engraved: "DEDICATED TO THE S.D.H.S STUDENTS WHO GAVE THEIR LIVES IN THE WAR/BY THE CLASS OF JUNE 1919/STUDENT BODY OF 1921/THE CLASS OF JAN. 1922." The top and engraved side are smooth; the remaining sides are rough granite. The memorial is oriented 45 degrees from the surrounding buildings.

As-built diagrams from mid-1970s campus reconstruction are marked "Relocated existing tombstone inscription to face SW/Concrete base to extend 1'-6" from each face" (Wheeler 1976b). The as-built diagrams do not indicate where the memorial was moved from; however, based on photographs it appears that the memorial was located within a Gray Castle courtyard (Plate 47). Its current location was previously occupied by the Gray Castle main building footprint. The beveled concrete base appears to have been added when it was relocated.

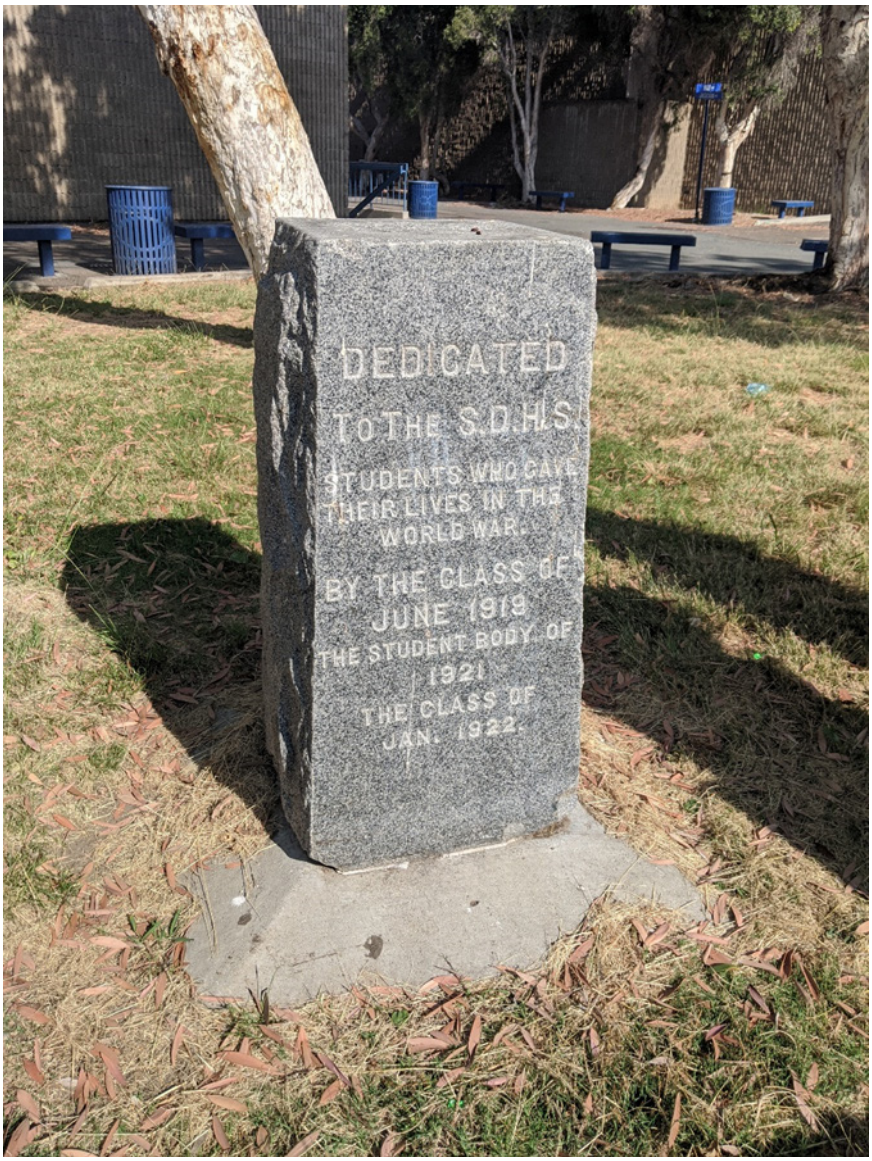


Plate 46. World War I memorial, facing northwest (8/11/2020).



Plate 47. Photo of students with World War I memorial, circa 1950s.
Courtesy of the SDHS Alumni Association.

6.4.4 Gray Castle Doors (Feature 4)

The main entry doors on building 100 are from the Gray Castle main building built in 1907 and designed by Frank Shaver Allen as shown in Plates 48 and 49 (Amero n.d.). The doors were intentionally preserved when Gray Castle was demolished and installed as the primary entry doors on the new main building, building 100, designed by Richard George Wheeler. They were installed during construction of building 100 by Roel Construction Company in 1974-1975 (Amero n.d.).

These consist of two pairs of carved wooden doors with bronze hardware, in the same Gothic Revival style of the structure from which they were removed (Plates 50 and 51). Modern elements of the doorway include a black aluminum frame and sill, a narrow single separating the door pairs, a tall wood lintel, ADA-compliant signage on the exterior, and push bars, kick-plates, and pneumatic hinges on the interior (Plates 50 and 51). The doors are in fair to poor condition. Damage from replacement modern hardware and wood screws from signage are the most evident impacts.

The Gray Castle doors are considered an iconic decorative element of SDHS. The doors were utilized consistently as the backdrop for student group and facility photographs during the early and mid-twentieth century, including the group photographs shown in Plates 52 and 53.



Plate 48. Photograph of Gray Castle main entry doors, 1962-1963.
Courtesy of the SDHS Alumni Association.



Plate 49. Photograph of Gray Castle doors on building 100 in 2019.
Courtesy of the *San Diego Union-Tribune*.



Plate 50. Building 100 entrance doors from the Gray Castle, exterior view (1/20/2020).



Plate 51. Building 100 entrance doors from the Gray Castle, interior view (8/11/2020).



Plate 52. Photograph of the "Senior A Dramatic Talent" group from the 1930 SDHS yearbook. Courtesy of Classmates.com.



Plate 53. Photograph of the "Pom Court" in the 1963 SDHS yearbook. Courtesy of Classmates.com.

6.4.5 Landscaping (Feature 5)

Most pre-1975 sidewalks, quads, recreational facilities, and landscaping features were destroyed during major 1970s reconstruction phases. Based on aerial photography from 1972 and 1980 and photographs of campus construction in 1975, there are only a few areas likely to contain any remnant landscaping

dating to circa 1902 to the demolition of Gray Castle in 1975-1976. These areas include the eucalyptus trees on the southeast side of building 700, the pine trees between building 100 and building 400, and some eucalyptus trees along the edge of the campus.

Three mature eucalyptus trees surround the southern portion of building 700 (Plate 27). All three are on the steep slope to the south and east of the building, along with the cut stumps of ten or more additional trees. On as-built diagrams for the mid-1970s campus reconstruction, the south and east sides of building 700 are labelled “Existing trees to remain” (Wheeler 1976b). Small circles representing individual trees are shown on the diagram, and these appear to line up with existing trees or stumps. This marked area on the as-builts extends to the north to along the access road behind building 600. Currently, two eucalyptus trees exist in a narrow planter in this area, but they appear much younger than the ones to the south so are likely later additions.

The pine trees between building 100 and building 400 are likely remnant historic landscaping elements from the earlier Gray Castle campus (Plate 54). Aerial photographs between 1953 and 1972 show trees in this location along the walkway to campus from the intersection of Russ Boulevard and Park Boulevard (NETROnline 2020). A newspaper article from 1976 states that a “stand of Torrey Pine trees planted on the West side of campus by graduating senior classes has been preserved” during the 1975-1976 campus redevelopment (Williamson 1976). However, no other information about the Torrey Pine trees was found during archival research, and it is unclear where they were located. The campus reconstruction as-built diagrams show individual trees in this location, but the area is not labelled either “existing trees to remain” or “planting area” as other areas on the diagram. Parts of the area have been heavily modified, especially the southeast portion, where a wide concrete staircase and sidewalk were added in 2003 when the main campus entrance was moved to this area.



Plate 54. Remnant pine trees in background, adjacent to building 100 (right), facing south (4/3/2020).

Other areas are marked “existing trees to remain” on the as-builts, including the single pine tree in a planter in the center of the parking area north of building 100. It also includes a strip between Park Boulevard and the parking lot immediately north of building 200. This row of trees extends along both sides of Park Boulevard from the main parking lot entrance on the west side of building 200 approximately 350 meters north to the I-5 overcrossing. These trees are more appropriately assessed as part of Park Boulevard rather than SDHS.

A group of baobab trees (*Adansonia digitata*) is located on the southeast side of the student quad, on either side of a southwest-northeast sidewalk (Plate 55). According to the SDHS Alumni Association, there is a story told by 1970s and 1980s alumni that the trees were planted by horticulturalist Kate Sessions. Ms. Sessions was principal and teacher at SDHS from 1884 to 1885 (Amero n.d.). She began planting trees in Balboa Park and around San Diego in 1892 in exchange for nursery space within the park (Engstrand 2005).However, research indicates that the school grounds were bare of vegetation until 1902, when the Board of Public Works began a tree-planting project (Amero n.d.). Historic aerial research indicates the baobab trees were planted in the mid-1990s during major modifications to the student quad. A different grove, without the current sidewalk, was present in the area prior to that, planted as part of the mid-1970s campus reconstruction. Before that, the location of the baobab trees was occupied by the eastern portion of the Gray Castle building (NETROnline 2020).



Plate 55. Baobab tree grove, southeast corner of student quad, facing north (8/11/2020).

6.4.6 World War II Plaque (Feature 6)

The World War II plaque is located inside building 100, on the north wall of the reception lobby, just inside the main entrance doors. It consists of four carved Philippine mahogany wooden panels separated by three columns of names, with a dedication plaque at the bottom of the middle column (Plates 56 and 57). The dedication plaque as shown in Plate 57 reads: "THESE SONS OF SAN DIEGO HIGH SCHOOL/GAVE THEIR LIVES IN THE/SACRED CAUSE OF FREEDOM/FREEDOM OF SPEECH/FREEDOM FROM WANT/FREEDOM OF RELIGION/FREEDOM FROM FEAR/EVERYWHERE IN THE WORLD/ DEDICATION MAY 28, 1948." The plaque includes a total of 158 names engraved on metal slates. The names are presented in alphabetical order. The plaque was installed in Russ Auditorium in 1948, prior to the installation of the wood carved panels (SDHC c. 1949).

The hand-carved relief panels were created by local San Diego artist, Isabelle Schultz Churchman, between 1947 and 1949 (SDHC c. 1949). The panels were commissioned by the San Diego Board of Education specifically for the World War II commemorative plaque (*San Diego Union* 1949). The project was managed by W.A. Hammon, retired Head of the Public Speaking Department, and Miss Dorothy Kuhn, the Art Department Head (SDHC c. 1949). The panels represent President Roosevelt's *Four Freedoms* (Freedom of Speech, Freedom of Religion, Freedom from Want, Freedom from Fear) for which the war was fought (*San Diego Union* 1949). The images on the panels feature civic WPA style scenes of religion, animal husbandry, agriculture, childhood, and academics (Plate 55). During the 1930s New Deal era, Churchman was a state-sponsored artist under the State Emergency Relief Administration (SERA). She created dioramas depicting episodes of San Diego history as part of the WPA Curriculum Project of the San Diego City Schools (Kamerling 1989). During her work with SERA she met local artist, Edwin T. Churchman whom she married on May 19, 1936 (Kamerling 1989). It appears that her experience as a WPA artist influenced her design for these panels.

During World War II, Isabelle became a draftsman for the 11th Naval District. After the war she taught classes at the San Diego Fine Arts Gallery and the YMCA. Mrs. Churchman was a prolific artist in the San Diego community and many of her works are still on display. Although best known for her sculpture in bronze and ceramic, she also worked in pottery, watercolors, wood relief, enamel on copper, and glass tile mosaic. Some of her local San Diego installations include figural groups for the Burnham and Prudential buildings in San Diego, a portrait relief of Dean Peterson for San Diego State College, and an onyx sculpture of St. Francis for the Francis Parker School (Kamerling 1989).

The World War II plaque was originally displayed in SDHS's Russ Auditorium from 1948 to circa 1973, when Russ Auditorium was demolished. After the Russ Auditorium was demolished in 1973, the plaque was reinstalled in its current location in the building 100 lobby circa 1975. A wooden framework connects the panels from behind and attaches them to the concrete block wall. The base of the frame appears to be a modern addition, likely added when it was installed in its current location (Plate 57). Based on newspaper articles about the plaque in 1949, and the photograph of the recently completed panels as shown in Plates 58 and 59, the original order of the panels was changed, most likely during the reinstallation of the plaque in building 100 (SDHC c. 1949; *San Diego Union* 1949).



Plate 56. World War II plaque, facing north (8/11/2020).

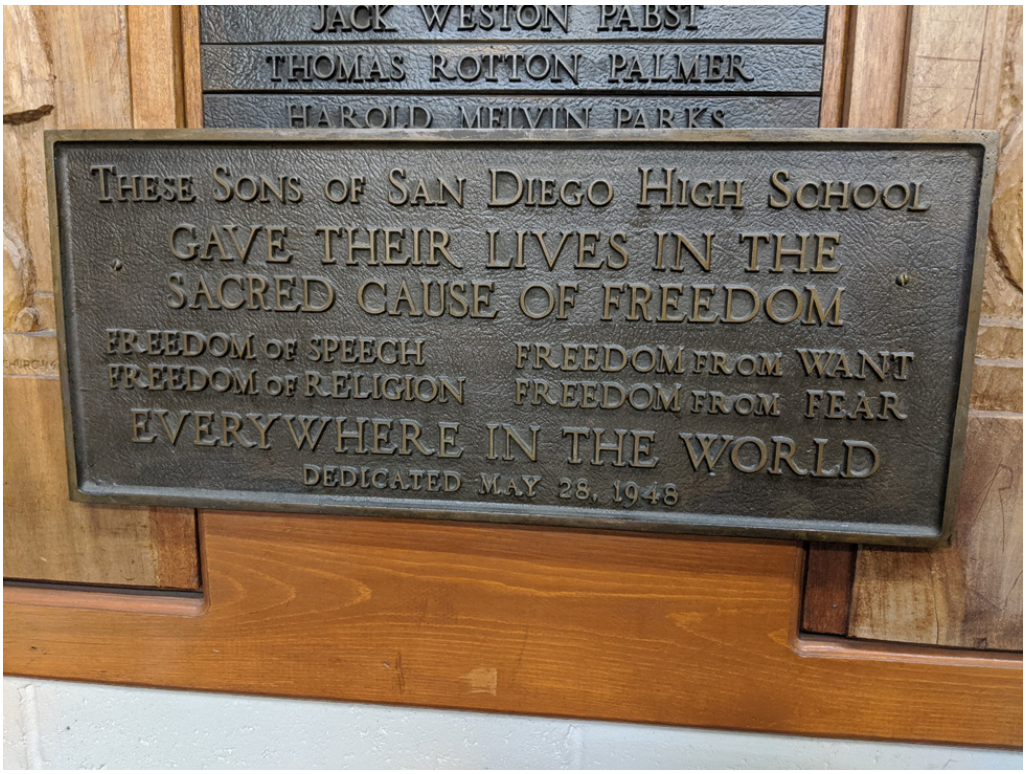


Plate 57. World War II bronze plaque detail, showing student names, dedication text, and modern base framework (8/11/2020).



Plate 58. Photograph of the completed panels in the original order, possibly Churchman's home, circa 1949. Courtesy of the SDHC Photo Archive, Photo ID No. 89:17160).

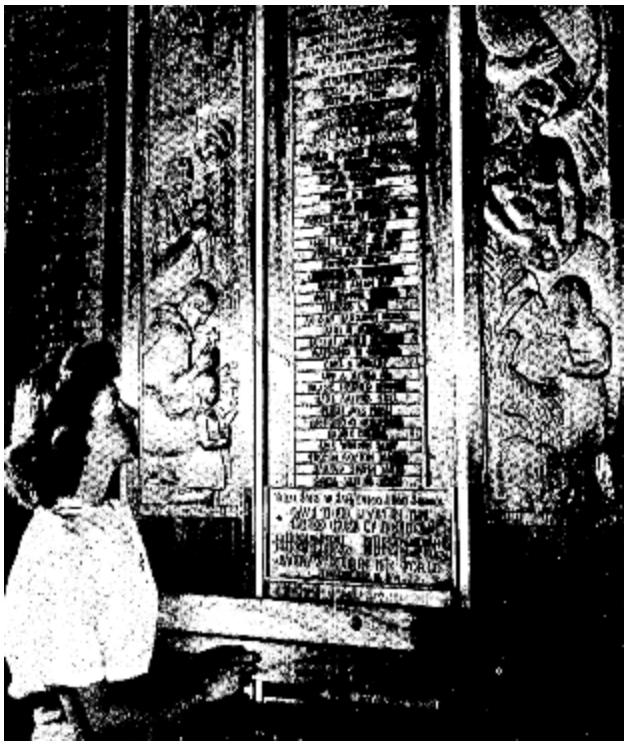


Plate 59. Photo of the World War II plaque in 1949 (*San Diego Union* 1949).
Courtesy of Genealogy Bank.

6.4.7 Former Balboa Stadium Terracing (Feature 7)

Terracing on the north end of the stadium is a remnant of the original 1914 Balboa Stadium, left over after the 1978 demolition. The remnant terracing is currently covered with landscaping vegetation (Plate 60). The original Balboa Stadium was designed by Quayle Brothers Architects and Charles Cressey and was opened in May 1915 as part of the Panama-California Exposition (Amero n.d.).

Balboa Stadium originally seated 23,500 on concrete seats poured within cut terracing on the west, north, and east sides of the field. When completed, it was the largest stadium ever constructed in the United States. The south end was flanked by three-story towers with a row of columns in between, and a semi-circular loggia containing dressing rooms and a service entrance extended towards Russ Boulevard. An upper deck was added to the stadium in 1960, bringing capacity to 40,000 when it became the first home of the San Diego Chargers football team (Plate 61). The original stadium hosted civic as well as high school events, including visits by Presidents Wilson, Roosevelt, and Kennedy, as well as concerts including the Beatles (Amero n.d.).

The terracing on the north end of the stadium and the modified hillside on the south end are the only remnants of the 1914 Balboa Stadium. No structures, foundations, or features were observed during the historic built-environment survey. The terracing for the stadium was completed using steam shovel and mules (Plate 62).



Plate 60. Balboa Stadium north end, showing remnant 1914 terracing (1/20/2020).



Plate 61. Balboa Stadium 1964, showing added upper deck. Courtesy of the SDHS Alumni Association.



Plate 62. Balboa Stadium under construction in 1914. The photograph depicts the stadium being built with a steam shovel and mules. Courtesy of the SDHC.

7.0 EVALUATIONS

This chapter outlies the evaluation methods used for evaluating the historic resources extant within San Diego High School. This chapter also includes the detailed evaluations under the NRHP, CRHR, and CSDHRR Criteria.

7.1 EVALUATION METHODOLOGY AND CRITERIA

The designation and preservation of the City of San Diego's historic resources is a primary goal of the Historic Preservation Element in the City's Draft General Plan. To this end, the City commissioned the development of the *San Diego Modernism Historic Context Statement* to assist in the identification, evaluation and preservation of significant historic buildings, districts, sites and structures associated with the Modernism movement in San Diego from 1935 to 1970 (City 2007). To help streamline historic resource evaluations, SDUSD commissioned the *Modern San Diego Public School Development* historic context in 2014 (Yates 2014). This document addresses post-1933 construction on properties across the District. Aside from the Modern Architecture contexts described above, the historic resources were also considered within the wider context of twentieth century San Diego public school buildings and campuses, as well as within the historic context of SDHS.

The evaluation Criteria described in the *San Diego Modernism Historic Context* (including NRHP, CRHR, CSDHRR, and integrity Criteria) were used to assess the historic resources documented within the SDHS campus. Due to the school's unique construction history in multiple phases across more than 80 years,

the buildings and features were considered on an individual basis and not as a potential historic district. A full evaluation of eligibility for listing on the NRHP, CRHR, and CSDHRR was conducted for each building and feature on campus. NRHP, CRHR, and CSDHRR Criteria are provided in Section 1.3, *Regulatory Framework*.

7.2 SIGNIFICANCE AND ELIGIBILITY EVALUATIONS

Within the San Diego High School campus 15 historic built environment resources were identified. There are seven buildings, one structure, and seven features. These buildings, structures, and features were evaluated for historic significance and eligibility for listing on the NRHP, CRHR and the CSDHRR.

Criteria A through D of the CSDHRR are essentially identical with Criteria A/1 through C/3 of the NRHP/CRHR. Therefore, the evaluations under the first three Criteria of each register are combined for each resource. The last two Criteria of the CSDHRR, E and F, are provided separately for each resource. Four of the resources, buildings 100-400, were built the same year and designed by the same architect. Since the historic context for buildings 100-400 are essentially the same, they were evaluated together for historical significance under all three registers. Resources were also evaluated for historic integrity adhering to the NPS *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* (NRB 15; NPS 1995). All NRHP/CRHR evaluations adhere to NRB 15. Additional criteria considerations are assessed when applicable (NPS 1995).

7.2.1 Buildings 100, 200, 300, and 400

These four resources were designed by the same architect with a common style and built during the same construction period in 1974-1975 and are evaluated together. The four buildings are best categorized as buildings, a construction created principally to shelter human activity. As part of SDHS, they have been evaluated in the context of education in San Diego between 1938 and 1978, the Brutalist sub-style of Modern architecture, and the work of architect Richard George Wheeler. All four buildings are recommended not significant under the NRHP/CRHR/CSDHRR Criteria and therefore not eligible for listing in the NRHP/CRHR/CSDHRR. A detailed evaluation under each criterion is provided below as well as integrity evaluations.

7.2.1.1 NRHP/CRHR/CSDHRR Criterion A/1/A

While buildings 100, 200, 300, and 400, as part of SDHS, are associated with broad patterns in education and school construction in California and the United States, they are not associated with specific events that have made a significant contribution to these patterns. State patterns were different from national patterns: in response to the Field Act and the San Fernando earthquake of 1971, school construction was occurring across California during this period. San Diego's response appears to have followed that of the rest of the state: a local architect designing replacement campus buildings in a contemporary style that was modern, with little to no reference to a general or specific past. As stated in NRB 15, mere association with historic events or trends is not enough, in and of itself, to qualify under Criterion A (NPS 1995). Furthermore, archival research did not reveal any historically significant events associated with these buildings. Buildings 100 through 400 are recommended not significant under Criterion A/1/A.

7.2.1.2 NRHP/CRHR/CSDHRR Criterion B/2/B

While buildings 100, 200, 300, and 400, as part of SDHS, are associated with the lives of people important to state and local history, that association is simply one of attendance during childhood or employment during adulthood. Based on school capacity, at least 30,000 students and hundreds of faculty and staff have attended or been employed in these buildings since their construction. Research has not turned up any significant association between buildings 100 through 400 and the productive lives of former students, faculty, or staff who attended school or worked in the buildings. As stated in NRB 15, persons associated with the buildings must be individually significant and their association must be documented by accepted methods of historical research (NPS 1995). In addition, properties associated with living persons are usually not eligible for inclusion in the NRHP (NPS 1995). Buildings 100 through 400 are recommended not significant under Criterion B/2/B.

7.2.1.3 NRHP/CRHR/CSDHRR Criterion C/3/C and D

Buildings 100 through 400 were designed by Richard George Wheeler in the Brutalist sub-style of Modern architecture. While the buildings have all of the primary and secondary character-defining features of Brutalism (exposed and expressive structural system, monumental massing, rectilinear forms, exposed concrete as building finish; repetitive patterns, intentional avoidance of traditional elements or ornament), they are not exceptional examples of the style. Wheeler's designs at SDHS are not mentioned in lists of important Brutalist architecture in San Diego (City 2007). Significant local examples of the Brutalist style include several buildings on the University of California San Diego campus, including the Humanities and Social Sciences building by Richard George Wheeler in 1969.

While Richard George Wheeler is not listed on the San Diego HRB list of Master Architects (City 2011), he is listed in the Contributing Designers section of the *San Diego Modernism Historic Context Statement* (City 2007). Based on his body of work, his contribution to modern architecture in San Diego, and his training of, influence on, and mentorship of the next generation of San Diego architects, it is likely that Richard George Wheeler will be recognized by the HRB as a Master Architect. That status has likely not been considered yet since many of his designs have only recently reached the 45-year threshold and have not come under review for modification or demolition, with the exception of the SDG&E headquarters at 101 Ash Street in downtown San Diego.

However, buildings 100 through 400 at SDHS are not considered significant elements of Richard George Wheeler's work. They are not listed in the *San Diego Modernism Historic Context Statement* which lists him as a contributing designer of modern San Diego, nor are they included in his list of 50-plus designs on Keith York's *Modern San Diego* website (City 2007; York 2020). Works by Wheeler that are often mentioned as significant include the Shelter Island Restaurant/Hotel (1960) and Westgate Plaza Hotel (1970). According to Wheeler himself, the SDG&E headquarters (1968) had the largest impact on his career as an architect (Wheeler 1982).

Design considerations meant that Wheeler had less of a clean slate to work with at SDHS than on other projects. As he described, "because the school had to remain operational while demolition of the Cafeteria and Russ Auditorium occurred, and while construction of the Fine Arts building and the Administration and Classroom buildings was taking place, the design concept was somewhat controlled by the fact that the remaining buildings set the design characteristics" (Wheeler 1982). In addition, he said, "two factors had a strong influence on the final results—*Vandalism* and *Energy Conservation.* These two considerations dictated the small use of glass areas" (Wheeler 1982).

Buildings 100 through 400 do not represent an evolution of the Brutalist sub-style or modern architectural style or represent a transition between styles or sub-styles. Neither do they represent an important example of building practices during the 1970s or the use of indigenous materials or craftsmanship. Even if Richard George Wheeler is recognized as a master architect, buildings 100 through 400 do not express a particular phase in the development of his career, an aspect of his work, or a particular idea or theme in his craft. As stated in NRB 15, a property is not eligible as the work of a master simply because it was designed by a prominent architect (NPS 1995). Therefore, buildings 100 through 400 are recommended not significant under Criteria C/3/C and D.

7.2.1.4 NRHP/CRHR Criterion D/4

Buildings 100 through 400 have not yielded, and are not likely to yield, information important in the prehistory or history of San Diego, California, or the nation. Research has not revealed any important information which is contained in the physical material of the buildings themselves, and no research design has been developed which suggests the existence of such information. Therefore, buildings 100 through 400 are recommended not significant under Criterion D/4.

7.2.1.5 CSDHRR Criterion E

Buildings 100 through 400 have not been listed or previously determined eligible for listing on the NRHP or the CRHR. There is no listing for the property in the California Historical Resources Inventory Database (CHRID), nor is it included on the *Historic Landmarks Designated by the SD Historical Resources Board* (City 2014). Therefore, buildings 100 through 400 are recommended not significant under Criterion E.

7.2.1.6 CSDHRR Criterion F

While buildings 100 through 400 are a finite group of resources related to one another in a clearly distinguishable way, they are not a component of a listed or proposed Historic District. As discussed above, they are not recognized as important examples of Brutalist or Modern architecture, or the history or development of Brutalist or Modern architecture in the City. Therefore, buildings 100 through 400 are recommended not significant under Criterion F.

7.2.1.7 Integrity

NRB 15 defines the concept of integrity as the ability of a property to convey its significance, based on a property's physical features and how they relate to its significance (NPS 1995). The NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. To retain integrity, a property will always possess several, and usually most, of the aspects of location, design, setting, materials, workmanship, feeling, and association. Under NRHP/CRHR guidelines, since buildings 100 through 400 are recommended not significant under Criteria A-D/1-4, there is no significance to convey, and therefore no integrity to retain.

According to the City of San Diego, integrity is the authenticity of a historical resource's physical identity clearly indicated by the retention of characteristics that existed during the resource's period of significance. As stated in the *Guidelines for the Application of Historical Resources Board Designation Criteria*, historical resources eligible for designation by the HRB must meet one or more of the designation Criteria and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their historical significance (City 2009). Since

buildings 100 through 400 do not meet CSDHRR Criteria A-F, and therefore have no historical significance to convey, integrity is not a factor in the eligibility of the property.

Without meeting specific significance Criteria, only a general discussion of integrity can take place. The seven aspects of integrity for NRHP, CRHR, and CSDHRR eligibility considerations are:

LOCATION: Buildings 100 through 400 retain integrity of location. All four buildings are in their originally constructed locations.

DESIGN: Buildings 100 through 400 retain integrity of design. Spatial relationships are maintained, and even with later additions such as ductwork on building 100, awnings on building 200 and 300, ADA elevator on building 300, and the mural on building 400, the property's historic function is apparent.

SETTING: Buildings 100 through 400 retain integrity of setting. The basic physical conditions under which the property was built remain, and the property still retains the character of a high school.

MATERIALS: Buildings 100 through 400 retain integrity of materials. The buildings appear to retain most of their original construction materials and they still reveal the construction preferences of those who built them, as well as the building materials available during the period of significance. It appears that most additions are clearly defined and separated from the original historic fabric.

WORKMANSHIP: Buildings 100 through 400 retain integrity of workmanship. Even with modern additions and material replacements, the structures still present evidence of 1970s construction methods.

FEELING: Buildings 100 through 400 retain integrity of feeling. Even with modifications to the buildings and the addition of other buildings on campus, the property retains the aesthetic and historic sense of a late-twentieth century urban high school in San Diego.

ASSOCIATION: Association directly links a historic property with a historic event, activity, or person of past time and place, and requires the presence of physical features to convey the property's historic character. Without reference to a specific historic event, activity, or person, integrity of association to that event, activity, or person cannot be evaluated.

7.2.2 Building 500

Building 500 is best categorized as a building, a construction created principally to shelter human activity. As part of SDHS, it has been evaluated in the context of education in San Diego between 1938 and 1978, the International sub-style of Modern architecture in San Diego between 1935 and 1955, and the work of architect Frank Lewis Hope, Jr. Building 500 is recommended significant under CSDHRR Criteria C and eligible for listing on the CSDHRR. A detailed evaluation under each criterion is provided below as well as an integrity evaluation.

7.2.2.1 NRHP/CRHR/CSDHRR Criterion A/1/A

While building 500, as part of SDHS, is associated with broad patterns in education and school construction in California and the United States, it is not associated with specific events that have made a significant contribution to these patterns. State patterns were different from national patterns: in response to the Field Act, construction of new school buildings with upgraded earthquake safety was

occurring across California during this period. San Diego's response appears to have followed that of the rest of the state: a local architect designing replacement campus buildings in a contemporary style (International, with little to no reference to locality). As stated in NRB 15, mere association with historic events or trends is not enough, in and of itself, to qualify under Criterion A (NPS 1995). Furthermore, archival research did not reveal any historically significant events associated with this building. Building 500 is recommended not significant under Criterion A/1/A.

7.2.2.2 NRHP/CRHR/CSDHRR Criterion B/2/B

While building 500, as part of SDHS, is associated with the lives of people important to state and local history, that association is simply one of attendance during childhood or employment during adulthood. Based on school capacity, thousands of students and hundreds of faculty and staff have attended or been employed in this building since its construction. Research has not turned up any significant association between building 500 and the productive lives of former students, faculty, or staff who attended school or worked in the buildings. As stated in NRB 15, persons associated with the buildings must be individually significant, and their association must be documented by accepted methods of historical research (NPS 1995). In addition, properties associated with living persons are usually not eligible for inclusion in the NRHP (NPS 1995). Building 500 is recommended not significant under Criterion B/2/B.

7.2.2.3 NRHP/CRHR/CSDHRR Criterion C/3/C and D

Building 500 was designed by Frank Lewis Hope, Jr., in the International sub-style of Modern architecture. While the building has all the primary character-defining features of the International sub-style (flat roof, minimal applied ornamentation, horizontal bands of flush windows, asymmetrical façades) and some secondary features (square corners, concrete exterior), it is not an exceptional example of the style. Hope's designs at SDHS are not mentioned in lists of important International architecture in San Diego (City 2007). Significant local examples of the sub-style include McKinley Elementary School in North Park by Requa (1937) and the Education Center in University Heights by Haufbauer (1953).

Frank Lewis Hope, Jr., is listed on the San Diego HRB list of Master Architects (City 2011). However, there is confusion since his son of the same name was also a prominent San Diego architect. The Frank Hope (1901-1994) that designed building 500 started the firm Frank L. Hope & Associates in 1928 and retired in 1965. Hope has two entries on the San Diego Historic Landmarks list: First National Bank remodel in downtown San Diego (1940, HRB 465) and the Frank L Hope Jr. House in Point Loma (1947, HRB 803).

However, SDHS building 500 is not considered a significant element of Frank Hope's body of work. While it is listed in his entry in the Contributing Designers of Modern San Diego section of the *San Diego Modernism Historic Context Statement*, it is misattributed to his son. Aside from his Landmark listings, works by Hope that are often mentioned as significant include several projects for the San Diego Roman Catholic Diocese, including St. Patrick's Catholic Church in North Park (1928), the Carmelite Monastery in Normal Heights (1930), and Sacred Heart Catholic Church in Ocean Beach (1946).

Building 500 does not represent an evolution of the International sub-style or modern architectural style or represent a transition between styles or sub-styles. Neither does it represent an important example of building practices during the 1930s or the use of indigenous materials or craftsmanship. Though Frank L. Hope, Jr., is recognized as a master architect, building 500 does not express a particular phase in

the development of his career, an aspect of his work, or a particular idea or theme in his craft. As stated in NRB 15, a property is not eligible as the work of a master simply because it was designed by a prominent architect (NPS 1995). Therefore, building 500 is recommended not significant under NRHP, CRHR, and CSDHRR Criterion C/3/D.

However, the *San Diego Modernism Historic Context Statement* states that "examples of this style in San Diego are limited; therefore, retention of good examples is important" (City 2007). While not an exceptional example rising to the level of state or national significance, building 500 does exhibit all of the primary and some of the secondary character-defining features of the style and should be considered a good example in the City of San Diego. Therefore, building 500 is recommended significant under CSDHRR Criterion C (International Style) with 1950, the year of construction, as the period of significance.

7.2.2.4 NRHP/CRHR Criterion D/4

Building 500 has not yielded, and is not likely to yield, information important in the prehistory or history of San Diego, California, or the nation. Research has not revealed any important information which is contained in the physical material of the building itself, and no research design has been developed which suggests the existence of such information. Building 500 is recommended not significant under Criterion D/4.

7.2.2.5 CSDHRR Criterion E

Building 500 has not been listed or previously determined eligible for listing on the NRHP or the CRHR. There is no listing for the property in the CHRID, nor is it included on the *Historic Landmarks Designated by the SD Historical Resources Board* (City 2014). Therefore, building 500 is recommended not significant under Criterion E.

7.2.2.6 CSDHRR Criterion F

Building 500 is not a finite group of resources related to one another in a clearly distinguishable way and is not a component of a listed or proposed Historic District. As discussed above, it is not recognized as an important example of International or Modern architecture, or the history or development of International or Modern architecture in the City. Therefore, building 500 is recommended not significant under Criterion F.

7.2.2.7 Integrity

NRB 15 defines the concept of integrity as the ability of a property to convey its significance, based on a property's physical features and how they relate to its significance (NPS 1995). The NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. To retain integrity, a property will always possess several, and usually most, of the aspects of location, design, setting, materials, workmanship, feeling, and association. Under NRHP/CRHR guidelines, since building 500 is recommended not significant under Criteria A-D/1-4, there is no significance to convey, and therefore no integrity to retain.

According to the City of San Diego, integrity is the authenticity of a historical resource's physical identity clearly indicated by the retention of characteristics that existed during the resource's period of significance. As stated in the *Guidelines for the Application of Historical Resources Board Designation*

Criteria, historical resources eligible for designation by the HRB must meet one or more of the designation Criteria and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their historical significance (City 2009).

Since building 500 is recommended as significant under CSDHRR Criterion C as a good example of the International sub-style of Modern Architecture, integrity must be considered in order to determine whether or not building 500 retains enough of its historic character or appearance to be recognizable as an International style building from 1935 to 1955 and therefore eligible for listing on the CSDHRR. As stated in the *San Diego Modernism Historic Context Statement*, "location and setting are particularly relevant for International style resources which are institutional and related to a 'campus' environment, and the preservation of the surrounding site may be important to the overall significance of the resource" (City 2007).

The seven aspects of integrity for NRHP, CRHR, and CSDHRR eligibility considerations are:

LOCATION: Building 500 retains integrity of location. The building is in its originally constructed location.

DESIGN: Building 500 retains integrity of design. Spatial relationships are maintained, and even with modern additions such as exterior utilities and the connecting ramp to building 800, the property's historic function is apparent.

SETTING: Building 500 retains integrity of setting. Although surrounded by school buildings when constructed, and now fronting an open quad, the basic physical conditions under which the property was built remain, and the property still retains the character of a high school.

MATERIALS: Building 500 retains integrity of materials. The structure appears to retain most of its original construction materials, they still reveal the construction preferences of those who built the structure and the materials available during the period of significance, and most additions are clearly defined and separated from the original historic fabric.

WORKMANSHIP: Building 500 retains integrity of workmanship. Even with modern additions and material replacements, the structure still presents evidence of circa 1950 construction methods.

FEELING: Building 500 retains integrity of feeling. Even with modifications to the building and the addition of other buildings on campus, the property retains the aesthetic and historic sense of a twentieth century urban high school in San Diego.

ASSOCIATION: Building 500 retains integrity of association with education in San Diego from 1938 to 1978. The building is still used for educational purposes, within an educational setting, and it is sufficiently intact to convey that relationship to an observer. Building 500 also retains integrity of association with the International sub-style of Modern architecture in San Diego between 1935 and 1955. Even with modern additions and replacements including the connecting bridge and many windows, the International style is still dominant. No later architects are associated with building 500.

In conclusion building 500 retains sufficient integrity in order to convey its significance under CSDHRR Criterion C (International style) and is recommended eligible for listing on the CSDHRR with 1950, the year of construction, as the period of significance.

7.2.3 Building 600

Building 600 is best categorized as a building, a construction created principally to shelter human activity. As part of SDHS, it has been evaluated in the context of education in San Diego between 1938 and 1978, the International sub-style of Modern architecture in San Diego between 1935 and 1955, and the work of architect Frank Lewis Hope, Jr. Building 600 is recommended significant under CSDHRR Criteria C and eligible for listing on the CSDHRR. A detailed evaluation under each criterion is provided below as well as an integrity evaluation.

7.2.3.1 NRHP/CRHR/CSDHRR Criterion A/1/A

While building 600, as part of SDHS, is associated with broad patterns in education and school construction in California and the United States, it is not associated with specific events that have made a significant contribution to these patterns. State patterns were different from national patterns: in response to the Field Act, construction of new school buildings with upgraded earthquake safety was occurring across California during this period. San Diego's response appears to have followed that of the rest of the state: a local architect designing replacement campus buildings in a contemporary style (International, with little to no reference to locality). As stated in NRB 15, mere association with historic events or trends is not enough, in and of itself, to qualify under Criterion A (NPS 1995). Furthermore, archival research did not reveal any historically significant events associated with this building. Building 600 is recommended not significant under Criterion A/1/A.

7.2.3.2 NRHP/CRHR/CSDHRR Criterion B/2/B

While building 600, as part of SDHS, is associated with the lives of people important to state and local history, that association is simply one of attendance during childhood or employment during adulthood. Based on school capacity, thousands of students and hundreds of faculty and staff have attended or been employed in this building since its construction. Research has not turned up any significant association between building 600 and the productive lives of former students, faculty, or staff who attended school or worked in the buildings. As stated in NRB 15, persons associated with the buildings must be individually significant and their association must be documented by accepted methods of historical research (NPS 1995). In addition, properties associated with living persons are usually not eligible for inclusion in the NRHP (NPS 1995). Building 600 is recommended not significant under Criterion B/2/B.

7.2.3.3 NRHP/CRHR/CSDHRR Criterion C/3/C and D

Building 600 was designed by Frank Lewis Hope, Jr., in the International sub-style of Modern architecture. While the building has all the primary character-defining features of the International sub-style (flat roof, minimal applied ornamentation, horizontal bands of flush windows, asymmetrical façades) and some secondary features (square corners, concrete exterior), it is not an exceptional example of the style. Hope's designs at SDHS are not mentioned in lists of important International architecture in San Diego (City 2007). Significant local examples of the sub-style include McKinley Elementary School in North Park by Requa (1937) and the Education Center in University Heights by Haufbauer (1953).

Frank Lewis Hope, Jr., is listed on the San Diego HRB list of Master Architects (City 2011). However, there is confusion since his son of the same name was also a prominent San Diego architect. The Frank Hope (1901-1994) that designed building 600 started the firm Frank L. Hope & Associates in 1928 and retired

in 1965. Hope has two entries on the San Diego Historic Landmarks list: First National Bank remodel in downtown San Diego (1940, HRB 465) and the Frank L Hope Jr. House in Point Loma (1947, HRB 803).

However, SDHS building 600 is not considered a significant element of Frank Hope's body of work. Aside from his Landmark listings, works by Hope that are often mentioned as significant include several projects for the San Diego Roman Catholic Diocese, including St. Patrick's Catholic Church in North Park (1928), the Carmelite Monastery in Normal Heights (1930), and Sacred Heart Catholic Church in Ocean Beach (1946).

Building 600 does not represent an evolution of the International sub-style or modern architectural style or represent a transition between styles or sub-styles. Neither does it represent an important example of building practices circa 1940 or the use of indigenous materials or craftsmanship. Though Frank L. Hope, Jr., is recognized as a master architect, building 600 does not express a particular phase in the development of his career, an aspect of his work, or a particular idea or theme in his craft. As stated in NRB 15, a property is not eligible as the work of a master simply because it was designed by a prominent architect (NPS 1995). Building 600 is recommended not significant under NRHP, CRHR, and CSDHRR Criterion C/3/D.

However, the *San Diego Modernism Historic Context Statement* states that "examples of this style in San Diego are limited; therefore, retention of good examples is important" (City 2007). While not an exceptional example rising to the level of state or national significance, building 600 does exhibit all of the primary and some of the secondary character-defining features of the style and should be considered a good example in the City of San Diego. Therefore, building 600 is recommended significant under CSDHRR Criterion C (International Style) with 1940, the year of construction, as the period of significance.

7.2.3.4 NRHP/CRHR Criterion D/4

Building 600 has not yielded, and is not likely to yield, information important in the prehistory or history of San Diego, California, or the nation. Research has not revealed any important information which is contained in the physical material of the building itself, and no research design has been developed which suggests the existence of such information. Building 600 is recommended not significant under Criterion D/4.

7.2.3.5 CSDHRR Criterion E

Building 600 has not been listed or previously determined eligible for listing on the NRHP or the CRHR. There is no listing for the property in the CHRID, nor is it included on the *Historic Landmarks Designated by the SD Historical Resources Board* (City 2014). Building 600 is recommended not significant under Criterion E.

7.2.3.6 CSDHRR Criterion F

Building 600 is not a finite group of resources related to one another in a clearly distinguishable way and is not a component of a listed or proposed Historic District. As discussed above, it is not recognized as an important example of International or Modern architecture, or the history or development of International or Modern architecture in the City. Building 600 is recommended not significant under Criterion F.

7.2.3.7 Integrity

National Register Bulletin 15 defines the concept of integrity as the ability of a property to convey its significance, based on a property's physical features and how they relate to its significance (NPS 1995). The NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. To retain integrity, a property will always possess several, and usually most, of the aspects of location, design, setting, materials, workmanship, feeling, and association. Under NRHP/CRHR guidelines, since building 600 is recommended not significant under Criteria A-D/1-4, there is no significance to convey, and therefore no integrity to retain.

According to the City of San Diego, integrity is the authenticity of a historical resource's physical identity clearly indicated by the retention of characteristics that existed during the resource's period of significance. As stated in the *Guidelines for the Application of Historical Resources Board Designation Criteria*, historical resources eligible for designation by the HRB must meet one or more of the designation Criteria and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their historical significance (City 2009).

Since building 600 is recommended as significant under CSDHRR Criterion C as a good example of the International sub-style of Modern Architecture, integrity must be considered in order to determine whether or not building 600 retains enough of its historic character or appearance to be recognizable as an International style building from 1935 to 1955 and therefore eligible for listing in the CSDHRR. As stated in the *San Diego Modernism Historic Context Statement*, "location and setting are particularly relevant for International style resources which are institutional and related to a 'campus' environment, and the preservation of the surrounding site may be important to the overall significance of the resource" (City 2007).

The seven aspects of integrity for NRHP, CRHR, and CSDHRR eligibility considerations are:

LOCATION: Building 600 retains integrity of location. The building is in its originally constructed location.

DESIGN: Building 600 retains integrity of design. Spatial relationships are maintained, and even with modern additions such as exterior utilities and railings, the property's historic function is apparent.

SETTING: Building 600 retains integrity of setting. Although surrounded by school buildings when constructed, and now fronting an open quad, the basic physical conditions under which the property was built remain, and the property still retains the character of a high school.

MATERIALS: Building 600 retains integrity of materials. The structure appears to retain most of its original construction materials which reveal the construction preferences of those who built the structures and the materials that were available during the period of significance. Most additions are clearly defined and separated from the original historic fabric as well.

WORKMANSHIP: Building 600 retains integrity of workmanship. Even with modern additions and material replacements, the structures still present evidence of circa 1940 construction methods.

FEELING: Building 600 retains integrity of feeling. Even with modifications to the building and the addition of other buildings on campus, the property retains the aesthetic and historic sense of a twentieth century urban high school in San Diego.

ASSOCIATION: Building 600 retains integrity of association with education in San Diego from 1938 to 1978. The building is still used for educational purposes, within an educational setting, and it is sufficiently intact to convey that relationship to an observer. Building 600 also retains integrity of association with the International sub-style of Modern architecture in San Diego between 1935 and 1955. Even with modern additions and replacements including hand railings, doors, and windows, the International style is still dominant. No later architects are associated with building 600.

In conclusion, building 600 retains sufficient integrity in order to convey its significance under CSDHRR Criterion C (International style) and is recommended eligible for listing on the CSDHRR with 1940, the year of construction, as the period of significance.

7.2.4 Building 700

Building 700 is best categorized as a building, a construction created principally to shelter human activity. As part of SDHS, it has been evaluated in the context of education in San Diego between 1938 and 1978, the International sub-style of Modern architecture, and the work of architects Charles and Edward Quayle. Building 700 is recommended significant under CSDHRR Criteria C and eligible for listing on the CSDHRR. A detailed evaluation under each criterion is provided below as well as an integrity evaluation.

7.2.4.1 NRHP/CRHR/CSDHRR Criterion A/1/A

While building 700, as part of SDHS, is associated with broad patterns in education and school construction in California and the United States, it is not associated with specific events that have made a significant contribution to these patterns. State patterns were different from national patterns: in response to the Field Act, construction of new school buildings with upgraded earthquake safety was occurring across California during this period. San Diego's response appears to have followed that of the rest of the state: a local architect designing replacement campus buildings in a contemporary style (International, with little to no reference to locality). As stated in NRB 15, mere association with historic events or trends is not enough, in and of itself, to qualify under Criterion A (NPS 1995). Furthermore, archival research did not reveal any historically significant events associated with this building. Building 700 is recommended not significant under Criterion A/1/A.

7.2.4.2 NRHP/CRHR/CSDHRR Criterion B/2/B

While building 700, as part of SDHS, is associated with the lives of people important to state and local history, that association is simply one of attendance during childhood or employment during adulthood. Based on school capacity, thousands of students and hundreds of faculty and staff have attended or been employed in this building since its construction. Research has not turned up any significant association between building 700 and the productive lives of former students, faculty, or staff who attended school or worked in the buildings. As stated in NRB 15, persons associated with the buildings must be individually significant, and their association must be documented by accepted methods of historical research (NPS 1995). In addition, properties associated with living persons are usually not eligible for inclusion in the NRHP (NPS 1995). Building 700 is recommended not significant under Criterion B/2/B.

7.2.4.3 NRHP/CRHR/CSDHRR Criterion C/3/C and D

Building 700 was designed by Quayle Brothers Architects, Charles and Edward Quayle, in the International sub-style of Modern architecture. While the building portions possess the primary character-defining features of the International sub-style (flat roof, minimal applied ornamentation, horizontal bands of flush windows, asymmetrical façades) and some secondary features (square corners, concrete exterior), some features are mixed or less-developed (southern gabled roof, single windows instead of bands, etc.), and it is not an exceptional example of the style. Building 700 is not mentioned in lists of important International architecture in San Diego (City 2007). Significant local examples of the sub-style include McKinley Elementary School in North Park by Requa (1937) and the Education Center in University Heights by Haufbauer (1953).

The Quayle Brothers (Charles and Edward Quayle and their father William Quayle) are listed on the San Diego HRB list of Master Architects (City of San Diego 2011). The Quayle Brothers have at least 11 entries on the San Diego Historic Landmarks list, including the Elk's Hall (HRB 139), the North Park Theater (HRB 245), and the Owl Drug building (HRB 374). However, SDHS building 700 is not considered a significant element of the Quayle Brothers body of work. Aside from their Landmark listings, works by Quayle Brothers that are often mentioned as significant include the Salt Lake and Union Pacific building at the Panama-California Exposition, the Buick building at 402 West Broadway, and Balboa Stadium (1914) at SDHS, all since destroyed.

After William Quayle's death in 1906, his sons, Charles and Edward, continued to run the business into the mid-1930s. Building 700 was one of their last designs, along with the NRHP-listed San Diego Police Department (1939), before both Quayle Brothers passed in 1940. Building 700 was deigned very late in the career of the Quayle Brothers, and very early in the period of significance of the International Style in San Diego. The Quayle Brothers typically worked in revival and Deco styles for their civic building designs.

Building 700 does not represent an important example of building practices during the 1930s or the use of indigenous materials or craftsmanship. Though the Quayle Brothers are recognized as master architects, building 700 does not express a particular phase in the development of their career, an aspect of their work, or a particular idea or theme in their craft. As stated in NRB 15, a property is not eligible as the work of a master simply because it was designed by a prominent architect (NPS 1995). Therefore, building 700 is recommended not significant under NRHP, CRHR, and CSDHRR Criterion C/3/D.

However, the *San Diego Modernism Historic Context Statement* states that "examples of this style in San Diego are limited; therefore, retention of good examples is important" (City 2007). Since the International Style came late to San Diego, building 700 is not a good example of the style's transition at the state or national level, but does represent the style's development at the local level in the City of San Diego. Therefore, building 700 is recommended significant under CSDHRR Criterion C (International Style) with 1938, the year of construction, as the period of significance.

7.2.4.4 NRHP/CRHR Criterion D/4

Building 700 has not yielded, and is not likely to yield, information important in the prehistory or history of San Diego, California, or the nation. Research has not revealed any important information which is contained in the physical material of the building itself, and no research design has been developed

which suggests the existence of such information. Building 700 is recommended not significant under Criterion D/4.

7.2.4.5 CSDHRR Criterion E

Building 700 has not been listed or previously determined eligible for listing on the NRHP or the CRHR. There is no listing for the property in the CHRID, nor is it included on the *Historic Landmarks Designated by the SD Historical Resources Board* (City 2014). Building 700 is recommended not significant under Criterion E.

7.2.4.6 CSDHRR Criterion F

Building 700 is not a finite group of resources related to one another in a clearly distinguishable way and is not a component of a listed or proposed Historic District. As discussed above, it is not recognized as an important example of International or Modern architecture, or the history or development of International or Modern architecture in the City. Therefore, building 700 is recommended not significant under Criterion F.

7.2.4.7 Integrity

National Register Bulletin 15 defines the concept of integrity as the ability of a property to convey its significance, based on a property's physical features and how they relate to its significance (NPS 1995). The NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. To retain integrity, a property will always possess several, and usually most, of the aspects of location, design, setting, materials, workmanship, feeling, and association. Under NRHP/CRHR guidelines, since building 700 is recommended not significant under Criteria A-D/1-4, there is no significance to convey and, therefore, no integrity to retain.

According to the City of San Diego, integrity is the authenticity of a historical resource's physical identity clearly indicated by the retention of characteristics that existed during the resource's period of significance. As stated in the *Guidelines for the Application of Historical Resources Board Designation Criteria*, historical resources eligible for designation by the HRB must meet one or more of the designation Criteria and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their historical significance (City 2009).

Since building 700 is recommended as significant under CSDHRR Criterion C as a good example of the local development of the International sub-style of Modern Architecture, integrity must be considered in order to determine whether or not building 700 retains enough of its historic character or appearance to be recognizable as a developing International style building from 1935 to 1955 and therefore eligible of listing in the CSDHRR. As stated in the *San Diego Modernism Historic Context Statement*, "location and setting are particularly relevant for International style resources which are institutional and related to a 'campus' environment, and the preservation of the surrounding site may be important to the overall significance of the resource" (City 2007).

The seven aspects of integrity for NRHP, CRHR, and CSDHRR eligibility considerations are:

LOCATION: Building 700 retains integrity of location. The building is in its originally constructed location.

DESIGN: Building 700 retains integrity of design. Spatial relationships are maintained, and even with modern additions such as exterior utilities and metal stairs, the property's historic function is apparent.

SETTING: Building 700 retains integrity of setting. Although surrounded by different school buildings when constructed, the basic physical conditions under which the property was built remain, and the property still retains the character of a high school.

MATERIALS: Building 700 retains integrity of materials. The structure appears to retain most of its original construction materials which reveal the construction preferences of those who built the structures and the materials available during the period of significance. Most additions are clearly defined and separated from the original historic fabric as well.

WORKMANSHIP: Building 700 retains integrity of workmanship. Even with modern additions and material replacements, the structures still present evidence of late 1930s construction methods.

FEELING: Building 700 retains integrity of feeling. Even with modifications to the building and the addition of other buildings on campus, the property retains the aesthetic and historic sense of a twentieth century urban high school in San Diego.

ASSOCIATION: Building 700 retains integrity of association with education in San Diego from 1938 to 1978. The building is still used for educational purposes, within an educational setting, and it is sufficiently intact to convey that relationship to an observer. Building 700 also retains integrity of association with the International sub-style of Modern architecture in San Diego between 1935 and 1955. Even with modern additions and replacements including doors, windows, and exterior stairs, the International style is still apparent. No later architects are associated with building 700.

In conclusion, building 700 retains sufficient integrity in order to convey its significance under CSDHRR Criterion C (International style) and is recommended eligible for listing on the CSDHRR with 1938, the year of construction, as the period of significance.

7.2.5 Balboa Stadium

Balboa Stadium is best categorized as a structure, a functional construction made for purposes other than creating human shelter. The stadium is comprised of a football field, track, two concrete bleachers, and seven permanent structures, all of which are of very simple design and construction. As part of San Diego High School, it has been evaluated in the context of education in San Diego between 1938 and 1978, vernacular architecture, and the work of architect Richard George Wheeler. Balboa Stadium is recommended not significant under the NRHP/CRHR/CSDHRR Criteria and therefore not eligible for listing in the NRHP/CRHR/CSDHRR. A detailed evaluation under each criterion is provided below as well as an integrity evaluation.

7.2.5.1 NRHP/CRHR/CSDHRR Criterion A/1/A

While Balboa Stadium, as part of SDHS, is associated with broad patterns in education and school construction in California and the United States, it is not associated with specific events that have made a significant contribution to these patterns. State patterns were different from national patterns: in response to the Field Act and the San Fernando earthquake of 1971, school construction was occurring across California during this period. San Diego's response appears to have followed that of the rest of the state: a local architect designing replacement campus buildings in a contemporary style (modern,

with little to no reference to a general or specific past). As stated in NRB 15, mere association with historic events or trends is not enough, in and of itself, to qualify under Criterion A (NPS 1995). Furthermore, archival research did not reveal any historically significant events associated with Balboa Stadium. Balboa Stadium is recommended not significant under Criterion A/1/A.

7.2.5.2 NRHP/CRHR/CSDHRR Criterion B/2/B

While Balboa Stadium, as part of SDHS, is associated with the lives of people important to state and local history, that association is simply one of attendance during school or civic events. Based on capacity and stadium use, tens of thousands of students, staff, and community members have attended events in the stadium since its construction. Research has not turned up any significant association between Balboa Stadium and the productive lives of former students, staff, or community members who attended events at the stadium. As stated in NRB 15, persons associated with the building must be individually significant, and their association must be documented by accepted methods of historical research (NPS 1995). In addition, properties associated with living persons are usually not eligible for inclusion in the NRHP (NPS 1995). Therefore, Balboa Stadium is recommended not significant under Criterion B/2/B.

7.2.5.3 NRHP/CRHR/CSDHRR Criterion C/3/C and D

Balboa Stadium was designed by Richard George Wheeler in a vernacular style of architecture. The structures in the stadium complex are all very simple, with none of the character-defining features of the other buildings on campus designed by Wheeler (buildings 100 through 400). They are of strictly utilitarian design, with no stylistic flourishes. Wheeler's designs at SDHS are not mentioned in lists of important architecture in San Diego (City 2007).

While Richard George Wheeler is not listed on the San Diego HRB's list of Master Architects (City 2011), he is listed in the Contributing Designers section of the *San Diego Modernism Historic Context Statement* (City 2007). Based on his body of work, his contribution to modern architecture in San Diego, and his training of, influence on, and mentorship of the next generation of San Diego architects, it is likely that Richard George Wheeler will be recognized by the HRB as a Master Architect. That status has likely not been considered yet since many of his designs have only recently reached the 45-year threshold and have not come under review for modification or demolition, with the exception of the SDG&E headquarters at 101 Ash Street in downtown San Diego.

However, Balboa Stadium is not considered a significant element of Richard George Wheeler's work. It is not listed in the *San Diego Modernism Historic Context Statement* which lists him as a contributing designer of modern San Diego, nor is it included in his list of more than 50 designs on Keith York's *Modern San Diego* website (City 2007; York 2020). Works by Wheeler that are often mentioned as significant include the Shelter Island Restaurant/Hotel (1960) and Westgate Plaza Hotel (1970). According to Wheeler himself, the SDG&E headquarters (1968) had the largest impact on his career as an architect (Wheeler 1982).

Balboa Stadium does not represent an evolution of vernacular architecture. Neither does it represent an important example of building practices during the 1970s or the use of indigenous materials or craftsmanship. Even if Richard George Wheeler is recognized as a master architect, Balboa Stadium does not express a particular phase in the development of his career, an aspect of his work, or a particular idea or theme in his craft. As stated in NRB 15, a property is not eligible as the work of a master simply

because it was designed by a prominent architect (NPS 1995). Therefore, Balboa Stadium is recommended not significant under Criteria C/3/C and D.

7.2.5.4 NRHP/CRHR Criterion D/4

Balboa Stadium has not yielded, and is not likely to yield, information important in the prehistory or history of San Diego, California, or the nation. Research has not revealed any important information which is contained in the physical material of the stadium complex itself, and no research design has been developed which suggests the existence of such information. Therefore, Balboa Stadium is recommended not significant under Criterion D/4.

7.2.5.5 CSDHRR Criterion E

Balboa Stadium has not been listed or previously determined eligible for listing on the NRHP or the CRHR. There is no listing for the property in the CHRID, nor is it included on the *Historic Landmarks Designated by the SD Historical Resources Board* (City 2014). Therefore, Balboa Stadium is recommended not significant under Criterion E.

7.2.5.6 CSDHRR Criterion F

While the Balboa Stadium complex consists of a finite group of resources related to one another in a clearly distinguishable way, they are not a component of a listed or proposed Historic District. As discussed above, they are not recognized as important examples of vernacular architecture, or the history or development of vernacular architecture in the City. Balboa Stadium is recommended not significant under Criterion F.

7.2.5.7 Integrity

NRB 15 defines the concept of integrity as the ability of a property to convey its significance, based on a property's physical features and how they relate to its significance (NPS 1995). The NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. To retain integrity, a property will always possess several, and usually most, of the aspects of location, design, setting, materials, workmanship, feeling, and association. Under NRHP/CRHR guidelines, since Balboa Stadium is recommended not significant under Criteria A-D/1-4, there is no significance to convey, and therefore no integrity to retain.

According to the City of San Diego, integrity is the authenticity of a historical resource's physical identity clearly indicated by the retention of characteristics that existed during the resource's period of significance. As stated in the *Guidelines for the Application of Historical Resources Board Designation Criteria*, historical resources eligible for designation by the HRB must meet one or more of the designation Criteria and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their historical significance (City 2009). Since Balboa Stadium does not meet CSDHRR Criteria A-F, and therefore has no historical significance to convey, integrity is not a factor in the eligibility of the property.

Without meeting specific significance Criteria, only a general discussion of integrity can take place. The seven aspects of integrity for NRHP, CRHR, and CSDHRR eligibility considerations are:

LOCATION: Balboa Stadium retains integrity of location. The field, track, bleachers, and ancillary structures are in their originally constructed locations.

DESIGN: Balboa Stadium retains integrity of design. Spatial relationships are maintained, and even with later additions such as lighting and ADA-compliant ramps, the property's historic function is apparent.

SETTING: Balboa Stadium retains integrity of setting. The basic physical conditions under which the property was built remain, and the property still retains the character of a high school stadium.

MATERIALS: Balboa Stadium retains integrity of materials. The structures appear to retain most of their original construction materials, which reveal the construction preferences of those who built the structures as well as the materials available during the period of significance. Most additions are clearly defined and separated from the original historic fabric as well.

WORKMANSHIP: Balboa Stadium retains integrity of workmanship. Even with modern additions and material replacements, the structures still present evidence of circa 1980 construction methods.

FEELING: Balboa Stadium retains integrity of feeling. Even with modifications to the buildings and the addition of other buildings on campus, the property retains the aesthetic and historic sense of a late-twentieth century urban high school stadium in San Diego.

ASSOCIATION: Association directly links a historic property with a historic event, activity, or person of past time and place, and requires the presence of physical features to convey the property's historic character. Without reference to a specific historic event, activity, or person, integrity of association to that event, activity, or person cannot be evaluated.

7.2.6 Gargoyle Planter (Feature 1)

The gargoyle planter is best categorized as an object, a construction that is primarily artistic in nature or relatively small in scale and simply constructed. As part of SDHS, it has been evaluated in the context of education and school design in San Diego in the twentieth century as well as the history of SDHS. Russ Auditorium was designed by Lincoln Rogers in the Gothic Revival style to complement the adjacent Gray Castle. The auditorium was built in 1926 and demolished in 1973 to make way for campus redevelopment. The gargoyles, originally located in a band above the second-story windows of the Russ Auditorium, were purposely salvaged and repurposed as an adornment to a newly constructed planter on the grounds of the newly redeveloped SDHS campus circa 1976.

The gargoyle planter is recommended significant under CSDHRR Criteria A, C, and F and eligible for listing on the CSDHRR. A detailed evaluation under each criterion is provided below as well as an integrity evaluation.

7.2.6.1 NRHP/CRHR/CSDHRR Criterion A/1/A

The demolition of the Gray Castle campus was devastating to the SDHS community. Redevelopment architect and alumni Richard George Wheeler, intentionally paid homage to the Gray Castle in his campus redevelopment design. The Gothic Revival style concrete gargoyles were salvaged from Russ

Auditorium when it was demolished in 1973 and were installed on the subject planter. Based on the archival record, this project was undertaken with donated funds from alumni, students, faculty, and retired faculty. The redevelopment of the campus allowed for small preservation projects including the construction of the gargoyle planter and the re-installation of the Gray Castle courtyard fountain and the Gray Castle main doors, and the World War memorials. Implementation of these small preservation projects, while not rising to the level of significance under Criteria A of the NRHP or Criteria 1 of the CRHR, is a historically significant event at the local level in the City of San Diego. The gargoyle planter is recommended significant under CSDHRR Criterion A as a representation of the SDHS community's preservation effort and as a reflection of the Gothic Revival Russ Auditorium, constructed in 1926, which was a significant part of the Gray Castle campus. The period of significance is circa 1976, the year the planter was constructed. Further research might be able to clarify the exact construction date of the planter.

7.2.6.2 NRHP/CRHR/CSDHRR Criterion B/2/B

There is no direct association between the gargoyle planter and the lives of people important to state and local history. Research has not turned up any significant association between the planter and any historically significant individuals. As stated in NRB 15, persons associated with the resources must be individually significant, and their association must be documented by accepted methods of historical research (NPS 1995). The gargoyle planter is recommended not significant under Criterion B/2/B.

7.2.6.3 NRHP/CRHR/CSDHRR Criterion C/3/C and D

The original design by Richard George Wheeler for the re-installation of the Russ Auditorium gargoyles was a more elaborate fountain in the same location with the gargoyles around the top tier as shown in Plate 39. It is unclear why this initial design did not occur. According to a secondary source, the planter was constructed by Roel Construction Company in 1975, however primary research was not able to confirm this statement (Amero n.d.). Based on the SDHS yearbooks the planter was not yet constructed in early 1976 (SDHS 1976).

The design of the planter is a simple and utilitarian support structure for the gargoyle figures. Other than the figures, there are no decorative embellishments, and the material is cast-in-place concrete. Research was unable to determine who designed or constructed the gargoyles, but they were installed on the Russ Auditorium, which was designed by architect Lincoln Rogers. The gargoyles are unique in their representation of athletic and academic subjects. While the planter does not represent the work of an identifiable master, the gargoyles possess high artistic value and represent an important example of the Gothic Revival style at the local level. The gargoyles having been moved from their original location significantly impacts their historic integrity, making them not eligible for listing in the NRHP/CRHR under Criterion C/3. For a complete integrity analysis please refer to Section 7.2.6.7 below. However, the gargoyles and their history are recognizable by SDHS and the local community and are strongly associated with the Gray Castle campus which is why they were intentionally preserved. The gargoyles are recommended significant under CSDHRR Criterion C (high artistic value) with a 1926 period of significance, the year Russ Auditorium was constructed. We do not know for certain who constructed the planter or the gargoyle specifically, therefore it is not recommended significant under CSDHRR Criterion D.

7.2.6.4 NRHP/CRHR Criterion D/4

The gargoyle planter has not yielded, and is not likely to yield, information important in the prehistory or history of San Diego, California, or the nation. Research has not revealed any important information which is contained in the physical material of the object itself, and no research design has been developed which suggests the existence of such information. The gargoyle planter is recommended not significant under Criterion D/4.

7.2.6.5 CSDHRR Criterion E

The gargoyle planter has not been listed or previously determined eligible for listing on the NRHP or the CRHR. There is no listing for the property in the CHRID, nor is it included on the *Historic Landmarks Designated by the SD Historical Resources Board* (City 2014). The gargoyle planter is recommended not significant under Criterion E.

7.2.6.6 CSDHRR Criterion F

The gargoyle planter is included in a finite group of resources which are related to one another in a clearly distinguishable way. The gargoyle planter, Gray Castle courtyard fountain, the Gray Castle doors, the World War I memorial, and the World War II plaque were all intentionally salvaged from the Gray Castle campus and reinstalled within the redeveloped SDHS campus between 1975 and 1976. Therefore, these five resources are recommended significant under Criterion F with a 1975-1976 period of significance.

7.2.6.7 Integrity

National Register Bulletin 15 defines the concept of integrity as the ability of a property to convey its significance, based on a property's physical features and how they relate to its significance (NPS 1995). The NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. To retain integrity, a property will always possess several, and usually most, of the aspects of location, design, setting, materials, workmanship, feeling, and association.

According to the City of San Diego, integrity is the authenticity of a historical resource's physical identity clearly indicated by the retention of characteristics that existed during the resource's period of significance. As stated in the *Guidelines for the Application of Historical Resources Board Designation Criteria*, historical resources eligible for designation by the HRB must meet one or more of the designation Criteria and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their historical significance (City 2009).

The seven aspects of integrity for NRHP, CRHR, and CSDHRR eligibility considerations are:

LOCATION: The gargoyle planter retains integrity of location. However, the gargoyles themselves have been moved from their original location on Russ Auditorium, where they adorned the exterior of the building from 1926 to 1973.

DESIGN: The gargoyle planter retains integrity of design. The planter and the gargoyle figures do not appear to have been modified since construction, and the object remains in use as a planter.

SETTING: The gargoyle planter retains integrity of setting. Since its construction, it remains situated along the sidewalk in front of a main campus entrance.

MATERIALS: The gargoyle planter retains integrity of materials. The object appears to retain all of its original construction materials, and they still reveal the construction preferences of those who built the object and the materials available during the period of significance.

WORKMANSHIP: The gargoyle planter retains integrity of workmanship. The gargoyles still present evidence of 1920s artistic methods, and the remainder of the planter still presents evidence of 1970s construction methods.

FEELING: The gargoyle planter retains integrity of feeling. The object retains the aesthetic and historic sense of a twentieth century planter on a high school campus.

ASSOCIATION: The gargoyle planter retains integrity of association. The gargoyle planter, by incorporating physical features from the 1926 Russ Auditorium, directly links the resource with the SDHS Gray Castle campus as well as the 1970s reconstruction and conveys its historic character.

In conclusion, the planter retains all seven aspects of integrity, allowing it to convey its significance under CSDHRR Criterion A with a circa 1976 period of significance and Criterion F with a 1975-1976 period of significance. In regard to the concrete gargoyles themselves, the City HRB states that a moved property significant under CSDHRR Criteria C or D must retain enough historic features to convey its architectural values and retain integrity of design, materials, workmanship, feeling, and association (City 2009). It is recommended that the gargoyles retain sufficient integrity to convey its local significance under CSDHRR Criterion C, with a 1926 period of significance.

7.2.7 Gray Castle Courtyard Fountain (Feature 2)

The fountain is best categorized as an object, a construction that is primarily artistic in nature or relatively small in scale and simply constructed. As part of SDHS, it has been evaluated in the context of education and school design in San Diego in the twentieth century as well as the history of SDHS. The fountain was originally constructed in 1907 within an outdoor Gray Castle courtyard designed by Frank Shaver Allen. When the Gray Castle was demolished during the 1975-1976 campus redevelopment, the fountain was purposely salvaged and relocated within the new SDHS campus. The new fountain enclosure was constructed by Roel Construction Company, circa 1975. The fountain is recommended significant under CSDHRR Criteria A and F and is recommended eligible for listing on the CSDHRR. A detailed evaluation under each criterion is provided below as well as an integrity evaluation.

7.2.7.1 NRHP/CRHR/CSDHRR Criterion A/1/A

The demolition of the Gray Castle campus was devastating to the SDHS community. Redevelopment architect and alumni Richard George Wheeler, intentionally paid homage to the Gray Castle in his campus redevelopment design. To accomplish this, the Gray Castle courtyard fountain was purposely salvaged and relocated within the new SDHS campus. The redevelopment of the campus allowed for small preservation projects including the construction of the gargoyle planter, and the re-installation of the Gray Castle courtyard fountain and the Gray Castle main doors, and the World War memorials. Implementation of these small preservation projects, while not rising to the level of significance under Criteria A of the NRHP or Criteria 1 of the CRHR, comprise a historically significant event at the local level in the City of San Diego. The Gray Castle courtyard fountain is recommended significant under CSDHRR

Criterion A as a representation of the SDHS community's preservation effort and as a reflection of the Gray Castle constructed in 1907. The period of significance is 1975-1976, when the fountain was salvaged and reinstalled.

7.2.7.2 NRHP/CRHR/CSDHRR Criterion B/2/B

There is no direct association between the fountain and the lives of people important to state and local history. Research has not turned up any significant association between the fountain and any individuals. As stated in NRB 15, persons associated with the resources must be individually significant, and their association must be documented by accepted methods of historical research (NPS 1995). The fountain is recommended not significant under Criterion B/2/B.

7.2.7.3 NRHP/CRHR/CSDHRR Criteria C/3/C and D

While the Gray Castle was designed by Frank Shaver Allen, research does not indicate who designed or constructed the fountain specifically. Roel Construction Co. constructed the new enclosure for the salvaged and relocated fountain, and it is not considered a master work of the construction company. The design and material of the original fountain reflect those of the Gothic-Revival style though it is not an exceptional example of the style. Neither does it possess high artistic value or represent the work of an identifiable master. It does not represent an important example of building practices circa 1910 or 1975, or the use of indigenous materials or craftsmanship. Therefore, the fountain is recommended not significant under Criteria C/3/C and D.

7.2.7.4 NRHP/CRHR Criterion D/4

The fountain has not yielded, and is not likely to yield, information important in the prehistory or history of San Diego, California, or the nation. Research has not revealed any important information which is contained in the physical material of the object itself, and no research design has been developed which suggests the existence of such information. Therefore, the fountain is recommended not significant under Criterion D/4.

7.2.7.5 CSDHRR Criterion E

The fountain has not been listed or previously determined eligible for listing on the NRHP or the CRHR. There is no listing for the property in the CHRID, nor is it included on the *Historic Landmarks Designated by the SD Historical Resources Board* (City 2014). Therefore, the fountain is recommended not significant under Criterion E.

7.2.7.6 CSDHRR Criterion F

The Gray Castle courtyard fountain is included in a finite group of resources which are related to one another in a clearly distinguishable way. The gargoyle planter, Gray Castle courtyard fountain, the Gray Castle doors, the World War I memorial, and the World War II plaque were all intentionally salvaged from the Gray Castle campus and reinstalled within the redeveloped SDHS campus between 1975 and 1976. Therefore, these five resources are recommended significant under Criterion F with a 1975-1976 period of significance.

7.2.7.7 Integrity

National Register Bulletin 15 defines the concept of integrity as the ability of a property to convey its significance, based on a property's physical features and how they relate to its significance (NPS 1995). The NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. To retain integrity, a property will always possess several, and usually most, of the aspects of location, design, setting, materials, workmanship, feeling, and association.

According to the City of San Diego, integrity is the authenticity of a historical resource's physical identity clearly indicated by the retention of characteristics that existed during the resource's period of significance. As stated in the *Guidelines for the Application of Historical Resources Board Designation Criteria*, historical resources eligible for designation by the HRB must meet one or more of the designation Criteria and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their historical significance (City 2009).

The following integrity evaluation specifically assess the reconstructed fountain installed in 1975, which was found to be significant under local CSDHRR Criteria A and F The seven aspects of integrity for NRHP, CRHR, and CSDHRR eligibility considerations are:

LOCATION: The re-installed fountain constructed in 1975 retains integrity of location.

DESIGN: The fountain retains integrity of design and does not appear to be altered from its initial construction in 1975.

SETTING: The fountain retains integrity of setting within the SDHS campus.

MATERIALS: The fountain retains its concrete materials.

WORKMANSHIP: The fountain retains integrity of workmanship with its cast-in-place concrete construction.

FEELING: The fountain retains integrity of feeling of a preserved fountain from the Gray Castle campus. The object retains the aesthetic and historic sense of a twentieth century fountain on a high school campus.

ASSOCIATION: The fountain conveys its association with the Gray Castle campus as well as with the 1975-1976 campus reconstruction.

In conclusion, the fountain retains all seven aspects of integrity allowing it to convey its significance under CSDHRR Criteria A and F. The Gray Castle courtyard fountain is recommended eligible under CSDHRR Criteria A and F with a 1975-1976 period of significance

7.2.8 World War 1 Memorial (Feature 3)

The World War I memorial is best categorized as an object, a construction that is primarily artistic in nature or relatively small in scale and simply constructed. As part of SDHS, it has been evaluated in the context of education, military, and social history in San Diego between 1919 and 1922 as well as the history of SDHS. The event (World War I student losses) was important enough to be commemorated by 1919-1922 students with this memorial. The memorial was purposefully salvaged and reinstalled within

the newly redeveloped SDHS campus in 1975-1976. The World War I memorial is recommended significant under CSDHRR Criteria A and F and eligible for listing on the CSDHRR. A detailed evaluation under each criterion is provided below as well as an integrity evaluation.

7.2.8.1 NRHP/CRHR/CSDHRR Criterion A/1/A

While the World War I memorial, as part of SDHS, is associated with broad patterns in education, military, and social history in California and the United States, it is not associated with specific events that have made a significant contribution to these patterns. Memorials to students who served in World War I are not uncommon during this period, and there are no known events associated with the SDHS World War I memorial, either during its installation or later. As stated in NRB 15, mere association with historic events or trends is not enough, in and of itself, to qualify under Criterion A (NPS 1995). The World War I memorial is recommended not significant under NRHP/CRHR Criterion A/1.

Within the historic context of SDHS, the World War I memorial was salvaged during the redevelopment of the campus in 1975-1976 and reinstalled within the new campus. The demolition of the Gray Castle campus was devastating to the SDHS community. Redevelopment architect and alumni Richard George Wheeler, intentionally paid homage to the Gray Castle in his campus redevelopment design. The redevelopment of the campus allowed for small preservation projects including the gargoyle planter, and the re-installation of the Gray Castle courtyard fountain and the Gray Castle main doors, and the World War memorials. Implementation of these small preservation projects, while not rising to the level of significance under Criteria A of the NRHP or Criteria 1 of the CRHR, comprise a historically significant event at the local level in the City of San Diego. The World War I memorial is recommended significant under CSDHRR Criterion A as a representation of the SDHS community's preservation effort and as a reflection of the earlier Gray Castle campus in the early twentieth century. The period of significance is 1975-1976, when the memorial was salvaged and reinstalled.

7.2.8.2 NRHP/CRHR/CSDHRR Criterion B/2/B

There is no direct association between the World War I memorial and the lives of people important to state and local history. No individual names are listed on the monument, either those to whom it is dedicated, or those of the dedicated groups. Research has not turned up any significant association between the World War I memorial and any individuals. As stated in NRB 15, persons associated with the resources must be individually significant, and their association must be documented by accepted methods of historical research (NPS 1995). Therefore, the World War I memorial is recommended not significant under Criterion B/2/B.

7.2.8.3 NRHP/CRHR/CSDHRR Criteria C/3/C and D

Research was unable to determine who designed or constructed the memorial. The simple design, plain engraving, and common material do not embody distinctive characteristics of a type, period, or method of construction. Neither do they possess high artistic value or represent the work of an identifiable master. It does not represent an important example of building practices circa 1920 or the use of indigenous materials or craftsmanship. Therefore, the World War I memorial is recommended not significant under Criteria C/3/C and D.

7.2.8.4 NRHP/CRHR Criterion D/4

The World War I memorial has not yielded, and is not likely to yield, information important in the prehistory or history of San Diego, California, or the nation. Research has not revealed any important information which is contained in the physical material of the object itself, and no research design has been developed which suggests the existence of such information. Therefore, the World War I memorial is recommended not significant under Criterion D/4.

7.2.8.5 CSDHRR Criterion E

The World War I Memorial has not been listed or previously determined eligible for listing on the NRHP or the CRHR. There is no listing for the property in the CHRID, nor is it included on the *Historic Landmarks Designated by the SD Historical Resources Board* (City 2014). Therefore, the World War I memorial is recommended not significant under Criterion E.

7.2.8.6 CSDHRR Criterion F

The World War I memorial is included in a finite group of resources which are related to one another in a clearly distinguishable way. The gargoyle planter, Gray Castle courtyard fountain, the Gray Castle doors, the World War I memorial, and the World War II plaque were all intentionally salvaged from the Gray Castle campus and reinstalled within the redeveloped SDHS campus between 1975 and 1976. Therefore, these five resources are recommended significant under Criterion F with a 1975-1976 period of significance.

7.2.8.7 Criteria Considerations

The World War I memorial is considered a commemorative property which requires analysis under the NRHP Criteria Consideration F (NPS 1995).

Criteria Consideration F: Commemorative Properties – As a property whose sole function is commemorative, the World War I memorial must meet Criteria Consideration F: Commemorative Properties to be eligible for the NRHP. This indicates that it must possess significance on its own value, not on the value of the event or person being memorialized. This significance can be associated with design; age, tradition, or symbolic value; or as the last representative of an event or person. However, the World War I memorial is not significant for its architectural, artistic, or design qualities from its period of creation; no research has documented that it significantly represents the enduring principles or historic identity of the group that erected it; other memorials to the death of soldiers in World War I exist; and no individuals are listed on the memorial. Therefore, the World War I memorial does not meet Criteria Consideration F and is not eligible for listing on the NRHP.

7.2.8.8 Integrity

National Register Bulletin 15 defines the concept of integrity as the ability of a property to convey its significance, based on a property's physical features and how they relate to its significance (NPS 1995). The NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. To retain integrity, a property will always possess several, and usually most, of the aspects of location, design, setting, materials, workmanship, feeling, and association.

According to the City of San Diego, integrity is the authenticity of a historical resource's physical identity clearly indicated by the retention of characteristics that existed during the resource's period of significance. As stated in the *Guidelines for the Application of Historical Resources Board Designation Criteria*, historical resources eligible for designation by the HRB must meet one or more of the designation Criteria and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their historical significance (City 2009).

The following integrity evaluation specifically assess the relocated World War I memorial incorporated in the 1975-1976 redevelopment of the SDHS campus, which was found to be significant under local CSDHRR Criteria A and F. The seven aspects of integrity for NRHP, CRHR, and CSDHRR eligibility considerations are:

LOCATION: The World War I memorial retains integrity of location from 1975-1976.

DESIGN: The World War I memorial retains integrity of design. The main body of the memorial has not been modified, and the object's historic function is apparent.

SETTING: The World War I memorial retains integrity of setting within the SDHS campus.

MATERIALS: The World War I memorial retains integrity of materials with its engraved stone construction.

WORKMANSHIP: The World War I memorial retains integrity of workmanship.

FEELING: The World War I memorial retains integrity of feeling as a feature from the Gray Castle campus that was salvaged and reinstalled in 1975-1976.

ASSOCIATION: The World War I memorial retains integrity of association as a feature from the Gray Castle campus that was salvaged and reinstalled in 1975-1976.

In conclusion, the World War I memorial retains all seven aspects of integrity, allowing it to convey its significance under CSDHRR Criteria A and F. The World War I memorial is recommended eligible under CSDHRR Criteria A and F with a 1975-1976 period of significance.

7.2.9 Gray Castle Doors (Feature 4)

The Gray Castle Doors are best categorized as an object, a construction that is primarily artistic in nature or relatively small in scale and simply constructed. As part of SDHS, it has been evaluated in the context of education and school design in San Diego in the twentieth century as well as the history of SDHS. The doors were originally constructed in 1907 on the main Gray Castle building designed by architect Frank Shaver Allen. When the Gray Castle was demolished during the 1975-1976 campus redevelopment, the doors were purposely salvaged and relocated on building 100 by architect and alumni Richard George Wheeler.

The doors, originally the main entrance doors on the Gray Castle constructed in 1907, were remounted as the main entrance doors to building 100 when it was constructed in 1974-1975. As stated in NRB 15, "parts of buildings, such as interiors, façades, or wings, are not eligible independent of the rest of the existing building. The whole building must be considered, and its significant features must be identified" (NRB 15). In Section 7.2.1 of this study (*Buildings 100, 200, 300, and 400*), building 100 is recommended

not significant under any NRHP/CRHR/CSDHRR Criteria. Therefore, the Gray Castle doors are not eligible as individual resources for listing on the NRHP or CRHR under any of the Criteria (A-D).

7.2.9.1 CSDHRR Criterion A

Within the historic context of SDHS and the City of San Diego, the Gray Castle main building doors were salvaged during the redevelopment of the campus in 1975-1976 and reinstalled on building 100. The demolition of the Gray Castle campus was devastating to the SDHS community. Redevelopment architect and alumni Richard George Wheeler, intentionally paid homage to the Gray Castle in his campus redevelopment design. He chose to salvage the doors and repurpose them on the new main building on campus (building 100). The redevelopment of the campus allowed for small preservation projects including the construction of the gargoyle planter and the re-installation of the Gray Castle courtyard fountain and the Gray Castle main doors, and the World War memorials. Implementing this small preservation project, while not rising to the level of significance under Criteria A of the NRHP or Criteria 1 of the CRHR, is a historically significant event at the local level in the City of San Diego. The Gray Castle doors are recommended significant under CSDHRR Criterion A as a representation of the SDHS community's preservation effort and as a reflection of the Gray Castle campus in the early and mid-twentieth century. The period of significance is circa 1975, when the doors were salvaged and reinstalled on building 100.

7.2.9.2 CSDHRR Criterion B

There is no direct association between the Gray Castle doors and the lives of people important to state and local history. Research has not turned up any significant association between the doors and any individuals. As stated in NRB 15, persons associated with the resources must be individually significant and their association must be documented by accepted methods of historical research (NPS 1995). Therefore, the Gray Castle doors are recommended not significant under Criterion B/2/B.

7.2.9.3 CSDHRR Criteria C and D

The Gray Castle doors embody the characteristics of the Gothic Revival style in which they were designed. While the doors themselves do not sufficiently represent the work of master architect Frank Shaver Allen, the doors possess high artistic value and represent an important example of the Gothic Revival style at the local level. The doors and their history are recognizable by SDHS and the local community and are strongly associated with the Gray Castle campus, which is why they were preserved. Therefore, the doors are recommended significant under CSDHRR Criterion C (high artistic value) with a 1907 period of significance, the year Gray Castle was constructed. The doors themselves do not sufficiently represent the work of master architect Frank Shaver Allen, and therefore the doors are not recommended significant under CSDHRR Criterion D.

7.2.9.4 CSDHRR Criterion E

The Gray Castle doors have not been listed or previously determined eligible for listing on the NRHP or the CRHR. There is no listing for the property in the CHRID, nor is it included on the *Historic Landmarks Designated by the SD Historical Resources Board* (City 2014). Therefore, the Gray Castle doors are recommended not significant under Criterion E.

7.2.9.5 CSDHRR Criterion F

The Gray Castle doors are included in a finite group of resources which are related to one another in a clearly distinguishable way. The gargoyle planter, Gray Castle courtyard fountain, the Gray Castle doors, the World War I memorial, and the World War II plaque were all intentionally salvaged from the Gray Castle campus and reinstalled within the redeveloped SDHS campus between 1975 and 1976. Therefore, these five resources are recommended significant under Criterion F with a 1975-1976 period of significance.

7.2.9.6 Integrity

National Register Bulletin 15 defines the concept of integrity as the ability of a property to convey its significance, based on a property's physical features and how they relate to its significance (NPS 1995). The NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. To retain integrity, a property will always possess several, and usually most, of the aspects of location, design, setting, materials, workmanship, feeling, and association.

According to the City of San Diego, integrity is the authenticity of a historical resource's physical identity clearly indicated by the retention of characteristics that existed during the resource's period of significance. As stated in the *Guidelines for the Application of Historical Resources Board Designation Criteria*, historical resources eligible for designation by the HRB must meet one or more of the designation Criteria and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their historical significance (City 2009).

The seven aspects of integrity for NRHP, CRHR, and CSDHRR eligibility considerations are:

LOCATION: The doors were relocated after Gray Castle was demolished and reinstalled in their current location circa 1975 on building 100. The doors retain integrity of location since circa 1975.

DESIGN: The Gray Castle doors retain integrity of design. While some hardware has been modified or added, the carved tracery and other details do not appear to have been modified since construction, and the doors remain in use as exterior doors.

SETTING: The Gray Castle doors retain integrity of setting as the main entry doors on the SDHS campus.

MATERIALS: The Gray Castle doors retain integrity of materials. The object appears to retain most of its original construction materials, and they still reveal the construction preferences of those who built the object and the materials available during the period of significance.

WORKMANSHIP: The Gray Castle doors retain integrity of workmanship. The carving and hardware still present evidence of early 1900s artistic methods.

FEELING: The Gray Castle doors retain integrity of feeling. While placed in a different building than originally constructed, the doors still evoke a historic sense of the 1907 Gothic Revival structure for which they were originally constructed.

ASSOCIATION: The Gray Castle doors retain integrity of association. By incorporating physical features from the 1907 Gray Castle, the doors are directly linked with the 1907 SDHS campus and convey its historic character.

In conclusion, the doors retain sufficient integrity allowing them to convey their significance under CSDHRR Criterion A with a 1975 period of significance and Criterion F with 1975-1976 period of significance. The City HRB states that a moved property significant under CSDHRR Criteria C or D must retain enough historic features to convey its architectural values and retain integrity of design, materials, workmanship, feeling, and association (City 2009). It is recommended that the doors retain sufficient integrity to convey their local significance under CSDHRR Criterion C, with a 1907 period of significance as a Gothic revival decorative element from the Gray Castle main building.

7.2.10 Historic Landscaping (Feature 5)

As described earlier in Section 6.4.5, some of the landscaping present on the SDHS campus is of historic age. However, research could not date any of the plantings to a specific period. At best, the landscaping was planted between 1902, when the City began planting at SDHS, and the mid-1970s, when some of it was marked as "existing" on as-built diagrams (Amero n.d.; Wheeler 1976b). Research did not identify an association between campus landscaping and historically significant people or events. A few of the extant pines trees are possibly the Torrey Pines that were planted by graduating senior classes, but research did not confirm their exact location (Williamson 1976). Research did show that no existing plantings are associated with horticulturalist and former SDHS Principal Kate Sessions. Additionally, some landscaping remnants are more associated with other properties, such as Park Boulevard, than with SDHS. The extant landscaping within SDHS do not represent a cohesive landscape designed by an identified person or group, nor can the extant trees be identified to a specific era or date. For these reasons, the landscaping elements extant within the SDHS campus do not constitute a historic landscape as defined by *National Register Bulletin 18: How to Evaluate and Nominate Designed Historic Landscapes*, and therefore a formal evaluation is not provided (NPS *n.d.*) The historic landscaping remnants within SDHS campus are recommended not historically significant and not eligible for listing in the NRHP, CRHR, and CSDHRR.

7.2.11 World War II Plaque (Feature 6)

The World War II Plaque is best categorized as an object, a construction that is primarily artistic in nature or relatively small in scale and simply constructed. As part of SDHS, it has been evaluated in the context of education, military, and social history in San Diego between 1941 and 1948 as well as within the historic context of SDHS. The plaque was commissioned by members of the San Diego Board of Education and includes hand-carved relief panels created by local San Diego artist, Isabelle Schultz Churchman. The plaque was originally installed in the Russ Auditorium in 1948-1949. The plaque was salvaged when the Russ Auditorium was demolished in 1973 and was reinstalled in building 100 in 1975-1976. The World War II plaque is recommended significant under CSDHRR Criteria A, D, and F and eligible for listing on the CSDHRR. A detailed evaluation under each criterion is provided below as well as an integrity evaluation.

7.2.11.1 NRHP/CRHR/CSDHRR Criterion A/1/A

While the World War II plaque, as part of SDHS, is associated with broad patterns in education, military, and social history in California and the United States, it is not associated with specific events that have made a significant contribution to these patterns. Memorials to students who served in World War II are not uncommon during this period, and there are no known events associated with the SDHS World War II plaque, either during its installation or later. As stated in NRB 15, mere association with historic events

or trends is not enough, in and of itself, to qualify under Criterion A (NPS 1995). Therefore, the World War II plaque is recommended not significant under NRHP/CRHR Criterion A/1.

Within the historic context of SDHS, the World War II plaque was salvaged during the redevelopment of the campus in 1975-1976 and reinstalled in building 100. The demolition of the Gray Castle campus was devastating to the SDHS community. Redevelopment architect and alumni Richard George Wheeler, intentionally paid homage to the Gray Castle in his campus redevelopment design. The redevelopment of the campus allowed for small preservation projects including the construction of the gargoyle planter, and the re-installation of the Gray Castle courtyard fountain and the Gray Castle main doors, and the World War memorials. Implementation of these small preservation projects, while not rising to the level of significance under Criteria A of the NRHP or Criteria 1 of the CRHR, are a historically significant event at the local level in the City of San Diego. The World War II plaque is recommended significant under CSDHRR Criterion A as a representation of the SDHS community's preservation effort and as a reflection of the earlier Gray Castle campus in the early twentieth century. The period of significance is 1975-1976, the year the memorial was salvaged and reinstalled.

7.2.11.2 NRHP/CRHR/CSDHRR Criterion B/2/B

There is no direct association between the World War II plaque and the lives of people important to state and local history. While individual names are listed, specific actions or events are not, and the focus of the plaque is the collective sacrifice of the individuals in service of the ideals described. Research has not turned up any significant association between the World War II plaque and any individuals. As stated in NRB 15, persons associated with the resources must be individually significant, and their association must be documented by accepted methods of historical research (NPS 1995). Therefore, the World War II plaque is recommended not significant under Criterion B/2/B.

7.2.11.3 NRHP/CRHR/CSDHRR Criteria C/3/C and D

The decorative portion of the World War II plaque consists of four wood carved relief panels which were designed by local artist, Isabelle Schultz Churchman in 1947-1949. The panels represent President Roosevelt's *Four Freedoms* (Freedom of Speech, Freedom of Religion, Freedom from Want, Freedom from Fear) for which the war was fought. The images on the panels feature WPA style scenes of religious practitioners, animal husbandry, agriculture, childhood, and academics. During the 1930s New Deal era, Churchman was a state-sponsored artist under SERA, who created dioramas depicting episodes of San Diego history under the WPA Curriculum Project of the San Diego City Schools. It appears that her experience as a WPA artist influenced her design for these panels.

The design of the panels may embody the distinctive characteristics of the WPA style; however, they are not considered WPA art. The panels were not a government funded project nor was it a part of the San Diego City Schools Curriculum Project in the 1930s and early 1940s. However, Isabella Churchman is considered a locally significant San Diego based artist during the twentieth century. Churchman is known mostly for her sculptures, and these panels are a rare example of her wood relief work. Though not rising to national or state significance under the NRHP and the CRHR, the panels are recommended significant under Criterion D of the CSDHRR as notable work of a local master artist, Isabelle Schultz Churchman. The period of significance of the plaque under this Criterion is 1948-1949 when the plaque and panels were completed.

7.2.11.4 NRHP/CRHR Criterion D/4

The World War II plaque has not yielded, and is not likely to yield, information important in the prehistory or history of San Diego, California, or the nation. Research has not revealed any important information which is contained in the physical material of the object itself, and no research design has been developed which suggests the existence of such information. Therefore, the World War II plaque is recommended not significant under Criterion D/4.

7.2.11.5 CSDHRR Criterion E

The World War II plaque has not been listed or previously determined eligible for listing on the NRHP or the CRHR. There is no listing for the property in the CHRID, nor is it included on the *Historic Landmarks Designated by the SD Historical Resources Board* (City 2014). Therefore, the World War II plaque is recommended not significant under Criterion E.

7.2.11.6 CSDHRR Criterion F

The World War II plaque is included in a finite group of resources which are related to one another in a clearly distinguishable way. The gargoyle planter, Gray Castle courtyard fountain, the Gray Castle doors, the World War I memorial, and the World War II plaque were all intentionally salvaged from the Gray Castle campus and reinstalled within the redeveloped SDHS campus between 1975 and 1976. Therefore, these five resources are recommended significant under Criterion F with a 1975-1976 period of significance.

7.2.11.7 Criteria Considerations

The World War II plaque is considered a commemorative property which requires analysis under the NRHP Criteria Consideration F (NPS 1995).

Criteria Consideration F: Commemorative Properties – As a property whose sole function is commemorative, the World War II plaque must meet Criteria Consideration F: Commemorative Properties. This indicates that it must possess significance on its own value, not on the value of the event or person being memorialized. This significance can be associated with design; age, tradition, or symbolic value; or as the last representative of an event or person. However, the World War II plaque is not significant for its architectural, artistic, or design qualities from its period of creation; no research has documented that it significantly represents the enduring principles or historic identity of the group that erected it; other memorials to the death of soldiers in World War II exist; and none of the individuals listed on the plaque are documented historic figures. Therefore, the World War II plaque does not meet Criteria Consideration F and is not eligible for listing on the NRHP.

7.2.11.8 Integrity

National Register Bulletin 15 defines the concept of integrity as the ability of a property to convey its significance, based on a property's physical features and how they relate to its significance (NPS 1995). The NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. To retain integrity, a property will always possess several, and usually most, of the aspects of location, design, setting, materials, workmanship, feeling, and association.

According to the City of San Diego, integrity is the authenticity of a historical resource's physical identity clearly indicated by the retention of characteristics that existed during the resource's period of significance. As stated in *the Guidelines for the Application of Historical Resources Board Designation Criteria*, historical resources eligible for designation by the HRB must meet one or more of the designation Criteria and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their historical significance (City 2009).

The seven aspects of integrity for NRHP, CRHR, and CSDHRR eligibility considerations are:

LOCATION: The World War II plaque retains integrity of location from 1975-1976. The plaque was originally installed in the Russ Auditorium, where it hung between 1948 and 1973, when the building demolished.

DESIGN: The World War II plaque retains integrity of design despite what appears to be an accidental rearrangement of the panels during the 1975-1976 installation in building 100 as well as a new wooden base. Overall, the plaque retains sufficient integrity of design and the object's historic function is apparent.

SETTING: The World War II plaque retains integrity of setting. Although installed in a different SDHS lobby, the basic physical conditions under which the object was constructed remain. The object still retains the character of a war memorial in the interior of a SDHS building.

MATERIALS: The World War II plaque retains integrity of materials. The object retains most of its original construction materials, they still reveal the construction preferences of those who built the object, and the modern wood base addition is clearly defined and separated from the original historic fabric.

WORKMANSHIP: The World War II plaque retains integrity of workmanship. Even with the modern base addition, the object still presents evidence of 1940s construction methods.

FEELING: The World War II plaque retains integrity of feeling. Even with modifications to the base and its placement inside a different building, the object retains the aesthetic and historic sense of a twentieth century war memorial on a high school campus.

ASSOCIATION: The World War II plaque retains integrity of association as a feature from the Gray Castle campus that was salvaged and reinstalled in 1975. The plaque also retains its association with artist Isabelle Schultz Churchman.

In conclusion, the World War II plaque retains sufficient integrity allowing it to convey its significance under CSDHRR Criteria A, D, and F. The World War II plaque is recommended eligible under CSDHRR Criteria A and F, with a 1975-1976 period of significance, as well as CSDHRR Criterion D, with a 1948-1949 period of significance.

7.2.12 Former Balboa Stadium Terracing (Feature 7)

The former Balboa Stadium is best categorized as a site. While formerly a structure, demolition in 1978 resulted in the loss of historic configuration, and only remnants of the stadium remain. NRB 15 defines a site as "the location of a significant event or prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself maintains historical or

archaeological value regardless of the value of any existing structure" (NPS 1995:5). The former Balboa Stadium terracing is recommended not significant under the applicable Criteria and therefore not eligible for listing in the NRHP, CRHR, or the CSDHRR. A detailed evaluation under each Criterion is provided below as well as an integrity evaluation.

7.2.12.1 NRHP/CRHR/CSDHRR Criterion A/1/A

The original Balboa Stadium was designed by Quayle Brothers Architects and Charles Cressey and was opened in May 1915 as part of the Panama-California Exposition. The remnant terracing, while being associated with the original Balboa Stadium, is not directly associated with a specific historic event, pattern, or trend that occurred within the stadium. The original Balboa stadium was demolished in response to the Field Act and the San Fernando earthquake of 1971, which required demolition of buildings and structures across California. San Diego's response appears to have followed that of the rest of the state. As stated in NRB 15, mere association with historic events or trends is not enough, in and of itself, to qualify under Criterion A (NPS 1995). Therefore, the former Balboa Stadium terracing remnants are recommended not significant under the NRHP, CRHR, or CSDHRR Criterion A/1/A.

7.2.12.2 NRHP/CRHR/CSDHRR Criterion B/2/B

While Balboa Stadium, as part of SDHS campus, is associated with the lives of people important to state and local history, that association is simply one of attendance during school or civic events. Based on capacity and stadium use, tens of thousands of students, staff, and community members attended events in the original Balboa Stadium while it was extant. Research has not turned up any significant association between Balboa Stadium and the productive lives of former students, staff, or community members who attended events at the stadium. As stated in NRB 15, persons associated with the building must be individually significant and their association must be documented by accepted methods of historical research (NPS 1995). Therefore, the remnant Balboa Stadium terracing is recommended not significant under Criterion B/2/B.

7.2.12.3 NRHP/CRHR/CSDHRR Criteria C/3/C and D

The original Balboa Stadium was designed by Quayle Brothers Architects and Charles Cressey and was opened in May 1915 as part of the Panama-California Exposition. Though the Balboa Stadium is widely considered a historically significant structure however it is no longer extant. The remnant terracing is all that remains of the original Balboa Stadium, and unfortunately the terracing is not able to convey the significant design of the stadium nor are they able to convey the master work of the Quayle Brothers Architects and Charles Cressey. Therefore, the remnant Balboa Stadium terracing is recommended not significant under Criteria C/3/C and D.

7.2.12.4 NRHP/CRHR Criterion D/4

The former Balboa Stadium terracing has not yielded, and is not likely to yield, information important in the prehistory or history of San Diego, California, or the nation. Research has not revealed any important information which is contained in the physical material of the site itself, and no research design has been developed which suggests the existence of such information. Therefore, the former Balboa Stadium terracing is recommended not significant under Criterion D/4.

7.2.12.5 CSDHRR Criterion E

The former Balboa Stadium terracing remnants have not been listed or previously determined eligible for listing on the NRHP or the CRHR. There is no listing for the property in the CHRID, nor is it included on the *Historic Landmarks Designated by the SD Historical Resources Board* (City 2014). Therefore, the terracing is recommended not significant under Criterion E.

7.2.12.6 CSDHRR Criterion F

The former Balboa Stadium terracing remnants are not included in a finite group of resources related to one another in a clearly distinguishable way and is not a component of a listed or proposed Historic District. Therefore, the terracing remnants are recommended not significant under Criterion F.

7.2.12.7 Integrity

National Register Bulletin 15 defines the concept of integrity as the ability of a property to convey its significance, based on a property's physical features and how they relate to its significance (NPS 1995). The NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. To retain integrity, a property will always possess several, and usually most, of the aspects of location, design, setting, materials, workmanship, feeling, and association. Since the former Balboa Stadium terracing remnants are recommended not significant under any of the NRHP, CRHR, and CSDHRR criteria, there is no significance to convey, and therefore no integrity to retain.

According to the City of San Diego, integrity is the authenticity of a historical resource's physical identity clearly indicated by the retention of characteristics that existed during the resource's period of significance. As stated in the *Guidelines for the Application of Historical Resources Board Designation Criteria*, historical resources eligible for designation by the HRB must meet one or more of the designation criteria and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their historical significance (City 2009). Since the former Balboa Stadium terracing does not meet CSDHRR Criteria A-F, and therefore has no historical significance to convey, integrity is not a factor in the eligibility of the property.

Without meeting specific significance Criteria, only a general discussion of integrity can take place. The seven aspects of integrity for NRHP, CRHR, and CSDHRR eligibility considerations are:

LOCATION: The former Balboa Stadium terracing remnants are in their original footprint and retain integrity of location.

DESIGN: The former Balboa Stadium terracing does not retain integrity of design. The stadium was demolished in 1978.

SETTING: The former Balboa Stadium terracing does not retain integrity of setting due to the demolition of the stadium in 1978. The terracing is surrounded by a more modern stadium constructed after the demolition of the former Balboa Stadium.

MATERIALS: The former Balboa Stadium terracing does not retain integrity of materials due to the demolition of the stadium in 1978.

WORKMANSHIP: The former Balboa Stadium terracing does not retain integrity of workmanship due to the demolition of the stadium in 1978.

FEELING: The former Balboa Stadium terracing does not retain integrity of feeling due to the demolition of the stadium in 1978.

ASSOCIATION: The former Balboa Stadium terracing does retain integrity of association with the former Balboa Stadium constructed in 1914.

In conclusion, the former Balboa Stadium terracing is recommended not significant under the applicable Criteria and therefore not eligible for listing in the NRHP, CRHR, or the CSDHRR.

7.2.13 Eligibility Summary

In conclusion, eight historic resources are recommended eligible for listing in the local CSDHRR (Table 4, *NRHP/CRHR/CSDHRR Eligibility Recommendations*). Buildings 500, 600, 700, and features 1 (gargoyle planter), 2 (Gray Castle courtyard fountain), 3 (World War I memorial), 4 (Gray Castle doors), and 6 (World War II plaque) are eligible for listing in the CSDHRR and as such, are considered historical resources for the purposes of CEQA.

Table 4
NRHP/CRHR/CSDHRR ELIGIBILITY RECOMMENDATIONS

Resource Name	NRHP/CRHR Eligibility	CSDHRR Eligibility	Period(s) of Significance
Building 100	Not eligible	Not eligible	N/A
Building 200	Not eligible	Not eligible	N/A
Building 300	Not eligible	Not eligible	N/A
Building 400	Not eligible	Not eligible	N/A
Building 500	**Not eligible**	**Eligible (Criterion C)**	**1950**
Building 600	**Not eligible**	**Eligible (Criterion C)**	**1940**
Building 700	**Not eligible**	**Eligible (Criterion C)**	**1938**
Balboa Stadium	Not eligible	Not eligible	N/A
Gargoyle Planter (Feature 1)	**Not eligible**	**Eligible (Criteria A, C, and F)**	**1926/1975-1976**
Gray Castle Courtyard Fountain (Feature 2)	**Not eligible**	**Eligible (Criteria A and F)**	**1975-1976**
World War I Memorial (Feature 3)	**Not eligible**	**Eligible (Criteria A and F)**	**1975-1976**
Gray Castle Doors (Feature 4)	**Not eligible**	**Eligible (Criteria A, C, and F)**	**1907/1975-1976**
Landscaping (Feature 5)	Not eligible	Not eligible	N/A
World War II Plaque (Feature 6)	**Not eligible**	**Eligible (Criteria A, D, and F)**	**1948-1949/ 1975-1976**
Balboa Stadium Terracing (Feature 7)	Not eligible	Not eligible	N/A

*__Bold__ resources are considered historical resources for the purposes of CEQA.

7.3 MANAGEMENT RECOMMENDATIONS

A study was undertaken to identify cultural resources that are present in the SDHS WSM and LRFMP project area and to determine the effects of the project on cultural resources. Eight historical resources were identified within the project area, two of which would be subject to direct impacts from project implementation. Buildings 600 and 700, both identified as historical resources eligible for the CSDHRR, are proposed for demolition. Demolition of a historical resource under CEQA is an unmitigable significant impact. Alternatives to demolition should be considered during the environment review process. Alternatives may include retaining the buildings and adhering to the Secretary of the Interior's Standards for the Treatment of Historic Properties for any proposed changes or alterations. If alternatives to demolition are not feasible, impacts to the loss of these resources would be partially mitigated through implementation of Historic American Buildings Survey (HABS)- level of documentation of these resources, including additional historic research, measured drawings, photographs, and other documentation. Interpretive and educational projects may also be included in a mitigation strategy to partially mitigate impacts.

Based on the results of the current study, no archaeological resources will be impacted by the project. No further cultural resources work in regard to archaeological resources is recommended.

In the event that human remains are discovered, the County Coroner shall be contacted. If the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the NAHC, shall be contacted in order to determine proper treatment and disposition of the remains. All requirements of Health & Safety Code §7050.5 and PRC §5097.98 shall be followed.

Should the project limits change to incorporate new areas of proposed disturbance, archaeological survey of these areas will be required.

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Appendix A

Resumes

Stacie Wilson, RPA

Senior Archaeologist

HELIX Environmental Planning

Summary of Qualifications

Ms. Wilson has been professionally involved in cultural resources management for 15 years and has more than 17 years of unique experience in both archaeology and GIS. She has served as principal investigator on numerous cultural resources management projects, and regularly coordinates with local, state, and federal agencies and Native American tribal representatives. She is skilled in project management, archaeological inventories and excavation, and report documentation and has broad experience with utility, municipal, federal, renewable energy, and private development projects. Her years of experience also encompass an understanding of CEQA and NEPA compliance regulations. She is proficient at creating, organizing, and analyzing GIS data; technical skills include ArcGIS 10.4, Spatial Analyst, Geostatistical Analyst, and working with datasets in Microsoft Word and Excel. Ms. Wilson is detail-oriented and has strong organizational and coordination capabilities.

Selected Project Experience

Eastern Municipal Water District As-Needed Environmental Services (2015 - 2019). Serving as Senior Archaeologist on several individual task orders for HELIX's as-needed environmental services agreement with EMWD, including Well 59 Wellhead Treatment Facilities (2018), Cactus II Feeder Transmission Pipeline (2017 – 2018), and Fox Tank Replacement (2017). Responsible for coordinating cultural resources studies including records searches, Sacred Lands File searches, Native American outreach, reviews of historic aerial photographs and maps, and pedestrian surveys. Authored cultural resources technical reports.

Crescent Drive Sewer Improvements Project (2018). Cultural Task Lead for a sewer improvements project in the City of Vista. The project proposes to conduct improvements to the sewer main and connecting sewer laterals within Crescent Drive. Duties included conducting a record search and a Sacred Lands File search; reviewing existing cultural resources information for the project site and immediate vicinity; coordinating a field visit; and preparing a constraints report. Work performed for KEH and Associates, Inc. with the City of Vista as the lead agency.

Padre Dam Municipal Water District East County Advanced Water Purification Program (2018). Senior Archaeologist for cultural resources inventory and assessment of approximately 10 miles of pipeline. The East County Advanced Water Purification project proposes to increase the region's supply of potable water. Duties included preparation of a cultural resources study, assisting with community outreach with regard to the historic resources, and working with the agencies and interested parties to develop appropriate measures to avoid or minimize impacts. Work performed for Kennedy/Jenks Consultants, Inc., with Padre Dam Municipal Water District as the lead agency and Helix Water District, the County of San Diego, and the City of El Cajon as participating agencies.

Education

Master of Science, Applied Geographical Information Science, Northern Arizona University, 2008

Bachelor of Arts, Anthropology, University of California, San Diego, 2001

Bachelor of Science, Biological Psychology, University of California, San Diego, 2001

Registrations/ Certifications

The Register of Professional Archaeologists #16436, 2008

Riverside County Approved Cultural Resources Consultant, 2017

Professional Affiliations

Society for California Archaeology

City of San Diego Water Group Job 939 (2018). Principal Investigator for the Water Group Job 939, located in the Sorrento Valley area of the City of San Diego. Conducted as part of an as-needed contract with the City of San Diego, Public Works Department, Project Implementation Division, the project proposes approximately 6,846 linear feet of water main replacement and installation. Duties included conducting background research, reviewing previous cultural resource surveys, and coordination of Native American and archaeological monitors.

Alvarado 2nd Pipeline Extension (2018 - 2019). Principal Investigator overseeing completion of cultural resource management services for the geotechnical investigations related to this approximately 8.5-mile pipeline project, which will include the extension of the existing Alvarado 2nd Pipeline along Friars Road between Interstate 805 and West Mission Bay Drive. Responsibilities included overseeing a record search and submitting a request for a Sacred Lands File search; reviewing environmental, geological, and existing cultural resources information for the project alignment; coordinating a field visit; and preparing a report that provided monitoring recommendations. Oversaw subsequent archaeological and Native American monitoring program. Work performed for Kennedy/Jenks Consultants, Inc., with the City of San Diego as the lead agency.

City of San Diego Sewer Group 806 (2017 - 2018). Principal Investigator for the Sewer Group Job 806, located in the College Area and Mid City Kensington-Talmadge community planning areas in the City of San Diego. Conducted as part of an as-needed contract with the City of San Diego, Public Works Department, Project Implementation Division, the project proposes both the replacement and rehabilitation of existing sewer mains, including replacing-in-place approximately 2,158 linear feet of existing vitrified clay pipe sewer mains. Duties included conducting background research, reviewing previous cultural resource surveys, conducting a field survey with a Native American monitor, and the preparation of a cultural resources technical report.

Quince Street Senior Housing Project (2017). Principal Investigator for the demolition of an existing warehouse complex within a developed property in order to construct affordable housing for seniors. Managed reconnaissance survey of the project area, which included photography of the built environment within the project site and documentation/evaluation of structures over 50 years of age. Assisted with cultural resources technical report preparation. Work performed for San Diego InterFaith Housing Foundation, with the City of Escondido as the lead agency.

City of San Diego Long-term Mitigation Strategy Development (2016). Principal Investigator for a cultural resources study of the Kearny Mesa East Mitigation Site, a 7.57-acre City of San Diego owned parcel located in Murphy Canyon. Conducted as part of an as-needed contract with the City of San Diego, Transportation & Storm Water Department, the project evaluated the potential mitigation opportunities for the parcel. Duties included conducting background research, a field survey and recording of cultural resources, Native American outreach and coordination, and report preparation. Work performed for the City of San Diego.

Theodore G. Cooley, RPA

Senior Archaeologist

HELIX Environmental Planning

Summary of Qualifications

Mr. Cooley has over 45 years of experience in archaeological resource management. He has directed test and data recovery investigations, monitoring programs, and archaeological site surveys of large and small tracts, and has prepared reports for various cultural resource management projects. He is well-versed in National Historic Preservation Act, National Environmental Policy Act (NEPA), and California Environmental Quality Act (CEQA) regulations and processes. Mr. Cooley's experience also includes Native American consultation for monitoring of archaeological field projects, including some with human remains and reburial-related compliance issues.

Selected Project Experience

8016 Broadway Self Storage Project (2019 - Present). Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory program of the Lemon Grove Self-Storage project located in the City of Lemon Grove, San Diego County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the Summit Environmental Group, Inc.

Briggs Road Walton Development Project (Assessor's Parcel Number 461-170-001) (2019 - Present). Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory program of the Briggs Road Residential project located in Riverside County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the Walton International Group, LLC.

Brown Field and Montgomery Field Airport Master Plans (2019 - Present). Senior Archaeologist for Phase I cultural resource inventory and pedestrian survey programs at the Brown Field Municipal Airport and the Montgomery-Gibbs Executive Airport, in the City of San Diego, in support of updating of the Airport Master Plan and its Programmatic Environmental Impact Report. Involvement included participation in the analysis of the results from the survey programs and co-authorship of the technical reports. Work performed as a subconsultant to C&S Companies, with the City of San Diego as the lead agency.

Cubic Redevelopment Environmental Consulting (2019 - Present). Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory and assessment program in support of a 20-acre redevelopment project, located in the community of Kearny Mesa, City of San Diego. Involvement included participation in the analysis of the results from the survey program and preparation of the technical report. Work performed for Cubic Redevelopment Environmental Consulting, with the City of San Diego as lead agency.

Education

Master of Arts, Anthropology, California State University, Los Angeles, 1982

Bachelor of Arts, Anthropology, California State College, Long Beach, 1970

Registrations/ Certifications

Register of Professional Archaeologists #10621, 2019

City of San Diego, Certified Principal Investigator for Monitoring Projects

County or Riverside, Certified Cultural Resources Consultant Principal Investigator

County of Orange, Certified Cultural Resources Consultant Principal Investigator

County of San Diego, Approved Consultant for Archaeological Resources

Los Angeles, Ventura, San Luis Obispo, and Santa Barbara Approved Consultant

Theodore G. Cooley, RPA

Senior Archaeologist

French Valley 303 Project (2019 - Present). Senior Archaeologist for an archaeological construction monitoring program for the French Valley 303 Site residential development project, located in the French Valley area of unincorporated Riverside County. Involvement included participation in the analysis of the results from the monitoring program and co-authorship of the technical report. Work performed for Pulte Home Co., LLC.

Hiser Property Project (2019 - Present). Senior Archaeologist for a due diligence study prepared to summarize potential cultural resources constraints to the 9.2-acre Hiser Property development project, located in the Mission Gorge area of the City of Santee, San Diego County. The study consisted of background research including a record search and limited archival study, a field survey, and a review of the Sacred Lands File from the Native American Heritage Commission (NAHC). Involvement included participation in the analysis of the results and preparation of a summary letter report of the potential cultural resources-related constraints to the planned development. Work performed for KB Home.

Ponto Hotel Technical Studies (2019 - Present). Senior Archaeologist for a cultural resources assessment study for the Ponto Hotel development project in the City of Carlsbad, San Diego County, California. Involvement included participation in the analysis of the results from the assessment program and preparation of the technical report. Work performed for Kam Sang Company, with the City of Carlsbad as the lead agency.

R.M. Levy Water Treatment Plant Sewer Replacement (2019 - Present). Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory and assessment program in support of a water treatment plant, sewer pipeline, replacement project, located in the community of Lakeside, San Diego County. Involvement included participation in the analysis of the results from the survey program and preparation of the technical report. Work performed for HELIX Water District.

Salt Bay District Specific Plan EIR (2019 - Present). Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory program in support of the 46.6-acre Salt Bay Design District Specific Plan mixed-use wholesale/retail shopping and light industrial development project, in the cities of San Diego and Chula Vista. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for M. & A. Gabaee, with the City of San Diego as lead agency.

San Jacinto Property Project (2019 - Present). Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory program of the 214 residential project located in Riverside County. Involvement included participation in the analysis

of the results from the survey program and co-authorship of the technical report. Work performed for the Walton International Group, LLC.

San Elijo Joint Powers Authority Roadway and Trail Addendum and Permitting (2019 - Present). Senior Archaeologist for Phase I cultural resource inventory, pedestrian survey, and resource testing at the San Elijo Water Reclamation Facility adjacent to San Elijo lagoon, in San Diego County, in support of the preparation by the San Elijo Joint Powers Authority of a Roadway and Trail Addendum for upgrades to the facility requiring verification of Nationwide Permit authorization from the U.S. Army Corps of Engineers (USACE). Involvement included participation in the analysis of the results from the survey and testing program and co-authorship of the technical report. Work performed as a subconsultant to Kimley-Horn & Associates, with the San Elijo Joint Powers Authority as lead agency.

Sycamore & Watson Project (2019 - Present). Senior Archaeologist for an archaeological construction monitoring program for the Sycamore & Watson residential development project, located in City of Vista, San Diego County. Involvement included participation in the analysis of the results from the monitoring program and preparation of the technical report. Work performed for Meritage Homes.

Sycamore Canyon/Goodan Ranch Public Access Plan IS/MND (2019 - 2019). Senior Archaeologist for Phase I pedestrian survey and cultural resource inventory in support of the preparation by the County of San Diego County Parks Department of a Public Access Plan for the Sycamore Canyon/Goodan Ranch Preserve located in coastal foothills of unincorporated west-central San Diego County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the County of San Diego.

Sycuan/Sloane Canyon Trail IS/MND (2019). Senior Archaeologist for Phase I pedestrian survey and cultural resource inventory in support of the preparation by the County of San Diego County Department of a Parks and Recreation for the Sycuan/Sloane Canyon Trail project located in the coastal foothills of unincorporated southwestern San Diego County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the County of San Diego.

The Enclave at Delpy's Corner Project (2019 - Present). Senior Archaeologist for a cultural resources monitoring and data recovery program in support of a proposed 124-unit townhome development project, in the City of Vista, San Diego County. Involvement included participation in the analysis of the prehistoric lithic artifacts and preparation of technical report sections containing the results of these analyses. Work performed for CalAtlantic Homes.

Theodore G. Cooley, RPA

Senior Archaeologist

Previous Project Experience

NextEra Energy Genesis Solar Project (2012 - 2014). Archaeologist for a 2,000-acre solar project west of the City of Blythe, Riverside County. The work involved identification, evaluation, and treatment of unanticipated discoveries encountered during survey and construction monitoring, for compliance with Section 106 regulations through the Bureau of Land Management (BLM)and CEQA through the California Public Utilities Commission (CPUC). Performed analyses of 1,238 prehistoric flaked lithic and ground stone artifacts produced from survey and monitoring conducted as part of compliance for construction. Wrote technical report results sections from analyses. Work performed for NextEra Energy.

Sacramento Municipal Utility District Upper American River Project (2015 - 2016). Archaeologist performing analyses of 1,143 prehistoric flaked lithic artifacts produced from investigations conducted at 16 archaeological sites, located in the Sierra Nevada Mountains in the Eldorado National Forest, Eldorado County. Work was conducted as part of treatment program of archaeological sites in the Eldorado National Forest in compliance with Section 106 regulations through a Programmatic Agreement with the Federal Regulatory Commission (FERC) and State Historic Preservation Office (SHPO). Wrote technical report results sections from analyses. Work performed for Sacramento Municipal Utility District (SMUD).

Sycamore Canyon/Goodan Ranch Preserve, Cielo and Wu Additions (2016). Supervisory Archaeologist for Phase I pedestrian survey and cultural resource inventory of 139 acres of proposed parcel additions to the existing Sycamore Canyon/Goodan Ranch natural park preserve located in coastal foothills of unincorporated west-central San Diego County. Participated in the field survey for prehistoric and historic archaeological resources within the parcel additions and was senior co-author of the technical report of results from the survey program. Work performed for County of San Diego Department of Parks and Recreation.

Moosa Canyon Pipeline Protection (2014 - 2015). Supervisory Archaeologist for Phase I pedestrian survey and cultural resources inventory of a 7.2-acre area for proposed protective measures for three parallel underground pipelines at their crossing of the Moosa Canyon drainage, in the coastal foothills of north-central San Diego County. Conducted preparation of the field survey for prehistoric and historic archaeological resources within the survey area and co-authored of the technical report of results from the survey program. Work performed for San Diego County Water Authority.

University Heights Parcel Additions to the Escondido Creek Preserve (2015) Supervisory Archaeologist for Phase I pedestrian survey and cultural resource inventory 262 acres of proposed parcel additions to the existing of the Escondido Creek Open Space Preserve located in coastal foothills in unincorporated west-central San Diego County. Participated in the field survey for prehistoric and historic archaeological resources and was senior co-author of the technical report of results

from the survey program. Work performed for the County of San Diego Department of Parks and Recreation.

Mesa Trail Restoration and Dairy Mart Pond Overlook Projects (2014). Supervisory Archaeologist for Phase I pedestrian survey and cultural resources inventory of 281 acres of proposed restoration and trail construction within the Tijuana River Valley Regional Park located in coastal area of southwestern San Diego County. Participant in the field survey for prehistoric and historic archaeological resources within the survey area. Co-author of the technical report of results from the survey program. Work performed for the County of San Diego Department of Parks and Recreation.

NAVFAC Southwest Construction and Operation of Solar Photovoltaic Systems at Naval Weapons Station Seal Beach (2014 - 2015). Field Director for archaeological survey of an approximately 86-acre area of Naval Weapons Station Seal Beach in Orange County proposed for the construction of a solar project. Duties included direction of the field crew and participation in the analysis and report preparation. Work performed for U.S. Navy.

NAVFAC Southwest Conversion of Building H-100 for Administrative Reuse (MILCON P-1131)(2015). Field Director for archaeological survey for the proposed renovation of Building H-100 and associated facilities, and of locations proposed for the demolition of 37 buildings and structures in various areas on Marine Corps Base (MCB) Camp Pendleton in San Diego County. Duties included direction of the field crew, and participation in the analysis and report preparation. Work performed for U.S. Navy.

RE Barren Ridge/Cinco Solar Project Cultural Resources (2014). Supervisory Archaeologist directing the field survey and site documentation for prehistoric and historic archaeological resources within 800 acres including a 600-acre plant facility site and three proposed Gen-Tie power electrical line corridor alternatives for a solar plant facility, located along the eastern base of the southern Sierra Nevada Mountains near Mojave, Kern County. Co-authored the technical reports of results from the survey program. The program was conducted under both Section 106 regulations due to the Gen-Tie lines on BLM land and CEQA for the solar facility site on private land. Work performed for Recurrent Energy.

Sacramento Area Flood Control Agency Natomas Levee Improvement Program Landslide Improvements Project (2012 - 2014). Archaeologist performing analyses of 4,085 prehistoric flaked lithic artifacts produced from investigations conducted at archaeological sites CA-SAC-1142, CA-SAC-15 , and CA-SAC-16, located along the Sacramento River as part of a treatment program of archaeological sites in compliance with Section 106 regulations administered by the United States Army Corps of Engineers (USACE) for levee improvements along the Sacramento River.

Theodore G. Cooley, RPA

Senior Archaeologist

Wrote technical report results sections of the analyses. Work performed for Sacramento Area Flood Control Agency (SAFCA).

MCB Camp Pendleton Section 110 Resource Delineation and Evaluation Study (2011 - 2013). Archaeologist participating in the investigations conducted for resource delineation and evaluation of National Register of Historic Places-eligible prehistoric archaeological site CA-SDI-1313/14791 on MCB Camp Pendleton, San Diego County. Involved conducting archaeological excavations for the delineation of the site to allow the base to successfully plan, under Section 110, for the protection of this significant resource from potential future adverse affects. Involvement included artifact analysis of 1,280 flaked lithic artifacts, preparation of results sections of the lithic analysis, and co-authorship of technical report. Work performed for U.S. Navy.

Archaeological Data Recovery for the Topanga Library (2011 - 2013). Archaeologist participating in the data recovery investigations conducted at prehistoric archaeological site CA-LAN-8 in the community of Topanga in the Santa Monica Mountains, Los Angeles County. Work involved conducting archaeological excavations for data recovery within the Area of Potential Effects (APE) for pipeline construction associated with construction of a new public library. Responsibilities included field work participation, lithic artifact analyst, and co-authorship of technical report. Work performed for Los Angeles County Department of Public Works.

MCB Camp Pendleton Geomorphological Investigations (2009 - 2013). Field Supervisory Archaeologist on a project to conduct geomorphological investigations along three drainages within MCB Camp Pendleton in San Diego County to assess the potential for the presence of deeply buried prehistoric archaeological deposits. Duties included the design, coordination, and execution of the field geomorphological investigations; participation in the analysis of the results; and co-authorship of the technical report. Work performed for U.S. Navy.

California High-Speed Rail Authority, High Speed Rail Project (2011 - 2013). Field Director for a Phase I Cultural Resources Survey and Inventory of three alternative high-speed train alignment corridors, extending from Merced to Fresno in the San Joaquin Valley. Duties included direction of the field crew, participation in the analysis of results, and report preparation. Work performed for the State of California.

NAVFAC Southwest San Nicolas Island Archaeological Evaluations (2010 - 2012). Field Director for archaeological test investigations for the delineation an d evaluation of prehistoric site CA-SNI-41 on San Nicolas Island in the Channel Islands of the California Bight, Ventura County. The project involved testing for depth and horizontal extent, as well as significance evaluation of this Middle and Late Holocene site. Duties included direction of the field crew, participation in the analysis, and report preparation. Work performed for U.S. Navy.

Theodore G. Cooley, RPA

Senior Archaeologist

MCB Camp Pendleton Compliance Documentation Support Services for Environmental Security Section (2010 - 2012).Archaeologist providing compliance documentation support services to the MCB Camp Pendleton Cultural Resources Branch Head in San Diego County for several large construction projects. Duties included the preparation of documentation and correspondence for agency submittal for federal NEPA and Section 106 compliance requirements, principally to the State Historic Preservation Office (SHPO) and Advisory Council for Historic Preservation. Work performed for U.S. Navy.

Solar Millennium Ridgecrest Solar Project Cultural Resources Inventory Program (2009 - 2011). Co-Field Director of field survey for prehistoric and historic archaeological resources within a proposed 1,757-acre solar facility in the Mojave Desert, Kern County. Participated in the preparation of the Department of Parks and Recreation site forms and contributing author of the technical report of results from the survey program. Work performed for Solar Millennium.

NAVFAC Southwest Seal Beach Naval Weapons Station Archaeological Evaluations (2010 - 2011). Field Director for archaeological test investigations for the delineation and evaluation of prehistoric site P-30-1503 within the Seal Beach Naval Weapons Station along the margin of the Anaheim Creek drainage wetlands system in Orange County. The project involved testing for the depth and horizontal extent, as well as a significance evaluation of this Late Holocene site. Duties included direction of the field crew, participation in the analysis, and report preparation. Work performed for U.S. Navy.

NAVFAC Southwest San Nicolas Island Archaeological Evaluations (2009 - 2011). Field Archaeologist for archaeological evaluation of prehistoric sites CA-SNI-316, CA-SNI-361, and CA-SNI-550 on San Nicolas Island in the Channel Islands of the California Bight, Ventura County. The project involved significance testing and evaluation of these Middle and Late Holocene sites, and the analysis and synthesis of results with existing island-wide archaeological data. Duties included field crew member, participation in the analysis, and report preparation. Work performed for U.S. Navy.

Olivenhain Municipal Water District Raw Water Pipeline (2009 - 2010). Archaeologist and Principal Investigator for a Phase I Cultural Resources Survey and Inventory of two alternative pipeline alignment corridors in San Diego County totaling approximately 9 miles in length. Author of the technical report of results from the survey and inventory program. Work performed for Olivenhain Municipal Water District.

Sage Hill Open Space Preserve Cultural Resources Inventory (2009 - 2010). Supervisory Archaeologist for Phase I pedestrian survey and cultural resource inventory of the Sage Hill Open Space Preserve in unincorporated west-central San Diego County. Directed the field survey for prehistoric and historic archaeological

resources within the proposed 234-acre natural park preserve located in coastal foothills. Co-authored the technical report of results from the survey program. Work performed for County of San Diego Department of Parks and Recreation.

RRG Weldon Solar Project (2009 - 2010). Supervisory Archaeologist directing the field survey and site documentation for prehistoric and historic archaeological resources within a proposed 425-acre solar facility near Lake Isabella in the southern Sierra Nevada Mountains, Kern County. Co-author of the technical report of results from the survey program. The program was conducted under CEQA and local guidelines of the County of Kern for the implementation of CEQA. Work performed for RRG Weldon.

Abengoa Mojave Solar Project (2009 - 2010) Supervisory Archaeologist overseeing the survey of a proposed 1,765-acre solar facility in the Mojave Desert, San Bernardino County. Supervised the archaeological documentation and Phase II testing efforts and co-authored the technical reports of results from the survey and testing programs. Work performed for Abengoa.

Annie McCausland

Architectural Historian

HELIX Environmental Planning

Summary of Qualifications

Ms. McCausland meets the Secretary of the Interior's Professional Qualification Standards for Architectural History and History. Her expertise includes the Secretary of the Interior's Standards for the Treatment of Historic Properties, archival research, historic contexts, significance evaluations, and historic district documentation. She has completed numerous studies for residential, agricultural, military, rural, commercial, and industrial properties across California. She has prepared numerous technical reports including Historical Resources Evaluation Reports (HRER), Historic Property Survey Reports (HPSR), Historic Building Assessment Reports, Rehabilitation Reports, and Cultural Resources Phase I and II Reports, to satisfy compliance requirements under NHPA Section 106, California Environmental Quality Act (CEQA), and local government preservation ordinances. Ms. McCausland has worked extensively under the California Department of Transportation (Caltrans) Districts 5 and 8 as well as the U.S. Amy Corps of Engineers (USACE), Bureau of Land Management (BLM), and the Bureau of Reclamation (BOR), as well as local governments.

Previous Project Experience

East County Advance Water Purification Project (2019-Present) Architectural Historian conducting built-environment surveys and preparing site records, historic contexts, significance evaluations, and a rehabilitation plan adhering to the Secretary of the Interior Standards for a new water purification facility within Padre Dam Municipal Water District in Santee, California. Work performed for Kennedy Jenks in consultation with San Diego County and the California State Water Resources Control Board as lead agencies.

City of San Diego Dam Maintenance Project (2019-Present) Architectural Historian conducting built-environment surveys and preparing site records, historic contexts, significance evaluations, and historic resource report for fourteen (14) historic dam properties located throughout San Diego County. Work performed for lead agency, City of San Diego Public Utilities Department.

Pure Water City Pipeline Project (2019-Present) Architectural Historian preparing stabilization and preservation plan for a 1930s masonry wall, a significant local historic resource in Scripps Ranch. Work performed for CH2M Hill Engineers, Inc. with City of San Diego as lead agency.

Brea Dam Electrical Modernization (2018-2019). Architectural Historian consulting with contractors on the electrical and utility rehabilitation of the NRHP eligible Brea Dam, a USACE property in the City of Fullerton constructed in 1942. Prepared a Historic Property Rehabilitation Report and monitored removal and positioning of historic features. Work performed for Power Pro Plus, Inc. in consultation with USACE Los Angeles District as lead agency.

Education

Master of Arts, Public History, California State University, Sacramento, California, 2015

Bachelor of Arts, History, Chapman University, Orange, California, 2010

Professional Certifications

Registered Reader with the Huntington Library San Marino, California

Professional Affiliations

California Council for the Promotion of History

American Association for State and Local History

National Council on Public History

California Preservation Foundation

Los Angeles Conservancy

Society of Architectural Historians

Port of Long Beach Master Plan Update (2017 – 2019). Architectural Historian procuring the cultural resource chapter of a Programmatic Environmental Impact Report (PEIR), for the Port of Long Beach, as well as a technical survey and evaluation report. Conducted intensive and windshield surveys for historic built environment resources within the entire Port of Long Beach. Work performed for Leidos in consultation with the Port of Long Beach as lead agency.

LA Waterwheel Project Cultural Resources Assessment Report (2019). Architectural Historian preparing a built-environment survey, site record, historic context, significance evaluation, and mitigation recommendations for a portion of the Los Angeles River Channel in the City of Los Angeles. Work performed for Ruth Villalobos & Associates, Inc. with the City of Los Angeles as lead agency.

East Mountain Drive Water Crossing Replacement (2018 -2019). Architectural Historian preparing the Caltrans HRER for a water crossing replacement project in the community of Montecito. The study recommended a significant Shed style dwelling eligible for the NRHP and the CRHR. Work performed for Drake, Haglan & Associates in consultation with the County of Santa Barbara and Caltrans District 5.

De la Vina Street Bridge Replacement (2018 – 2019). Architectural Historian preparing the Caltrans HRER, HPSR, and City Memo for a bridge replacement project in the City of Santa Barbara. Nine properties were included in the study and one property featuring a 1930s commercial brick building, was found eligible as a local historic landmark. Ms. McCausland presented her findings to the City of Santa Barbara Historic Landmarks Commission who approved the local designation. Work performed for Bengal Engineering, Inc. with the City of Santa Barbara as the lead agency in consultation with Caltrans District 5.

Chuckwalla Valley Road Bridges Project (2019) Architectural Historian preparing the Caltrans HRER for the replacement of four historic timber stringer bridges on NRHP/CRHR eligible Chuckwalla Valley Road, near Desert Center in Riverside County. The bridges were found eligible for listing as character defining features of Chuckwalla Valley Road (Highway 60/70). Work performed for Riverside County in consultation with Caltrans District 8.

Montecito Creek Bridge Emergency Replacement (2018). Architectural Historian preparing the Caltrans HRER for emergency replacement of a NRHP/CRHR eligible masonry bridge in the community of Montecito. The bridge no longer retained integrity after the 2018 mudslide event and was found not eligible for listing in the NRHP/CRHR prior to its emergency demolition. Work performed for Santa Barbara County in consultation with Caltrans District 5.

Railroad Avenue Bridges Project (2019) Architectural Historian preparing the Caltrans HRER for the replacement of two historic timber stringer bridges on Railroad Avenue located in Riverside County. The bridges were recommended not eligible for listing in any register. A segment of the Pacific Crest Trail was documented and found eligible for listing in the NRHP and the CRHR. Work performed for Riverside County in consultation with Caltrans District 8.

Historic Building Assessment at 250 South Tustin Street (2018). Architectural Historian preparing a Historic Building Assessment for an early twentieth century craftsman house in the City of Orange. The study found the dwelling not eligible for state or local designation. Work performed for private developer, Klassic Engineering and Construction, Inc. with the City of Orange as lead agency

Avila Beach Schoolhouse Rehabilitation (2018 –2019). Architectural Historian consulting with contractor on the rehabilitation of an early twentieth century schoolhouse in the community of Avila

Beach, into a bed and breakfast, adhering to the Secretary of the Interior's Standards for the Treatment of Historic Properties. Work performed for private developer, Hodge Company with County of San Luis Obispo as the lead agency.

1121 Montalban Street (2019). Architectural Historian preparing the Historic Building Assessment for a private developer in the City of San Luis Obispo. The assessment included two properties and a 1920s Spanish Colonial Revival bungalow. The study found the properties and dwelling not eligible for listing in the CRHR or the local register. Work performed for CoVelop, Inc., with the City of San Luis Obispo as the lead agency.

Tranquillity Irrigation District Southeast Service Area Water Conservation and Conveyance Improvement Project (2018). Architectural Historian implementing the built environment study for a Cultural Resource Inventory and Evaluation in Fresno County. The study included portions of a rural irrigation district, with history dating to the late nineteenth century. Work performed for Provost & Pritchard Consulting Group with U.S. Bureau of Reclamation as the lead agency.

Gordon Acres Water Company Water System Improvements (2017-2018). Architectural Historian implementing the built environment survey and preparation of architectural resources investigation report for water system improvements in the town of Lucerne Valley. Work performed for NV5 with California State Water Resources Control Board as the lead agency.

Bloomington Commerce Center (2018). Architectural Historian implementing the built environment survey and preparation of cultural resources assessment report for a 56.6-acre commercial site in the community of Bloomington, San Bernardino County. The study included single-family dwellings dating from the 1920s to the 1960s. Work performed for Howard Industrial Partners with San Bernardino County as the lead agency.

Prologis Trailer Parking Expansion (2018). Architectural Historian implementing the built environment survey and preparation of cultural resources assessment report for expansion of a trailer parking area near the City of Redlands, San Bernardino County. Work performed for Albert A. Webb Associates with San Bernardino County as the lead agency.

Interstate 215 and University Parkway Interchange Improvements (2018). Architectural Historian preparing the Caltrans HRER for improvements to the I-215 interchange in the City of San Bernardino. Work performed for HDR in consultation with the City of San Bernardino and Caltrans District 8.

Interstate 10/Monroe Street Interchange Improvements (2018). Architectural Historian preparing the Caltrans HRER for interchange improvements in the City if Indio. Work performed for Michael Baker in consultation with the City of Indio and Caltrans District 8.

Biola Community Services District Recycled Water Improvements Feasibility Study (2018). Architectural Historian implementing the built environment survey and preparation of architectural resources investigation report for recycled water improvements in Fresno County. Work performed for Crawford & Bowen Planning, Inc., with U.S. Bureau of Reclamation as the lead agency.

Athos Renewable Energy Project (2018-2019). Architectural Historian implementing the built environment survey and preparation of historic contexts and resource evaluations for a 2,848-acre solar facility, a 6-mile-long transmission line corridor, and a surrounding 5-mile-wide buffer in Riverside County. Resources documented were associated with Desert Training Center, a NRHP designated multi-property

historic district. Work performed for IP Athos, LLC and Aspen Environmental Group with BLM as the lead agency.

Blythe Airport Fence Project (2018). Architectural Historian implementing the built environment survey and preparation of Phase-I Cultural Report in the City of Blythe for an airport improvement project. Work performed for Mead & Hunt with the Federal Aviation Administration (FFA) as the lead agency.

University of California Riverside Plant Growth Facility (2018). Architectural Historian implementing the built environment survey and preparation of a Historic Building Assessment report for a campus facility expansion project in the City of Riverside. Work performed for Albert A. Webb Associates with University of California Riverside as the lead agency.

Victorville Water District Distribution System Phase I Cultural Resource Assessment (2017). Architectural Historian preparing site records, significance evaluations, and historic contexts for a water distribution system project in the City of Victorville. Work performed for Meridian Consultants, LLC., with City of Victorville as the lead agency.

Cultural Resource Study: 196 San Miguel and 379 Second Street Avila Beach, San Luis Obispo County, California (2019). Architectural Historian preparing a built-environment survey, site record, historic contexts, and significance evaluation for a 1940s vernacular beach cottage located in the community of Avila Beach. The study found the cottage eligible for the NRHP and CRHR at the local level. Work performed for private developer, Sullivan & Associates, with San Luis Obispo County as the lead agency.

Alabama and Palmetto Project Phase 1 Cultural Resources Assessment (2019). Architectural Historian preparing a built-environment survey, site records, historic contexts, and significance evaluations for a development project in San Bernardino County. The subject property included resources associated with the citrus industry of the late nineteenth century. Work completed for Albert A. Webb Associates with County of San Bernardino as lead agency.

Sierra Avenue Widening Project Cultural Resources Assessment Revision (2018). Architectural Historian preparing a built-environment survey, site record, historic context, and significance evaluation for a street widening project in the City of Fontana. Work completed for HDR with the City of Fontana as lead agency.

City of Orange Cove Water Treatment Improvement Project Historic Property Identification Report (2019). Architectural Historian preparing a Historic Property Identification Report in the City of Orange Cove in Fresno and Tulare counties. The study area included a rural agricultural property with historic archaeological resources. Work performed for Crawford & Bowen Planning Inc. with the City of Orange Cove as lead agency.

Southern California Logistics Airport Cultural Resources Assessment Report (2019). Architectural Historian preparing a site record update for George Airforce Base in the City of Victorville, California. Work performed for Michael Baker and Associates with the City of Victorville as lead agency.

Fort Visalia Historic Review (2019). Architectural Historian assisting with research and preparing historic contexts for the Fort Visalia site investigation. Work performed for the City of Visalia who is working to preserve the city's early history as the location of a fort in the mid-19th century.

Doug Mengers M.A., RPA #39693945, DPPH
Principal Investigator Cultural Resources



Mr. Mengers is a SOI qualified and registered Historian (DPPH), Archaeologist (RPA), and Architectural Historian with 13 years of experience focused in San Diego. As Principal Investigator and Project Manager for Cultural Resources, he is an experienced Project Lead for Archaeology, History, and Architectural History, managing teams of archaeologists, historian, and Native American monitors. His projects include redevelopment, Historic Districts, sewer, water, and dry utilities, historic-era assessments and evaluations, artifact recovery, and analysis. He has conducted evaluations of properties eligible for listing on the National Register, California Register, and local registers of historic resources. He has authored 100's of technical reports for CEQA/NEPA studies, conducted Native American consultation (AB-52/SB-18) and NHPA Sec. 106 compliance, and earned a CEQA Practice certificate at UCSD. He has produced EIR/PEA sections, Mitigation and Monitoring Plans, Historic Resources technical reports and Historic Structure Assessments in compliance with City of San Diego guidelines. He has a strong understanding of CEQA, as well as the ability to critically assess information during the environmental review process and has worked with many local agencies conducting archaeological survey and NRHP historic-era structure evaluations with SHPO concurrence for Section 106 compliance.

Education

M.A., Applied Anthropology, San Diego State University

B.A, History, University of California at San Diego

B.A, Anthropology, University of California at San Diego

Professional Certifications & Registrations

Secretary of Interior Standards (36 CRP Part 61) for History, Architectural History, and Archaeology (historic and prehistoric)
Advanced CEQA Essentials
Bureau of Land Management (BLM) Principal Investigator
SANDAG Architectural Historian II
Hazwoper 40 Hour

Areas of Expertise

Section 106 Compliance
NEPA Compliance
Archaeological Field Studies
Historic–Era Structure Evaluations
Historic Artifact Analysis
Historic Publications
Condition Assessments
Integrity Assessments
Environmental
Contract/Project Management
State, Regional, Local Policy Knowledge
GIS Asset Management
ESRI ArcGIS
GIS Mobile Solutions
Resource Agency Coordination
Permitting
Public Meetings/Presentations

Select Project Experience:

San Diego High School Constraints Analysis, Phase 1, San Diego, CA (2019) PanGIS provided due diligence and constraints analysis services for cultural resources sensitivity analysis for historical (built) resources (historic-era structures and landscape features) for Whole Site Modernization Improvements and Long-Range Facilities Master Plan at San Diego High School. Initial research indicated that many of the existing structures were constructed prior to 1970, therefore requiring an assessment due to age and potential status as historic resources. Project Architectural Historian Mr. Mengers authored the historic constraints analysis. The goal of the historic-era structures and landscape features analysis is to determine if any built environment resources within the project area are likely to be considered historic resources under State guidelines and, if so, to determine if any built environment resources are likely to be or are potentially eligible for listing on the NRHP or Local Registers. He performed a reconnaissance survey to identify resources likely to require a full evaluation. The results of the analysis assisted the District in determining direct construction impacts to historic resources and guide future historic resource evaluations.

Alliant University Property Due Diligence/Constraints Evaluation for Historic-Era Structures, San Diego, CA (2018-2019) Senior historian Mr. Mengers conducted a cultural resources due diligence /constraints analysis to determine age of buildings and if any may be significant. He conducted

the preliminary research on the buildings, conducted a site visit, and wrote the historic-era cultural resources constraints analysis report. The report includes recommendations for additional work and highlight any buildings and landscape features that may be potentially eligible. The property is about 37 acres and many of the buildings required an assessment due to their date of construction. Research found that the buildings were constructed by a famous architect.

City of San Diego, 4th and J Street Artifact Analysis and Curation Project, San Diego, CA (2019 – 2020) Cultural monitoring for a redevelopment project at 4th and J Streets in downtown San Diego uncovered a deposit of approximately 1,000 Asian and Euro-American historic-era artifacts. Senior Historian Mr. Mengers was the cultural lead and is tasked with overseeing the lab artifact cataloging, artifact analysis, comparative analysis, curation, and a technical report. Twenty percent of the collection is from the Chinese American period and was analyzed by a historian specializing in the history of Chinese American communities in Southern California. He analyzed the Euro-American artifacts, which was 80% of the collection. He met with representatives from the San Diego Chinese Historical Museum to discuss the finds and the curation of the Chinese portion of the artifacts. He authored a Historical Resource Technical Report according to City of San Diego Historical Resources Board guidelines.

Caltrans Historic District SR-163 Bridge Rail Upgrade Project (2019) Four bridges over SR-163 are part of a Historic District and must be upgraded to meet current safety standards. Senior Historical Archaeologist, Mr. Mengers worked with a team of architectural historians to conduct the necessary research and recommendations. He surveyed the bridges, took photos, produced a photo appendix, completed site resource forms, and over saw the production of the GIS based APE maps for DOT. Mr. Mengers was responsible for completing two Historic Property Survey Reports (HPSR)and the Finding of Effect or Finding on No Effect (FOE/FONE), along with GIS deliverables and exhibits.

Historic-era Resources Assessment for the Spence Residence Project, San Diego, CA (2019) The Spence Residence in La Jolla is over 45 years old and must be assessed according to San Diego Municipal Code for significance. Mr. Mengers conducted the background research, visited the project site, prepared a DPR form evaluating of the property based on criteria set forth in the Historical Resources Guidelines of the City of San Diego's Land Development Manual, and wrote the Historical Research Report according to City guidelines.

610 W Laurel Street Historical Evaluation Report, San Diego, CA (2020) Senior Historian Mr. Mengers meets the Secretary of the Interior's Professional Qualifications Standards in history (36 CFR Part 61) and served as Project Historian for this effort. The project site falls under City of San Diego jurisdiction, therefore, City guidelines for cultural resources must be followed. He conducted background historic research and completed a site visit to collect data about the properties necessary for DPR form preparation and preliminary site evaluation. The evaluation of the property was based on criteria set forth in the Historical Resources Guidelines of the City of San Diego's Land Development Manual. He authored the Historical Research Report for the structures that summarizes research findings and includes a DPR form with full evaluation.

Cultural Resource Studies and Evaluations for Del Mar Bluffs Stabilization Project 5 (2020) Architectural Historian and Senior Archaeologist Mr. Mengers reviewed cultural documentation from Del Mar Bluffs 4 and other previous studies. He and archaeological staff with rail certification training conducted a pedestrian survey of the Area of Potential Effect. After the pedestrian survey, he prepared a report documenting archaeological and historical resources and potential for impacts, including NRHP evaluations with SHPO concurrence. The memorandum includes sixteen site inventory form updates, ESRI GIS based maps, and recommendations for which sites may need further evaluation. This project was subject to National Environmental Policy Act (NEPA) review for Section 106 compliance with USACE as the lead Federal agency.

Education

M.S., Geographical Information Studies, California State University, Long Beach

Archaeology graduate work, Centro de Estudios Avanzados de Puerto Rico y el Caribe

B.A., International Studies/Anthropology, University of California, San Diego

Spanish Language Immersion Program, Universidad Michoacana de San Nicolás de Hidalgo, Morelia, México

Professional Certifications & Registrations

Secretary of Interior Standards (36 CRP Part 61) for Archaeology (historic and prehistoric)
sUAS (FAA certification)
ROV operator certificate
OSHA-10 certification

Areas of Expertise

Historic-Era Structure Evaluations
Condition Assessment
Integrity Assessments
Historic Title Searches
Archaeological Field Studies
ArcGIS Online Administrator
Esri ArcGIS software
ESRI Arc Server
Photogrammetry
ArcGIS Map Making
Asset Management
sUAS (drone) flight planning, data collection, & processing
ArcGIS StoryMaps
Adobe Photoshop

Kris **Reinicke M.S., RPA # 17578, GISc**
Historic Research Associate



Ms. Reinicke is a registered professional archaeologist with 9 years' experience and has a special interest in historic structures. She is experienced at historic title searches, historic/archival research and is a contributing author for numerous Historic Context Statements. She meets the Secretary of the Interior's Professional Qualifications Standards. She has conducted surveys for Historic-era structure evaluations and populating site inventory forms including specifically for buildings structures, and objects. She has completed Historic Structures Reports (HSRs), Historic American Building Surveys (HABS), Historic Resource Evaluation Reports (HRERs), National Register of Historic Places (NRHP) and State Register of Historic Resources nominations and Section 106 review.

Ms. Reinicke is an experienced ESRI based Geographic Information Systems (GIS) practitioner and manager. She specializes in Geospatial Solutions in support of Utility, Transportation, Water, and Land Planning projects. She is skilled in custom GIS solutions, geodatabases, cartography, ArcGIS Online applications, Story Maps, and GIS field data capture solutions (Survey123). She is also a FAA certified sUAS Remote Pilot creating numerous ortho mosaics, topography, and 3D models.

Select Project Experience:

Historic-era Cultural Services for the properties at 1702-1708 State Street and 412-418 Date Street in San Diego, CA (2020) The project area includes four bungalows at 1702-1708 State Street and 412-418 Date Street in the Little Italy neighborhood of San Diego. To determine if the buildings meet the City's Historic Review Board requirements for the Local Register, Historic Research Assistant Ms. Reinicke supported project tasks including property research including research owner/occupant history of the property, review building records, complete title search, obtain and review historic maps and aerials, and review documents from the San Diego History Center. She contributed to the completion of a field evaluation for each of the four structures and prepare a combined DPR 523 Form and a brief Historical Research Report.

NPS Mojave National Preserve Determination of Eligibility for 7 Mine Sites, San Bernardino County, CA (2019) Senior Archaeologist, Ms. Reinicke and Senior Historian Mr. Mengers evaluated 7 abandoned mine sites to determine their eligibility for listing on the National Register of Historic Places (NRHP). The study included condition assessments, photo-documentation, and architectural descriptions along with descriptions and photographs of the cultural landscape. She managed the mapping and recording of historic mining features, as well as helped write sections of the site inventory forms for portions of sites she recorded in the field.

Historic Resources Evaluation for the Cottonwood Golf Club Project, San Diego County, CA (2019) Research associate, Ms. Reinicke performed archival and background research, conducted the intensive survey of the property, and created DPR 523 forms for each property. PanGIS staff evaluated the Cottonwood Golf Club and a single-family residence and its associated outbuildings at the project site that were potentially historically significant. The evaluation of the built environment resources was performed for eligibility for the California Register of Historical Resources (CRHR), San Diego County Local Register of Historic Resources (Local Register), and the County of San Diego Resource Protection Ordinance (RPO). The report has been prepared in accordance with the CEQA prior to the redevelopment. Results of this evaluation will assist the County in determining the direct construction impacts to resources.

Alliant University Property Due Diligence/Constraints Evaluation for Historic-Era Structures, San Diego, CA (2019) Ms. Reinicke assisted the PanGIS Architectural Historian conduct a cultural resources due diligence /constraints analysis to determine age of buildings and if any may be significant. She conducted the preliminary research on the buildings, conducted a site visit, and contributed to the historic portion of the cultural resources constraints analysis report. The report included recommendations for additional work and highlight any buildings and landscape features that may be potentially significant. The property located in the City of San Diego, is about 37 acres and many of the buildings were constructed between 1966 and 1972, requiring an assessment due to their date of construction. Research found that many of the buildings were designed by a famous architect and are eligible for a District nomination.

610 W Laurel Street Historical Evaluation Report, San Diego, CA (2020) Historic architecture research assistant Ms. Reinicke conducted background historic research and completed a title search and authored the DPR form. The evaluation of the property was based on criteria set forth in the Historical Resources Guidelines of the City's Land Development Manual. The City's Historic Review Board's initial assessment (project number: 65370) found the building to be potentially eligible under one or more HRB designation criteria. To determine if the building meets the City's Historic Review Board requirements for the Local Register, PanGIS conducted property research, a field evaluation, DPR 523 Form, and prepare a brief Historical Research Report for the structure.

Historic-era Structure Cultural Resources Assessment for the Olive Avenue Project (2019) Historic research assistant and Archaeologist, Ms. Reinicke, conducted a property title research, obtained and reviewed historic maps, aerial photographs, and conducted a field evaluation and photo survey, and assisted in the preparation of the site inventory form for the residential complex and surrounding area. The report included a preliminary evaluation for eligibility and inclusion on local, state, and federal registers of historic resources. Background research was conducted at the Historical Society, where PanGIS staff located a family memoir of the owners of the property, who are prominent in local history for their involvement with agriculture and community events. Structures include a 1930s vernacular, single-family residence with an associated barn building.

Historic Research Report for the Sacred Heart Catholic Church Historic Structure Evaluation (2017) Historic research associate, Ms. Reinicke performed an historic structure evaluation, conducted a photo survey and archival research, made assessments, created graphics and geospatial mapping. She authored the Coronado historic context section of the final report. The building was designed by Irving Gill, a prominent and well-known architect, in Los Angeles and San Diego regions.

San Diego Unified La Jolla Elementary School Historic-Era Buildings Assessment (2019) The school is hoping to modernize the campus by renovating and constructing new facilities. Historian assistant, Ms. Reinicke conducted a site visit with PanGIS senior historian to record the historic-era buildings, wrote site inventory forms that include a preliminary evaluation for eligibility for the NRHP, State, and Local Registers.

Confidential Appendix B

Records Search Results
(Bound Separately)

Confidential Appendix C

Native American Correspondence
(Bound Separately)

Appendix D

DPR Site Forms

State of California ♦ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 5S2

Other Review Code | Reviewer | Date | Listings

Page 1 **of** 54 ***Resource Name or #:** San Diego High School

P1. Other Identifier: San Diego High Educational Complex

***P2. Location:** ☐ **Not for Publication** ☑ **Unrestricted**

***a. County** San Diego **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Point Loma **Date** 1975 **PLSS** San Diego Pueblo Lands

c. Address 2351 Cardinal Lane City San Diego Zip 92123

d. UTM: Zone 11N , 485,700 mE/ 3,620,255 mN (center of F2: Fountain)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
Bounded by Park Blvd. to west, I-5 to east, and Russ Boulevard to south.

***P3a. Description:**
SDHS is the oldest school in San Diego (City 2020). It began as the Russ School in August 1882, an elementary school named after Joseph Russ, whose Russ Lumber Company donated the wood for construction of the school. A high school program was established at Russ School in 1888. The school became entirely a high school in 1893, known as Russ High School. The original Russ School building (1882) was moved several hundred feet in 1906 to accommodate new school building construction commissioned by the Board of Education. The Board planned to rehabilitate the old Russ School building, but it burned to the ground in 1911. In its place, a new main school building was constructed, known as the "Gray Castle" (Amero n.d.).<Continued>

***P3b. Resource Attributes:** HP15. Educational building, HP42. Stadium, HP30. Trees, HP26. Monument, HP29. Landscape architecture



***P4. Resources Present:** ☑ Building ☑ Structure ☑ Object ☑ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo:
Overview of campus, facing NE; 2/18/2020 (Google Maps)

***P6. Date Constructed/Age and Source:**
☑ Historic ☐ Prehistoric ☐ Both
1938-2003(SDUSD, Amero *nd*)

***P7. Owner and Address:**
San Diego Unified School District, 4100 Normal St, San Diego, CA 92103

***P8. Recorded by:** Doug Mengers and Kris Reinicke; PanGIS, Inc.; San Diego, CA

***P9. Date Recorded:** 8/11/2020

***P10. Survey Type:** Intensive

***P11. Report Citation:** McCausland, Annie, Theodore Cooley, Stacie Wilson, and Doug Mengers (2020) *San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan: Cultural Resources Technical Report*. Prepared by HELIX Environmental Planning and PanGIS for San Diego Unified School District.

***Attachments:** ☐NONE ☑Location Map ☑Continuation Sheet ☑Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☑ Other (List): DPR 523k Sketch Map

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** San Diego High School, Building 100 ***NRHP Status Code** 6Z **Page** 2 **of** 54

B1. Historic Name: Building A

B2. Common Name: Administration Building

B3. Original Use: Offices, classrooms B4. Present Use: Offices, classrooms

***B5. Architectural Style:** Modern/Brutalist

***B6. Construction History:**

Construction began September 1974, completed and occupied September 1977. Post-construction additions or modifications include a marquee awning above the student store entrance, galvanized steel duct plenums on the east façade for kitchen exhaust, and two metal roll-up doors.

***B7. Moved?** ☑No ☐Yes ☐Unknown **Date:** **Original Location:**

***B8. Related Features:** Gargoyle Planter (Feature 1) west of Building 100; Gray Castle Doors (Feature 4) serve as main entry doors since construction; World War II Plaque (Feature 6) within reception lobby of Building 100; a grove of Torrey pine trees east of Building 100

B9a. Architect: Richard George Wheeler and Associates; San Diego, CA

B9b. Builder: Paul Roehl Construction Company

***B10. Significance: Theme** Brutalist architecture/ Cultural values (education) **Area** San Diego
Period of Significance 1938-1978 **Property Type** Educational Building **Applicable Criteria** N/A

Buildings 100, 200, 300, and 400 were designed by the same architect with a common style and built during the same construction period in 1974-1975 and are evaluated together. As part of SDHS, they have been evaluated in the context of education in San Diego between 1938 and 1978, the Brutalist sub-style of Modern architecture, and the work of architect Richard George Wheeler.

Building 100 is recommended not significant under NRHP Criteria A-D, CRHR Criteria 1-4, and City of San Diego Historical Resources Register (CSDHRR) Criteria A-F and is therefore recommended NOT ELIGIBLE for listing on the NRHP, CRHR, and CSDHRR. Under NRHP/CRHR/CSDHRR guidelines, since Building 100 is recommended not significant under Criteria A-D/1-4/A-F, there is no historical significance to convey, and therefore no integrity to retain. See project report for detailed evaluation (McCausland et al. 2020).

B11. Additional Resource Attributes: (List attributes and codes)
HP15. Educational building

***B12. References:** See Continuation Sheet

B13. Remarks: See Continuation Sheet for project description

***B14. Evaluator:** D. Mengers; PanGIS, Inc.

***Date of Evaluation:** 11/5/2020

(Sketch Map with north arrow required.)

See page 11 for DPR 523k Sketch Map

(This space reserved for official comments.)

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** San Diego High School, Building 200 ***NRHP Status Code** 6Z **Page** 3 **of** 54

B1. Historic Name: Building D

B2. Common Name: Gymnasium

B3. Original Use: Gymnasium B4. Present Use: Gymnasium

***B5. Architectural Style:** Modern/Brutalist

***B6. Construction History:**

Construction began September 1974, completed and occupied September 1977. Post-construction additions or modifications include security cameras at the roof line, utility connections, metal signage and a metal catwalk bridge connecting the eastern and northern roof sections.

***B7. Moved?** ☑**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**

***B8. Related Features:** None.

B9a. Architect: Richard George Wheeler and Associates; San Diego, CA

B9b. Builder: Paul Roehl Construction Company

***B10. Significance: Theme** Brutalist architecture/ Cultural values (education)

Area San Diego **Period of Significance** 1938-1978

Property Type Educational Building **Applicable Criteria** N/A

Buildings 100, 200, 300, and 400 were designed by the same architect with a common style and built during the same construction period in 1974-1975 and are evaluated together. As part of SDHS, they have been evaluated in the context of education in San Diego between 1938 and 1978, the Brutalist sub-style of Modern architecture, and the work of architect Richard George Wheeler.

Building 200 is recommended not significant under NRHP Criteria A-D, CRHR Criteria 1-4, and City of San Diego Historical Resources Register (CSDHRR) Criteria A-F and is therefore recommended NOT ELIGIBLE for listing on the NRHP, CRHR, and CSDHRR. Under NRHP/CRHR/CSDHRR guidelines, since Building 200 is recommended not significant under Criteria A-D/1-4/A-F, there is no historical significance to convey, and therefore no integrity to retain. See project report for detailed evaluation (McCausland et al. 2020).

B11. Additional Resource Attributes: HP15. Educational building

***B12. References:** See Continuation Sheet

B13. Remarks: See Continuation Sheet for project description.

***B14. Evaluator:** D. Mengers; PanGIS, Inc.

***Date of Evaluation:** 11/5/2020

(Sketch Map with north arrow required.)

See page 11 for DPR 523k Sketch Map

(This space reserved for official comments.)

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** San Diego High School, Building 300 ***NRHP Status Code** 6Z **Page** 4 **of** 54

B1. Historic Name: Building B

B2. Common Name: Library and Innovation Center, cafeteria

B3. Original Use: Counseling offices, library and cafeteria

B4. Present Use: Library and Innovation Center, cafeteria

***B5. Architectural Style:** Modern/Brutalist

***B6. Construction History:**

Construction began September 1974, completed and occupied September 1977. Post-construction additions or modifications include utility connections; metal utility boxes in chain link enclosures; security cameras at the roof line; and metal signage.

***B7. Moved?** ☑**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**

***B8. Related Features:** Building 100 is west of Building 300 and they are connected by a second story bridge.

B9a. Architect: Richard George Wheeler and Associates; San Diego, CA

B9b. Builder: Paul Roehl Construction Company

***B10. Significance: Theme** Brutalist architecture/ Cultural values (education)

Area San Diego **Period of Significance** 1938-1978 **Property Type** Educational Building **Applicable Criteria** N/A

Buildings 100, 200, 300, and 400 were designed by the same architect with a common style and built during the same construction period in 1974-1975 and are evaluated together. As part of SDHS, they have been evaluated in the context of education in San Diego between 1938 and 1978, the Brutalist sub-style of Modern architecture, and the work of architect Richard George Wheeler.

Building 300 is recommended not significant under NRHP Criteria A-D, CRHR Criteria 1-4, and City of San Diego Historical Resources Register (CSDHRR) Criteria A-F and is therefore recommended NOT ELIGIBLE for listing on the NRHP, CRHR, and CSDHRR. Under NRHP/CRHR/CSDHRR guidelines, since Building 300 is recommended not significant under Criteria A-D/1-4/A-F, there is no historical significance to convey, and therefore no integrity to retain. See project report for detailed evaluation (McCausland et al. 2020).

B11. Additional Resource Attributes: (HP15. Educational building

***B12. References:** See Continuation Sheet

B13. Remarks: See Continuation Sheet for project description

***B14. Evaluator:** D. Mengers; PanGIS, Inc.

***Date of Evaluation:** 11/5/2020

(Sketch Map with north arrow required.)

See page 11 for DPR 523k Sketch Map

(This space reserved for official comments.)

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** San Diego High School, Building 400 ***NRHP Status Code** 6Z **Page** 5 **of** 54

B1. Historic Name: Building C

B2. Common Name: Lois Perkins Performing Arts Theatre and Fine Arts classrooms

B3. Original Use: Theater and classrooms B4. Present Use: Theater and classrooms

***B5. Architectural Style:** Modern/Brutalist

***B6. Construction History:**

Construction began September 1974, completed and occupied September 1977. Post-construction additions or modifications include metal utility boxes; security cameras at the roof line; a canvas awning and metal signage.

***B7. Moved?** ☑No ☐Yes ☐Unknown **Date:** **Original Location:**

***B8. Related Features:** Gray Castle Courtyard Fountain (Feature 3) is north of Building 400; a grove of Torrey pine trees is north of Building 400

B9a. Architect: Richard George Wheeler and Associates; San Diego, CA

B9b. Builder: Paul Roehl Construction Company

***B10. Significance: Theme** Brutalist architecture/ Cultural values (education)
Area San Diego **Period of Significance** 1938-1978 **Property Type** Educational Building
Applicable Criteria N/A

Buildings 100, 200, 300, and 400 were designed by the same architect with a common style and built during the same construction period in 1974-1975 and are evaluated together. As part of SDHS, they have been evaluated in the context of education in San Diego between 1938 and 1978, the Brutalist sub-style of Modern architecture, and the work of architect Richard George Wheeler.

Building 400 is recommended not significant under NRHP Criteria A-D, CRHR Criteria 1-4, and City of San Diego Historical Resources Register (CSDHRR) Criteria A-F and is therefore recommended NOT ELIGIBLE for listing on the NRHP, CRHR, and CSDHRR. Under NRHP/CRHR/CSDHRR guidelines, since Building 400 is recommended not significant under Criteria A-D/1-4/A-F, there is no historical significance to convey, and therefore no integrity to retain. See project report for detailed evaluation (McCausland et al. 2020).

B11. Additional Resource Attributes: HP15. Educational building

***B12. References:** See Continuation Sheet

B13. Remarks: See Continuation Sheet for project description

***B14. Evaluator:** D. Mengers; PanGIS, Inc.

***Date of Evaluation:** 11/5/2020

(Sketch Map with north arrow required.)

See page 11 for DPR 523k Sketch Map

(This space reserved for official comments.)

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** San Diego High School, Building 500 ***NRHP Status Code** 5S2 **Page** 6 **of** 54

B1. Historic Name: Technical Arts Building

B2. Common Name: Technical Arts Building

B3. Original Use: Classrooms B4. Present Use: Classrooms

***B5. Architectural Style:** Modern/International

***B6. Construction History:**

Constructed in 1950. Modern additions include the stairs and a connecting ramp on the north side and exterior utilities including lighting, electrical, and security. Replacements include all second floor and some first-floor windows and doors.

***B7. Moved?** ☑**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**

***B8. Related Features:** Building 600 is connected to the south façade of Building 500. The north end of the east façade has a chain link fence and an aluminum shade covered enclosure.

B9a. Architect: Frank Lewis Hope, Jr.; San Diego, CA

B9b. Builder: Unknown

***B10. Significance: Theme** International sub-style/ Cultural values (education)
Area San Diego **Period of Significance** 1950
Property Type Educational Building **Applicable Criteria** CSDHRR Criterion C

Building 500 was evaluated as part of SDHS, in the context of education in San Diego between 1938 and 1978, the International sub-style of Modern architecture in San Diego between 1935 and 1955, and the work of architect Frank Lewis Hope, Jr.

Building 500 is recommended ELIGIBLE for the CSDHRR under Criteria C as a good example of the International sub-style of Modern Architecture in San Diego. It is recommended not significant under NRHP Criteria A-D, CRHR Criteria 1-4, and CSDHRR Criteria A, B and D. Therefore, it is recommended NOT ELIGIBLE for listing on the NRHP and CRHR.

Building 500 retains sufficient integrity in order to convey its significance under CSDHRR Criterion C (International style) and is recommended eligible for listing on the CSDHRR with 1950, the year of construction, as the period of significance. See project report for detailed evaluation (McCausland et al. 2020).

B11. Additional Resource Attributes: HP15. Educational building

***B12. References:** See Continuation Sheet

B13. Remarks: See Continuation Sheet for project description

***B14. Evaluator:** D. Mengers; PanGIS, Inc.

***Date of Evaluation:** 11/5/2020

(Sketch Map with north arrow required.)

See page 11 for DPR 523k Sketch Map

(This space reserved for official comments.)

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** San Diego High School, Building 600 ***NRHP Status Code** 5S2 **Page** 7 **of** 54

B1. Historic Name: Science/ROTC Building

B2. Common Name: Science/ROTC Building

B3. Original Use: Classrooms B4. Present Use: Classrooms

***B5. Architectural Style:** Modern/International

***B6. Construction History:**

Construction in 1940. Modern additions or replacements include all doors and windows on the first and second floors, hand railings, and exterior utilities including lighting, electrical, and security fixtures.

***B7. Moved?** ☑No ☐Yes ☐Unknown **Date:** **Original Location:**

***B8. Related Features:** Building 500 is connected to the north façade of Building 600.

B9a. Architect: Frank Lewis Hope, Jr.; San Diego, CA

B9b. Builder: Unknown

***B10. Significance: Theme** International sub-style/ Cultural values (education)
Area San Diego **Period of Significance** 1940
Property Type Educational Building **Applicable Criteria** CSDHRR Criterion C

Building 600 was evaluated as part of SDHS, in the context of education in San Diego between 1938 and 1978, the International sub-style of Modern architecture in San Diego between 1935 and 1955, and the work of architect Frank Lewis Hope, Jr.

Building 600 is recommended ELIGIBLE for the CSDHRR under Criteria C as a good example of the International sub-style of Modern Architecture in San Diego. It is recommended not significant under NRHP Criteria A-D, CRHR Criteria 1-4, and CSDHRR Criteria A, B and D. Therefore, it is recommended NOT ELIGIBLE for listing on the NRHP and CRHR.

Building 600 retains sufficient integrity in order to convey its significance under CSDHRR Criterion C (International style) and is recommended eligible for listing on the CSDHRR with 1940, the year of construction, as the period of significance. See project report for detailed evaluation (McCausland et al. 2020).

B11. Additional Resource Attributes: HP15. Educational building

***B12. References:** See Continuation Sheet

B13. Remarks: See Continuation Sheet for project description

***B14. Evaluator:** D. Mengers; PanGIS, Inc.

***Date of Evaluation:** 11/5/2020

(Sketch Map with north arrow required.)

See page 11 for DPR 523k Sketch Map

(This space reserved for official comments.)

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** San Diego High School, Building 700 ***NRHP Status Code** 5S2 **Page** 8 **of** 54

B1. Historic Name: Choral and English Building

B2. Common Name: Choral and English Building

B3. Original Use: Classrooms B4. Present Use: Classrooms

***B5. Architectural Style:** Modern/International

***B6. Construction History:**

Construction in 1938. Modern additions include metal stairs on the northern portion, railings, and exterior utilities including lighting, electrical, and security fixtures. Most doors and windows have been replaced.

***B7. Moved?** ☑**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**

***B8. Related Features:** None.

B9a. Architect: Quayle Brothers Architects (Charles and Edward Quayle); San Diego, CA

B9b. Builder: Stanley Burne Structural Engineering

***B10. Significance: Theme** International sub-style/ Cultural values (education)
Area San Diego **Period of Significance** 1938
Property Type Educational Building **Applicable Criteria** CSDHRR Criterion C

Building 700 was evaluated as part of SDHS, in the context of education in San Diego between 1938 and 1978, the International sub-style of Modern architecture in San Diego between 1935 and 1955, and the work of the Quayle Brothers Architects.

Building 700 is recommended ELIGIBLE for the CSDHRR under Criteria C as a good example of the International sub-style of Modern Architecture in San Diego. It is recommended not significant under NRHP Criteria A-D, CRHR Criteria 1-4, and CSDHRR Criteria A, B and D. Therefore, it is recommended NOT ELIGIBLE for listing on the NRHP and CRHR.

Building 700 retains sufficient integrity in order to convey its significance under CSDHRR Criterion C (International style) and is recommended eligible for listing on the CSDHRR with 1938, the year of construction, as the period of significance. See project report for detailed evaluation (McCausland et al. 2020).

B11. Additional Resource Attributes: HP15. Educational building

***B12. References:** See Continuation Sheet

B13. Remarks: See Continuation Sheet for project description

***B14. Evaluator:** D. Mengers; PanGIS, Inc.

***Date of Evaluation:** 11/5/2020

(Sketch Map with north arrow required.)

See page 11 for DPR 523k Sketch Map

(This space reserved for official comments.)

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** San Diego High School, Balboa Stadium ***NRHP Status Code** 6Z **Page** 9 **of** 54

B1. Historic Name: Balboa Stadium

B2. Common Name: Balboa Stadium

B3. Original Use: Stadium B4. Present Use: Stadium

***B5. Architectural Style:** Vernacular

***B6. Construction History:**

Constructed in 1978. Post-construction additions or modifications include Home side ADA-compliant ramps constructed between 2003-2005; stadium lighting (installed in 1984 according to a dedication plaque on the Home concession stand); tall chain link fences surrounding the stadium area, with pedestrian and vehicle gates; goal posts, turf, and other field improvements; a scoreboard and flagpole at the south end of the field; and fenced storage areas.

***B7. Moved?** ☑No ☐Yes ☐Unknown **Date:** **Original Location:**

***B8. Related Features:** None.

B9a. Architect: Richard George Wheeler and Associates; San Diego, CA

B9b. Builder: James R. Libby and Associates; San Diego, CA

***B10. Significance: Theme** Cultural values (education)
Area San Diego **Period of Significance** 1938-1978
Property Type Stadium/sports arena **Applicable Criteria** N/A

Balboa Stadium, as part of San Diego High School, has been evaluated in the context of education in San Diego between 1938 and 1978, vernacular architecture, and the work of architect Richard George Wheeler.

Balboa Stadium is recommended not significant under NRHP Criteria A-D, CRHR Criteria 1-4, and City of San Diego Historical Resources Register (CSDHRR) Criteria A-F, and is therefore recommended NOT ELIGIBLE for listing on the NRHP, CRHR, and CSDHRR. Under NRHP/CRHR/CSDHRR guidelines, since Balboa Stadium is recommended not significant under Criteria A-D/1-4/A-F, there is no historical significance to convey, and therefore no integrity to retain. See project report for detailed evaluation (McCausland et al. 2020).

B11. Additional Resource Attributes: HP42. Stadium

***B12. References:** See Continuation Sheet

B13. Remarks: See Continuation Sheet for project description

***B14. Evaluator:** D. Mengers; PanGIS, Inc.

***Date of Evaluation:** 11/5/2020

(Sketch Map with north arrow required.)

See page 11 for DPR 523k Sketch Map

(This space reserved for official comments.)

State of California ◆ Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #** San Diego High School

***Map Name:** Point Loma 7.5' USGS ***Scale:** 1:24,000 ***Date of map:** 1975

San Diego High School WSM and LRFMP



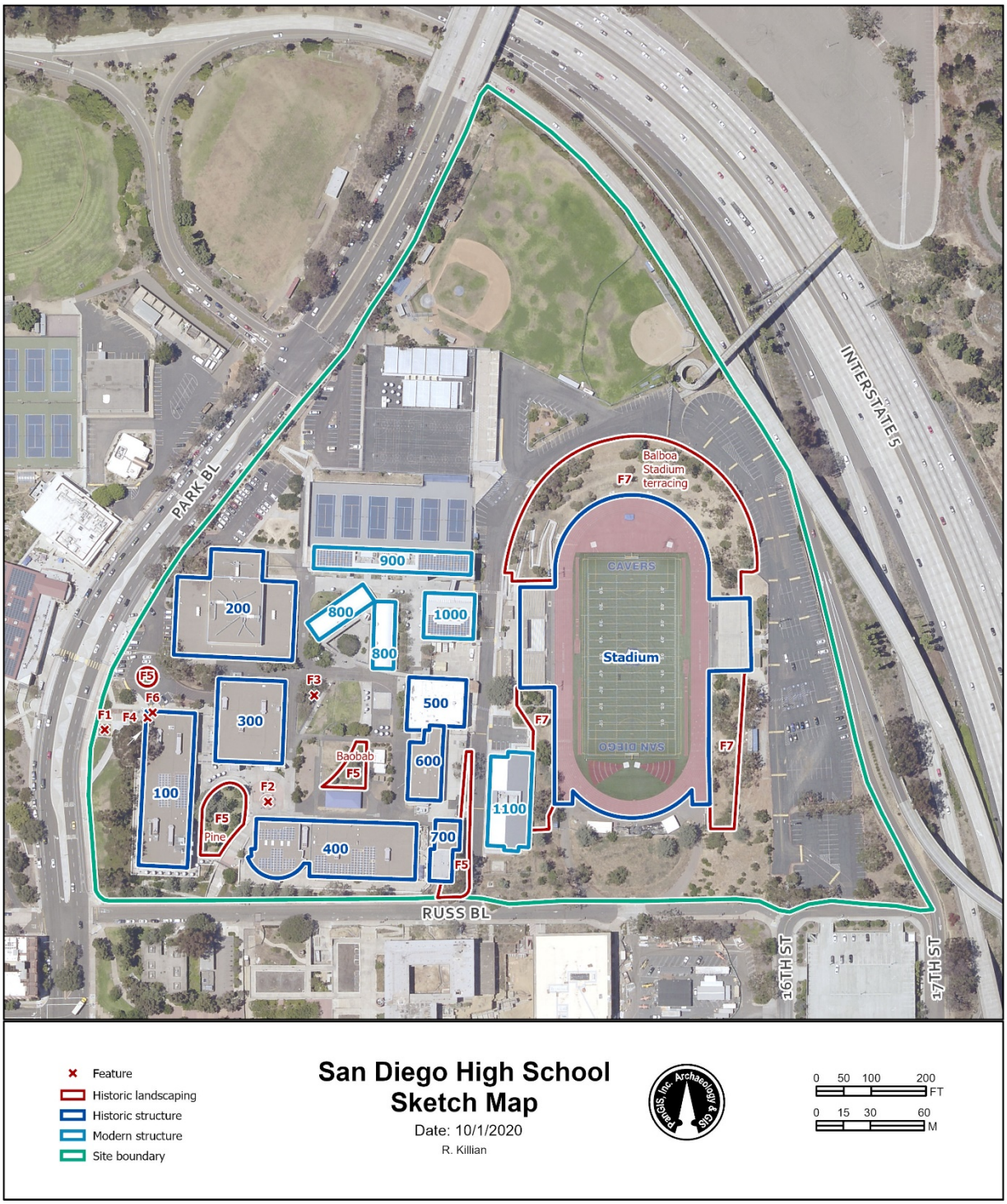
HELIX Environmental Planning

USGS Topography

Figure 2

State of California ♁ Natural Resources Agency Primary #
DEPARTMENT OF PARKS AND RECREATION HRI#
SKETCH MAP
Trinomial

Page 11 **of** 54 ***Resource Name or #** San Diego High School
***Drawn by:** R. Killian, PanGIS, Inc. ***Date of map:** 10/1/2020



***P3a. Description:** <Continued>

Opened in 1907, the Gray Castle was designed by architect Frank Shaver Allen in the Gothic Revival style and constructed of granite veneer over brick (Amero n.d.). Three additional buildings which housed home economics, fine arts, and technology classrooms were designed by the Quayle Brothers and their partner Charles Cressey in the Gothic Revival style (Amero n.d.). These buildings were completed in 1913. Balboa Stadium also designed by the Quayle Brothers and Cressey opened during the Panama-California Exposition in May 1915. The 1920s saw the addition of boys' and girls' gymnasiums (1923), Russ Auditorium (1926), and the Main Gymnasium (1928). These buildings were also designed in the Gothic Revival style and were parts of the SDHS campus commonly known as the Gray Castle. Additional classrooms (buildings 500, 600, and 700) were built between 1938 and 1950, and an upper deck was added to Balboa Stadium in 1960, bringing its capacity to 40,000. The 1933 Long Beach earthquake damaged or destroyed many school buildings in southern California, prompting the passing of the Field Act, which established earthquake safety standards for new construction. However, renovation of pre-1933 structures was spotty until the San Fernando earthquake of 1971 (Amero n.d.). At SDHS, demolition of pre-Field Act structures began with the Russ Auditorium in 1973 and proceeded to the Gray Castle main building. Replacement buildings 100 to 400 were constructed in 1975 to 1976. Balboa Stadium was demolished and replaced with a much smaller venue in 1978. The new campus was designed by local architect Richard George Wheeler.

Students, alumni, and faculty fought to preserve Gray Castle which had served SDHS for over 65 years (Williamson 1976). When the Gray Castle was demolished, pieces of the gray granite walls were collected by students as souvenirs (*San Diego Union* 1975: 13). The new campus was designed by local architect Richard George Wheeler, an SDHS alumni from the Class of 1935 (Williamson 1976). Wheeler stated in a newspaper article in 1976 that his team tried to "give the new buildings a feeling of strength and solidarity like the old school had. We tried to build a strong, contemporary school and give it the appearance of sitting on a pedestal with a wall around it, resulting in the appearance of a castle" (Williamson 1976). Wheeler, like other alumni, also cherished Gray Castle and paid homage to it in his redevelopment design of the campus.

Artifacts from the Gray Castle campus were intentionally preserved and incorporated into the new campus. These artifacts included the gargoyles from Russ Auditorium, the fountain from a Gray Castle courtyard, the primary entry doors from the Gray Castle main building, and a few Torrey Pine trees (Williamson 1976). Other artifacts preserved and incorporated into the new campus included a World War I stone memorial and a World War II plaque designed by Isabelle Shultz Churchman. These preserved artifacts from the Gray Castle campus which were incorporated into the new campus represent an intentional act of preservation that was enacted by the SDHS community, not required by any

preservation laws. These artifacts are the last remnants of the Gray Castle which are still extant today in 2020.

Other additions to SDHS campus have occurred since 1976. New classrooms (building 800) and second story walkways were added in 1995, more new classrooms (buildings 900 and 1000) in 2003, and the campus entrance was switched from Park Boulevard to Russ Boulevard. In 2004, SDHS was reorganized into six autonomous small schools on a single campus (SDUSD 2020). Additional classrooms (building 1100) were constructed in 2011. The present campus consists of administration and classroom buildings 100 through 1100, Balboa Stadium, athletic facilities (handball and tennis courts, baseball and soccer fields), a variety of ancillary structures (shade pavilions, pedestrian bridges, sheds, etc.), as well as parking lots, sidewalks, and landscaping.

The current campus contains eight buildings and structures over 45 years in age, including Balboa Stadium, constructed in 1978, which will become 45 years in age during the proposed Project timeline. There are seven historic features located on campus as well.

This site record documents 15 historic resources extant within the SDHS campus, including buildings 100, 200, 300, 400, 500, 600, 700, Balboa Stadium, gargoyle planter (feature 1), Gray Castle courtyard fountain (feature 2), World War I memorial (feature 3),Gray Castle doors (feature 4), historic landscaping (feature 5), World War II plaque (feature 6), and former Balboa Stadium terracing (feature 7).

In conclusion, eight historic resources are recommended eligible for listing in the local City of San Diego Historical Resources Register (CSDHRR). The resources recommended eligible for local listing include buildings 500, 600, 700, and features 1 (gargoyle planter), 2 (Gray Castle courtyard fountain), 3 (World War I memorial), 4 (Gray Castle doors), and 6 (World War II plaque) are eligible for listing in the CSDHRR and as such, are considered historical resources for the purposes of CEQA. Detailed descriptions of the 15 resources are provided below. Complete historic contexts and evaluations are provided in the Cultural Resources Technical Report (McCausland et al. 2020).

Building 100 – Administration and Classrooms

Building 100 forms the southwest corner of campus. It was designed by Richard George Wheeler and constructed in 1974-75. It was originally called Building A and houses administration offices and classrooms. Building 100 is a Brutalist style, two-story rectangular structure with three exterior, partially recessed staircases. Cladding is predominantly fluted concrete blocks with concrete slabs above slender bays of recessed windows and doors. The roof is flat with a short parapet.

The primary entrance faces Park Boulevard and is located in an alcove on the northwest corner of the building. The entrance alcove is dominated by a wall of

cobalt blue-glazed, rectangular tiles located immediately south of the entry doors (Figure 1). The main entry doors are from the "Grey Castle" built in 1907 (Amero n.d.). These consist of two pairs of carved wood doors with bronze hardware, in the same Gothic style of the structure they were removed from. The doors are in fair to poor condition, with damage from replacement modern hardware and wood screws from signage the most evident impacts. Above the entry doors is one wide panel of teak plank and two fixed windows one-story high, reaching to the roof. A massive, two-story irregular hexagon pillar with fluted concrete block cladding stands diagonally across from the entryway and extends to the roof.



Figure 1. Building 100 entrance, facing east (4/3/2020).

Two-foot rectangular openings are cut into the concrete slabs abutting the building in between the bays of windows. Fig vines were planted in these, and through at least the early 1980s the façade was covered with foliage, referencing the Gray Castle (Wheeler 1982). The west and south façades are surrounded by a wide concrete walk on top of a concrete retaining wall. The retaining wall cladding mimics the façade of the building with a wider ribbed pattern. A second-story bridge on the east façade connects to the library, at building 300.

Other features include drinking fountains with blue square tile splashes. Post-construction additions or modifications include a marquee awning above the student store entrance, galvanized steel duct plenums on the east façade for kitchen exhaust, and two metal roll-up doors (Figure 2). The exterior condition

of the building is excellent, and it appears to have been continually maintained.



Figure 2. Building 100 east façade showing roll-up doors, awning, and water fountain, facing southwest (4/3/2020).

Building 200 – Gymnasium

Building 200 forms the northwest corner of the central plaza, north of Building 100 and Building 300. It was designed by Richard George Wheeler and constructed in 1974. Originally named building D, it is a Brutalist style single-story building with a simple, rectangular ground plan with a projection on the north façade. Cladding is predominantly fluted concrete blocks with cast-in-place concrete slabs above slender bays of recessed windows and doors. The roof is flat with a short parapet and a raised central portion of tilt-up concrete panels to account for the height of an indoor basketball court (Figure 3).

The primary entrance to the Gymnasium is on the south façade and consists of sets of metal doors leading to a foyer. On a concrete panel above the east doors is a mural which reads “San Diego High School” painted on a blue ribbon with a depiction of the original Gray Castle school building (Figure 4). To the right of this entrance is a single ticket window and counter and a doorway to the girls’ locker room obscured by a tall concrete block wall. To the left of

the foyer entrance is a drinking fountain with blue square tile splash and a doorway to the boys' locker room obscured by a tall concrete block wall.



Figure 3. Building 200, northeast corner, showing raised central portion and catwalk (4/3/2020).



Figure 4. Building 200 main entrance, showing mural and ticket window (4/3/2020).

The north and west façades are surrounded by a concrete walk on top of a concrete retaining wall with a metal and wood banister. Single and double doors along the west, north, and east façades provide access to wrestling and gymnastics rooms, equipment storage rooms, and vestibules off the indoor ballcourt. Most of the building is surrounded by blacktop, with some landscaping on the southeast and northwest, and a parking lot below the concrete walk on the west façade.

Other features include a metal catwalk bridge connecting the eastern and northern roof sections (Figure 3), metal ladders providing access to the central roof section, various styles of exterior lighting fixtures, drinking fountains with blue square tile splashes, and metal benches near the southeast corner. Post-construction additions or modifications include security cameras at the roof line, utility connections, and metal signage. The exterior condition of the building is excellent, and it appears to have been continually maintained.

Building 300 – Library and Innovation Center

Building 300 forms the west side of the student quad area. It was designed by Richard George Wheeler and constructed in 1974. It was originally called building B and houses the library, the Innovation Center, and the cafeteria. Building 300 is a Brutalist style, two-story rectangular structure constructed on a west-facing slope with a staircase each on its north, west, and south-facing façades. Cladding is predominantly fluted concrete blocks with cast-in-place concrete slabs above slender bays of recessed windows and doors. The roof is flat with a short parapet. Two massive, two-story irregular hexagonal pillars with fluted concrete block cladding stand on the building's southeast and southwest corners and extend to the roof (Figure 5). The south façade has two elevators that project from the building. The original elevator is centered on the façade and is clad in fluted concrete. The newer Americans with Disabilities Act (ADA)-compliant elevator is to the west of the original and was constructed from concrete block between 2006 and 2007 (Google Earth 2020).

The main entrance to the building is on the upper story of the south façade, with double metal doors in a wall of floor-to-ceiling windows. Other doors in this recessed walkway lead to restrooms and classrooms, and the walkway forms a bridge that connects to building 100 (Figure 6). The lower floor of the south façade is a recessed loggia with two large cafeteria windows with rolling window gates, windows to the counseling offices, and two sets of metal double doors to counseling offices and entrance/ egress from the elevators and

staircase serving the library on the second floor of the building. Several narrow fluted concrete columns support the second story walkway and bridge.



Figure 5. Building 300 south façade, showing corner column, elevator shafts, and quad (4/3/2020).

The north end of the east façade has a recessed ticket counter with marquee above (Figure 7). The remainder of the east, north, and west façades include exterior and subterranean concrete staircases and metal doors giving access to upper and lower floor classrooms and offices. Other features include drinking fountains with blue square tile splashes and various styles of exterior lighting fixtures. Post-construction additions or modifications include utility connections; metal utility boxes in chain link enclosures; security cameras at the roof line; and metal signage. The entire building is surrounded by blacktop

or concrete, with no landscaping. The exterior condition of the building is excellent, and it appears to have been continually maintained.



Figure 6. Building 300 lower level, showing cafeteria windows and bridge to Building 100 (4/3/2020).



Figure 7. Building 300 northeast corner, showing ticket counter and subterranean staircase (4/3/2020).

Building 400 – Performing Arts

Building 400 forms the south side of the student quad area, east of building 100 and west of building 700. It was designed by Richard George Wheeler and constructed in 1974. Originally named building C, it is a Brutalist-style, single-story rectangular structure with a semi-circular theater attached to the west façade by a vestibule. Cladding is predominantly fluted concrete blocks with cast-in-place concrete slabs above slender bays of recessed windows and doors. The roof is flat with a short parapet. The primary entrance is through the connecting vestibule and faces north onto the student quad (Figure 8). Two sets of metal double doors, each with glass glazing, lead into the vestibule. There is a 4.5-inch metal accordion separation joint between the vestibule and the rectangular classroom building. The entryway is covered by a tattered, blue canvas Bostonian awning with the words, “Lois Perkins Performing Arts Theatre.”



Figure 8. Building 400 main entrance and mural, facing southwest (1/20/2020).

The north façade of the theater has a blue horizontal rolling security gate to the scene shop and an adjacent metal door to a dressing room. The west façade of the theater has a set of double metal doors to a corridor behind the stage and a single metal door leading to a dressing room. The theater has a semi-circular footprint to accommodate the audience seating. Two single metal doors on the west façade lead to different levels of the seating area and are mirrored by doors on the other side of the audience seating leading to the vestibule (Figure 9). Two-foot rectangular openings are cut into the concrete slabs abutting the building along the façade of the semi-circle. Vine plants are growing in the westernmost opening, and the façade was once covered with foliage (Wheeler 1982). A small 16-foot by 13-foot control room is off the

south façade of the theater. There are double metal and glass doors on the south side of the vestibule between the theater and the arts building.

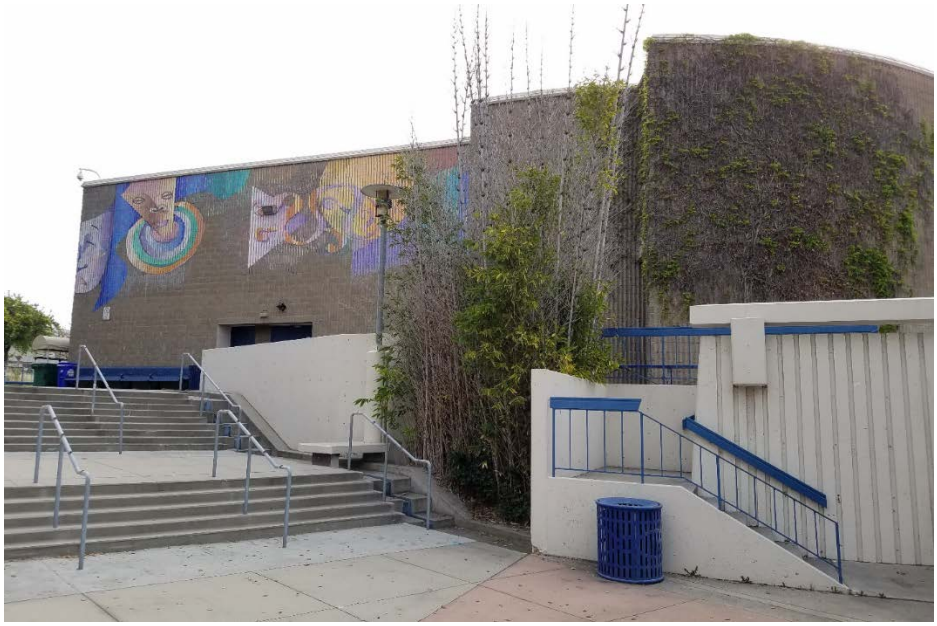


Figure 9. Building 400, west façade, showing mural and vines (4/3/2020).

The south façade of the arts building has a concrete ramp leading to a single metal door to the music room. There are four evenly spaced, recessed bays along the façade, the two western bays having narrow windows and the two eastern bays having single metal doors. The east facade has five sets of metal double doors, one set in the middle and two adjacent sets on the northern and southern side of the façade. Two concrete block enclosed patios on the northern and southern side of the façade are original (shown in as-builts). The northern enclosure has a gas kiln affixed to the northeast corner of the building. The north façade has four recessed bays, two with windows and two with doorways. There are several metal utility fixtures and pipes on the eastern side of the façade.

A mural covers the upper portion of the north and west sides of the theater (Figure 10). The mural is acrylic paint applied directly onto the fluted concrete exterior of the building in such a way that two different images are visible, depending on the viewer's point of view, centered on the northwest corner of the building. The mural, measuring 140 feet wide by 15 feet high, is titled "Multicultural Motion" and was designed by muralist Lorena Loaiza of Mexico City (SDHS and Young at Art 1992). It was painted by Loaiza and more than 40 SDHS art students from 1991-1992, with funding provided by SDHS Young at Art Program, the Maxwell H. Gulk Foundation, the Pastel Society of San

Diego, and other donors. It was dedicated on May 28, 1992 (SDHS and Young at Art 1992).



Figure 10. Building 400, northwest corner, showing mural and entrances (4/3/2020).

Other features include a student-produced art project affixed to the building along the eastern portion of the south façade (Figure 11). The thin wood board installation reads, “Feel the Future. I said, young man.... feel good. I could not say happy because I will lie. Graduating 17. Control Greed; Why won't daddy say he's sorry. Guardian John Saul Gotta get some! Music is a pathway to

yourself. PEACE MAN! The real me. Men Are Back". The exterior condition of the building is excellent, and it appears to have been continually maintained.



Figure 11. Building 400 south façade, showing student art project (4/3/2020).

Building 500

Building 500 sits on the north end of the east side of the student quad area (Figure 12). It was designed by San Diego architect Frank Lewis Hope, Jr., as the Technical Arts building and was constructed in 1950 (City of San Diego 2007). The two-story building has a nearly rectangular floorplan, with the main entrance on the second floor of the north side (Figure 13). The building has all the primary character-defining features of the International sub-style with a flat roof, minimal applied ornamentation, horizontal bands of flush windows,

and asymmetrical façades, and some of the secondary features such as square corners and concrete exterior.



Figure 12. Building 500 west façade, showing original windows on lower floor and modern replacements on upper (1/20/2020).



Figure 13. Building 500, north side, facing southeast (1/20/2020).

The north end of the east façade is a small loading dock or maintenance access area. It has two wide metal roll-up doors behind a chain link fence and an aluminum shade covering half of the area (Figure 14). The west half of the south façade is flush with building 600; the remaining half forms a rear courtyard shared by building 500 and building 600.



Figure 14. Building 500, east façade, showing loading/maintenance area (1/20/2020).

Building 600

Building 600 is situated on the south end of the east side of the student quad area. Designed by Frank Lewis Hope, Jr., as the Science/ROTC building, it was constructed in 1940 (SDUSD 2020). The two-story building has a nearly rectangular floorplan, with the main entrance on the second floor of the north side where it connects to building 500 (Figure 15).

The building has all the primary character-defining features of the International sub-style with a flat roof, minimal applied ornamentation, horizontal bands of flush windows, and asymmetrical façades, and some of the secondary features such as square corners and concrete exterior. The building's exterior detailing, including banding and corner bevels, matches the adjacent

building 500, which was designed by the same architect a decade later (Figures 16 and 17) (Hope 1940; Hope 1950).



Figure 15. Building 500 and 600 connection, facing east (1/20/2020).



Figure 16. Building 600, southwest corner, showing south entrance and modern replacement windows (1/20/2020).



Figure 17. Building 600, southeast corner, showing International-style detailing (1/20/2020).

The north façade is flush with building 500. The east façade of building 500 and the south façade of building 600 form a rear courtyard shared by both buildings (Figure 18).



Figure 18. Courtyard formed by rear of building 500 (left) and building 600 (right), facing north (1/20/2020).

Modern additions or replacements include all doors and windows on the first and second floors, hand railings, and exterior utilities including lighting, electrical, and security fixtures. At least some adjacent concrete sidewalks and stairs are likely original. The exterior condition is excellent, and the building appears to have been continually maintained.

Building 700

Building 700 lies at the southeast corner of the student quad area. It was designed by Quayle Brothers Architects (Charles and Edward Quayle) of San Diego as the Choral and English building and was constructed in 1938 (Quayle Bros Architects 1938; SDUSD 2020). The floorplan consists of two offset rectangles, both of poured concrete construction. The building's southern portion is a tall single story with an end gable roof. Main entrances are on the east façade and northwest corner (Figure 19). Tall narrow windows are separated by wide

mullions on the west, south, and east façades, giving the appearance of a chapel (Figure 20).



Figure 19. Building 700, east façade, showing east entrance and eastern staircases (1/20/2020).



Figure 20. Building 700, southeast corner, facing northwest (1/20/2020).

The northern portion is two stories with a flat roof (Figure 21). Exterior staircases lead to entrances on each floor. Combined, the building portions possess the primary character-defining features of the International sub-style, with a flat roof, minimal applied ornamentation, horizontal bands of flush windows, and asymmetrical façades, and some of the secondary features such as square corners and concrete exterior. However, some features are mixed or less developed, including the southern gabled roof and single windows instead of bands.



Figure 21. Building 700, northeast corner, facing southwest (1/20/2020).

Modern additions include metal stairs on the northern portion, railings, and exterior utilities including lighting, electrical, and security fixtures. Most doors and windows in both portions have been replaced. At least some adjacent concrete sidewalks and stairs are likely original, along with the glass block windows on the west side of the building's southern portion (Figure 22). The

exterior condition is excellent, and the building appears to have been continually maintained.



Figure 22. Building 700, southwest corner, showing original glass block windows on west façade (1/20/2020).

Building 800

Building 800 lies at the center of campus, north of the central quad. It was constructed in 1995. Building 800 was not a part of the campus evaluation because it is not fifty years old as of 2020.

Building 900

Building 900 lies at the center of campus, north of the central quad and kitty corner to Building 800. It was constructed in 2003. Building 900 was not a part of the campus evaluation because it is not fifty years old as of 2020.

Building 1000

Building 1000 lies northeast of the central quad. It was constructed in 2003. Building 1000 was not a part of the campus evaluation because it is not fifty years old as of 2020.

Building 1100

Building 1100 lies southwest of Balboa Stadium. It was constructed in 2011. Building 1100 was not a part of the campus evaluation because it is not fifty years old as of 2020.

Balboa Stadium

Balboa Stadium sits on the east side of campus, separated from I-5 by an asphalt parking lot. It was designed by Richard George Wheeler to replace the original 1914 Balboa Stadium on the same site and was constructed in 1978. The stadium is composed of seven permanent structures, a football field, track, and two sets of concrete bleachers (Figure 23).



Figure 23. Balboa Stadium overview, facing south (1/20/2020).

The structures are all very simple in design and construction and are of a vernacular style. The cladding throughout is cream colored stucco over wire mesh and wood frame construction. The roofs are mostly flat or shed roofs with a very low pitch and wood facia. All doors are metal and painted a deep cobalt blue. The west concourse is the Home side, and the east concourse is the Visitor side. Each concourse has a landing that is 20 feet wide, made of several 4-inch-thick concrete slabs. The Home side has concrete ADA-compliant ramps that were added between 2003 and 2005 (NETROnline 2020). One 75-foot long ramp with one switch-back connects the access road west of the stadium to the

Home concourse, and a second, longer ramp of 415 feet goes from the concourse to the field level with three switchbacks (Figure 24).



Figure 24. Balboa Stadium, view facing the Home side, showing switchback ramp from concourse to field level (1/20/2020).

The restroom buildings on both the Home and Visitor sides are rectangular (15 feet by 50 feet) and have stucco cladding with wood facia (Figure 25). The roofs are flat with a wide, 3-foot eave on the front elevation only. Men's restrooms on both sides of the field have four stalls and urinals, and the women's restroom has four stalls on the Visitor side and six on the Home side. Women's and men's restrooms are separated by the custodian and garden storage room. On the Home side, the doors are facing the field, to the east; on the Visitor side, doors face to the west. There are two sets of original, tiled splash drinking fountains on the front elevations between the recessed doorways into the women's and men's restrooms.

The concession stands on both the Home and Visitor sides are rectangular (10 feet by 24 feet) and have stucco cladding with wood facia (Figure 26). The roofs are flat with a wide, 5-foot eave on the front elevation only. Three,

blue rolling metal security shutters cover the openings over the sales counter. Both have a single metal door on the south façade.



Figure 25. Balboa Stadium, Home side restrooms (1/20/2020).



Figure 26. Balboa Stadium, Home concession booth (1/20/2020).

The press box is located on the Home side and is a rectangular building (8 feet by 52 feet) and has stucco cladding with wood facia (Figure 27). The roof is flat with a wide, 3-foot eave on the front elevation and about 1 foot on the rear. There are six rolling metal security shutters over a counter facing the

field. Two coaches' boxes (8 feet by 10 feet) on the north and south side flank a larger room in the center for press. There are three single metal doors on the west elevation for access to the coaches and press rooms.



Figure 27. Balboa Stadium press box and Home side seating (1/20/2020).

There are small ticket booths on the Home and Visitor sides that are roughly square (6 feet by 8 feet) and have stucco cladding with wood facia (Figure 28). The roofs are flat with a wide, 3-foot eave on the front elevation only. Each has two ticket windows with rolling metal security shutters over counters. A single metal door is on the back façade.

The bleachers on both the Home and Visitor sides are concrete. The Home side has three bays of bleachers with 19 rows and a total of 2,280 seats (Figure 27). Two imperial staircases (with 5 steps) start at field level and lead up between the bays of bleachers. The Visitor side has two bays of bleachers with 18 rows and a total of 1,440 seats (Figure 28). One imperial staircase leads to the staircase between the bays of seats.

Other features include stadium lighting (installed in 1984 according to a dedication plaque on the Home concession stand); tall chain link fences surrounding the stadium area, with pedestrian and vehicle gates; goal posts,

turf, and other field improvements; a scoreboard and flagpole at the south end of the field; and fenced storage areas (Figure 29).



Figure 28. Balboa Stadium, Visitors side seating, showing restrooms, ticket booth, and concession (4/3/2020).



Figure 29. Balboa Stadium scoreboard and fenced storage areas (4/3/2020).

Feature 1 – Gargoyle Planter

The gargoyle planter is located along Park Boulevard, near the main entrance doors to building 100 (Figure 30). The gargoyles were originally decorative elements above the window line of the Russ Auditorium (Figure 31). The construction date of the planter is unclear based on the available sources, but it appears to have been circa 1976. By 1981 the gargoyles were installed on the

current planter, as shown in Figure 32 (SDHS 1981 yearbook). Richard Amero's historic context, San Diego High School District and Balboa Park, credits Paul Roel Construction Co. for the construction of the planter and installation of the gargoyles (Amero n.d.).



Figure 30. Gargoyle planter along Park Boulevard, facing southwest (1/20/2020).



Figure 31. Russ Auditorium (1926-1973), showing concrete gargoyle figures above window line, 1953 (SDHS Alumni Association).



Figure 32. Photograph of gargoyle planter from the 1981 SDHS Yearbook (SDHS 1981: 8-9).

The cast concrete gargoyles depict academic subjects including geography, mathematics, and writing, and are anchored by baseball and football athletes on the corners. The gargoyles are mounted to a modern poured concrete planter surrounded by non-native landscaping. They are in fair to poor condition, with a covering of lichen and some extremities missing.

Feature 2 – Gray Castle Courtyard Fountain

This resource is a concrete fountain on a concrete base, enclosed by a metal railing. It is situated in a round brick patio between buildings 300 and 400 on the southeast side of campus (Figure 33). The fountain has two tiers, each of which has a concrete bowl atop a square pillar, with the upper tier smaller in scale than the lower. The fountain sits on a round concrete base set within a diamond shape pool, approximately 6 feet by 6 feet and currently dry. The pool is surrounded by a circular planter approximately 15 feet in diameter, divided by 12-inch-wide concrete crib walls. The planter is surrounded by a three-foot-high painted metal railing.

The fountain, and possibly the diamond-shaped enclosure, appear to be original. The fountain was originally constructed in the early twentieth century, likely as part of the original construction of the Gray Castle in 1907. Early photographs show it as the centerpiece of “Fountain Court,” in the interior courtyard of the main Gray Castle building (Figure 34). Here, the fountain and diamond-shaped pool were surrounded by a rectangular pool approximately 15 feet by 20 feet. The fountain was moved approximately 100 feet west to its current

location when the campus was reconstructed in 1975-1976 and the crib walls, railing, and brick surround were added (Wheeler 1976a).



Figure 33. Fountain, facing southeast (8/11/2020).

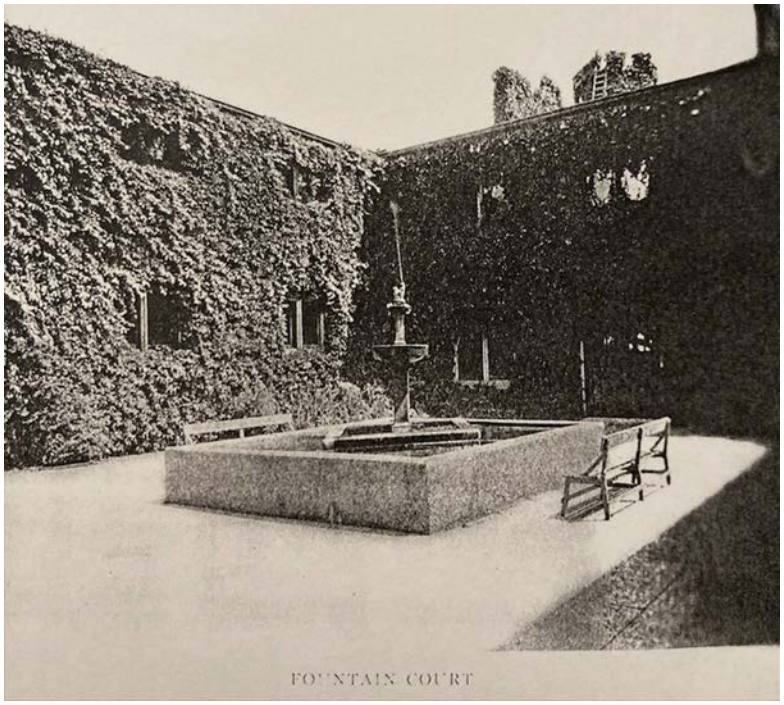


Figure 34. Fountain in original setting in Gray Castle courtyard, circa 1920s (SDHS Alumni Association).

In both locations, the fountain has been a popular gathering spot for students as illustrated by the photographs in Figures 35 and 36. The concrete fountain is in poor condition, with significant portions of the upper pillar spalled off, exposing rusted iron interior piping and rendering the fountain inoperative. The fountain water basin has also been filled in with dirt. However, it was operational for some time after being moved to its current location, as shown in archival photos from the 1980s (Figure 36).



Figure 35. Photograph of fountain with students in 1918, during the Spanish Flu epidemic (SDHS Alumni Association).



Figure 36. Fountain in current location and operational, circa 1980 (SDHS Alumni Association).

Feature 3 – World War I Memorial

The World War I memorial is located on the northwest side of the student quad area, adjacent to a southwest-northeast sidewalk. It consists of a granite obelisk, approximately 18 inches square and three feet high, resting on a poured concrete base (Figure 37). The southeast facing side of the memorial is engraved: "DEDICATED TO THE S.D.H.S STUDENTS WHO GAVE THEIR LIVES IN THE WAR/BY THE CLASS OF JUNE 1919/STUDENT BODY OF 1921/THE CLASS OF JAN. 1922." The top and engraved side are smooth; the remaining sides are rough granite. The memorial is oriented 45 degrees from the surrounding buildings.

As-built diagrams from mid-1970s campus reconstruction are marked "Relocated existing tombstone inscription to face SW/Concrete base to extend 1'-6" from each face" (Wheeler 1976b). The as-built diagrams do not indicate where the memorial was moved from; however, based on photographs it appears that the memorial was located within a Gray Castle courtyard (Figure 38). Its current

location was previously occupied by the Gray Castle main building footprint. The beveled concrete base appears to have been added when it was relocated.

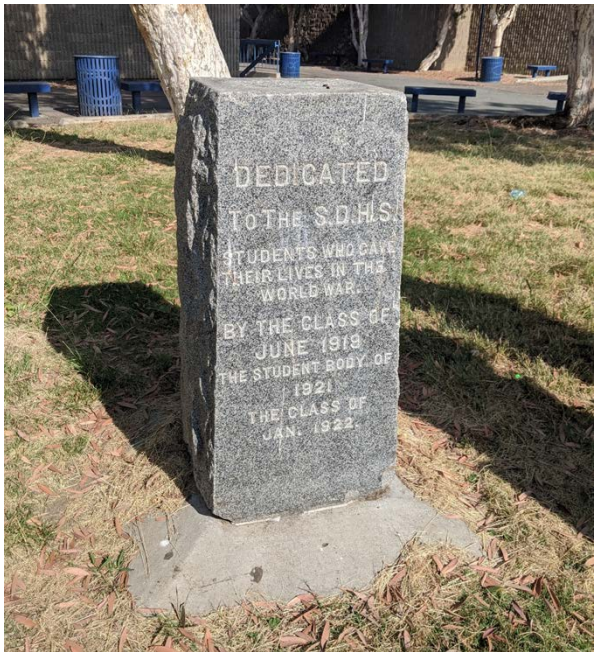


Figure 37. World War I memorial, facing northwest (8/11/2020).



Figure 38. Photo of students with World War I memorial, circa 1950s (SDHS Alumni Association).

Feature 4 – Gray Castle Doors

The main entry doors on building 100 are from the Gray Castle main building built in 1907 and designed by Frank Shaver Allen as shown in Figure 39 (Amero n.d.). The doors were intentionally preserved when Gray Castle was demolished and installed as the primary entry doors on the new main building, building 100, designed by Richard George Wheeler (Figure 40). They were installed during construction of building 100 by Roel Construction Company in 1974-1975 (Amero n.d.). These consist of two pairs of carved wooden doors with bronze hardware, in the same Gothic Revival style of the structure from which they were removed. Modern elements of the doorway include a black aluminum frame and sill, a narrow single separating the door pairs, a tall wood lintel, ADA-compliant signage on the exterior, and push bars, kick-plates, and pneumatic hinges on

the interior. The doors are in fair to poor condition. Damage from replacement modern hardware and wood screws from signage are the most evident impacts.



Figure 39. Photograph of Gray Castle main entry doors, 1962-1963 (SDHS Alumni Association).

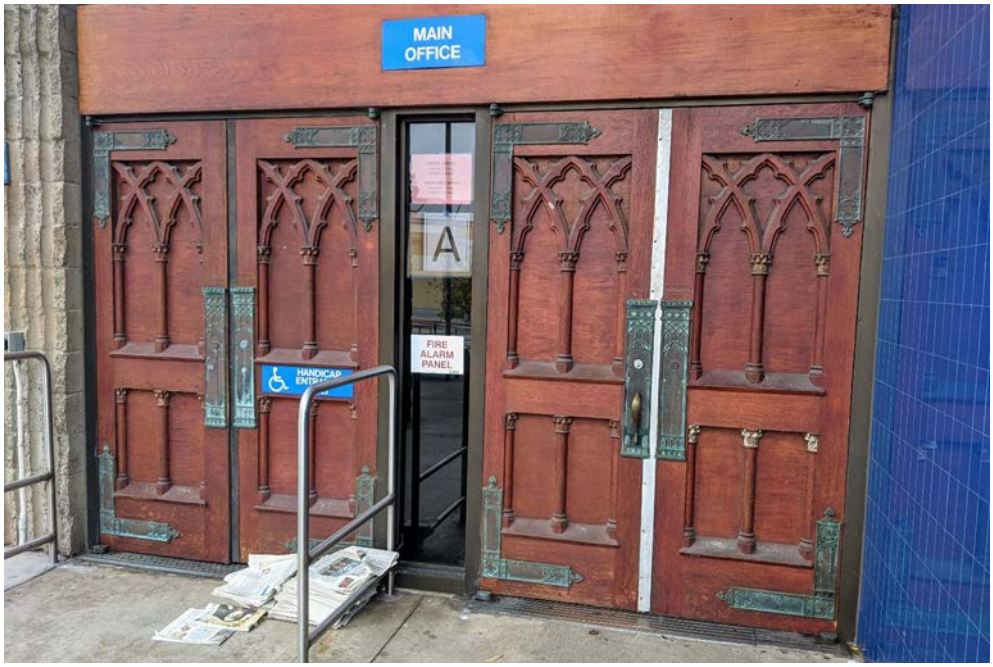


Figure 40. Building 100 entrance doors from the Gray Castle, exterior view (1/20/2020).

The Gray Castle doors are considered an iconic decorative element of SDHS. The doors were utilized consistently as the backdrop for student group and facility photographs during the early and mid-twentieth century, including the group photographs shown in Figure 41.



Figure 41. Photograph of the "Senior A Dramatic Talent" group from the 1930 SDHS yearbook (Classmates.com).

Figure 5 – Landscaping

Most pre-1975 sidewalks, quads, recreational facilities, and landscaping features were destroyed during major 1970s reconstruction phases. Based on aerial photography from 1972 and 1980 and photographs of campus construction in 1975, there are only a few areas likely to contain any remnant landscaping dating to circa 1902 to the demolition of Gray Castle in 1975-1976. These areas include the eucalyptus trees on the southeast side of building 700, the pine trees between building 100 and building 400, and some eucalyptus trees along the edge of the campus.

Three mature eucalyptus trees surround the southern portion of building 700 (Figure 20). All three are on the steep slope to the south and east of the building, along with the cut stumps of ten or more additional trees. On as-built diagrams for the mid-1970s campus reconstruction, the south and east sides of building 700 are labelled "Existing trees to remain" (Wheeler 1976). Small circles representing individual trees are shown on the diagram, and these

appear to line up with existing trees or stumps. This marked area on the as-builts extends to the north to along the access road behind building 600. Currently, two eucalyptus trees exist in a narrow planter in this area, but they appear much younger than the ones to the south so are likely later additions.

The pine trees between building 100 and building 400 are likely remnant historic landscaping elements from the earlier Gray Castle campus (Figure 2, left). Aerial photographs between 1953 and 1972 show trees in this location along the walkway to campus from the intersection of Russ Boulevard and Park Boulevard (NETROnline 2020). A newspaper article from 1976 states that a "stand of Torrey Pine trees planted on the West side of campus by graduating senior classes has been preserved" during the 1975-1976 campus redevelopment (Williamson 1976). However, no other information about the Torrey Pine trees was found during archival research, and it is unclear where they were located. The campus reconstruction as-built diagrams show individual trees in this location, but the area is not labelled either "existing trees to remain" or "planting area" as other areas on the diagram. Parts of the area have been heavily modified, especially the southeast portion, where a wide concrete staircase and sidewalk were added in 2003 when the main campus entrance was moved to this area.

Other areas are marked "existing trees to remain" on the as-builts, including the single pine tree in a planter in the center of the parking area north of building 100. It also includes a strip between Park Boulevard and the parking lot immediately north of building 200. This row of trees extends along both sides of Park Boulevard from the main parking lot entrance on the west side of building 200 approximately 350 meters north to the I-5 overcrossing. These trees are more appropriately assessed as part of Park Boulevard rather than SDHS.

A group of baobab trees (*Adansonia digitata*) is located on the southeast side of the student quad, on either side of a southwest-northeast sidewalk (Figure 42). According to the SDHS Alumni Association, there is a story told by 1970s and 1980s alumni that the trees were planted by horticulturalist Kate Sessions. Ms. Sessions was principal and teacher at SDHS from 1884 to 1885 (Amero n.d.). She began planting trees in Balboa Park and around San Diego in 1892 in exchange for nursery space within the park (Engstrand 2005).However, research indicates that the school grounds were bare of vegetation until 1902, when the Board of Public Works began a tree-planting project (Amero n.d.). Historic aerial research indicates the baobab trees were planted in the mid-1990s during major modifications to the student quad. A different grove, without the current sidewalk, was present in the area prior to that, planted as part of the mid-

1970s campus reconstruction. Before that, the location of the baobab trees was occupied by the eastern portion of the Gray Castle building (NETROnline 2020).



Figure 42. Baobab tree grove, southeast corner of student quad, facing north (8/11/2020).

Feature 6 – World War II Plaque

The World War II plaque is located inside building 100, on the north wall of the reception lobby, just inside the main entrance doors. It consists of four carved Philippine mahogany wooden panels separated by three columns of names, with a dedication plaque at the bottom of the middle column (Figure 43). The dedication plaque as shown on the bottom center of Figure 43 reads: “THESE SONS OF SAN DIEGO HIGH SCHOOL/GAVE THEIR LIVES IN THE/SACRED CAUSE OF FREEDOM/FREEDOM OF SPEECH/FREEDOM FROM WANT/FREEDOM OF RELIGION/FREEDOM FROM FEAR/EVERYWHERE IN THE WORLD/DEDICATION MAY 28, 1948.” The plaque includes a total of 158 names engraved on metal slates. The names are presented in

alphabetical order. The plaque was installed in Russ Auditorium in 1948, prior to the installation of the wood carved panels (SDHC c. 1949).



Figure 43. World War II plaque, facing north (8/11/2020).

The hand-carved relief panels were commissioned by the San Diego Board of Education and were created by local San Diego artist Isabelle Schultz Churchman between 1947 and 1949 (SDHC c. 1949; *San Diego Union* 1949). They represent President Roosevelt's Four Freedoms (Freedom of Speech, Freedom of Religion, Freedom from Want, Freedom from Fear) for which the war was fought (*San Diego Union* 1949). The images on the panels feature civic WPA style scenes of religion, animal husbandry, agriculture, childhood, and academics (Figure 44). During the 1930s New Deal era, Churchman was a state-sponsored artist under the State Emergency Relief Administration (SERA). It appears that her experience as a WPA artist influenced her design for these panels.

The World War II plaque was originally displayed in SDHS's Russ Auditorium from 1948 to circa 1973. After the Russ Auditorium was demolished in 1973, the plaque was reinstalled in its current location in the building 100 lobby circa 1975. A wooden framework connects the panels from behind and attaches them to the concrete block wall. The base of the frame appears to be a modern addition, likely added when it was installed in its current location (Figure 43). Based on newspaper articles about the plaque in 1949, and the photograph of the recently completed panels, the original order of the panels was changed, most

likely during the reinstallation of the plaque in building 100 (SDHC c. 1949; *San Diego Union* 1949).



Figure 44. Photograph of the completed panels in the original order, possibly Churchman's home, circa 1949 (SDHC Photo Archive, 89:17160).

Feature 7 – Former Balboa Stadium Terracing

Terracing on the north end of the stadium is a remnant of the original 1914 Balboa Stadium, left over after the 1978 demolition. The original terracing for the stadium was completed using steam shovel and mules. The remnant terracing is currently covered with landscaping vegetation (Figure 45). The original Balboa Stadium was designed by Quayle Brothers Architects and Charles Cressey

and was opened in May 1915 as part of the Panama-California Exposition (Amero n.d.).



Figure 45. Balboa Stadium north end, showing remnant 1914 terracing (1/20/2020).

Balboa Stadium originally seated 23,500 on concrete seats poured within cut terracing on the west, north, and east sides of the field. When completed, it was the largest stadium ever constructed in the United States. The south end was flanked by three-story towers with a row of columns in between, and a semi-circular loggia containing dressing rooms and a service entrance extended towards Russ Boulevard. An upper deck was added to the stadium in 1960, bringing capacity to 40,000 when it became the first home of the San Diego Chargers football team (Figure 46). The original stadium hosted civic as well as high school events, including visits by Presidents Wilson, Roosevelt, and Kennedy, as well as concerts including the Beatles (Amero n.d.).

The terracing on the north end of the stadium and the modified hillside on the south end are the only remnants of the 1914 Balboa Stadium. No structures, foundations, or features were observed during the historic built-environment

survey. The terracing for the stadium was completed using steam shovel and mules (Figure 47).



Figure 46. Balboa Stadium 1964, showing added upper deck (SDHS Alumni Association).



Figure 47. Balboa Stadium under construction in 1914. The photograph depicts the stadium being built with a steam shovel and mules (SDHC).

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B13. Remarks:

This evaluation was conducted as part of the San Diego Unified School District's proposed San Diego High School (SDHS) Whole Site Modernization (WSM) and Long-Range Facilities Master Plan (LRFMP) project. The proposed project involves the renewal of a lease between the City and the District and upgrades to the existing school campus buildings and facilities. The lease renewal would

extend the permission for the District to operate at the project site beyond 2024 for an additional 99 years. The short term WSM improvements would generally include minor improvements and reconfigurations of existing school buildings, parking areas, and quad areas, as well as improvements to existing athletic fields. The long term LRFMP improvements would involve the removal and addition of school buildings and structures, as well as a new entrance into the campus from the combined SR-163 off-ramp and I-5 on-ramp.

EIR Appendix D1

Geotechnical Evaluation

Geotechnical Evaluation

Building 700 and Additional Site Improvements
San Diego High School
1405 Park Boulevard
San Diego, California

Architects Mosher Drew

1775 Hancock Street, Suite 150 | San Diego, California 92110

January 18, 2019 | Project No. 108598002







Geotechnical | Environmental | Construction Inspection & Testing | Forensic Engineering & Expert Witness

Geophysics | Engineering Geology | Laboratory Testing | Industrial Hygiene | Occupational Safety | Air Quality | GIS

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

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Geotechnical & Environmental Sciences Consultants

Geotechnical Evaluation

Building 700 and Additional Site Improvements
San Diego High School
1405 Park Boulevard
San Diego, California

Ms. Audrey Stratton
Architects Mosher Drew
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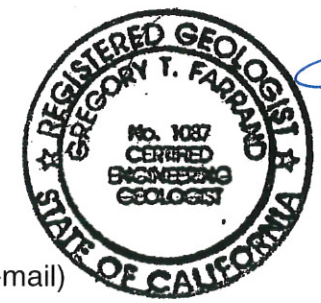
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1 INTRODUCTION

In accordance with your request, we have performed a geotechnical evaluation for the proposed Building 700 and additional site improvements at San Diego High School (SDHS) located at 1405 Park Boulevard in San Diego, California (Figure 1). Our geotechnical evaluation was performed in conformance with Chapter 18A of Title 24, Part 2, Volumes 1 and 2 of the 2016 California Building Code (CBC), and California Geological Survey (CGS) Note 48. This report presents the results of our field explorations and laboratory testing as well as our conclusions regarding the geotechnical conditions at the site and our recommendations for the design and construction of this project.

2 SCOPE OF SERVICES

Our scope of services for this evaluation included the following:

- Reviewing readily available published and in-house geotechnical literature including geologic and geotechnical reports, topographic maps, geologic and geologic hazard maps, fault maps, flood zone maps, and stereoscopic aerial photographs.
- Performing a field reconnaissance to observe site conditions and to mark the locations of the exploratory borings.
- Notifying Underground Service Alert (USA) and school personnel to clear boring locations for the potential presence of underground utilities. In addition, a private utility locating company was used to clear the locations for the potential presence of underground utilities.
- Obtaining a boring permit from the County of San Diego Department of Environmental Health (DEH).
- Performing a subsurface exploration program consisting of the following:
    - Drilling, logging, and sampling of 10 small diameter borings using a truck-mounted drill rig. Relatively undisturbed drive and bulk soil samples of the materials encountered were collected at selected intervals from the borings and transported to our in-house geotechnical laboratory for testing.
    - Excavating, logging, and sampling of 11 hand auger borings using manual equipment. Relatively undisturbed drive and bulk soil samples of the materials encountered were collected at selected intervals from the borings and transported to our in-house geotechnical laboratory for testing.
- Performing infiltration tests in seven (7) of our hand auger borings to evaluate the infiltration rates of the underlying soils.
- Performing agronomic testing on samples collected from existing landscaped areas.
- Performing geotechnical laboratory testing of representative soil samples to evaluate soil characteristics and parameters for design purposes.

- Compiling and performing an engineering analysis of the information obtained from our background review, subsurface exploration, and laboratory testing.
- Preparing this geotechnical report presenting our findings, conclusions, and geotechnical recommendations for the design and construction of this project.

3 SITE AND PROJECT DESCRIPTION

The San Diego High School campus is located at 1405 Park Boulevard within the downtown area of San Diego, California (Figures 1 and 2). The campus encompasses approximately 30 acres of land bounded by Park Boulevard to the west and northwest, Interstate 5 to the northeast and east, and Russ Boulevard and San Diego City College campus to the south. The project site coordinates are 32.7207° North latitude and -117.1515° West longitude. While the site was first developed as a school campus in 1882, much of the existing site improvements were constructed in the mid 1970's (SDUSD, 2013). The campus currently supports various classroom, administration, and multi-purpose buildings, baseball and softball fields, basketball courts, a stadium, and parking lots. Topographically, the campus slopes gently down to the south and southwest. The school stadium is situated on the east side of the campus and consists of a relatively lower terrace with slopes ranging from 20 to 50 feet in height along the eastern, northern, and western boundaries. Elevations on the San Diego High School campus range from approximately 110 feet above mean sea level (MSL) along Russ Boulevard south of the stadium to approximately 180 feet MSL in the northern portion of the site.

Based on our review of project documents (Architects Mosher Drew, 2018) the proposed project includes the construction of new structures at different locations on campus (Figure 2). In the southern portion of the campus, existing Building 700 will be demolished and replaced by a new two-story, approximately 7,500 square feet, building that will serve as the Food Service and Custodial Building. Also in the southern portion of campus, existing shade structure will be demolished and two new food kiosk structures (approximately 1,500 square feet each) will be constructed that will be located west of the existing Buildings 500 and 600. In the northern portion of the campus at the baseball and softball fields, two new structures that will house concessions and dugouts will be constructed. An existing portable restroom will also be removed and replaced. Retaining walls are also anticipated to be constructed at new Building 700. Fault hazard evaluations for Building 700 and food kiosk buildings will be provided under separate cover at a later date.

4 BACKGROUND

Ninyo & Moore previously prepared geotechnical evaluations at the San Diego High School campus for Building 1100 (Ninyo & Moore, 2008a) and for improvements to the stadium, baseball field, and softball field (Ninyo & Moore, 2014). The geotechnical evaluation for Building 1100 included subsurface evaluation consisting of four small-diameter borings and an exploratory trench. Subsequent to the geotechnical evaluation, a fault hazard evaluation was also performed for the building, consisting of seven large-diameter borings and two geophysical resistivity surveys (Ninyo & More, 2008b). The geotechnical evaluation for the stadium, baseball field, and softball field improvements consisted of 20 small-diameter borings. We recently performed a desktop-level geologic reconnaissance study for the proposed project (Ninyo & Moore, 2018), including review of available reports prepared by other consultants for projects at San Diego High School (Woodward-Gizienski, 1973; SCS&T, 1993; Geocon, 2001; and TerraPacific, 2009) as well as the City College campus to the south (Rore, Inc., 2008). The findings from these studies are incorporated into this report, as appropriate.

5 SUBSURFACE EXPLORATION

Our subsurface exploration was conducted on November 19 through November 21, 2018 and included the drilling, logging, and sampling of ten small-diameter borings (B-1 through B-10) and the excavating, logging, and sampling of eleven hand auger borings (HA-1 through HA-11). Prior to commencing the subsurface exploration, the locations were cleared of underground utilities by Underground Service Alert and school personnel. In addition, a private utility locator was retained to clear the locations for the potential presence of underground utilities. The purpose of the borings was to evaluate subsurface conditions and to collect soil samples for laboratory testing.

The borings were drilled to depths ranging from approximately 1.5 to 41.5 feet using manual equipment and a truck-mounted drill rig equipped with 8-inch diameter, continuous-flight, hollow-stem augers. Excavation refusal was encountered to manual equipment in ten of our borings (HA-1 through HA-5 and HA-7 through HA-11). Ninyo & Moore personnel logged the borings in general accordance with the Unified Soil Classification System (USCS) and ASTM International (ASTM) Test Method D 2488 by observing cuttings and drive samples. Representative bulk and in-place soil samples were collected at selected depths from within the exploratory borings and transported to our in-house geotechnical laboratory for analysis. The approximate locations of the borings are presented on Figure 2. The boring logs are presented in Appendix A.

6 LABORATORY TESTING

Geotechnical laboratory testing was performed on representative soil samples collected during our subsurface exploration. This testing included an evaluation of in-situ moisture content and dry density, gradation, consolidation, shear strength, expansion index, soil corrosivity, and R-value. The results of the in-situ dry density and moisture content tests are presented at the corresponding depths on the boring logs in Appendix A. Descriptions of the geotechnical laboratory test methods and the results of the other geotechnical laboratory tests performed are presented in Appendix B.

In addition, agronomic testing on samples collected from near-surface excavations was performed by a specialized, outside laboratory. The agronomic test locations and results are presented in Appendix C.

7 INFILTRATION TESTING

As a means of evaluating the infiltration characteristics of near-surface materials, infiltration tests were performed at seven locations designated HA-1, HA-2, HA-4, HA-5, HA-6, HA-7, and HA-10. Following the excavation of these borings on November 19, 2018, the locations were prepared for infiltration testing by placing approximately 2 inches of gravel on the bottom of the holes, installing a 2-inch diameter perforated PVC pipe, and backfilling the annulus with pea gravel. As part of the test procedure, a presoak was performed on November 19, 2018 to represent adverse conditions for infiltration. The presoak consisted of maintaining approximately 1 foot of water in each boring for approximately 4 hours. The water level was then allowed to drop overnight.

Infiltration testing was then performed on November 20, 2018 in general accordance with the City of San Diego BMP Design Manual (2018). The infiltration test holes were filled with approximately 12 inches of water and the water depth was measured in 30-minute intervals for the duration of the tests at HA-2, HA-4, HA-6, and HA-7. The water depth of HA-1, HA-5, and HA-10 was measured in 10-minute intervals due to the rapid rate of infiltration. The borings were refilled after reading each interval, as needed, to restore the initial water level.

7.1 Infiltration Test Results

Infiltration rates were calculated using the Porchet method. Infiltration test results and calculations are included in Appendix D and summarized in Table 1. Per the City of San Diego BMP Design Manual Appendix D Section D.5.1, a suitability factor of safety (FOS) of 2 is to be used for sites that have less than full infiltration. A completed Worksheet C.4-1: Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions with the appropriate

geotechnical aspects is presented in Appendix D. The estimated reliable infiltration rates presented in Table 1 are to be used for preliminary design purposes only. The rates should be corrected for the design infiltration rate after applying the design safety factor determined by the design engineer. The design of infiltration devices and/or other stormwater BMPs should be based on infiltration rates measured at the locations and depths of the devices and application of appropriate factor-of-safety.

Table 1 – Infiltration Test Results Summary

Infiltration Test	Approximate Test Depth (feet)	Description	Observed In-Situ Infiltration Rate (in/hr)	Factor of Safety[1]	Estimated Reliable/Factored Infiltration Rate[1] (in/hr)
HA-1	2.0	Silty Sand	9.90	2.0	4.9
HA-2	2.0	Silty Sand	0.72	2.0	0.36
HA-4	3.0	Silty Sandstone	1.14	2.0	0.57
HA-5	4.0	Silty Sandstone	6.33	2.0	3.2
HA-6	5.0	Silty Sandstone	1.11	2.0	0.55
HA-7	4.3	Sandy Clay	0.64	2.0	0.32
HA-10	4.2	Silty Sandstone	7.32	2.0	3.66

Notes:
in/hr = inches per hour
[1] Estimated reliable infiltration rate shall be the average measured infiltration rate/2 per Worksheet C.4-1 of the City of San Diego BMP Design Manual (2018).

We note that the in-situ infiltration rates presented in Table 1 represent the infiltration rates at the specific locations and depths indicated in the table. Variation in the infiltration rates can be expected at different depths and/or locations from those shown in the table.

Based on the City of San Diego BMP Design Manual (2018), infiltration rates greater than 0.05 inches per hour and less than 0.5 inches per hour may be suitable for partial infiltration. Infiltration rates of 0.5 inches per hour or greater per hour may be considered suitable for full infiltration design. Infiltration rates less than 0.05 inches per hour are considered a no infiltration condition. The City of San Diego BMP Design Manual (2018) provides additional discussion and considerations for applying an infiltration factor of safety.

Results of infiltration testing generally indicated reliable/factored infiltration rates varying from approximately 0.32 to 4.9 inches per hour. However, due to the geologic and geotechnical considerations, as evaluated in accordance with City of San Diego BMP Design Manual (2018), the site results in “No Infiltration Condition” (Appendix D). Based on the results of our infiltration testing and on the proximity to proposed and existing improvements, we recommend lining the bottom and sides of biofiltration basins or other infiltration devices with impermeable liners or other hydraulic restricted layers.

Other areas of the site not specifically tested may or may not accommodate infiltration of storm water. Additional infiltration testing would be needed in these other areas to evaluate whether infiltration in these areas/depths are feasible. Our services did not include an evaluation of the specific design of infiltration devices at the site or their potential impact on improvements at the site. Should specific devices be proposed, we can evaluate those upon request.

8 GEOLOGY AND SUBSURFACE CONDITIONS

Our findings regarding regional and site geology at the project location are provided in the following sections.

8.1 Regional Geologic Setting

The project area is situated in the coastal foothill section of the Peninsular Ranges Geomorphic Province. This geomorphic province encompasses an area that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin south to the southern tip of Baja California (Norris and Webb, 1990; Harden, 2004). The province varies in width from approximately 30 to 100 miles. In general, the province consists of rugged mountains underlain by Jurassic metavolcanic and metasedimentary rocks, and Cretaceous igneous rocks of the southern California batholith.

The Peninsular Ranges Province is traversed by a group of sub-parallel faults and fault zones trending roughly northwest. Several of these faults, which are shown on Figure 3, are considered active faults. The Elsinore, San Jacinto, and San Andreas faults are active fault systems located northeast of the project area and the Rose Canyon, Coronado Bank, San Diego Trough, and San Clemente faults are active faults located west of the project area. Major tectonic activity associated with these and other faults within this regional tectonic framework consists primarily of right-lateral, strike-slip movement. Further discussion of faulting relative to the site is provided in the Faulting and Seismicity section of this report.

8.2 Site Geology

Geologic units encountered during our field reconnaissance and subsurface exploration included fill and San Diego Formation. Based on our review of the referenced evaluations previously performed at the site, topsoil/colluvium and terrace deposits have also been encountered on the school campus. Generalized descriptions of these earth units are provided below. The geology of the site vicinity is shown on Figure 4. Additional descriptions are provided on the boring logs in Appendix A. Geologic cross sections are shown on Figure 5A through 5F.

8.2.1 Pavement Sections

Ten of our exploratory borings encountered pavement sections that consisted of asphalt concrete (AC) underlain by fill materials or the San Diego Formation. Some pavement sections also included base material underlying the AC. Table 2 summarizes the pavement sections as encountered in our borings. Some sections also included up to three overlays of AC pavement.

Table 2 – Encountered Pavement Sections

Boring	Approximate AC Thickness (inches)	Approximate Base Thickness (inches)
B-1	5	4
B-2	4	Not encountered
B-3	4	4
B-4	2	Not encountered
B-5	5	Not encountered
B-6	6	Not encountered
B-7	5	Not encountered
HA-3	8	Not encountered
HA-8	6	Not encountered
HA-9	4	Not encountered

8.2.2 Fill

Fill materials were encountered at the ground surface or underlying the pavements in borings B-2 through B-10, HA-1 through HA-9, and HA-11. The fill materials encountered in our borings extended to depths of up to 8 feet. As encountered, the fill materials generally consisted of light brown, brown, and yellowish brown, dry to wet, loose to dense, clayey and silty sand and silty gravel, and very stiff, sandy clay. Gravel, cobbles, and debris were encountered in the fill materials. Hand auger refusal was met within the fill materials in borings HA-1, HA-2, HA-7, HA-8, HA-9, and HA-11. Documentation regarding placement of these fills was not available for review.

8.2.3 Topsoil/Colluvium

While not encountered in our borings, relatively thin layers of topsoil/colluvium have been encountered at the site based on our review of the referenced evaluations previously performed at the site. These materials are described as brown, sandy clay and silty and clayey sand.

8.2.4 Terrace Deposits

While not encountered in our borings or mapped at the site, soils described as Pleistocene-age marine terrace deposits were encountered in the evaluation performed by Woodward-Gizienski (1973). These materials are described as various shades of brown, dense to very dense, silty sand with cobbles and layers of gravel. Layers of brown, hard, sandy clay were also encountered within the terrace deposits.

8.2.5 San Diego Formation

Materials of the Tertiary-aged San Diego Formation were encountered in our exploratory borings B-1 through B-10, HA-3 through HA-6, and HA-10, at the ground surface and underlying the pavements and fill and extending to the total depths explored. As encountered, these materials generally consisted of various shades of yellow, gray, and brown, dry to wet, weakly to moderately cemented, silty and clayey sandstone. Strongly cemented zones, gravel, and cobbles were also encountered in the San Diego Formation and hand auger refusal within the San Diego Formation occurred in four of our borings (HA-3, HA-4, HA-5, and HA-10).

8.3 Groundwater

Groundwater was not encountered at the time of our subsurface exploration in our borings that extended to a depth of up to approximately 41.5 feet. However, seepage was encountered in boring B-3 at a depth of approximately 5 feet. High moisture contents were also encountered within San Diego Formation in several borings. Static groundwater was not encountered on site in previous subsurface explorations performed as part of the referenced geotechnical evaluations. Based on data obtained from groundwater monitoring wells located approximately 600 feet from the southwestern corner of the school campus, groundwater in the project area is anticipated at an elevation of approximately 5 feet MSL, [i.e. at depths greater than 100 feet below the ground surface (CRA, 2015)]. Existing utility trench lines may act as conduits for perched water conditions and seepage may be anticipated. Seepage should also be anticipated in the existing landscaped areas. Fluctuations in the groundwater level and perched conditions may occur due to variations in ground surface topography, subsurface geologic conditions and structure, rainfall, irrigation, and other factors.

8.4 Flood Hazards

Based on our review of the Federal Emergency Management Agency Flood Insurance Rate Map ([FIRM], FEMA, 2012), the site and immediate surrounding areas are mapped as lying outside of 100- and 500-year flood zones. Accordingly, the potential for flooding of the site is considered low.

8.5 Landslides

Based on our review of referenced geologic maps, literature, topographic maps, and stereoscopic aerial photographs, no landslides or indications of deep-seated landsliding underlie the subject site (Tan, 1995). In addition, no indications of landsliding were observed during our site reconnaissance or subsurface exploration. As such, the potential for significant large-scale slope instability at the site is not a design consideration.

9 FAULTING AND SEISMICITY

Based on our review of the referenced geologic maps, geotechnical reports, stereoscopic aerial photographs, and our geologic field mapping, the subject site is not underlain by known active or potentially active faults (i.e., faults that exhibit evidence of ground displacement in the last 11,000 years and 2,000,000 years, respectively). Figure 3 shows the approximate site location relative to the major faults in the region. The subject site is not located within a State of California Earthquake Fault Zone (formerly known as Alquist-Priolo Special Studies Zone) (CGS, 2003; Hart and Bryant, 1997). However, an Earthquake Fault Zone is mapped along a portion of the south perimeter of the site, as shown in Figure 6. Active faults within this zone are mapped approximately 450 feet south of the campus and are considered part of the Downtown Graben, a trans-tensional zone of the Rose Canyon fault zone (Treiman, 2002). Furthermore, the site is within the City of San Diego's Downtown Special Fault Zone (Figure 7; City of San Diego, 2008). Potentially active faults, identified as the Florida Canyon Fault and the Texas Street Fault, are mapped approximately 1,000 and 5,000 feet east of the eastern perimeter of the site, respectively. Due to the presence of the project site within the Downtown Special Fault Zone, site-specific fault hazard evaluations will be performed for the proposed Building 700 and food kiosk buildings. The results of the fault hazard evaluations will be presented under separate cover.

In two previous fault evaluations performed at the school campus (Ninyo & Moore, 2008b and Geocon, 2001), evidence of faulting was not observed. These evaluations were performed prior to construction of the existing Building 1100 and Building 900. In a previous fault evaluation performed at several locations for the City College campus to the south (Rore, Inc., 2008),

evidence of faulting was observed in trenches excavated approximately 875 feet south of the San Diego High School campus.

Like the majority of southern California, the site is located in a seismically active area and the potential for strong ground motion is considered significant during the design life of the proposed structures. Based on our document review, the active Rose Canyon Fault is located less than one mile west of the project site. Table 3 lists selected principal known active faults that may affect the subject site, including the approximate fault-to-site distances, and the maximum moment magnitudes (Mmax) as published by the USGS (2018a).

Table 3 – Principal Active Faults

Fault	Approximate Fault-to-Site Distance miles (kilometers)	Maximum Moment Magnitude (Mmax)
Rose Canyon	0.9 (1.4)	6.9
Coronado Bank	13 (21)	7.4
Newport-Inglewood (Offshore)	34 (55)	7.0
Elsinore (Julian Segment)	41 (66)	7.4
Elsinore (Temecula Segment)	44 (70)	7.1
Earthquake Valley	46 (73)	6.8
Elsinore (Coyote Mountain)	51 (81)	6.9
Palos Verdes	59 (95)	7.3
San Jacinto (Coyote Creek Segment)	62 (100)	7.0
Elsinore (Glen Ivy Segment)	63 (101)	6.9
San Jacinto (Borrego Mountain Segment)	64 (104)	6.8
San Jacinto (Anza Segment)	65 (104)	7.3

In general, hazards associated with seismic activity include surface ground rupture, strong ground motion, liquefaction, and tsunamis. A brief description of these hazards and the potential for their occurrences on site are discussed below.

9.1 Surface Ground Rupture

As noted previously, site-specific fault hazard evaluations will be performed at the proposed Building 700 and food kiosk buildings and will be presented under separate cover. Ground surface rupture due to active faulting will be evaluated subsequent to the site-specific fault hazard evaluations. Lurching or cracking of the ground surface as a result of nearby seismic events is possible.

9.2 Strong Ground Motion

Based on our review of background information, data pertaining to the historical seismicity of the San Diego area are summarized in Table 4 below. This table presents historic earthquake data within a radius of approximately 62 miles (100 kilometers) of the site with a magnitude of 6.0 or greater, as obtained from the CGS Earthquake History and Catalogs website (CGS, 2018) and in-house proprietary data.

Table 4 – Historical Earthquakes that Affected the Site

Date	Magnitude (M)	Approximate Epicentral Distance miles (kilometers)
May 27, 1862	6.2	12 (19)
October 23, 1894	6.1	21 (34)
November 22, 1800	6.3	40 (64)

The 2016 California Building Code (CBC) specifies that the Risk-Targeted, Maximum Considered Earthquake (MCE_R) ground motion response accelerations be used to evaluate seismic loads for design of buildings and other structures. The MCE_R ground motion response accelerations are based on the spectral response accelerations for 5 percent damping in the direction of maximum horizontal response and incorporate a target risk for structural collapse equivalent to 1 percent in 50 years with deterministic limits for near-source effects. The horizontal peak ground acceleration (PGA) that corresponds to the MCE_R for the segments was calculated as 0.49g using the United States Geological Survey (USGS, 2018b) and Structural Engineers Association of California/ Office of Statewide Health Planning and Development (SEAOC/OSHPD, 2019) seismic design tool (web-based).

The 2016 CBC specifies that the potential for liquefaction and soil strength loss be evaluated, where applicable, for the Maximum Considered Earthquake Geometric Mean (MCE_G) peak ground acceleration with adjustment for site class effects in accordance with the American Society of Civil Engineers (ASCE) 7-10 Standard. The MCE_G peak ground acceleration is based on the geometric mean peak ground acceleration with a 2 percent probability of exceedance in 50 years. The MCE_G peak ground acceleration with adjustment for site class effects (PGA_M) was calculated as 0.55g using the USGS (2018b) and SEAOC/OSHPD (2019) seismic design tool that yielded a mapped MCE_G peak ground acceleration of 0.55g for the site and a site coefficient (F_{PGA}) of 1.00 for Site Class D.

9.3 Liquefaction

Liquefaction of cohesionless soils can be caused by strong vibratory motion due to earthquakes. Research and historical data indicate that loose granular soils and non-plastic silts that are saturated by a relatively shallow groundwater table are susceptible to liquefaction. Based on the relatively dense nature of the underlying San Diego Formation encountered in our borings and the anticipated depth to groundwater, it is our opinion that the potential for liquefaction to occur at the site is not a design consideration.

9.4 Tsunamis

Tsunamis are long wavelength seismic sea waves (long compared to the ocean depth) generated by sudden movements of the ocean bottom during submarine earthquakes, landslides, or volcanic activity. Seiches are similar oscillating waves on inland or enclosed bodies of water. Based on the location and elevation of the site and our review of available tsunami hazard maps (CEMA, 2009), the potential for a tsunami or seiche to affect the site is not a design consideration.

9.5 Geologic Hazard Map

Per the City of San Diego's Seismic Safety Study (2008), the school campus is located within the Downtown Special Fault Zone. A portion of the Seismic Safety Study map that includes the site and vicinity is presented in Figure 7. Due to the presence of the project site within the Downtown Special Fault Zone, site-specific fault hazard evaluations will be performed for the proposed Building 700 and food kiosk buildings. The results of the fault hazard evaluations will be presented under separate cover.

10 CONCLUSIONS

Based on our review of the referenced background data, the subsurface exploration, and geotechnical laboratory testing, it is our opinion that construction of the proposed project is feasible from a geotechnical standpoint provided the recommendations presented in this report are incorporated into the design and construction of the project. In general, the following conclusions were made:

- As encountered in our borings, the project site is generally underlain by fill and materials of the San Diego Formation. The existing fills are undocumented and not considered suitable for structural support in their current condition. The San Diego Formation encountered is considered suitable for structural support. Recommendations for remedial grading are presented in the following sections.

- Groundwater was not encountered at the time of our subsurface exploration in our borings that extended to a depth of up to approximately 41.5 feet. However, seepage was encountered in boring B-3 at a depth of approximately 5 feet. High moisture contents were also encountered within San Diego Formation in several borings. Perched water and/or seepage at the site should be anticipated. Fluctuations in the groundwater level and perched conditions may occur due to variations in ground surface topography, subsurface geologic conditions and structure, rainfall, irrigation, and other factors.

- The existing soils, as encountered in our borings, should be generally excavatable with heavy-duty earth moving equipment in good working condition. Additional efforts including heavy ripping should be anticipated in gravel and cobbles or when construction debris is encountered. Based on our borings and experience, gravel, cobbles, strongly cemented zones, and concretions should be anticipated within the San Diego Formation and Terrace deposits. Due to the presence of these materials, the contractor should anticipate encountering difficulties with performing excavations and drilling operations. Caving conditions should be anticipated in soils with low cohesion, gravel and cobble layers, or when seepage is encountered.

- On-site soils may be suitable for reuse as engineered fill, provided they meet the recommendations for fill materials as presented in this report. On-site excavations are anticipated to generate debris, gravel, cobbles, and oversized materials. Additional processing and handling of materials including screening and crushing should be anticipated.

- Based on our review of published geologic maps and aerial photographs, the subject site is not located within a State of California Earthquake Fault Zone. However, the site is located within the City of San Diego Downtown Special Studies Zone and site-specific fault hazard evaluations will be performed for the proposed Building 700 and food kiosk buildings.

- Based on our document and map review, the active Rose Canyon fault has been mapped within a mile of the school campus. Specifically, faults within the State of California Earthquake Fault Zone are mapped approximately 450 feet south of the campus. Accordingly, the potential for relatively strong seismic acceleration will need to be considered in the design of the proposed improvements.

- Preliminary field infiltration testing indicated factored infiltration rates of 0.36 to 4.9 inches per hour based on a planning/feasibility study factor of safety of 2.0. However, due to the geologic and geotechnical considerations, as evaluated in accordance with City of San Diego BMP Design Manual (2018), the site results in “No Infiltration Condition” (Appendix D).

- Results of our laboratory testing indicate that soils at the site possess a low to medium potential for expansion.

- Based on the results of our limited geotechnical laboratory testing presented in Appendix B, as compared to the Caltrans (2018) corrosion guidelines, and ACI 318, the on-site soils would be classified as corrosive.

11 RECOMMENDATIONS

The following recommendations are provided for the design and construction of the proposed project. These recommendations are based on our evaluation of the site geotechnical conditions and our assumptions regarding the planned development. Ninyo & Moore should be contacted for questions regarding the recommendations or guidelines presented herein.

11.1 Earthwork

In general, earthwork should be performed in accordance with the recommendations presented in this report. Ninyo & Moore should be contacted for questions regarding the recommendations or guidelines presented herein.

11.1.1 Pre-Construction Conference

We recommend that a pre-construction conference be held. The owner and/or their representative, the governing agencies' representatives, the civil engineer, Ninyo & Moore, and the contractor should be in attendance to discuss the work plan and project schedule and earthwork requirements.

11.1.2 Site Preparation

As noted previously, the existing Building 700 and shade structure at the site are proposed to be demolished. The demolition of the existing structures should also include removal of foundations, underground utilities, and other underground improvements/obstructions within the project area. Prior to performing excavations or other earthwork, the site should be cleared of existing fill soils, debris, vegetation, and loose or otherwise unsuitable soils. Obstructions that extend below the finished grade (such as tree stumps, roots, existing foundations, and underground utilities) should be removed and the resulting holes filled with compacted soil. Clearing and grubbing should extend to the outside of the proposed excavation and fill areas. The debris and unsuitable material generated during clearing and grubbing should be removed from areas to be graded and disposed of at a legal dumpsite away from the project area.

11.1.3 Remedial Grading for Building Pads and Retaining Walls

In order to provide suitable support for the new structures, we recommend that the existing undocumented fill soils and topsoil/colluvium within the limits of the building pads and retaining walls be over-excavated to competent formational materials and replaced with compacted, engineered fill. Based on the subsurface information disclosed by our

exploratory borings, the existing fill is anticipated to extend to depths of up to approximately 8 feet within the building footprints. However, the depth of removals may be deeper and should be evaluated in the field by Ninyo & Moore's representative based on the materials exposed. The lateral extent of these removals should be approximately 5 feet outside the building footprint, including foundations for attached overhangs, canopies, and other building appurtenances. As noted, the extent and depths of removals and overexcavations should be evaluated by Ninyo & Moore's representative in the field.

Subsequent to removal, the resulting surface should be scarified to a depth of approximately 8 inches, moisture conditioned, and recompacted to a relative compaction of 90 percent as evaluated by the ASTM International (ASTM) Test Method D 1557 prior to placing new fill. Once the resulting removal surface has been recompacted, the overexcavation should be backfilled with granular soils that possess a very low to low expansion potential (i.e., an expansion index [EI] less than 50). These materials should be placed and compacted in accordance with the Compacted Fill section of this report.

11.1.4 Treatment of Cut/Fill Transition

Based on the subsurface conditions at the site, cut/fill transitions may occur beneath proposed building locations. In order to mitigate the potential for differential settlement, we recommend that where a cut/fill transition line extends beneath a proposed building to be supported on formational materials, the cut portion of the pad should be undercut and the foundations should be extended to be supported on formational materials. The undercut should be 2 feet below the bottom of the planned slab elevation and replaced with compacted fill exhibiting a very low to low expansion potential (i.e., an expansion index [EI] of 50 or less). The undercut should be extended outward a distance of 5 feet beyond the limits of the structure.

We recommend that where a cut/fill transition line extends beneath a proposed building to be supported on compacted fill, the cut portion of the pad should be undercut one-third of the greatest fill depth or 3 feet below the bottom of the footing, whichever is greater. The undercut should be extended outward a distance of 5 feet beyond the limits of the structure. The resulting excavation should then be backfilled with granular soils with a very low to low expansion potential (i.e., an expansion index [EI] of 50 or less). These materials should be placed and compacted in accordance with the Compacted Fill section of this report.

11.1.5 Remedial Grading for Pavement and Flatwork

In the proposed pavement and flatwork areas, we recommend that the on-site soils be overexcavated to a depth of 1 foot below the subgrade elevation. The proposed overexcavations should extend outward horizontally 2 feet from the horizontal limits of the pavement or flatwork. The extent and depth of removals should be evaluated by Ninyo & Moore's representative in the field based on the material exposed. The resulting surface should be scarified 8 inches, moisture conditioned, and recompacted to a relative compaction of 90 percent as evaluated by ASTM D 1557. The overexcavation should then be filled with engineered fill. The engineered fill should be moisture conditioned to near optimum moisture content and compacted to a relative compaction of 90 percent as evaluated by ASTM D 1557. The upper 12 inches of subgrade soils beneath vehicular pavements should be placed at a relative compaction of 95 percent as evaluated by ASTM D 1557.

11.1.6 Excavation Characteristics

The existing soils, as encountered in our borings, should be generally excavatable with heavy-duty earth moving equipment in good working condition. Additional efforts including heavy ripping should be anticipated in gravel and cobbles or when construction debris is encountered. Based on our borings and experience, gravel, cobbles, strongly cemented zones, and concretions should be anticipated within the San Diego Formation and Terrace deposits. Due to the presence of these materials, the contractor should anticipate encountering difficulties with performing excavations and drilling operations. Caving conditions should be anticipated in soils with low cohesion, gravel and cobble layers, or when seepage is encountered. On-site excavations are anticipated to generate debris, gravel, cobbles, and oversized materials. Additional processing and handling of materials including screening and crushing should be anticipated.

11.1.7 Temporary Excavations

For temporary excavations, we recommend that the following Occupational Safety and Health Administration (OSHA) soil classifications be used:

Fill and Top Soil/Colluvium	*Type C*
San Diego Formation and Terrace deposits	*Type B*

Upon making the excavations, the soil classifications and excavation performance should be evaluated in the field by the geotechnical consultant in accordance with the OSHA regulations. Temporary excavations should be constructed in accordance with OSHA recommendations. For trenches or other excavations, OSHA requirements regarding personnel safety should be met using appropriate shoring (including trench boxes) or by laying back the slopes to no steeper than 1.5:1 (horizontal to vertical) in fill and topsoil/colluvium and 1:1 for San Diego Formation and Terrace deposits. Temporary excavations that encounter seepage may be shored or stabilized by placing sandbags or gravel along the base of the seepage zone. Excavations encountering seepage should be evaluated on a case-by-case basis. On-site safety of personnel is the responsibility of the contractor.

11.1.8 Shoring

Due to the depth of remedial grading, we anticipate that temporary shoring may be needed. Temporary shoring systems should be designed to resist the lateral loads generated from the earth materials present at the site.

For preliminary design of the shoring system, the magnitude and distribution of lateral earth pressures presented on Figure 8 for braced shoring and Figure 9 for cantilevered shoring should be used. The recommended design earth pressures are based on the assumptions that (a) the shoring system is constructed without raising the ground surface elevation behind the shoring, (b) that there are no surcharge loads, such as soil stockpiles, construction materials, or vehicular traffic, and (c) that no loads act above a 1 to 1 plane extending up and back from the base of the shoring system. For shoring subjected to the above-mentioned surcharge loads, the contractor should include the effect of these loads on lateral earth pressures acting on the shoring wall.

Settlement of the ground surface may occur behind the shoring wall during excavation. The amount of settlement depends on the type of shoring system, the quality of contractor's workmanship, and soil conditions. Settlement may cause distress to adjacent structures, if present. To reduce the potential for distress to adjacent structures, we recommend that the shoring system be designed to limit the ground settlement behind the shoring to ½ inch or less. Possible causes of settlement that should be addressed include vibration during installation of the sheet piling, excavation for construction, construction vibrations, dewatering, and removal of the support system. We recommend that the potential settlement distress be evaluated carefully by the contractor prior to construction.

The contractor should retain a qualified and experienced engineer to design the shoring system. The shoring parameters presented in this report are for preliminary design purposes and the contractor should evaluate the adequacy of these parameters and make appropriate modifications for their design. We recommend that the contractor take appropriate measures to protect workers. OSHA requirements pertaining to worker safety should be observed. We further recommend that the construction methods provided herein be carefully evaluated by a qualified specialty contractor prior to commencement of the construction.

11.1.9 Materials for Fill

On-site granular soils with an organic content of less than approximately 3 percent by volume (or 1 percent by weight), and that possess an expansion index (EI) less than 50, are suitable for reuse as engineered fill material. In general, fill material should not contain rocks or lumps over approximately 3 inches in diameter, and not more than approximately 30 percent larger than ¾ inch. Rocks or hard lumps larger than approximately 3 inches in diameter should be broken into smaller pieces or should be removed from the site. Soils with medium expansion potential were encountered in our borings. These soils need to be selectively graded, placed in non-structural areas, or removed from the site.

Imported fill material should generally be granular soils with a very low to low expansion potential (i.e., an expansion index [EI] of 50 or less). Additionally, import material should not be considered corrosive as defined by Caltrans (2018) corrosion guidelines and ACI 318. The contractor should be responsible for the uniformity of import material brought to the site. We recommend that materials proposed for use as import fill be evaluated from a contractor's stockpile rather than in-place materials. Materials for use as fill should be evaluated by Ninyo & Moore's representative prior to filling or importing.

To reduce the potential of importing contaminated materials to the site, prior to delivery, soil materials obtained from off-site sources should be sampled and tested in accordance with standard practice (Department of Toxic Substances Control [DTSC], 2001). Soils that exhibit a known risk to human health, the environment, or both, should not be imported to the site.

11.1.10 Compacted Fill

Prior to placement of compacted fill, the contractor should request an evaluation of the exposed ground surface by Ninyo & Moore. Unless otherwise recommended, the exposed ground surface should then be scarified to a depth of approximately 8 inches and watered or dried, as needed, to achieve moisture contents generally at or slightly above the

optimum moisture content. The scarified materials should then be compacted to a relative compaction of 90 percent as evaluated in accordance with the ASTM D 1557. The evaluation of compaction by the geotechnical consultant should not be considered to preclude any requirements for observation or approval by governing agencies. It is the contractor's responsibility to notify this office and the appropriate governing agency when project areas are ready for observation, and to provide reasonable time for that review.

Fill materials should be moisture conditioned to generally at or slightly above the laboratory optimum moisture content prior to placement. The optimum moisture content will vary with material type and other factors. Moisture conditioning of fill soils should be generally consistent within the soil mass.

Prior to placement of additional compacted fill material following a delay in the grading operations, the exposed surface of previously compacted fill should be prepared to receive fill. Preparation may include scarification, moisture conditioning, and recompaction.

Compacted fill should be placed in horizontal lifts of approximately 8 inches in loose thickness. Prior to compaction, each lift should be watered or dried as needed to achieve a moisture content generally at or slightly above the laboratory optimum, mixed, and then compacted by mechanical methods to a relative compaction of 90 percent as evaluated by ASTM D 1557. Successive lifts should be treated in a similar manner until the desired finished grades are achieved. The upper 12 inches of the subgrade materials beneath vehicular pavements should be compacted to a relative compaction of 95 percent relative density as evaluated by ASTM D 1557. Additionally, aggregate base materials underneath vehicular pavements should be compacted to a relative compaction of 95 percent relative density as evaluated by the current version of ASTM D 1557.

11.1.11 Pipe Bedding and Modulus of Soil Reaction (E')

We recommend that new pipelines (pipes), where constructed in open excavations, be supported on 6 or more inches of granular bedding material. Granular pipe bedding should be provided to distribute vertical loads around the pipe. Bedding material and compaction requirements should be in accordance with this report. Pipe bedding typically consists of graded aggregate with a coefficient of uniformity of three or more.

The modulus of soil reaction (E') is used to characterize the stiffness of soil backfill placed at the sides of buried flexible pipes for the purpose of evaluating deflection caused by the weight of the backfill over the pipe (Hartley and Duncan, 1987). A soil reaction modulus of

1,000 pounds per square inch (psi) may be used for an excavation depth of up to approximately 5 feet when backfilled with granular soil compacted to a relative compaction of 90 percent as evaluated by the ASTM D 1557. A soil reaction modulus of 1,400 psi may be used for trenches deeper than 5 feet.

11.1.12 Pipe Zone Backfill

The pipe zone backfill extends from the top of the pipe bedding material and continues to extend to 1 foot or more above the top of the pipe in accordance with the recent edition of the Standard Specifications for Public Works Construction ("Greenbook"). Pipe zone backfill should have a Sand Equivalent (SE) of 30 or more, and be placed around the sides and top of the pipe. Special care should be taken not to allow voids beneath and around the pipe. Compaction of the pipe zone backfill should proceed up both sides of the pipe.

It has been our experience that the voids within a crushed rock material are sufficiently large to allow fines to migrate into the voids, thereby creating the potential for sinkholes and depressions to develop at the ground surface. If open-graded gravel is utilized as pipe zone backfill, this material should be separated from the adjacent trench sidewalls and overlying trench backfill with a geosynthetic filter fabric.

11.1.13 Utility Trench Zone Backfill

Utility trench zone backfill material should be generally free of trash, debris, roots, vegetation, or deleterious materials. Trench zone backfill should generally be free of rocks or hard lumps of material in excess of 3 inches in diameter. Rocks or hard lumps larger than about 3 inches in diameter should be broken into smaller pieces or should be removed from the site. Oversize materials should be separated from material to be used as trench backfill. Moisture conditioning (including drying and/or mixing) of existing on-site materials is anticipated if reused as trench backfill.

11.1.14 Thrust Blocks

Thrust restraint for buried pipelines may be achieved by transferring the thrust force to the soil outside the pipe through a thrust block. Thrust blocks may be designed using the magnitude and distribution of passive lateral earth pressures presented on Figure 10. Thrust blocks should be backfilled with granular backfill material and compacted following the recommendations presented in this report.

11.1.15 Slopes

Based on our understanding, permanent fill or cut slopes are not currently planned for the project. Permanent fill or cut slopes, if planned, should not be constructed steeper than 2:1 (horizontal: Vertical) unless otherwise recommended by Ninyo & Moore and approved by the regulating agencies. Compaction of the face of fill slopes should be performed by backrolling at intervals of 4 feet or less in vertical slope height or as dictated by the capability of the available equipment, whichever is less. Fill slopes should be backrolled utilizing a conventional sheepsfoot-type roller. Care should be taken in maintaining the desired moisture conditions and/or reestablishing them as needed, prior to backrolling. The placement, moisture conditioning, and compaction of fill slope materials should be done in accordance with the recommendations presented in the Compacted Fill section. If excavations for cut slopes expose loose, cohesionless, or otherwise unsuitable materials, overexcavation of the unsuitable material and replacement with a compacted stabilization fill should be considered. If large fill and cut slopes are planned, we should be consulted for further evaluation and recommendations. Slope construction should be observed by Ninyo & Moore during construction.

Site runoff should not be permitted to flow over the tops of slopes. Positive drainage should be established away from the slopes. This may be accomplished by incorporating brow ditches placed at the top of the slopes to divert surface runoff away from slope faces where drainage devices are not otherwise available. The project plans and specifications should contain design features and construction requirements to reduce the potential for erosion of the on-site soils both during and after construction.

11.2 Seismic Design Parameters

Design of the proposed improvements should be performed in accordance with the requirements of governing jurisdictions and applicable building codes. Table 5 presents the seismic design parameters for the site in accordance with the CBC (2016) guidelines and adjusted MCE spectral response acceleration parameters (USGS, 2018b and SEAOC/OSPHD, 2019).

Table 5 – 2016 California Building Code Seismic Design Criteria

Seismic Design Factors	Values
Site Class	D
Site Coefficient, Fa	1.013
Site Coefficient, Fv	1.531
Mapped Spectral Acceleration at 0.2-second Period, Ss	1.217
Mapped Spectral Acceleration at 1.0-second Period, S1	0.469g

Table 5 – 2016 California Building Code Seismic Design Criteria	
Seismic Design Factors	**Values**
Spectral Acceleration at 0.2-second Period Adjusted for Site Class, SMS	1.233g
Spectral Acceleration at 1.0-second Period Adjusted for Site Class, SM1	0.718g
Design Spectral Response Acceleration at 0.2-second Period, SDS	0.822g
Design Spectral Response Acceleration at 1.0-second Period, SD1	0.479g

11.3 Foundations

Based on our understanding that the proposed buildings will be one-to two-stories and of wood-frame, steel-frame, and/or masonry block construction, we are providing the following recommendations. The proposed structures may be supported on shallow, continuous and/or spread footings bearing on compacted fill or competent formational materials. Foundations should be designed in accordance with structural considerations and the following recommendations. In addition, requirements of the appropriate governing jurisdictions and applicable building codes should be considered in the design of the structures.

11.3.1 Bearing Capacity

As noted, shallow, spread, or continuous footings, should be supported on compacted fill or competent formational materials. Additionally, to mitigate the potential for differential settlement, the whole foundation system for any single structure should be supported on either compacted fill or competent formational materials, but not both. The footings may be designed using a net allowable bearing capacity of 3,000 pounds per square foot (psf). The allowable bearing capacity may be increased by 250 psf for each additional foot of width or depth up to 4,000 psf. Additionally, these allowable bearing capacities may be increased by one-third when considering loads of short duration such as wind or seismic forces.

We recommend that shallow foundations for the new one-story and two-story buildings be founded 18 inches and 24 inches below the lowest adjacent grade, respectively. Continuous footings should have a width of 18 inches and spread footings should be 24 inches in width. The footings should be reinforced in accordance with the recommendations of the project structural engineer.

For proposed buildings to be supported on formational materials, portions of the building foundations may need to be deepened due to the topography of the site or fill thickness. As an alternative method to stepping down and deepening the footings, the deepened portions of the foundation excavations may be backfilled with controlled low-strength material (CLSM)

to the bottom elevation of the concrete footing. For this alternative, footings may bear on a controlled low strength material (CLSM) backfill with a compressive strength of 150 pounds per square inch (psi) according to "Greenbook," Section 201-6 specifications. CLSM backfill should extend down to competent formational materials.

11.3.2 Lateral Resistance

For resistance of footings to lateral loads, bearing either on compacted fill or competent formational materials, we recommend an allowable passive pressure of 350 psf per foot of depth be used with a value of up to 3,500 psf. This value assumes that the ground is horizontal for a distance of 10 feet, or three times the height generating the passive pressure, whichever is more. We recommend that the upper 1 foot of soil not protected by pavement or a concrete slab be neglected when calculating passive resistance.

For frictional resistance to lateral loads, we recommend a coefficient of friction of 0.35 be used between soil and concrete. The allowable lateral resistance can be taken as the sum of the frictional resistance and passive resistance provided the passive resistance does not exceed one-half of the total allowable resistance. The passive resistance values may be increased by one-third when considering loads of short duration such as wind or seismic forces.

11.3.3 Static Settlement

We estimate that the proposed structures, designed and constructed as recommended herein, will undergo total settlement on the order of 1 inch. Differential settlement on the order of ½-inch over a horizontal span of 40 feet should be expected.

11.3.4 Canopy/Shade Structure Foundations

If proposed, canopy/shade structures may be supported on CIDH piles. Canopy/shade structures typically impose relatively light axial loads on foundations. Although we anticipate that pile dimensions will be generally governed by the lateral load demand, we recommend that drilled canopy/shade structure foundations have a diameter of 24 inches or more. The pile dimensions (i.e., diameter and embedment) should be evaluated by the project structural engineer.

Drilled pile excavations may be difficult to perform due to the presence of gravel, cobbles, construction debris, concretions, and cemented zones. Temporary casing may be needed if seepage or caving conditions are encountered. The drilled pile construction should be observed by Ninyo & Moore during construction to evaluate if the earth materials encountered are

consistent with the design assumptions and the piles have been extended to the design depths. The drilled holes should be cleaned of loose soil and gravel. It is the contractor's responsibility to (a) take appropriate measures for maintaining the integrity of the drilled holes, (b) see that the holes are cleaned and straight, and (c) see that sloughed loose soil is removed from the bottom of the hole prior to the placement of concrete. Drilled piles should be checked for alignment and plumbness during installation. The amount of acceptable misalignment of a pile is approximately 3 inches from the plan location. It is usually acceptable for a pile to be out of plumb by 1 percent of the depth of the pile. The center-to-center spacing of piles should be no less than three times the nominal diameter of the pile.

For resistance of shade structure footings to lateral loads, we recommend an allowable passive pressure of 350 psf per foot of depth be used with a value of up to 3,500 psf. This value assumes that the shade structures are designed to tolerate ½ inch of deflection at the surface and that the ground is horizontal for a distance of 10 feet, or three times the height generating the passive pressure, whichever is more. We recommend that the upper 1 foot of soil not protected by pavement or a concrete slab be neglected when calculating passive resistance.

For frictional resistance to lateral loads, we recommend a coefficient of friction of 0.35 be used between soil and concrete. The allowable lateral resistance can be taken as the sum of the frictional resistance and passive resistance provided the passive resistance does not exceed one-half of the total allowable resistance. The passive resistance values may be increased by one-third when considering loads of short duration such as wind or seismic forces.

11.4 Retaining Walls

As noted, retaining walls are planned near proposed Building 700. Retaining wall foundations should be 18 inches or more below the finished subgrade elevation and should have a width of 18 inches or more. The bearing capacity, lateral resistance, and static settlement recommendations for shallow foundations provided in the previous sections are also applicable for retaining walls. For the design of a yielding retaining wall that is not restrained against movement by rigid corners or structural connections, preliminary lateral pressures are presented on Figure 11. For yielding retaining wall backfilled with granular compacted soil, the movement of top of wall (deflection) to generate active earth pressure is assumed to be 0.001 times the wall height. Restrained walls (non-yielding) may be designed for preliminary lateral pressures presented on Figure 12. These pressures assume select backfill materials and free draining conditions. Measures should be taken to reduce the potential for build-up of moisture behind the retaining walls. A drain should be provided behind the retaining wall as shown on Figure 13. The

drain should be connected to an appropriate outlet. If additional retaining walls are planned at other locations within the campus, we should be consulted. The recommendations presented herein may need to be revised or modified, accordingly.

11.5 Interior Slabs-on-Grade

We recommend that conventional, interior concrete slab-on-grade floors underlain by compacted fill materials of generally very low to low expansion potential be 5 inches in thickness and be reinforced with No. 3 reinforcing bars spaced 18 inches on center each way. The reinforcing bars should be placed near the middle of the slab. As a means to help reduce shrinkage cracks, we recommend that the slabs be provided with expansion joints at intervals of approximately 12 feet each way. The slab reinforcement and expansion joint spacing should be designed by the project structural engineer.

If moisture sensitive floor coverings are to be used, we recommend that slabs be underlain by a vapor retarder and capillary break system consisting of a polyethylene vapor retarder (with a thickness of 10 mil or more) membrane placed over 4 inches of medium to coarse, clean sand or pea gravel. As an alternative, the slab underlayment may consist of a 15-mil Stego Wrap vapor barrier (or equivalent) placed over 4 inches of crushed gravel. The steel reinforcements for the floor slabs shall be placed on the vapor retarder using chairs, as appropriate.

11.6 Concrete Flatwork

Exterior concrete flatwork should be 4 inches in thickness and should be reinforced with No. 3 reinforcing bars placed at 24 inches on-center both ways. A vapor retarder is not needed for exterior flatwork. To reduce the potential manifestation of distress to exterior concrete flatwork due to movement of the underlying soil, we recommend that such flatwork be installed with crack-control joints at appropriate spacing as designed by the structural engineer. Exterior slabs should be underlain by 4 inches of clean sand. The subgrade soils should be scarified to a depth of 8 inches, moisture conditioned to generally above the laboratory optimum moisture content, and compacted to a relative compaction of 90 percent as evaluated by ASTM D 1557. Positive drainage should be established and maintained adjacent to flatwork.

11.7 Soil Corrosivity

Laboratory testing was performed on representative samples of near-surface soil to evaluate soil pH, electrical resistivity, water-soluble chloride content, and water-soluble sulfate content. The soil pH and electrical resistivity tests were performed in general accordance with California

Test Method (CT) 643. The chloride content tests were performed in general accordance with CT 422. Sulfate testing was performed in general accordance with CT 417.

The results of the corrosivity testing indicated electrical resistivity of 760 and 2,600 ohm-centimeters (ohm-cm), soil pH of 6.1 and 8.1, chloride content of 105 and 435 parts per million (ppm), and sulfate contents of 0.007 and 0.100 percent (i.e., 70 and 1,000 ppm). A comparison with the Caltrans corrosion (2018) criteria and ACI 318 indicates that the on-site soils would be classified as corrosive. Caltrans (2018) defines a corrosive site as having earth materials with chloride concentration of 500 ppm or greater, sulfates concentration of 0.15 percent or greater (i.e., 1,500 ppm or greater), a pH of 5.5 or less, and/or an electrical resistivity of 1,100 ohm-centimeters or less.

11.8 Concrete

Concrete in contact with soil or water that contains high concentrations of water-soluble sulfates can be subject to premature chemical and/or physical deterioration. Soil samples tested during this evaluation indicated water-soluble sulfate contents of 0.007 and 0.100 percent (i.e., 70 and 1,000 ppm). Based on the ACI 318 criteria, the potential for sulfate attack is considered negligible for water-soluble sulfate contents in soil ranging from 0 to 0.10 percent by weight (0 to 1,000 ppm), indicating that soils underlying the site may be considered to have a negligible potential for sulfate attack. However, due to the potential for variability of on-site soils, we recommend that Type II/V cement be used for concrete in contact with soil with a water-cement ratio no higher than 0.45 by weight for the project.

11.9 Drainage

Roof, pad, and slope drainage should be conveyed such that runoff water is diverted away from slopes and structures to suitable discharge areas by nonerodible devices (e.g., gutters, downspouts, concrete swales, etc.). Positive drainage adjacent to structures should be established and maintained. Positive drainage may be accomplished by providing drainage away from the foundations of the structure at a gradient of 5 percent or steeper for a distance of 10 feet or more outside the building perimeter, or 2 percent or steeper for a distance of 10 feet or more outside the building perimeter if paved. Drainage should be further maintained by a graded swale leading to an appropriate outlet, in accordance with the recommendations of the project civil engineer and/or landscape architect.

Surface drainage on the site should be provided so that water is not permitted to pond. A gradient of 2 percent or steeper should be maintained over the pad area and drainage patterns should be established to divert and remove water from the site to appropriate outlets.

Care should be taken by the contractor during final grading to preserve any berms, drainage terraces, interceptor swales or other drainage devices of a permanent nature on or adjacent to the property. Drainage patterns established at the time of final grading should be maintained for the life of the project. The property owner and the maintenance personnel should be made aware that altering drainage patterns might be detrimental to slope stability and foundation performance.

11.10 Preliminary Pavement Design

The results of our laboratory testing indicated an R-value of 46 and 49. Due to the potential for variability of soils, we have used an R-value of 30 for preliminary design of site pavements. Traffic Indices (TI) of 5, 6, and 7 are assumed. In accordance with the City of San Diego Fire and Hazard Prevention Services Policy A-00-9, we have included a TI of 9.5 for fire lanes at the project site. Actual pavement recommendations should be based on R-value tests performed on bulk samples of the soils that are exposed at the finished subgrade elevations across the site at the completion of the earthwork operations.

Table 6 – Recommended Preliminary Flexible Pavement Sections

Traffic Index (Pavement Usage)	Design R-Value	Asphalt Concrete (in)	Class 2 or Crushed Aggregate Base (in)
5 (Parking Stalls)	30	3.0	6.0
6 (Light Traffic)	30	3.5	8.0
7 (Moderate Traffic)	30	4.5	9.0
9.5 (Fire Lanes)	30	6.5	13.0

We recommend that the upper 12 inches of the subgrade be compacted to 95 percent of its Proctor density as evaluated by ASTM D 1557. The aggregate base materials should be compacted to 95 percent of its Proctor density as evaluated by ASTM D 1557. Additionally, the AC materials should be compacted to 95 percent of the materials Hveem density. If traffic loads are different from those assumed, the pavement design should be re-evaluated.

We suggest that consideration be given to using Portland cement concrete (PCC) pavements in areas where dumpsters will be stored and where refuse trucks will stop and load. Experience indicates that refuse truck traffic can significantly shorten the useful life of asphalt concrete sections. We recommend that in these areas, 8 inches of 600 psi flexural strength Portland cement concrete reinforced with No. 3 bars, 18 inches on center, be placed over 8 inches of Class 2 or crushed aggregate base compacted to a relative compaction of 95 percent, placed over 1 or more feet of very low to low expansive fill materials compacted to the recommendations presented herein. The above section may also be used for fire lane PCC pavements.

12 PLAN REVIEW AND CONSTRUCTION OBSERVATION

The conclusions and recommendations presented in this report are based on analysis of observed conditions in widely spaced exploratory borings. If conditions are found to vary from those described in this report, Ninyo & Moore should be notified, and additional recommendations will be provided upon request. Ninyo & Moore should review the final project drawings and specifications prior to the commencement of construction. Ninyo & Moore should perform the needed observation and testing services during construction operations.

The recommendations provided in this report are based on the assumption that Ninyo & Moore will provide geotechnical observation and testing services during construction. In the event that it is decided not to utilize the services of Ninyo & Moore during construction, we request that the selected consultant provide the client and Ninyo & Moore with a Division of The State Architect (DSA) 109 form indicating that they fully understand Ninyo & Moore's recommendations, and that they are in full agreement with the design parameters and recommendations contained in this report. Construction of proposed improvements should be performed by qualified subcontractors utilizing appropriate techniques and construction materials.

13 LIMITATIONS

The field evaluation, laboratory testing, and geotechnical analyses presented in this geotechnical report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be encountered during construction. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface evaluation will be performed upon request. Please also note that our evaluation was limited to assessment of

the geotechnical aspects of the project, and did not include evaluation of structural issues, environmental concerns, or the presence of hazardous materials.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document.

This report is intended for design purposes only. It does not provide sufficient data to prepare an accurate bid by contractors. It is suggested that the bidders and their geotechnical consultant perform an independent evaluation of the subsurface conditions in the project areas. The independent evaluations may include, but not be limited to, review of other geotechnical reports prepared for the adjacent areas, site reconnaissance, and additional exploration and laboratory testing.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions. If geotechnical conditions different from those described in this report are encountered, our office should be notified and additional recommendations, if warranted, will be provided upon request. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

14 REFERENCES

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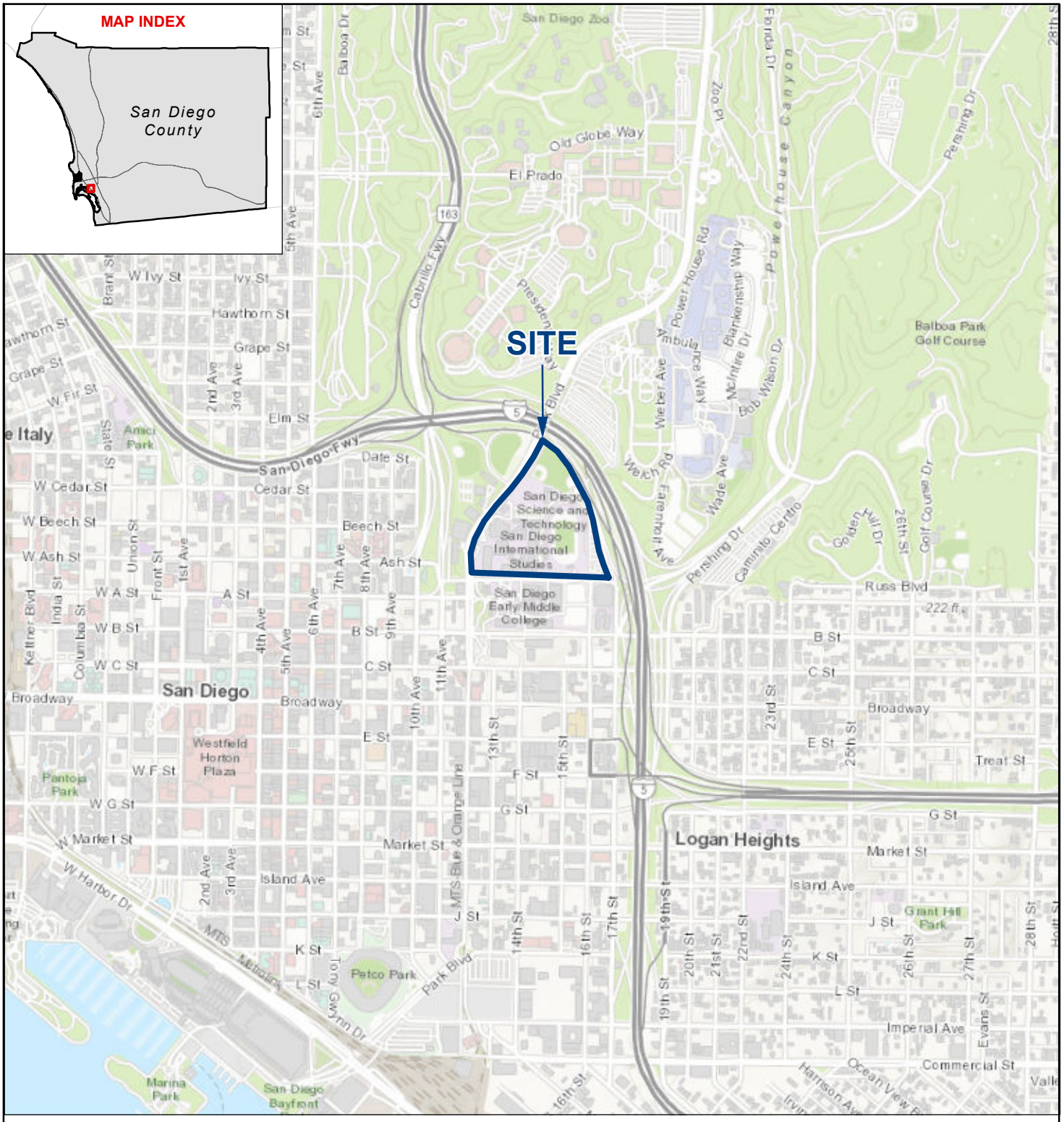
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FIGURES



NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCE: ESRI WORLD TOPO, 2017

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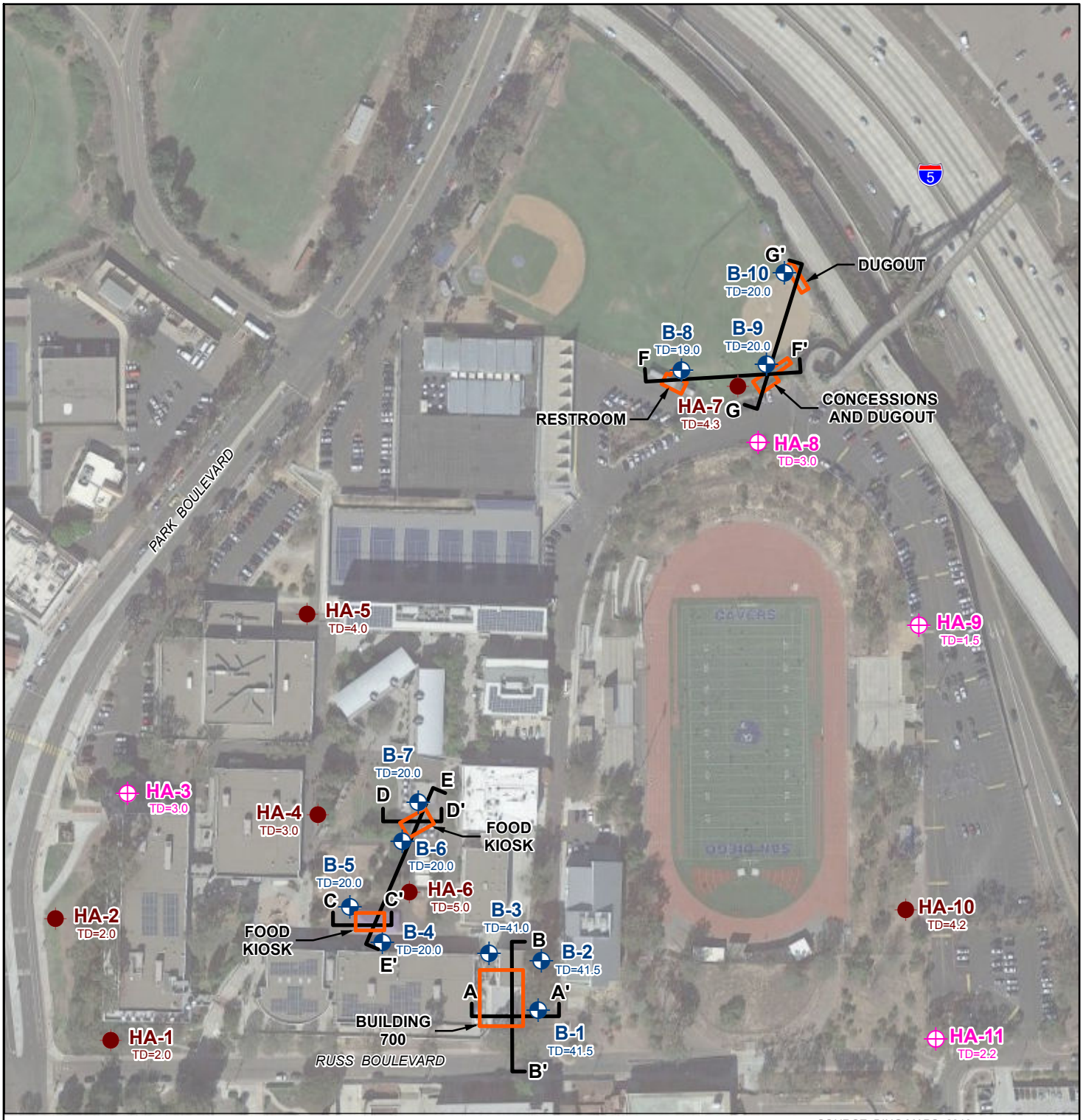
FIGURE 1

SITE LOCATION

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598002 | 1/19

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LEGEND

- PROPOSED STRUCTURES
- B-10 TD=20.0 — BORING, TD=TOTAL DEPTH IN FEET
- HA-10 TD=4.2 — HAND AUGER/INFILTRATION TEST, TD=TOTAL DEPTH IN FEET
- HA-11 TD=2.2 — HAND AUGER, TD=TOTAL DEPTH IN FEET
- E E' — GEOLOGIC CROSS SECTION

SOURCE: BING MAPS, 2018.
ARCHITECTS MOSHER DREW, 2018.

N

FEET
0 200 400

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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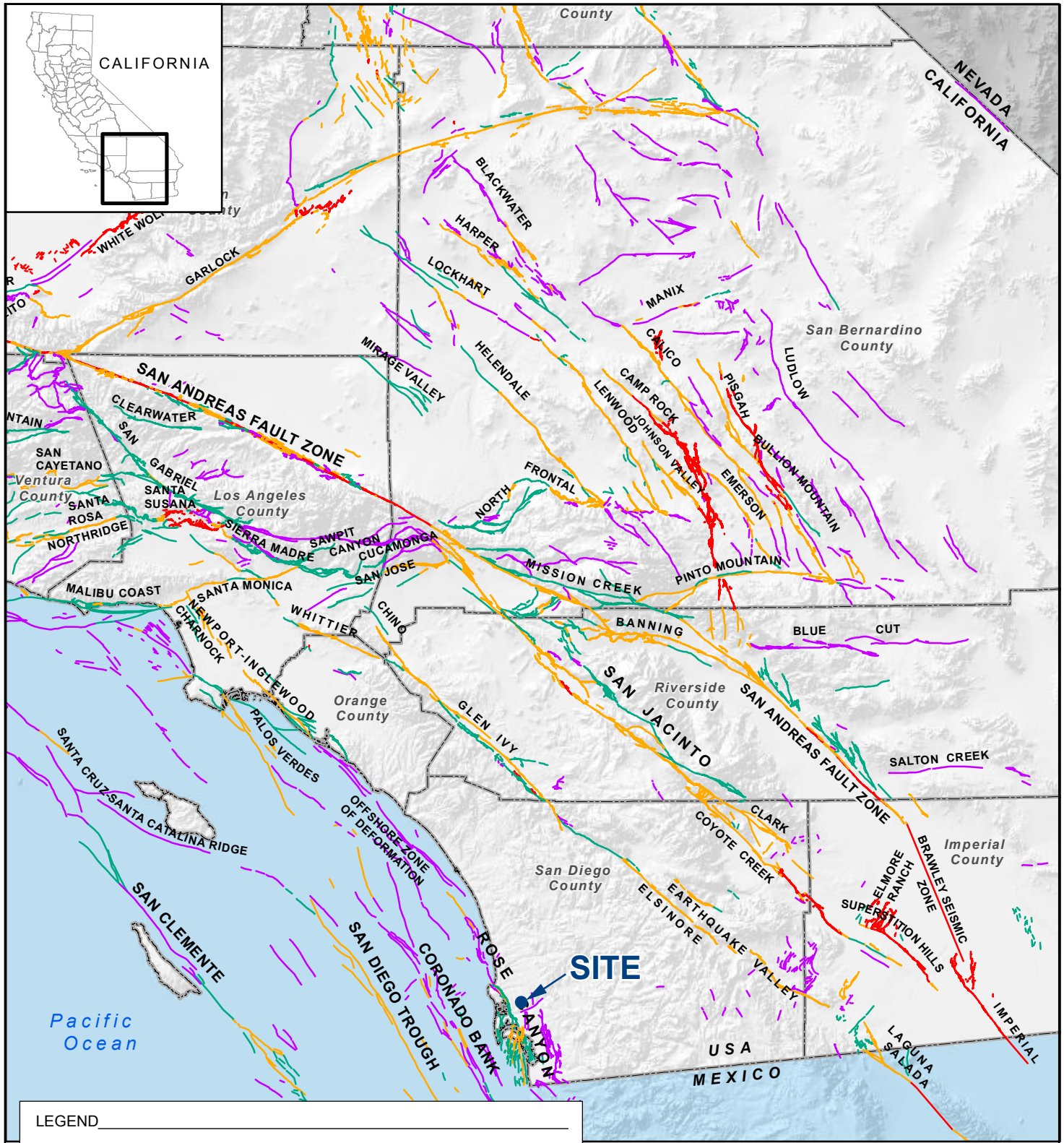
FIGURE 2

BORING LOCATIONS

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

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SOURCE: U.S. GEOLOGICAL SURVEY AND CALIFORNIA GEOLOGICAL SURVEY, 2006, QUATERNARY FAULT AND FOLD DATABASE FOR THE UNITED STATES.

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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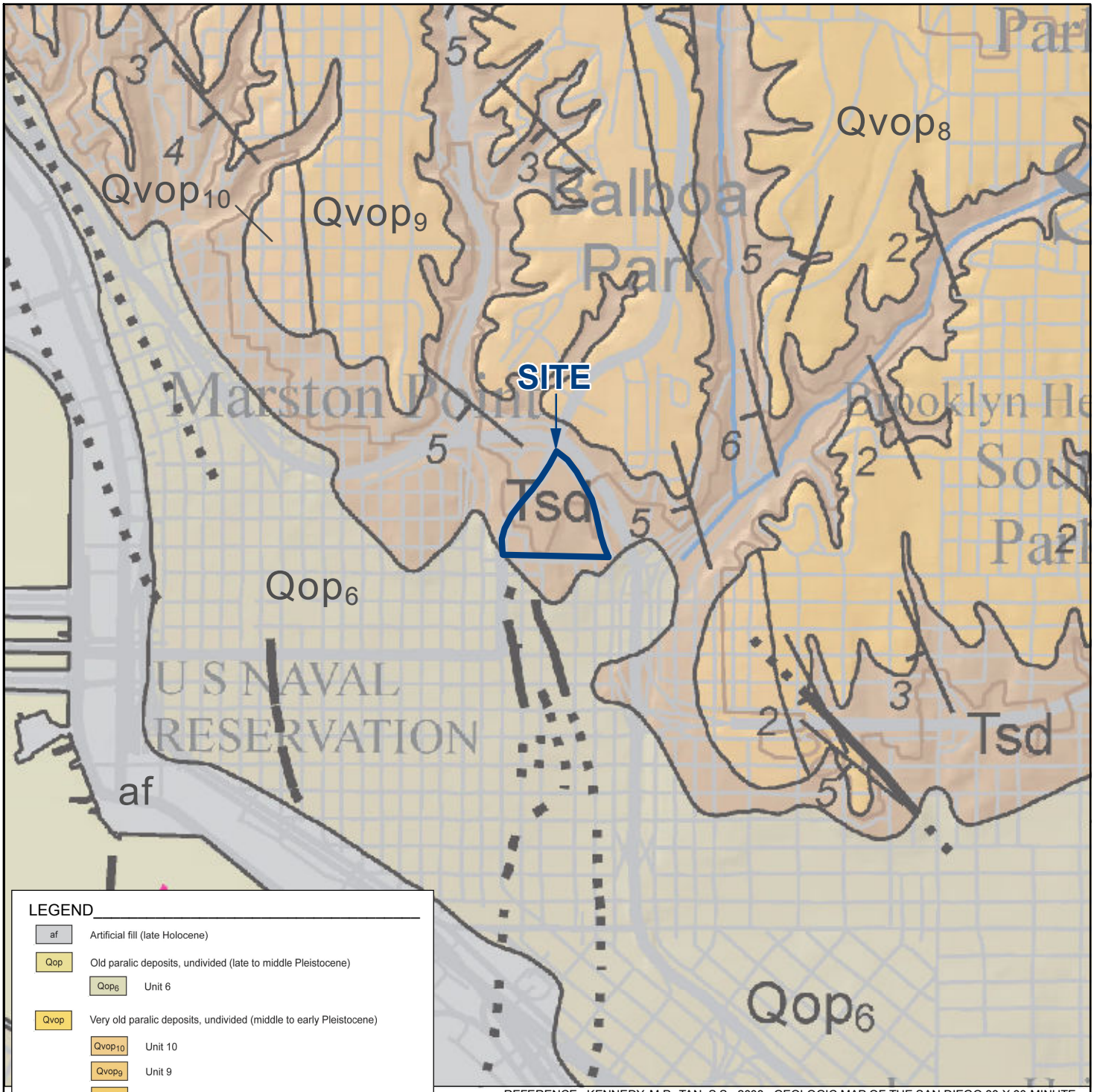
FIGURE 3

FAULT LOCATIONS

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

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REFERENCE: KENNEDY, M.P., TAN, S.S., 2008, GEOLOGIC MAP OF THE SAN DIEGO 30 X 60-MINUTE QUADRANGLE, CALIFORNIA

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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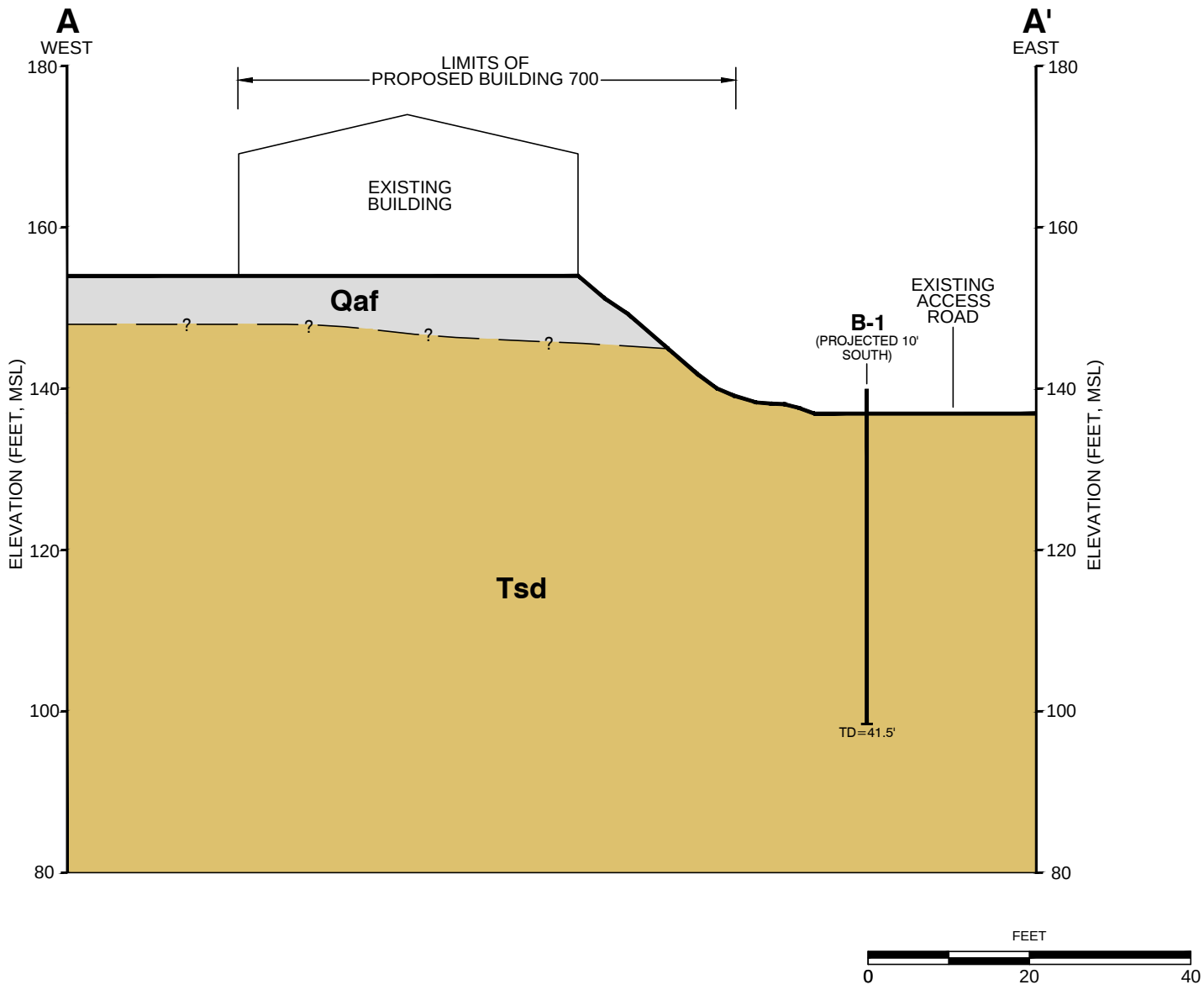
FIGURE 4

GEOLOGY

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

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LEGEND

- **B-1** (TD=41.5') — BORING, TD=TOTAL DEPTH IN FEET
- **Qaf** — FILL
- **Tsd** — SAN DIEGO FORMATION
- —— ? —— — GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN

5A 108598002 CS A-A'.DWG AOB

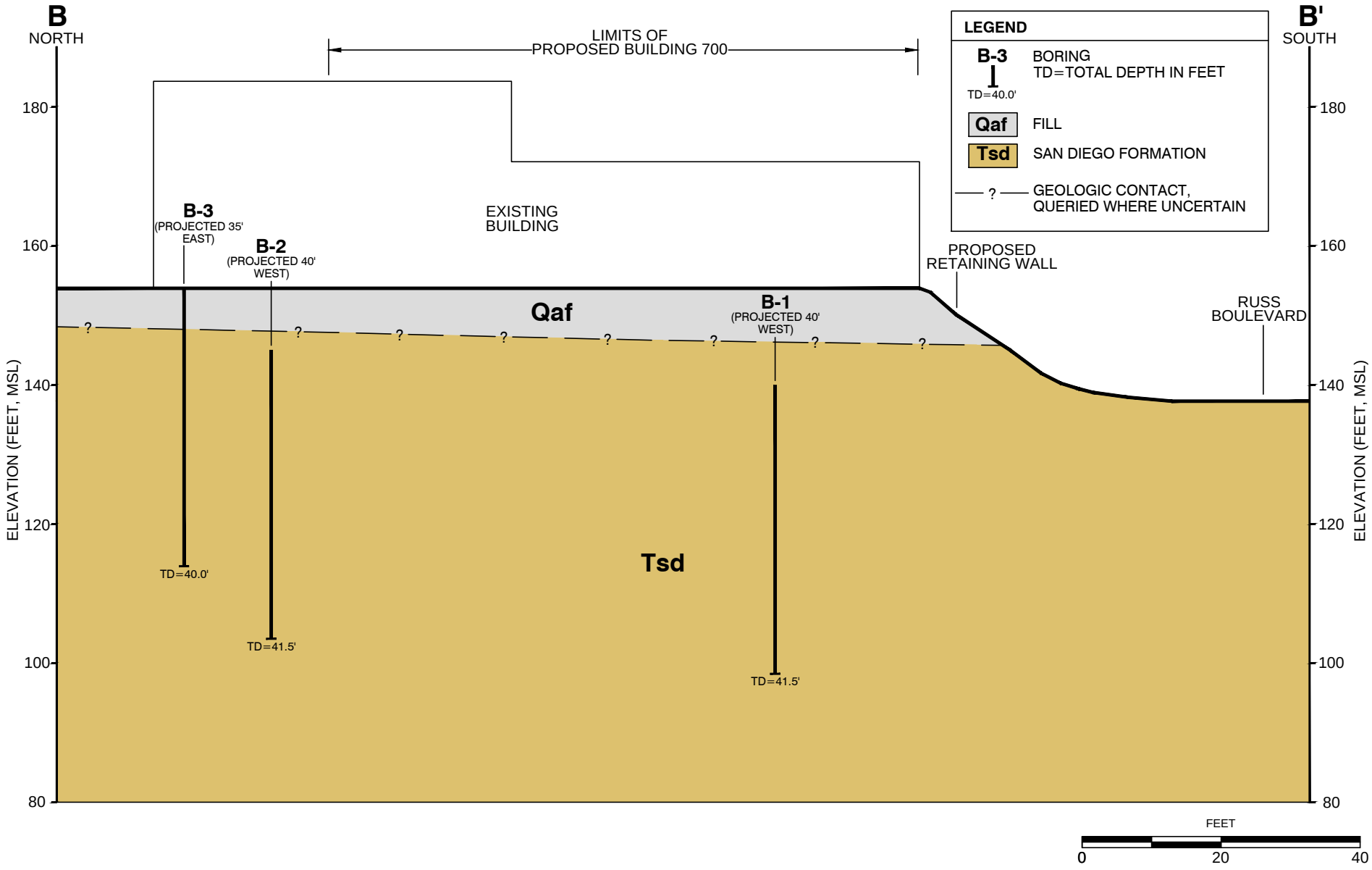
FIGURE 5A

GEOLOGIC CROSS SECTION A-A'

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

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5B 108598002 CS B-B'.DWG AOB

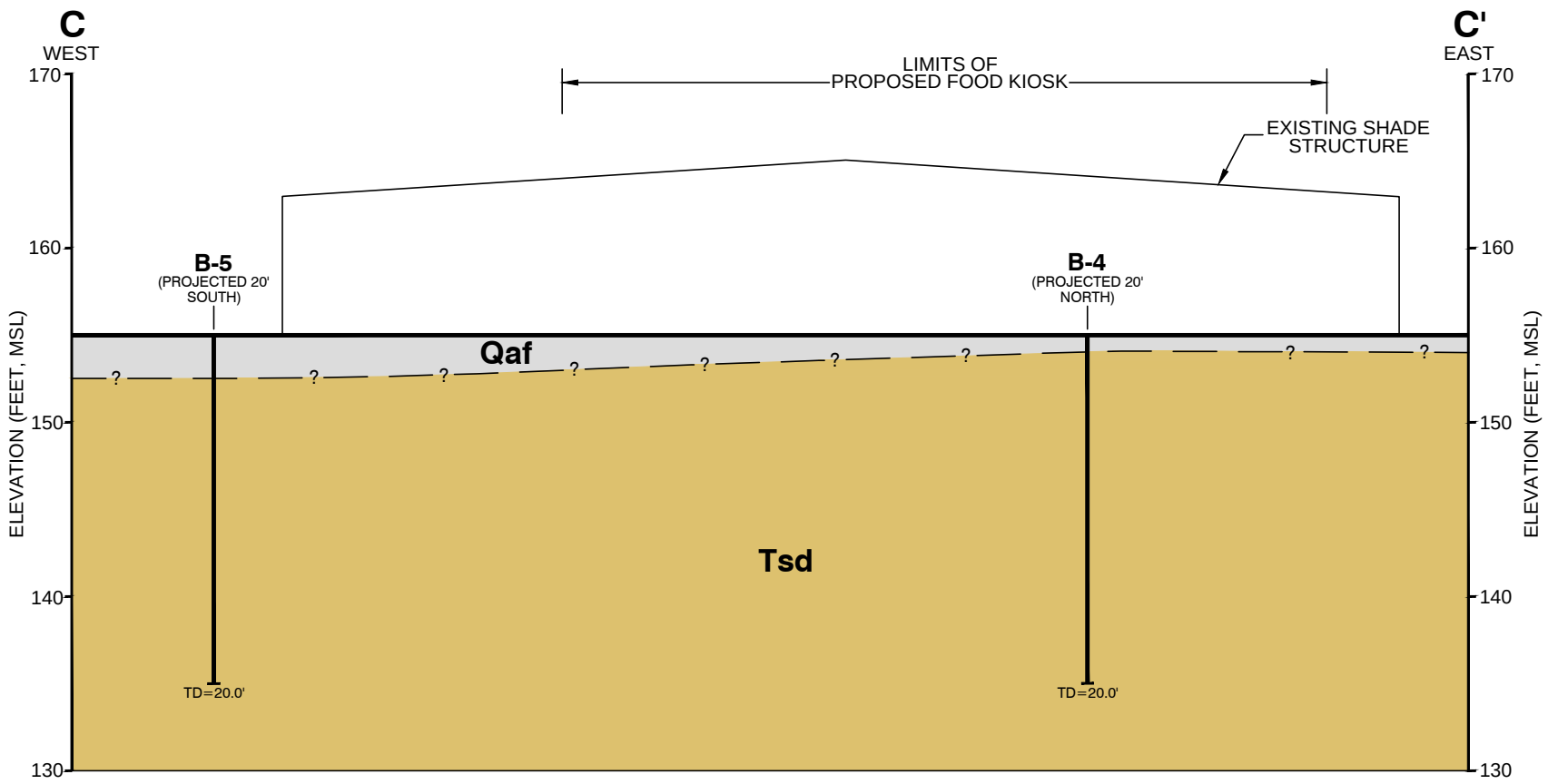
FIGURE 5B

GEOLOGIC CROSS SECTION B-B'

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

Ninyo & Moore
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LEGEND

B-4 (TD=20.0')	BORING TD=TOTAL DEPTH IN FEET
Qaf	FILL
Tsd	SAN DIEGO FORMATION
—— ? ——	GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN

FEET
0 10 20

5C 108598002 CS C-C'.DWG AOB

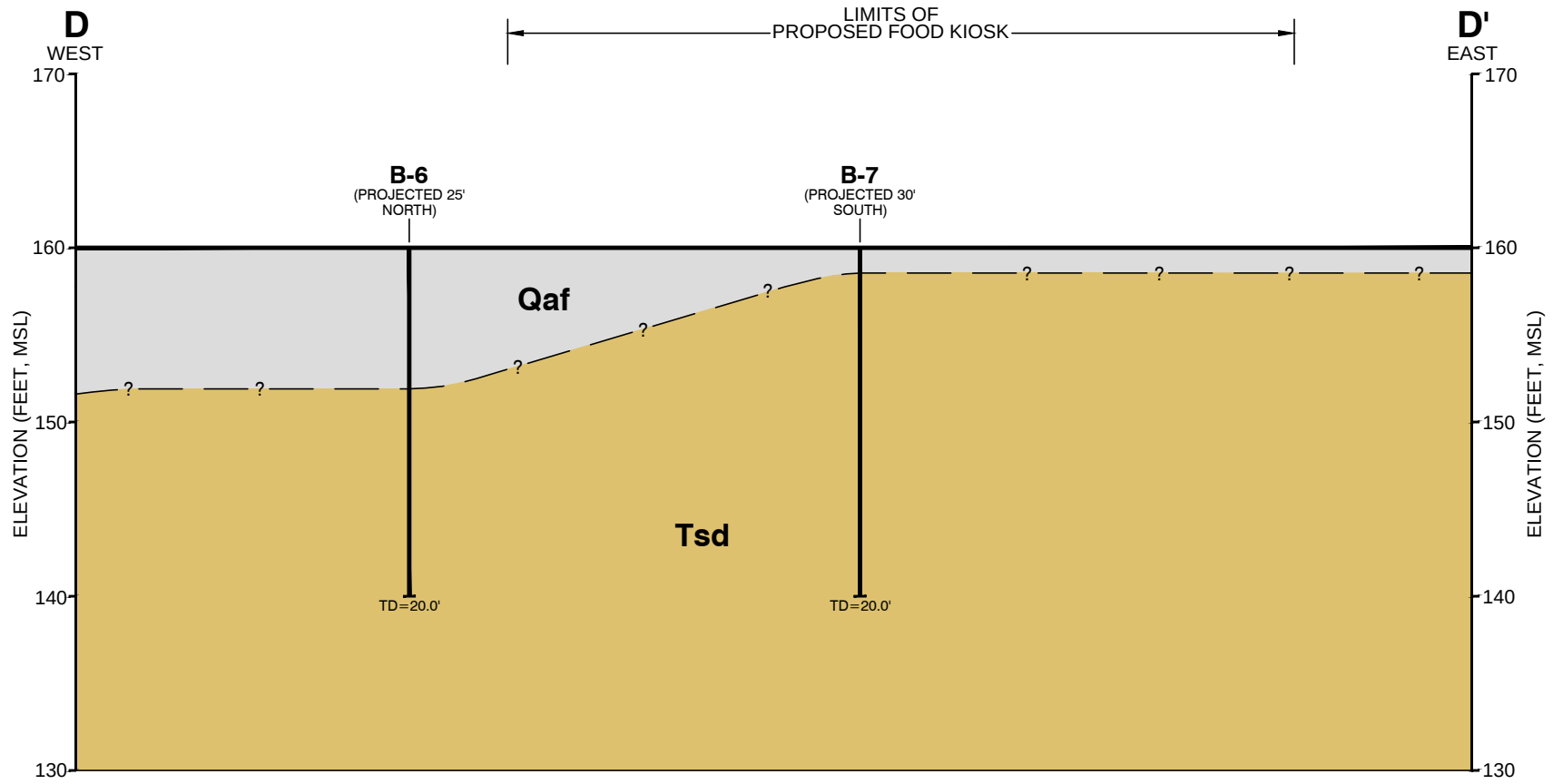
FIGURE 5C

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GEOLOGIC CROSS SECTION C-C'

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598002 I 1/19



LEGEND

B-7 (TD=20.0')	BORING TD=TOTAL DEPTH IN FEET
Qaf	FILL
Tsd	SAN DIEGO FORMATION
?	GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN

FEET
0 10 20

5D 108598002 CS D-D'.DWG AOB

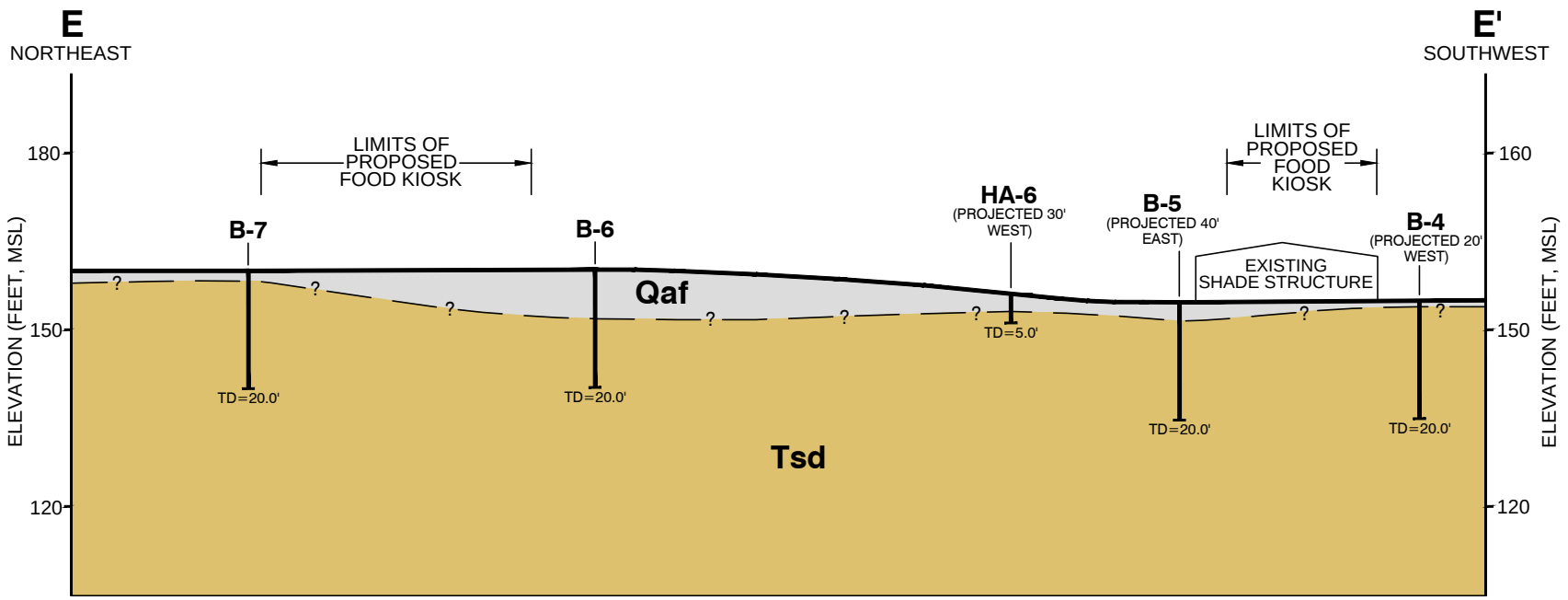
FIGURE 5D

GEOLOGIC CROSS SECTION D-D'

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

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LEGEND

B-7 (TD=20.0')	BORING TD=TOTAL DEPTH IN FEET
Qaf	FILL
Tsd	SAN DIEGO FORMATION
?	GEOLOGIC CONTACT, QUERIED WHERE UNCERTAIN

FEET
0 30 60

5E 108598002 CS E-E'.DWG AOB

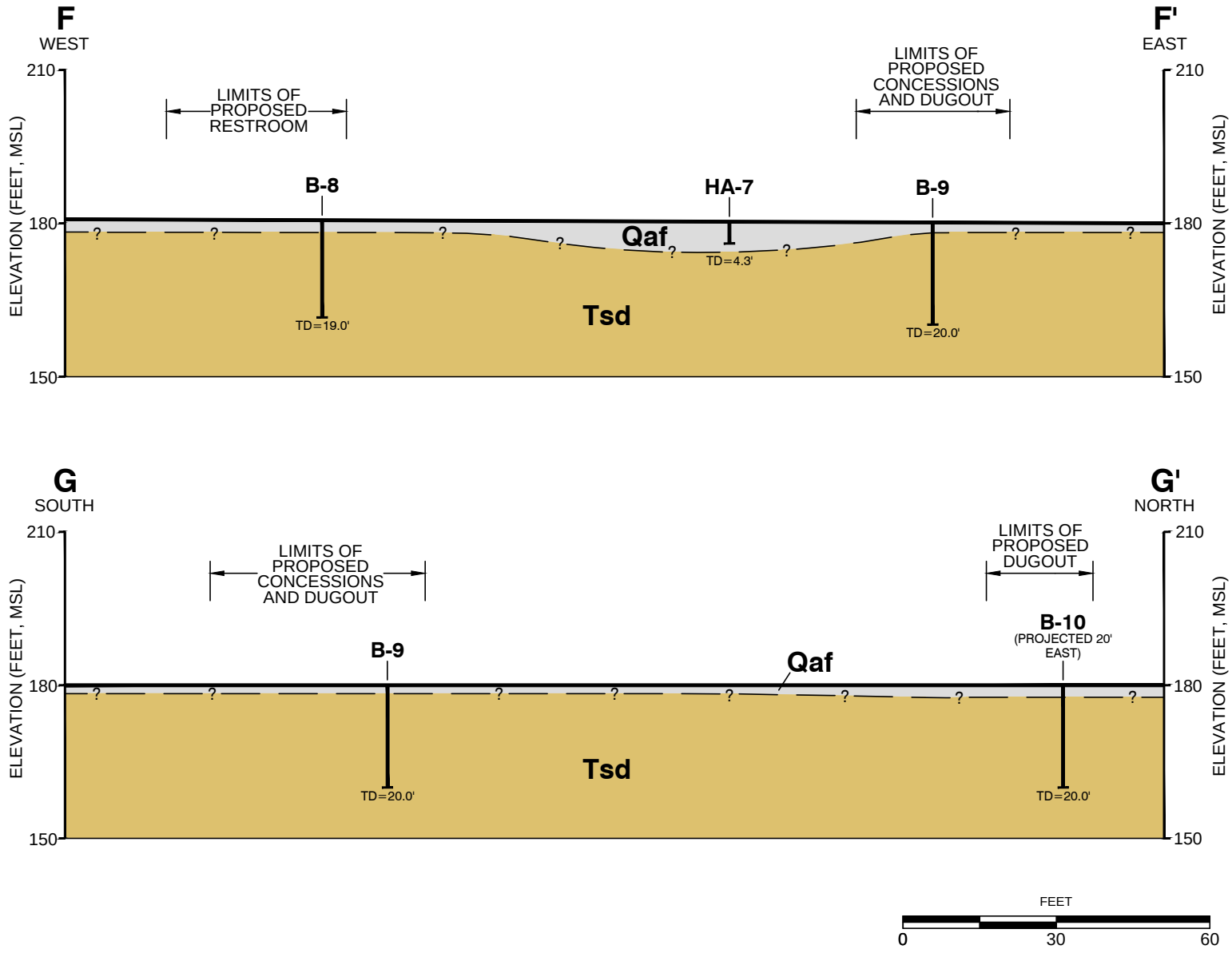
FIGURE 5E

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GEOLOGIC CROSS SECTION E-E'

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

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5F 108598002 CS F-F' G-G'.DWG AOB

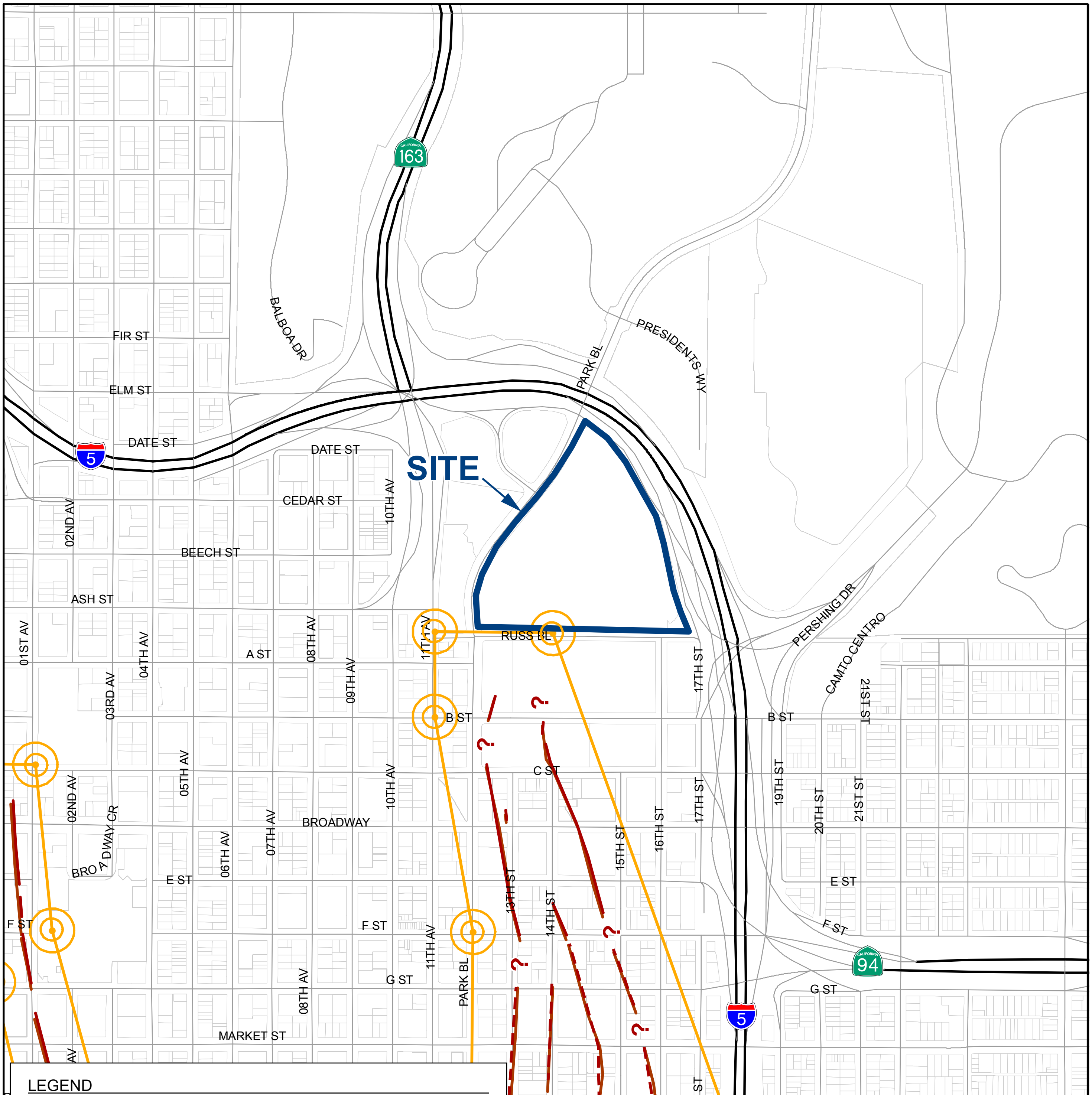
FIGURE 5F

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GEOLOGIC CROSS SECTION F-F' AND G-G'

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598002 I 1/19



LEGEND

FAULTS CONSIDERED TO HAVE BEEN ACTIVE DURING HOLOCENE TIME AND HAVE POTENTIAL FOR SURFACE RUPTURE; SOLID LINE WHERE ACCURATELY LOCATED, LONG DASH WHERE APPROXIMATELY LOCATED, SHORT DASH WHERE INFERRED. (CGS, 2003)

THESE ARE DELINEATED AS STRAIGHT-LINE SEGMENTS THAT CONNECT ENCIRCLED TURNING POINTS SO AS TO DEFINE EARTHQUAKE FAULT ZONE SEGMENTS. (CGS, 2003)

SOURCE: PARCELS - SanGIS, 2009

N

FEET
0 1,000 2,000

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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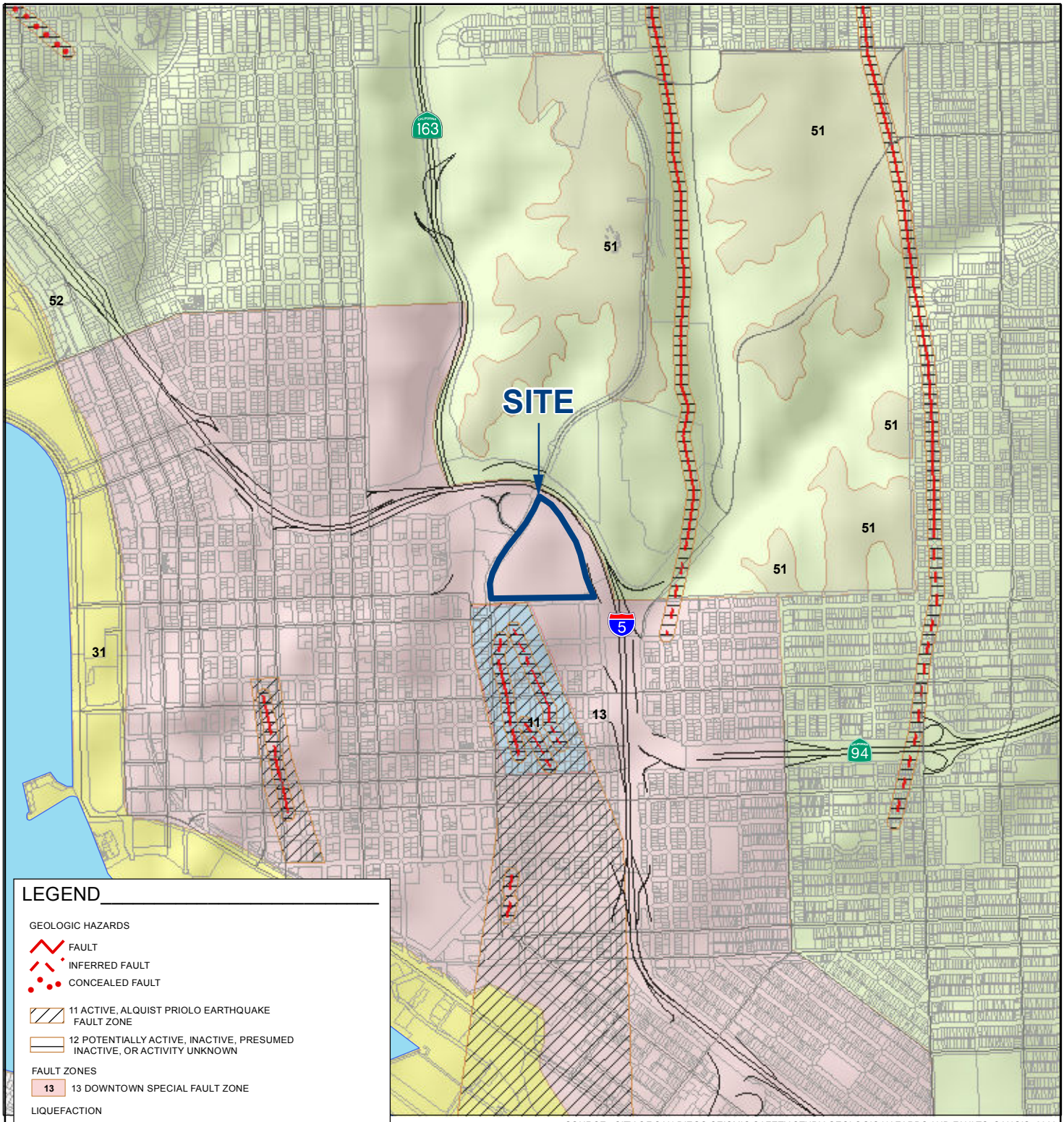
FIGURE 6

EARTHQUAKE FAULT ZONES

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

108598002 | 1/19



SOURCE: CITY OF SAN DIEGO SEISMIC SAFETY STUDY GEOLOGIC HAZARDS AND FAULTS, SANGIS, 2008

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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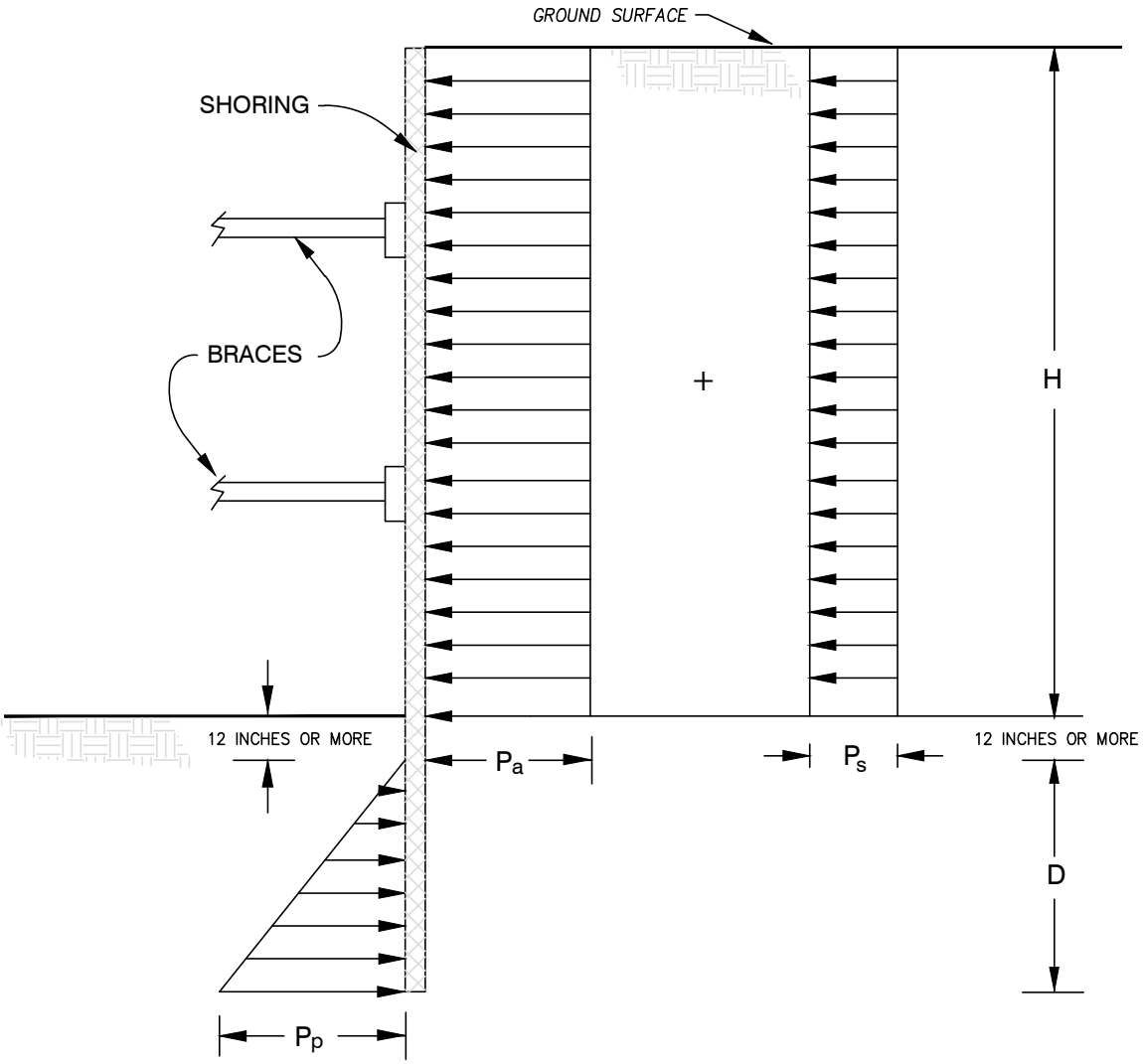
FIGURE 7

GEOLOGIC HAZARDS

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598002 | 1/19

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NOTES:

1. APPARENT LATERAL EARTH PRESSURE, P_a
   P_a = 29 H psf
2. CONSTRUCTION TRAFFIC INDUCED SURCHARGE PRESSURE, P_s
   P_s = 120 psf
3. PASSIVE LATERAL EARTH PRESSURE, P_p
   P_p = 350 D psf
4. ASSUMES GROUNDWATER IS NOT PRESENT
5. SURCHARGES FROM EXCAVATED SOIL OR CONSTRUCTION MATERIALS ARE NOT INCLUDED
6. H AND D ARE IN FEET

NOT TO SCALE

8 108598002 D-BEGS.DWG

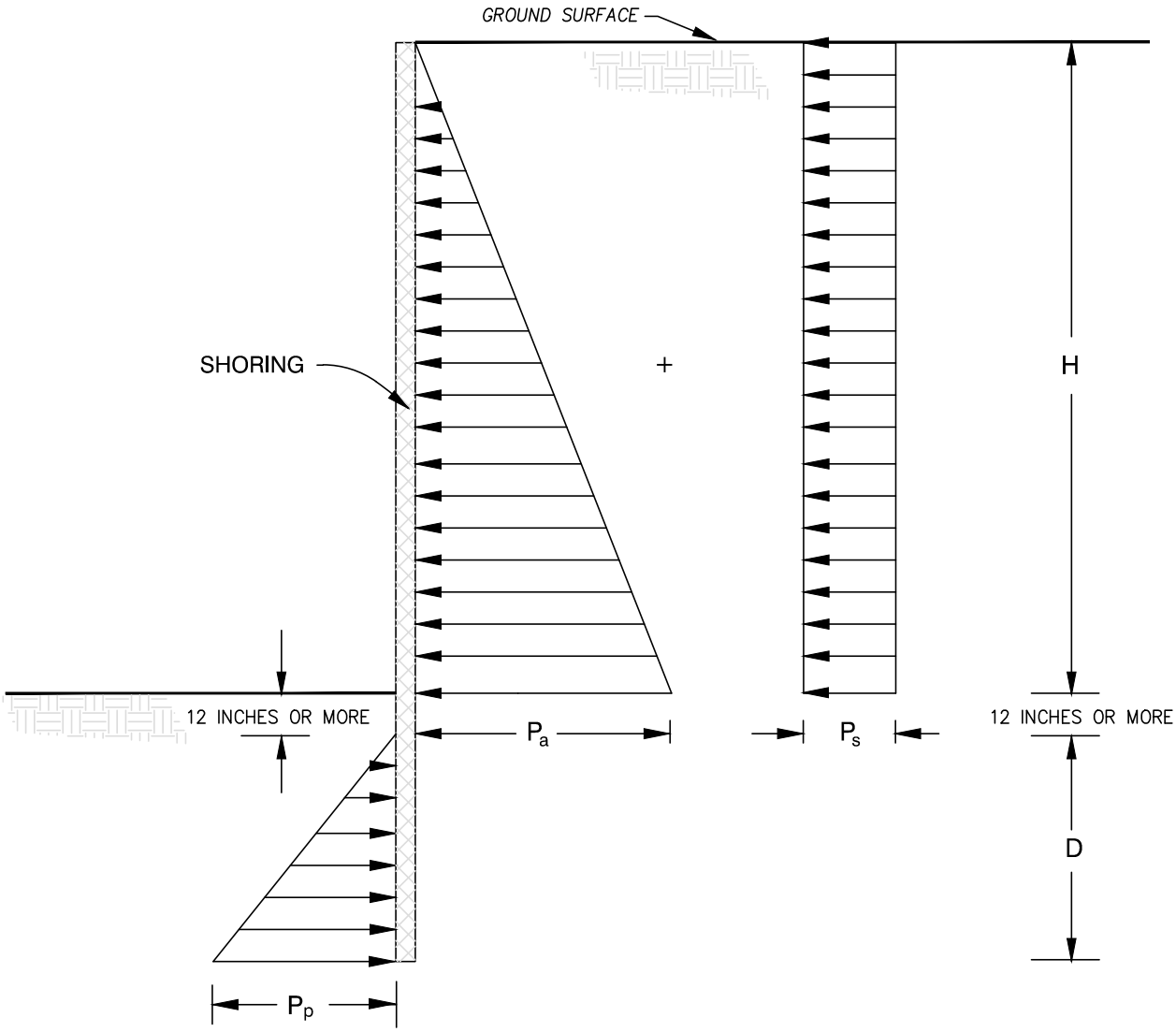
FIGURE 8

LATERAL EARTH PRESSURES FOR BRACED EXCAVATION

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS

1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants



NOTES:

1. ACTIVE LATERAL EARTH PRESSURE, P_a
   P_a = 44 H psf
2. CONSTRUCTION TRAFFIC INDUCED SURCHARGE PRESSURE, P_s
   P_s = 120 psf
3. PASSIVE LATERAL EARTH PRESSURE, P_p
   P_p = 350 D psf
4. ASSUMES GROUNDWATER IS NOT PRESENT
5. H AND D ARE IN FEET

NOT TO SCALE

9 108598002 D-CS.DWG

FIGURE 9

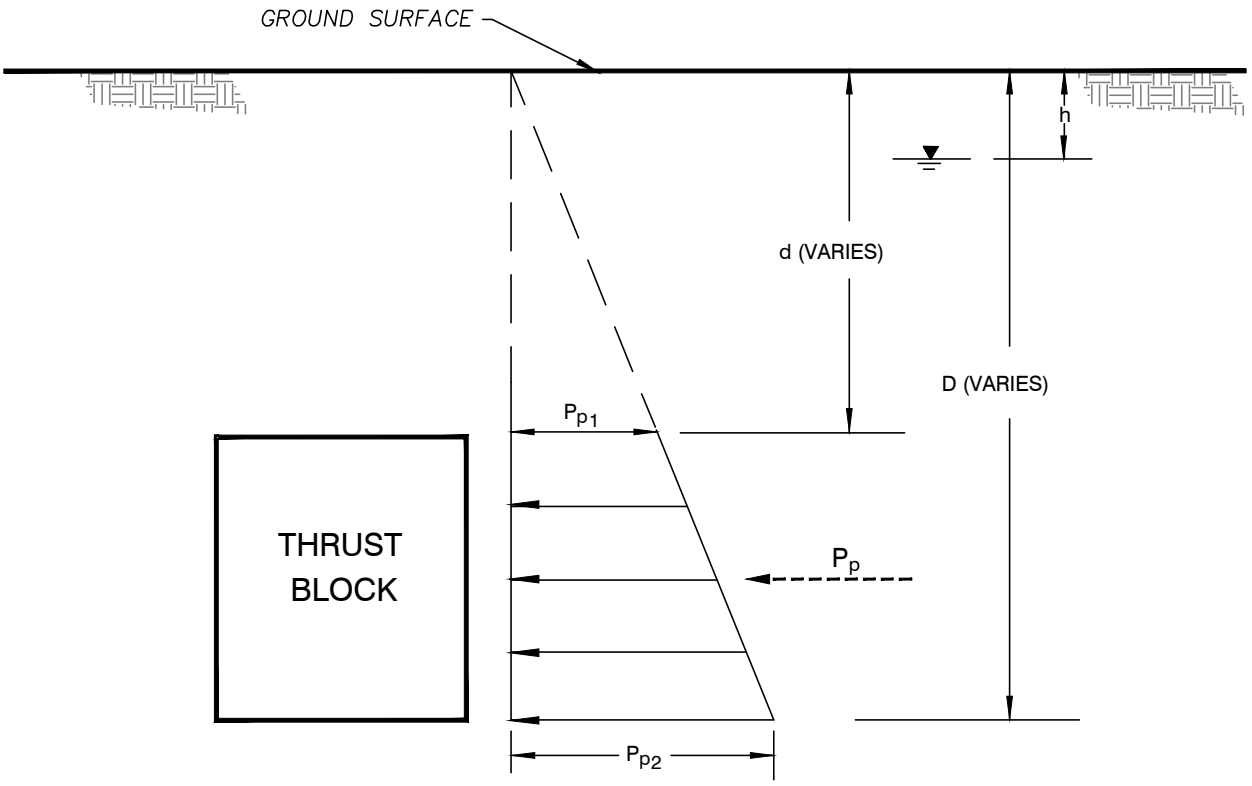
LATERAL EARTH PRESSURES FOR TEMPORARY CANTILEVERED SHORING

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS

1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

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NOTES:

1. GROUNDWATER BELOW BLOCK

   $P_p = 175 (D^2-d^2)$ lb/ft

2. GROUNDWATER ABOVE BLOCK

   $P_p = 1.4 (D - d)[124.8h + 57 (D+d)]$ lb/ft

3. ASSUMES BACKFILL IS GRANULAR MATERIAL
4. ASSUMES THRUST BLOCK IS ADJACENT TO COMPETENT MATERIAL
5. D, d AND h ARE IN FEET
6. GROUNDWATER TABLE

NOT TO SCALE

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FIGURE 10

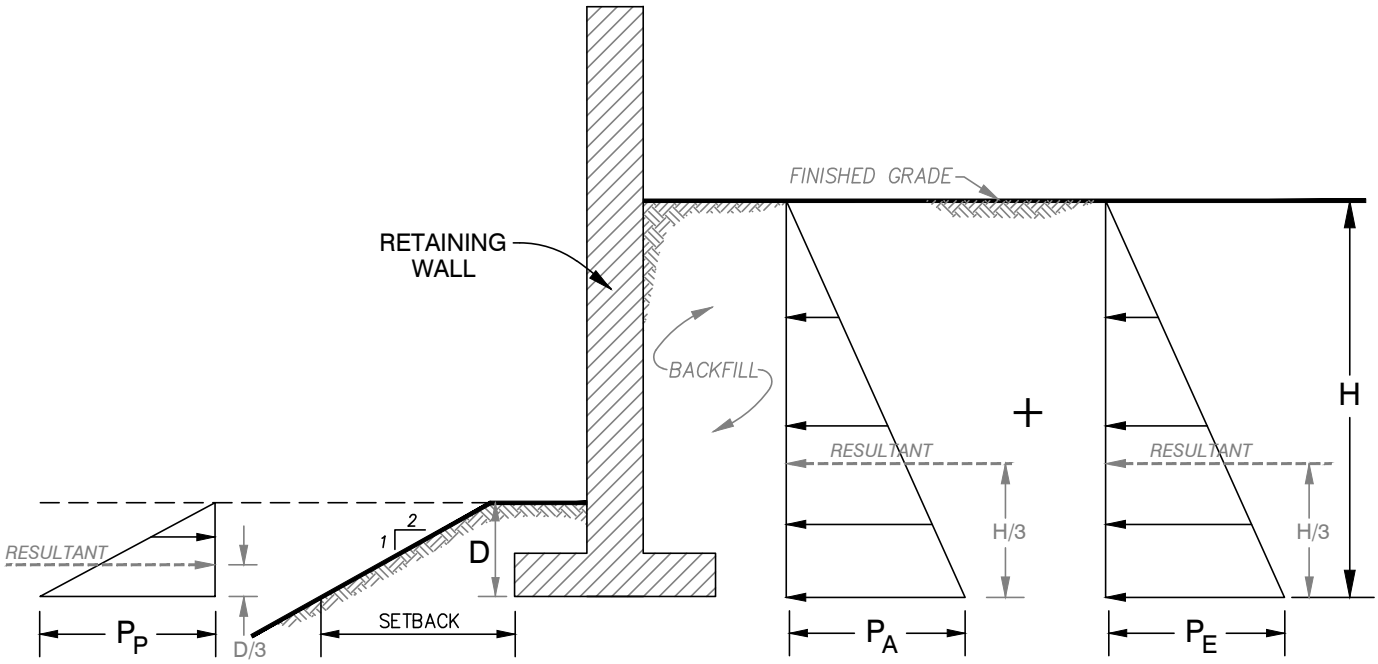
THRUST BLOCK LATERAL EARTH PRESSURE DIAGRAM

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS

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NOTES:

1. ASSUMES NO HYDROSTATIC PRESSURE BUILD-UP BEHIND THE RETAINING WALL
2. STRUCTURAL, GRANULAR BACKFILL MATERIALS SHOULD BE USED FOR RETAINING WALL BACKFILL
3. DRAINS AS RECOMMENDED IN THE RETAINING WALL DRAINAGE DETAIL SHOULD BE INSTALLED BEHIND THE RETAINING WALL
4. P_E IS CALCULATED IN ACCORDANCE WITH THE RECOMMENDATIONS OF MONONOBE AND MATSUO (1929), AND ATIK AND SITAR (2010).
5. SURCHARGE PRESSURES CAUSED BY VEHICLES OR NEARBY STRUCTURES ARE NOT INCLUDED
6. H AND D ARE IN FEET
7. SETBACK SHOULD BE IN ACCORDANCE WITH THE CBC

RECOMMENDED GEOTECHNICAL DESIGN PARAMETERS

Lateral Earth Pressure	Equivalent Fluid Pressure (lb/ft^2/ft) [1]	
P_A	Level Backfill with Granular Soils [2]	2H:1V Sloping Backfill with Granular Soils [2]
	44 H	76 H
P_E	17 H	
P_P	Level Ground	2H:1V Descending Ground
	350 D	130 D

NOT TO SCALE

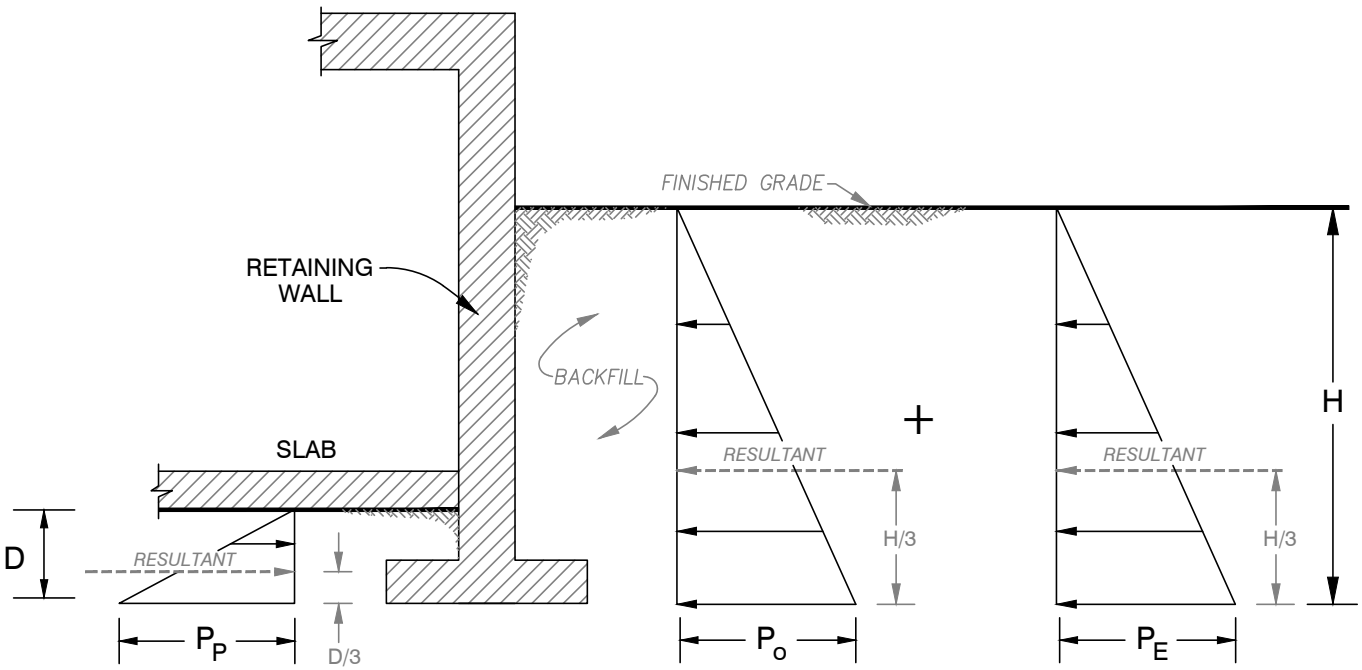
11 108598002 D-YRW.DWG AOB

FIGURE 11

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LATERAL EARTH PRESSURES FOR YIELDING RETAINING WALLS

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA



NOTES:

1. ASSUMES NO HYDROSTATIC PRESSURE BUILD-UP BEHIND THE RETAINING WALL
2. GRANULAR BACKFILL MATERIALS SHOULD BE USED FOR RETAINING WALL BACKFILL
3. DRAINS AS RECOMMENDED IN THE RETAINING WALL DRAINAGE DETAIL SHOULD BE INSTALLED BEHIND THE RETAINING WALL
4. P_E IS CALCULATED IN ACCORDANCE WITH THE RECOMMENDATIONS OF MONONOBE AND MATSUO (1929), AND ATIK AND SITAR (2010).
5. SURCHARGE PRESSURES CAUSED BY VEHICLES OR NEARBY STRUCTURES ARE NOT INCLUDED
6. H AND D ARE IN FEET

RECOMMENDED GEOTECHNICAL DESIGN PARAMETERS

Lateral Earth Pressure	Equivalent Fluid Pressure (lb/ft^2/ft) [1]	
P_O	Level Backfill with Granular Soils [2]	2H:1V Sloping Backfill with Granular Soils [2]
	64 H	93 H
P_E	17 H	
P_P	Level Ground	2H:1V Descending Ground
	350 D	130 D

NOT TO SCALE

12 108598002 D-RRW.DWG AOB

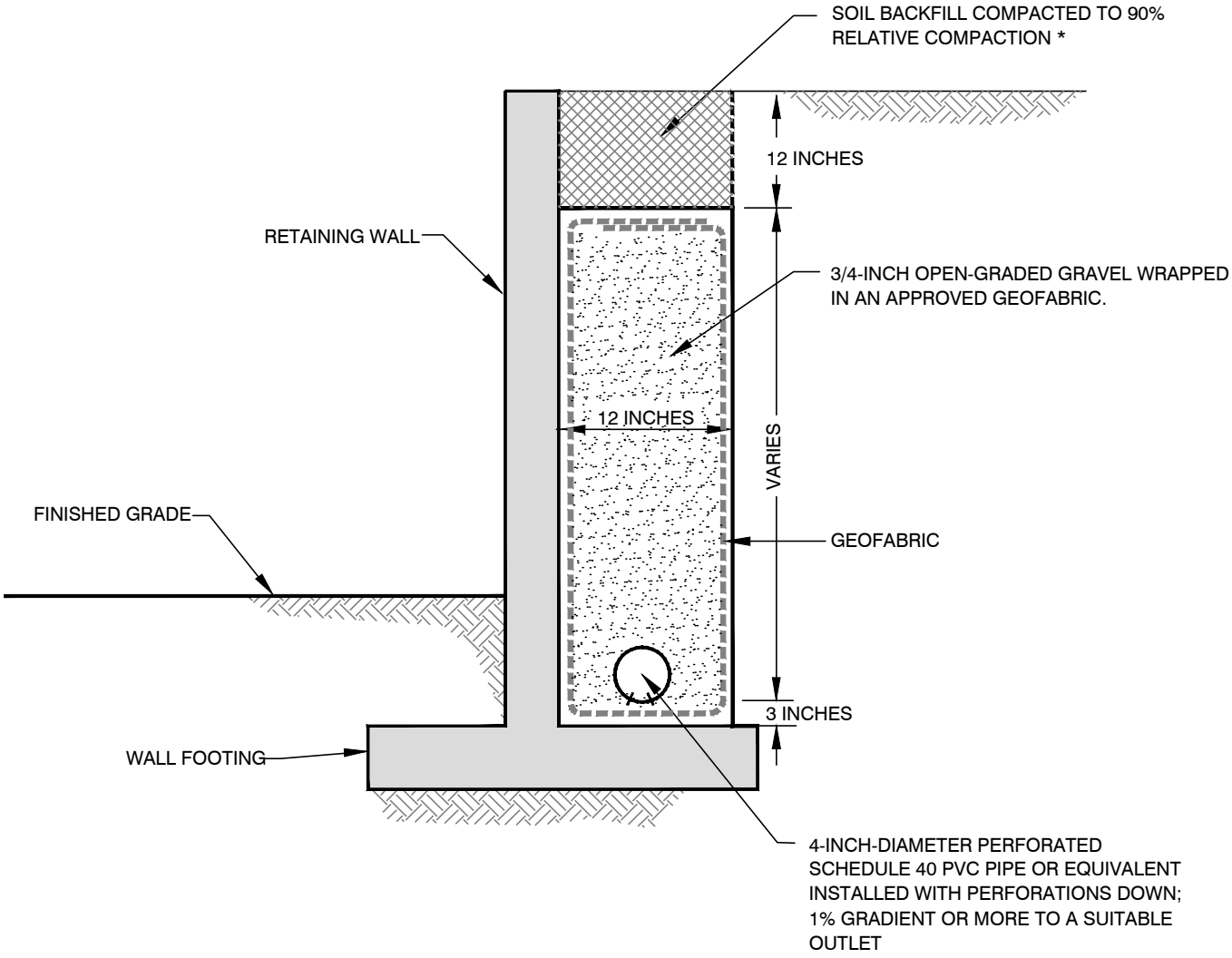
FIGURE 12

LATERAL EARTH PRESSURES FOR RESTRAINED RETAINING WALLS

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS

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*BASED ON ASTM D1557

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NOT TO SCALE

FIGURE 13

RETAINING WALL DRAINAGE DETAIL

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

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APPENDIX A

Boring Logs

APPENDIX A

BORING LOGS

Field Procedure for the Collection of Disturbed Samples
Disturbed soil samples were obtained in the field using the following methods.

Bulk Samples
Bulk samples of representative earth materials were obtained from the exploratory borings. The samples were bagged and transported to the laboratory for testing.

The Standard Penetration Test (SPT) Sampler
Disturbed drive samples of earth materials were obtained by means of a Standard Penetration Test sampler. The sampler is composed of a split barrel with an external diameter of 2 inches and an unlined internal diameter of 1⅜ inches. The sampler was driven into the ground with a 140-pound hammer free-falling from a height of 30 inches in general accordance with ASTM D 1586. The blow counts were recorded for every 6 inches of penetration; the blow counts reported on the logs are those for the last 12 inches of penetration. Soil samples were observed and removed from the sampler, bagged, sealed and transported to the laboratory for testing.

Field Procedure for the Collection of Relatively Undisturbed Samples
Relatively undisturbed soil samples were obtained in the field using the following method.

The Modified Split-Barrel Drive Sampler
The sampler, with an external diameter of 3 inches, was lined with 1-inch-long, thin brass rings with inside diameters of approximately 2.4 inches. The sample barrel was driven into the ground with the weight of a hammer in general accordance with ASTM D 3550. The driving weight was permitted to fall freely. The approximate length of the fall, the weight of the hammer, and the number of blows per foot of driving are presented on the boring logs as an index to the relative resistance of the materials sampled. The samples were removed from the sample barrel in the brass rings, sealed, and transported to the laboratory for testing.

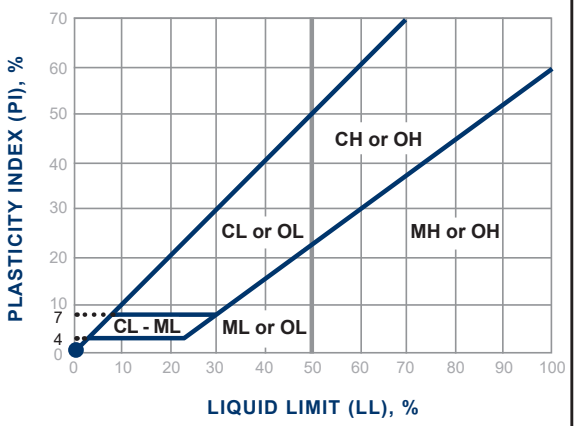
Soil Classification Chart Per ASTM D 2488

Primary Divisions			Secondary Divisions	
			Group Symbol	Group Name
COARSE-GRAINED SOILS more than 50% retained on No. 200 sieve	**GRAVEL** more than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVEL less than 5% fines	GW	well-graded GRAVEL
			GP	poorly graded GRAVEL
		GRAVEL with DUAL CLASSIFICATIONS 5% to 12% fines	GW-GM	well-graded GRAVEL with silt
			GP-GM	poorly graded GRAVEL with silt
			GW-GC	well-graded GRAVEL with clay
			GP-GC	poorly graded GRAVEL with
		GRAVEL with FINES more than 12% fines	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND 50% or more of coarse fraction passes No. 4 sieve	CLEAN SAND less than 5% fines	SW	well-graded SAND
			SP	poorly graded SAND
		SAND with DUAL CLASSIFICATIONS 5% to 12% fines	SW-SM	well-graded SAND with silt
			SP-SM	poorly graded SAND with silt
			SW-SC	well-graded SAND with clay
			SP-SC	poorly graded SAND with clay
		SAND with FINES more than 12% fines	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOILS 50% or more passes No. 200 sieve	**SILT and CLAY** liquid limit less than 50%	INORGANIC	CL	lean CLAY
			ML	SILT
			CL-ML	silty CLAY
		ORGANIC	OL (PI > 4)	organic CLAY
			OL (PI < 4)	organic SILT
	SILT and CLAY liquid limit 50% or more	INORGANIC	CH	fat CLAY
			MH	elastic SILT
		ORGANIC	OH (plots on or above "A"-line)	organic CLAY
			OH (plots below "A"-line)	organic SILT
	Highly Organic Soils		PT	Peat

Grain Size

Description		Sieve Size	Grain Size	Approximate Size
Boulders		> 12"	> 12"	Larger than basketball-sized
Cobbles		3 - 12"	3 - 12"	Fist-sized to basketball-sized
Gravel	Coarse	3/4 - 3"	3/4 - 3"	Thumb-sized to fist-sized
	Fine	#4 - 3/4"	0.19 - 0.75"	Pea-sized to thumb-sized
Sand	Coarse	#10 - #4	0.079 - 0.19"	Rock-salt-sized to pea-sized
	Medium	#40 - #10	0.017 - 0.079"	Sugar-sized to rock-salt-sized
	Fine	#200 - #40	0.0029 - 0.017"	Flour-sized to sugar-sized
Fines		Passing #200	< 0.0029"	Flour-sized and smaller

Plasticity Chart



Apparent Density - Coarse-Grained Soil

Apparent Density	Spooling Cable or Cathead		Automatic Trip Hammer	
	SPT (blows/foot)	Modified Split Barrel (blows/foot)	SPT (blows/foot)	Modified Split Barrel (blows/foot)
Very Loose	≤ 4	≤ 8	≤ 3	≤ 5
Loose	5 - 10	9 - 21	4 - 7	6 - 14
Medium Dense	11 - 30	22 - 63	8 - 20	15 - 42
Dense	31 - 50	64 - 105	21 - 33	43 - 70
Very Dense	> 50	> 105	> 33	> 70

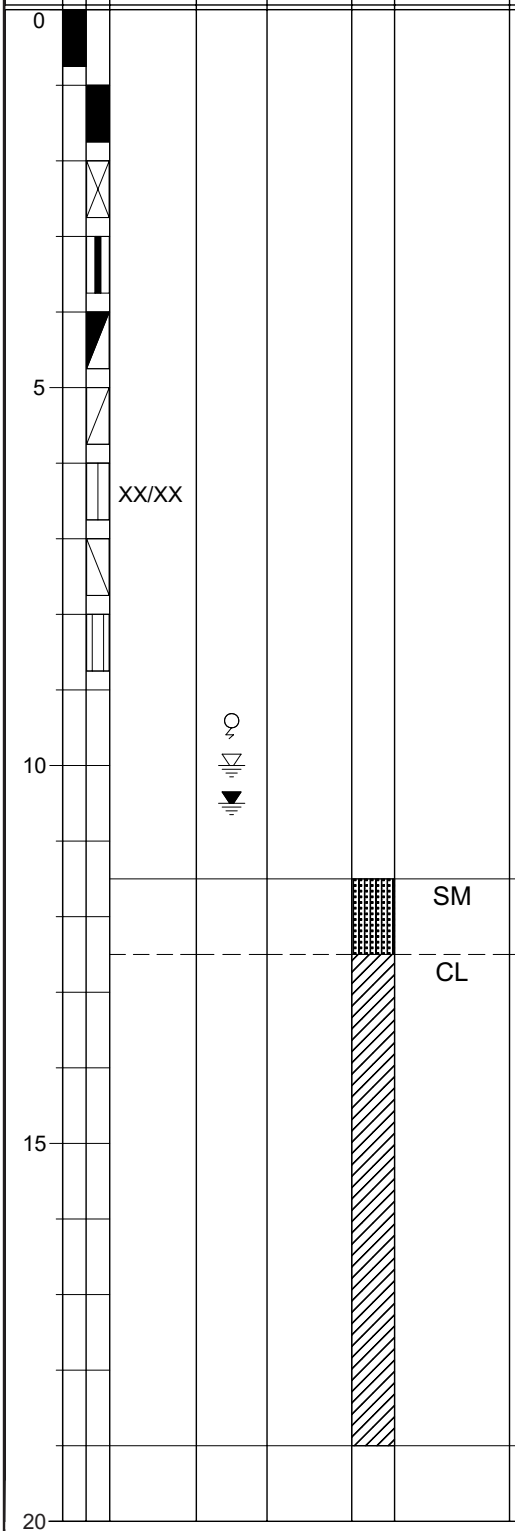
Consistency - Fine-Grained Soil

Consis-tency	Spooling Cable or Cathead		Automatic Trip Hammer	
	SPT (blows/foot)	Modified Split Barrel (blows/foot)	SPT (blows/foot)	Modified Split Barrel (blows/foot)
Very Soft	< 2	< 3	< 1	< 2
Soft	2 - 4	3 - 5	1 - 3	2 - 3
Firm	5 - 8	6 - 10	4 - 5	4 - 6
Stiff	9 - 15	11 - 20	6 - 10	7 - 13
Very Stiff	16 - 30	21 - 39	11 - 20	14 - 26
Hard	> 30	> 39	> 20	> 26

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USCS METHOD OF SOIL CLASSIFICATION

BORING LOG EXPLANATION SHEET



Bulk sample.

Modified split-barrel drive sampler.

No recovery with modified split-barrel drive sampler.

Sample retained by others.

Standard Penetration Test (SPT).

No recovery with a SPT.

Shelby tube sample. Distance pushed in inches/length of sample recovered in inches.

No recovery with Shelby tube sampler.

Continuous Push Sample.

Seepage.

Groundwater encountered during drilling.

Groundwater measured after drilling.

MAJOR MATERIAL TYPE (SOIL):

Solid line denotes unit change.

Dashed line denotes material change.

Attitudes: Strike/Dip
b: Bedding
c: Contact
j: Joint
f: Fracture
F: Fault
cs: Clay Seam
s: Shear
bss: Basal Slide Surface
sf: Shear Fracture
sz: Shear Zone
sbs: Shear Bedding Surface

The total depth line is a solid line that is drawn at the bottom of the boring.

DATE DRILLED 11/19/18 BORING NO. B-1

GROUND ELEVATION 140' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0						GP	ASPHALT CONCRETE: Approximately 5 inches thick.
							AGGREGATE BASE: Gray, dry to moist, medium dense, sandy GRAVEL; approximately 4 inches thick.
							SAN DIEGO FORMATION: Yellow and light gray, moist, weakly cemented, silty fine- to coarse-grained SANDSTONE; little gravel and cobbles.
		36	8.0	103.7			Yellow and light brown.
		23					
10		50/6"	8.3	89.1			Yellowish brown; trace oxidation staining.
		60					
		45	10.1	95.0			
		20					
20		42					Yellowish brown to yellowish gray.
		42					
		44					Yellowish gray to light gray; trace shell fragments.
		24					
30		41					Trace gravel.
							Reddish yellow; medium-grained; trace shell fragments.
		30					Light gray; fine-grained; trace oxidation staining.
		62					Light yellowish gray.
		43					Trace caliche.
40							

BORING LOG FIGURE A- 1

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SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

DATE DRILLED 11/19/18 BORING NO. B-1

GROUND ELEVATION 140' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40			65					SAN DIEGO FORMATION: (Continued) Light gray, moist, weakly cemented, silty fine-grained SANDSTONE; trace shell fragments.
								Total Depth = 41.5 feet. Groundwater not encountered during drilling. Backfilled with approximately 13 cubic feet of grout and capped with black-dyed concrete shortly after drilling on 11/19/18. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
50								
60								
70								
80								

DATE DRILLED 11/20/18 BORING NO. B-2

GROUND ELEVATION 145' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	ASPHALT CONCRETE: Approximately 4 inches thick. FILL: Yellowish brown, moist, loose to medium dense, silty SAND; trace gravel and cobbles; scattered brick and asphalt debris.
			20	9.7	88.9			SAN DIEGO FORMATION: Light yellowish gray, moist, weakly cemented, silty fine-grained SANDSTONE; trace gravel. Reddish yellow.
10			45					Yellowish brown; trace cobble.
			65	9.4	96.5			Yellowish gray.
20			44					Yellowish brown; trace gravel; trace decomposed organic matter.
			36					Light gray.
30			28					Trace oxidation staining; trace shell fragments; trace caliche.
			45					Few to little shell fragments; zones of moderately to strongly cemented shell beds.
40								

DATE DRILLED 11/20/18 BORING NO. B-2

GROUND ELEVATION 145' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40			43					SAN DIEGO FORMATION: (Continued) Gray, moist, weakly cemented, silty fine to medium-grained SANDSTONE; trace oxidation staining.
								Total Depth = 41.5 feet. Groundwater not encountered during drilling. Backfilled with approximately 13 cubic feet of grout and capped with black-dyed concrete shortly after drilling on 11/20/18.
								Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
50								The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
60								
70								
80								

DATE DRILLED 11/19/18 BORING NO. B-3

GROUND ELEVATION 155' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							ASPHALT CONCRETE: Approximately 4 inches thick.
						SM	BASE: Yellowish brown, moist, medium dense, silty SAND; few to little gravel, approximately 4 inches thick.
						SM	FILL: Yellowish brown, moist to wet, loose, silty SAND; little gravel and cobbles; trace cobble-size fragments of well cemented sandstone.
		50	15.9	110.0			Brown; wet.
							SAN DIEGO FORMATION: Yellowish brown, moist, weakly cemented, silty fine-grained SANDSTONE. Yellowish brown to reddish brown; fine to medium-grained.
		22					
10		16	13.4	109.1			Trace gravel.
		84/11"					Reddish brown; moderately cemented.
							Yellowish brown; weakly cemented.
		56	6.7	95.2			Fine-grained; micaceous.
		28					
20		44	7.3	93.6			Light yellowish brown; micaceous.
		30					
		50/4"					Light gray; trace gravel.
		31					
30		37					Yellowish gray.
		20					
		54					Trace cobble.
		64					Gray; trace gravel.
							Yellowish gray; trace gravel.
40							

BORING LOG FIGURE A- 5

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SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

DATE DRILLED 11/19/18 BORING NO. B-3

GROUND ELEVATION 155' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40			50/6"					SAN DIEGO FORMATION: (Continued) Yellowish brown, moist, weakly cemented, silty fine-grained SANDSTONE; trace shell fragments. Strongly cemented shell bed. Total Depth = 41 feet. Seepage encountered at approximately 5 feet during drilling. Groundwater not encountered during drilling. Backfilled with approximately 13 cubic feet of grout and capped with black-dyed concrete shortly after drilling on 11/19/18. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
50								
60								
70								
80								

DATE DRILLED 11/19/18 BORING NO. B-4

GROUND ELEVATION 155' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0						SC	ASPHALT CONCRETE: Approximately 2 inches thick. FILL: Yellowish brown, moist, loose, clayey SAND. SAN DIEGO FORMATION: Yellow to yellowish brown, moist, weakly cemented, silty fine-grained SANDSTONE.
		31	12.7	93.4			Trace cobble.
10		40	12.2	99.1			Yellowish brown; micaceous.
		37					Yellowish gray; fine to medium-grained.
		49					Light yellowish gray; trace coarse sand; laminated.
20							Total Depth = 20 feet. Groundwater not encountered during drilling. Backfilled and capped with black-dyed concrete shortly after drilling on 11/19/18. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
30							
40							

DATE DRILLED 11/19/18 BORING NO. B-5

GROUND ELEVATION 155' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	ASPHALT CONCRETE: Approximately 5 inches thick. FILL: Brown, moist, loose, silty SAND; trace gravel, brick, and concrete debris.
			50/6"	4.3	94.4			SAN DIEGO FORMATION: Yellow to yellowish gray, moist, weakly cemented, silty fine-grained SANDSTONE; micaceous. Trace cobble.
10			29	7.3	91.5			
			32					Gray; scattered pockets of caliche; trace shell fragments.
			30					Medium-grained; scattered oxidation staining.
20								Total Depth = 20 feet. Groundwater not encountered during drilling. Backfilled and capped with black-dyed concrete shortly after drilling on 11/19/18. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
30								
40								

BORING LOG FIGURE A- 8

DATE DRILLED 11/20/18 BORING NO. B-6

GROUND ELEVATION 160' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							ASPHALT CONCRETE: Approximately 6" thick.
						GM	FILL: Yellowish brown, moist, loose to medium dense, silty GRAVEL with sand; few cobbles.
		29	8.0	91.6			Brown; scattered brick and concrete debris.
10		77/10"	16.5	104.6			SAN DIEGO FORMATION: Yellowish brown, moist, weakly cemented, silty fine-grained SANDSTONE; micaceous; trace gravel.
							Trace cobble.
		31					Yellowish gray; fine to medium-grained.
		31					
20							Total Depth = 20 feet. Groundwater not encountered during drilling. Backfilled and capped with black-dyed concrete shortly after drilling on 11/20/18.
							Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
							The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
30							
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BORING LOG FIGURE A- 9

DATE DRILLED 11/20/18 BORING NO. B-7

GROUND ELEVATION 160' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	ASPHALT CONCRETE: Approximately 5 inches thick.
								FILL: Light brown, moist, loose, silty SAND; trace gravel and roots.
								SAN DIEGO FORMATION: Light yellow, moist, weakly cemented, silty fine-grained SANDSTONE; trace gravel. Trace cobble. Micaceous.
		■	85/11"	10.5	102.9			
10		■	25	7.4	105.5			Yellowish gray to yellowish brown; fine to medium-grained; trace gravel.
		■	29					Yellowish gray; medium-grained.
		■	34					Light gray.
20								Total Depth = 20 feet. Groundwater not encountered during drilling. Backfilled and capped with black-dyed concrete shortly after drilling on 11/20/18. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 11/20/18 BORING NO. B-8

GROUND ELEVATION 180' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■					▨	SM	FILL: Brown, dry to moist, medium dense, silty fine SAND; trace gravel.
	■					▨		SAN DIEGO FORMATION: Reddish yellow, moist, weakly cemented, silty fine-grained SANDSTONE.
		■	30	12.1	96.1	▨		
10		■	78/11"	14.3	92.1	▨		Yellowish gray; laminated.
		■	50/3"			▨		
		⊠	50/2"			▨		
			50/2"					Total Depth = 19 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling on 11/20/18. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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BORING LOG FIGURE A- 11

DATE DRILLED 11/20/18 BORING NO. B-9

GROUND ELEVATION 180' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	FILL: Brown, moist, loose, silty SAND; landscape-related roots at surface.
			30	20.3	99.4			SAN DIEGO FORMATION: Yellowish brown, moist, weakly cemented, silty fine-grained SANDSTONE; few to little gravel; trace cobbles. Decrease in sand; increase in silt content; trace gravel.
10			76	9.7	112.2			
			35					
			29					
20								Total Depth = 20 feet. Groundwater not encountered during drilling. Backfilled shortly after completion of drilling on 11/20/18. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 11/20/18 BORING NO. B-10

GROUND ELEVATION 180' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	FILL: Yellowish brown, moist to wet, loose, silty SAND; landscape-related topsoil and rootlets in upper 4".
			38	23.1	96.4			SAN DIEGO FORMATION: Yellowish brown, moist to wet, weakly cemented, silty fine-grained SANDSTONE; scattered pockets of clayey sandstone; micaceous.
								Increased silt content.
10			36	17.7	96.8			Laminated, decreased silt content.
			29					Yellowish gray.
			41					Zones of moderately cemented sandstone.
20								Total Depth = 20 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling on 11/20/18. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 11/19/18 BORING NO. HA-1

GROUND ELEVATION 125' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING Manual

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW LOGGED BY GSW REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■			6.4		▨	SM	FILL: Brown, moist, medium dense, silty SAND; few gravel and cobbles up to 6" in diameter; scattered debris and roots.
								Total Depth = 2 feet. (Refusal on cobble.) Groundwater not encountered during excavation. Infiltration test installed on 11/19/18. Backfilled shortly after testing on 11/20/18. Note: Groundwater, though not encountered at the time of excavation, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only, It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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BORING LOG FIGURE A- 14

DATE DRILLED 11/19/18 BORING NO. HA-2

GROUND ELEVATION 135' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING Manual

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW LOGGED BY GSW REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	FILL: Brown, moist, medium dense to dense, silty SAND; few gravel and cobbles up to 6" in diameter; scattered roots.
								Total Depth = 2 feet. (Refusal on cobble.) Groundwater not encountered during excavation. Infiltration test installed on 11/19/18. Backfilled shortly after testing on 11/20/18. Note: Groundwater, though not encountered at the time of excavation, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only, It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 11/21/18 BORING NO. HA-3

GROUND ELEVATION 145' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING Manual

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW LOGGED BY GSW REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								ASPHALT CONCRETE:
							SM	Approximately 8" thick; two layers of asphalt concrete; top layer is approximately 3-1/4" thick; bottom layer is approximately 4-3/4" thick.
								FILL:
								Brown, moist, medium dense, silty SAND; scattered gravel and cobbles.
								SAN DIEGO FORMATION:
								Light brown, moist, moderately cemented, silty fine-grained SANDSTONE; scattered gravel.
10								Total Depth = 3 feet. (Refusal)
								Groundwater not encountered during excavation.
								Backfilled and patched with black dyed concrete shortly after drilling on 11/21/18.
20								Note: Groundwater, though not encountered at the time of excavation, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
								The ground elevation shown above is an estimation only, It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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BORING LOG FIGURE A- 16

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SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

DATE DRILLED 11/19/18 BORING NO. HA-4

GROUND ELEVATION 160' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING Manual

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW LOGGED BY GSW REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■						SM	FILL: Brown, moist, medium dense, silty SAND; trace to few gravel and cobbles; scattered roots.
								SAN DIEGO FORMATION: Light brown to yellowish brown, moist, moderately cemented, silty fine- grained SANDSTONE.
								Total Depth = 3 feet. (Refusal) Groundwater not encountered during excavation. Infiltration test installed on 11/19/18. Backfilled shortly after testing on 11/20/18.
								Note: Groundwater, though not encountered at the time of excavation, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
10								The ground elevation shown above is an estimation only, It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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BORING LOG FIGURE A- 17

DATE DRILLED 11/19/18 BORING NO. HA-5

GROUND ELEVATION 160' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING Manual

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GLC LOGGED BY GLC REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■			2.8			SM	FILL: Light brown, dry to moist, loose, silty fine SAND; trace gravel. SAN DIEGO FORMATION: Reddish brown, moist, weakly cemented, silty SANDSTONE; trace gravel.
								Total Depth = 4 feet. (Refusal) Groundwater not encountered during excavation. Infiltration test installed on 11/19/18. Backfilled shortly after testing on 11/20/18. Note: Groundwater, though not encountered at the time of excavation, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only, It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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BORING LOG FIGURE A- 18

DATE DRILLED 11/19/18 BORING NO. HA-6

GROUND ELEVATION 155' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING Manual

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GLC LOGGED BY GLC REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0				2.1			SM	FILL: Brown, dry to moist, loose to medium dense, silty SAND; few cobbles.
								SAN DIEGO FORMATION: Light brown, moist, weakly to moderately cemented, silty SANDSTONE; trace cobbles.
10								Total Depth = 5 feet. Groundwater not encountered during excavation. Infiltration test installed on 11/19/18. Backfilled shortly after testing on 11/20/18. Note: Groundwater, though not encountered at the time of excavation, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only, It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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BORING LOG FIGURE A- 19

DATE DRILLED 11/19/18 BORING NO. HA-7

GROUND ELEVATION 180' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING Manual

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW LOGGED BY GSW REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	FILL: Brown to light brown, moist, medium dense, silty SAND; scattered gravel and cobbles up to 10 " in diameter; scattered clay pockets.
							CL	Brown, moist, very stiff, sandy CLAY; scattered gravel and cobbles.
								Total Depth = 4.3 feet. (Refusal) Groundwater not encountered during excavation. Infiltration test installed on 11/19/18. Backfilled shortly after testing on 11/20/18. Note: Groundwater, though not encountered at the time of excavation, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only, It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 11/21/18 BORING NO. HA-8

GROUND ELEVATION 180' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING Manual

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW LOGGED BY GSW REVIEWED BY NMM

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							ASPHALT CONCRETE:
			10.9			SM	Approximately 5-3/4" thick; three layers of asphalt concrete; top layer is approximately 2" thick; middle layer is approximately 1-1/2" thick; bottom layer is approximately 2-1/4" thick.
							FILL:
							Light brown to yellowish brown, moist, medium dense, silty fine SAND; scattered concrete fragments up to 4" in diameter.
10							Total Depth = 3 feet. (Refusal on rock.)
							Groundwater not encountered during excavation.
							Backfilled and patched with black dyed concrete shortly after drilling on 11/21/18.
20							Note: Groundwater, though not encountered at the time of excavation, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
							The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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BORING LOG FIGURE A- 21

DATE DRILLED 11/21/18 BORING NO. HA-9

GROUND ELEVATION 170' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING Manual

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW LOGGED BY GSW REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■					▒	SM	ASPHALT CONCRETE: Approximately 4-1/4" thick; two layers of asphalt concrete; top layer is approximately 1-3/4" thick; bottom layer is approximately 2-1/2" thick. FILL: Brown, moist, medium dense, silty SAND; scattered gravel, cobbles, and concrete fragments.
10								Total Depth = 1.5 feet. (Refusal on rock.) Groundwater not encountered during excavation. Backfilled and patched with black dyed concrete shortly after drilling on 11/21/18. Note: Groundwater, though not encountered at the time of excavation, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 11/19/18 BORING NO. HA-10

GROUND ELEVATION 150' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING Manual

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GLC LOGGED BY GLC REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								SAN DIEGO FORMATION: Light brown, dry to moist, moderately cemented, silty SANDSTONE; some gravel. Weakly cemented. Cobble.
								Total Depth = 4.2 feet. (Refusal) Groundwater not encountered during excavation. Infiltration test installed on 11/19/18. Backfilled shortly after testing on 11/20/18. Note: Groundwater, though not encountered at the time of excavation, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only, It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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BORING LOG FIGURE A- 23

DATE DRILLED 11/21/18 BORING NO. HA-11

GROUND ELEVATION 140' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING Manual

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW LOGGED BY GSW REVIEWED BY NMM

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■			3.7		▨	SM	FILL: Brown, dry to moist, medium dense, silty SAND; scattered gravel, cobbles, and roots.
								Total Depth = 2.2 feet. (Refusal on cobble.) Groundwater not encountered during excavation. Backfilled shortly after drilling on 11/21/18. Note: Groundwater, though not encountered at the time of excavation, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only, It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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APPENDIX B

Laboratory Testing

APPENDIX B

LABORATORY TESTING

Classification
Soils were visually and texturally classified in accordance with the Unified Soil Classification System (USCS) in general accordance with ASTM D 2488. Soil classifications are indicated on the log of the exploratory boring in Appendix A.

In-Place Moisture and Density Tests
The moisture content and dry density of relatively undisturbed samples obtained from the exploratory borings were evaluated in general accordance with ASTM D 2937. The test results are presented on the logs of the exploratory borings in Appendix A.

Gradation Analysis
Gradation analysis tests were performed on selected representative soil samples in general accordance with ASTM D 422. The grain size distribution curves are shown on Figures B-1 through B-5. These test results were utilized in evaluating the soil classifications in accordance with the USCS.

Consolidation Tests
Consolidation tests were performed on selected relatively undisturbed soil samples in general accordance with ASTM D 2435. The samples were inundated during testing to represent adverse field conditions. The percent of consolidation for each load cycle was recorded as a ratio of the amount of vertical compression to the original height of the sample. The results of the tests are summarized on Figure B-6.

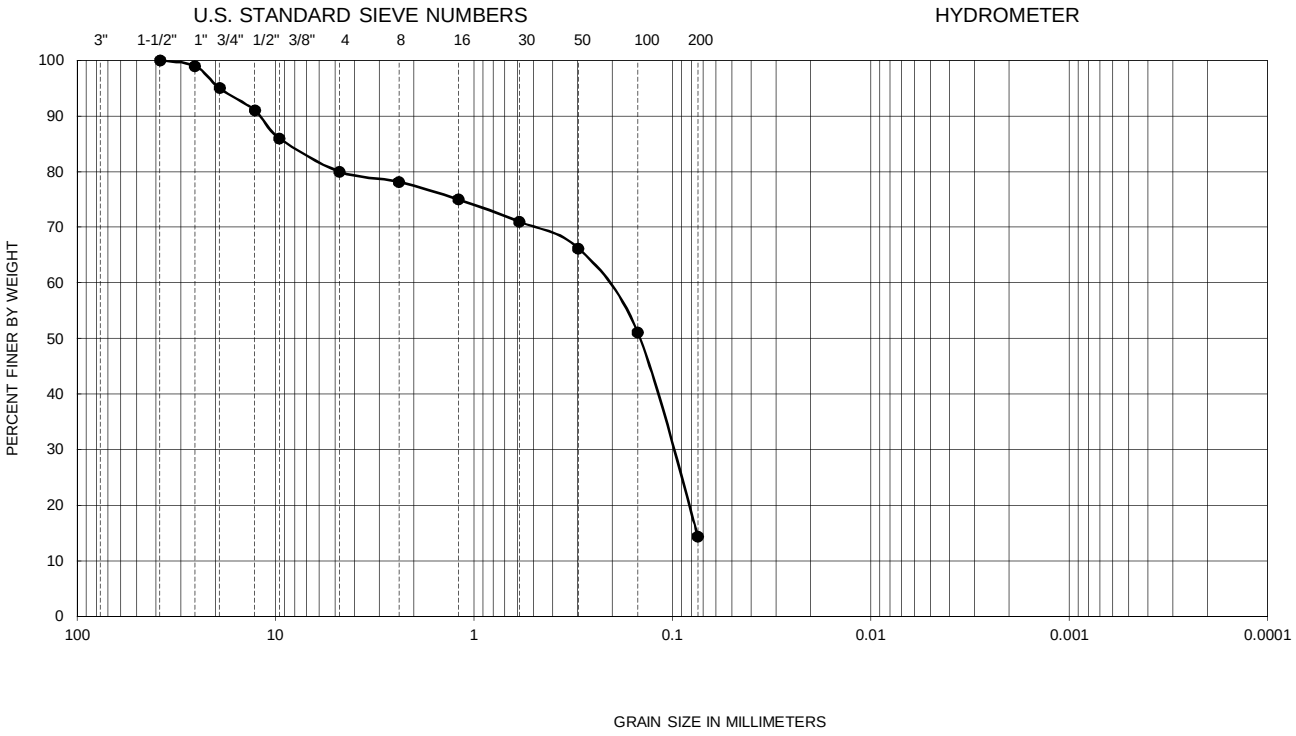
Direct Shear Test
Direct shear tests were performed on relatively undisturbed samples in general accordance with ASTM D 3080 to evaluate the shear strength characteristics of selected materials. The samples were inundated during shearing to represent adverse field conditions. The results are shown on Figures B-7 through B-9.

Expansion Index Tests
The expansion index of the selected material was evaluated in general accordance with ASTM D 4829. Specimens were molded under a specified compactive energy at approximately 50 percent saturation. The prepared 1-inch thick by 4-inch diameter specimen was loaded with a surcharge of 144 pounds per square foot and were inundated with tap water. Readings of volumetric swell were made for a period of 24 hours. The results of the test are presented on Figure B-10.

Soil Corrosivity Tests
Soil pH and electrical resistivity tests were performed on representative samples in general accordance with CT 643. The sulfate and chloride contents of the selected sample were evaluated in general accordance with CT 417 and 422, respectively. The results of these tests are presented on Figure B-11.

R-Value
The resistance value (R-value) for site soils was evaluated in general accordance with CT 301. Samples were prepared and evaluated for exudation pressure and expansion pressure. The equilibrium R-value is reported as the lesser or more conservative of the two calculated results. The test results are presented in Figure B-12.

GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (percent)	Equivalent USCS
●	B-1	1.0-4.0	--	--	--	--	--	--	--	--	14	SM

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

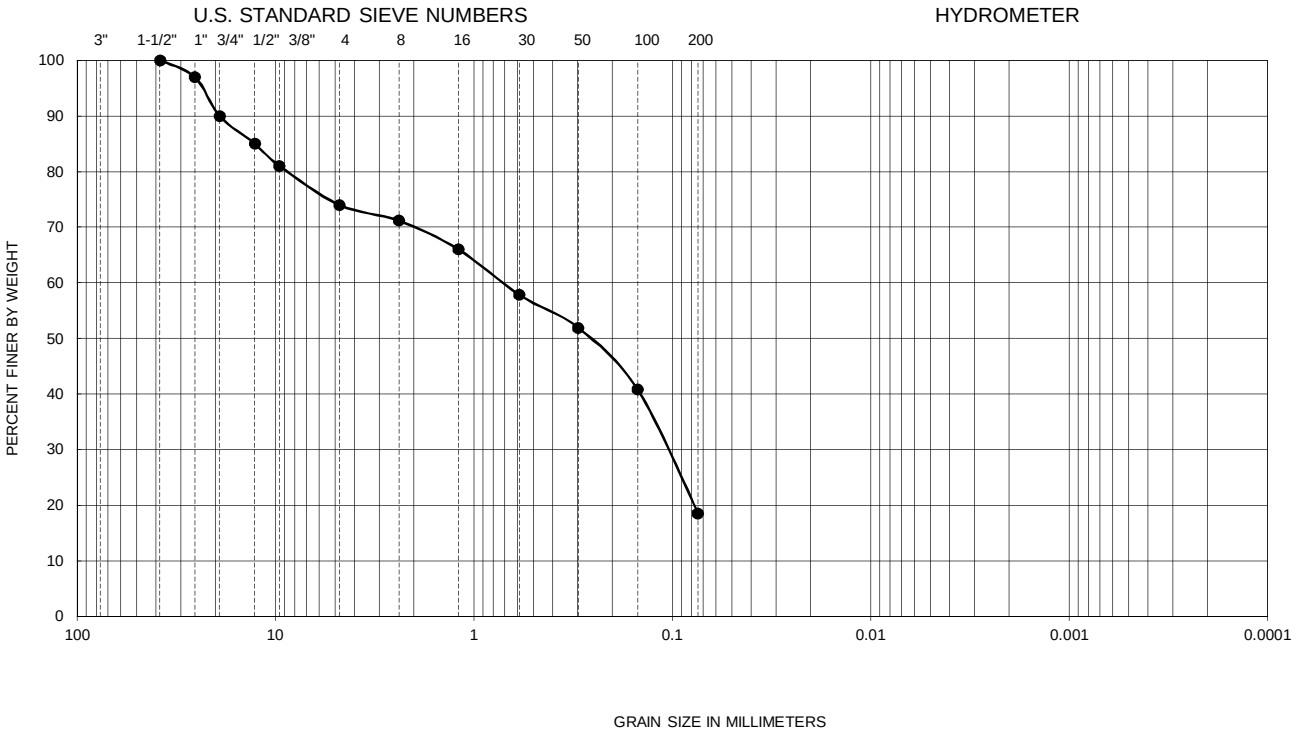
FIGURE B-1

GRADATION TEST RESULTS

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (percent)	USCS
●	B-3	1.0-4.0	--	--	--	--	--	--	--	--	19	SM

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

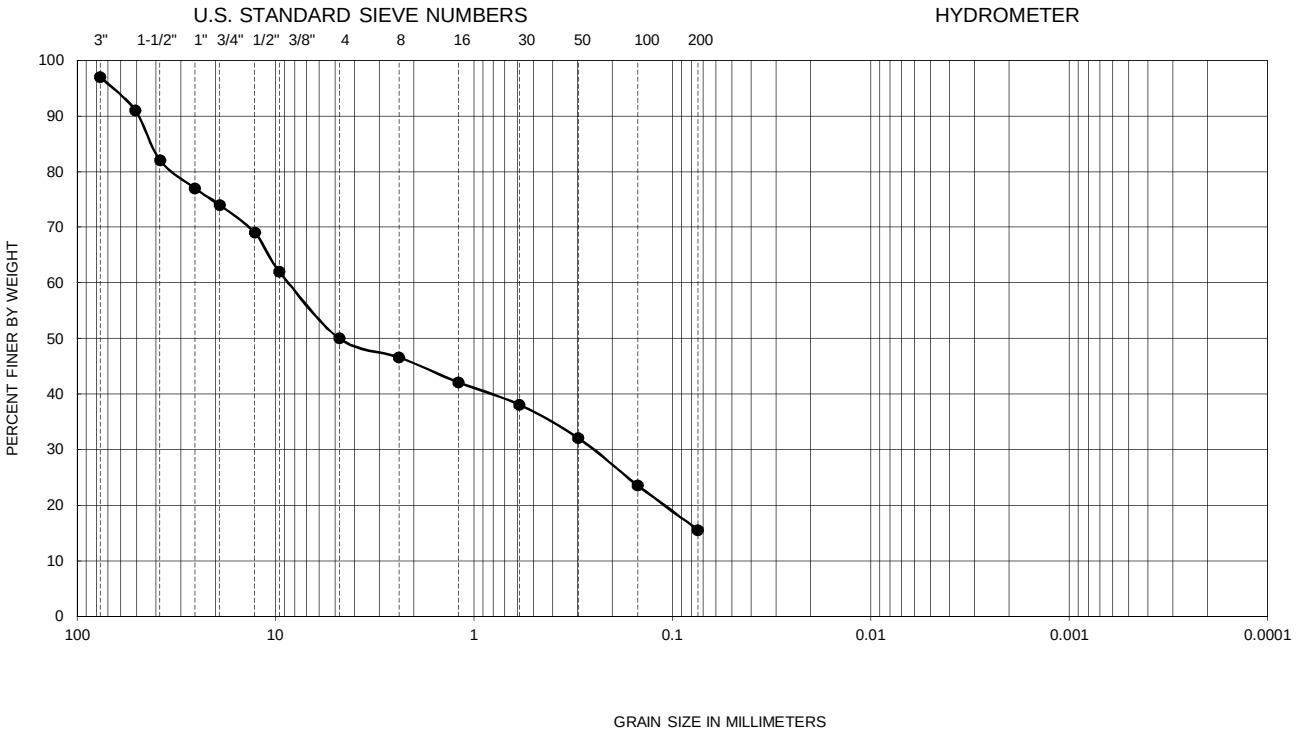
FIGURE B-2

GRADATION TEST RESULTS

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

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GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (percent)	USCS
●	B-6	0.5-3.0	--	--	--	--	--	--	--	--	16	GM

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

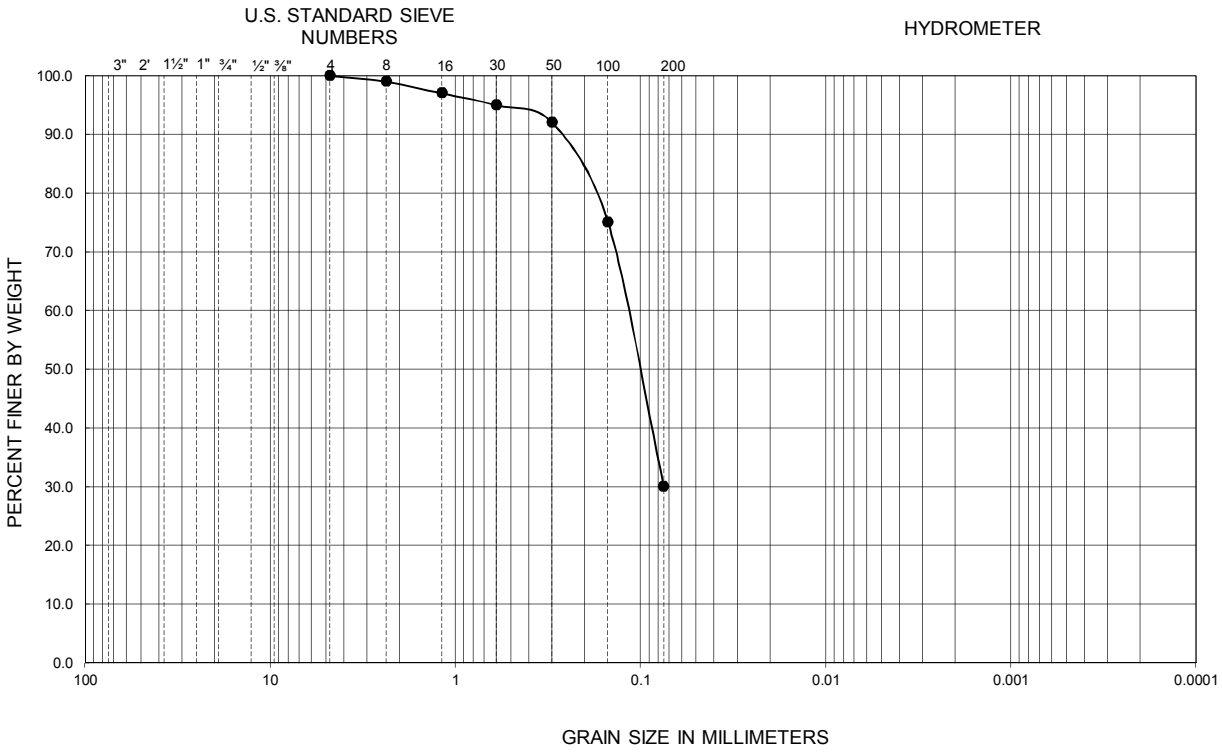
FIGURE B-3

GRADATION TEST RESULTS

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (percent)	Equivalent USCS
●	B-8	2.0-5.0	--	--	--	--	--	--	--	--	30	SM

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

FIGURE B-4

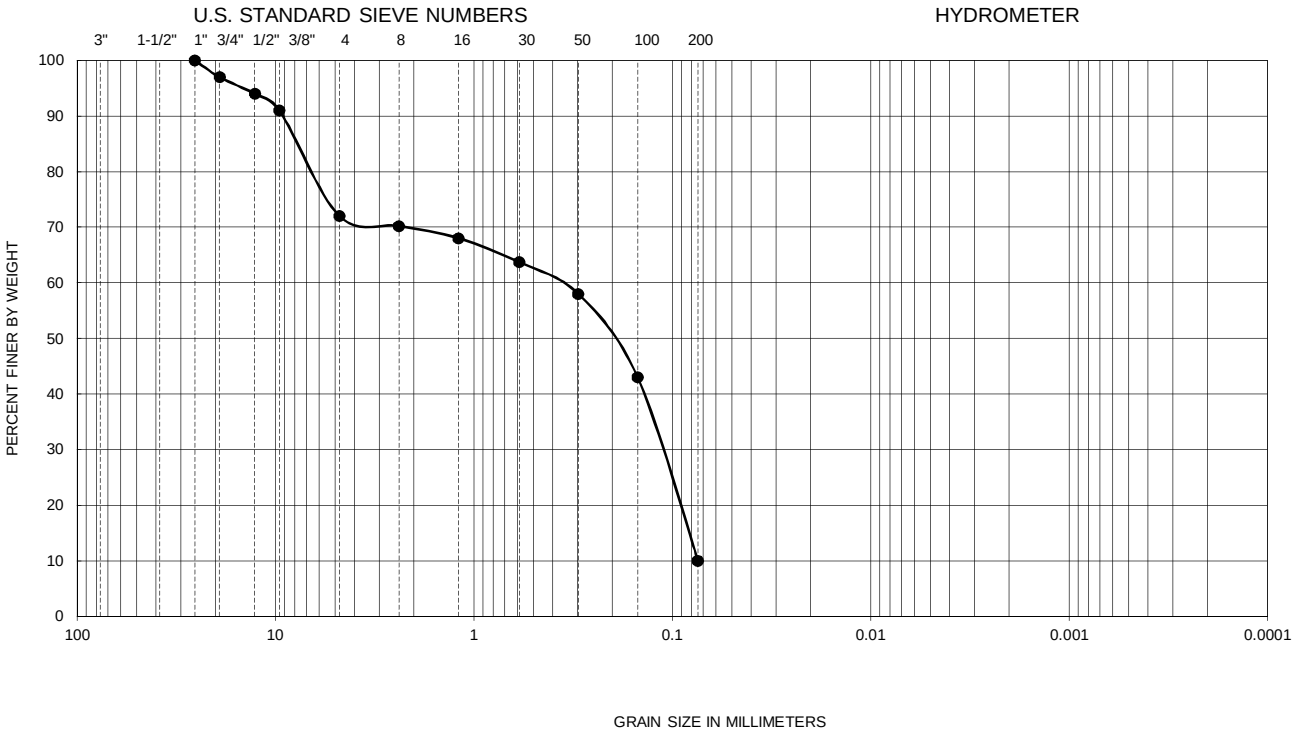
GRADATION TEST RESULTS

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SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598002 | 1/19

GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (percent)	Equivalent USCS
●	HA-10	0.0-7.0	--	--	--	0.07	0.11	0.35	4.7	0.5	10	SP-SM

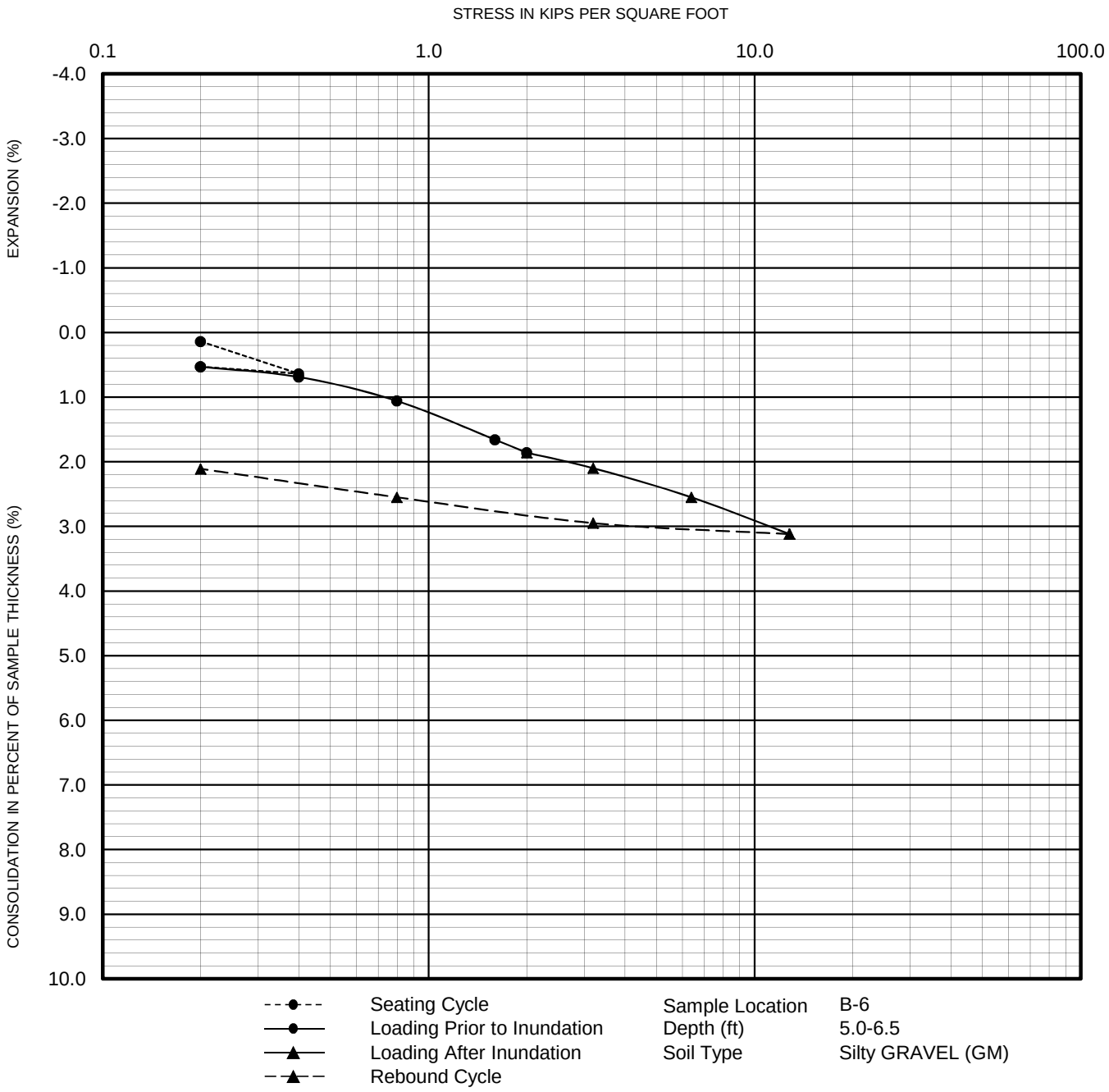
PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

FIGURE B-5

GRADATION TEST RESULTS

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants



PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 2435

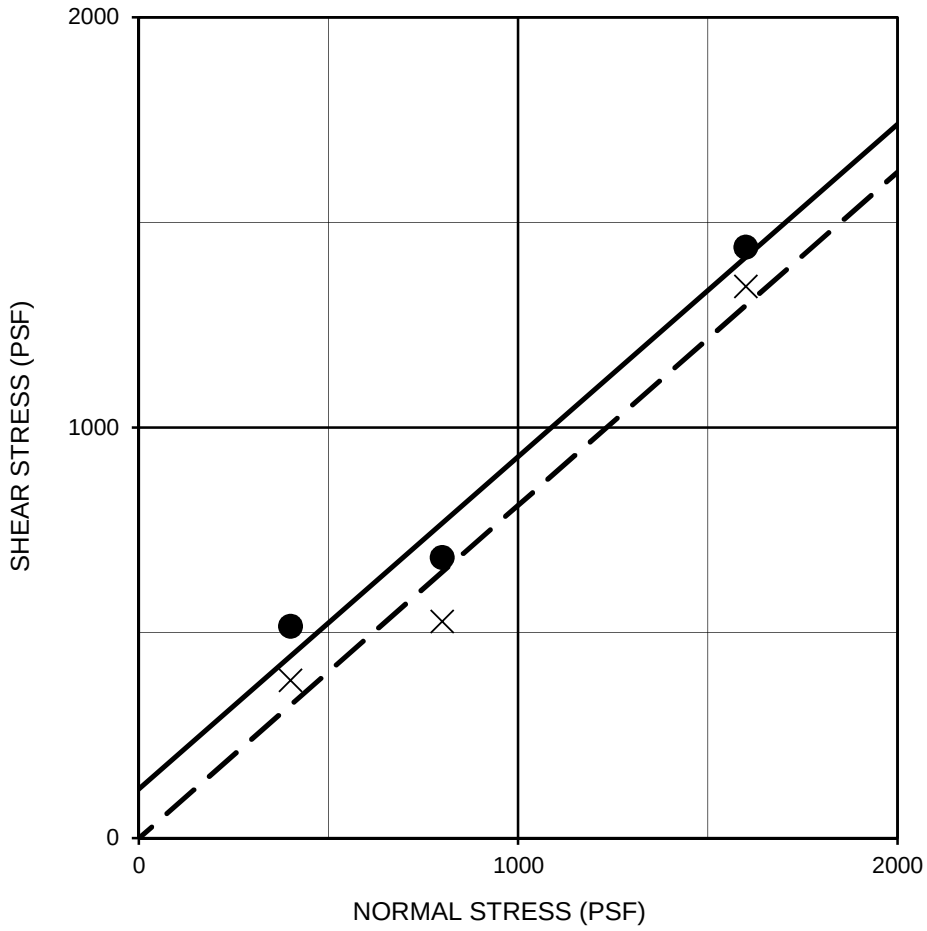
FIGURE B-6

CONSOLIDATION TEST RESULTS

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

108598002 | 1/19



Description	Symbol	Sample Location	Depth (ft)	Shear Strength	Cohesion (psf)	Friction Angle (degrees)	Soil Type
Silty SANDSTONE	—●—	B-1	5.0-6.5	Peak	120	39	Formation
Silty SANDSTONE	– – X – –	B-1	5.0-6.5	Ultimate	0	39	Formation

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 3080

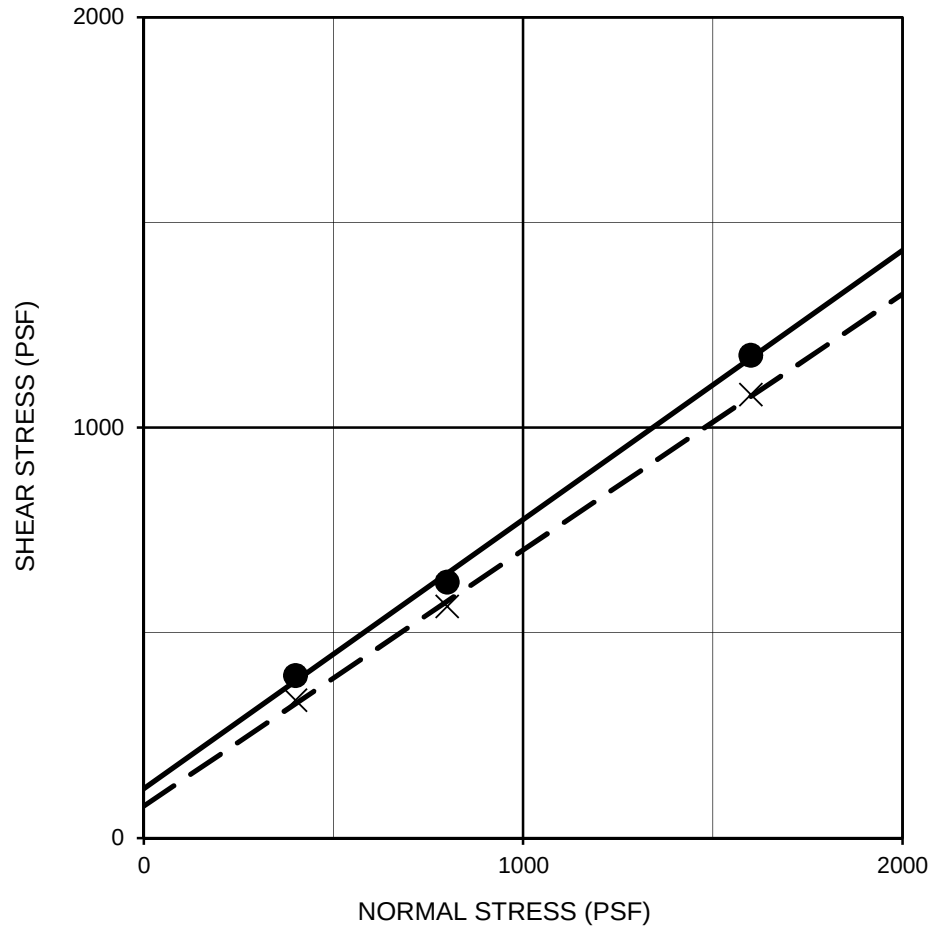
FIGURE B-7

DIRECT SHEAR TEST RESULTS

SAN DIEGO HIGH SCHOOL BUILDIING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598002 | 1/19

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Description	Symbol	Sample Location	Depth (ft)	Shear Strength	Cohesion (psf)	Friction Angle (degrees)	Soil Type
Silty SANDSTONE	—●—	B-3	10.0-11.5	Peak	120	33	Formation
Silty SANDSTONE	– – X – –	B-3	10.0-11.5	Ultimate	80	32	Formation

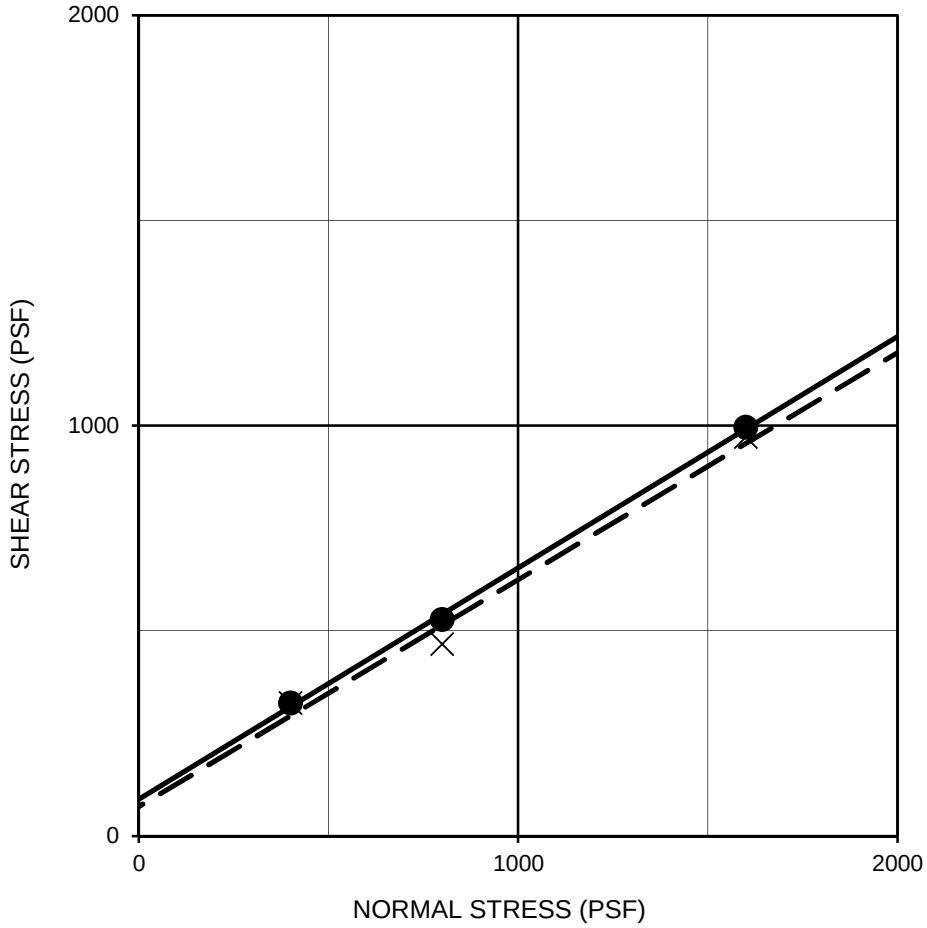
PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 3080

FIGURE B-8

DIRECT SHEAR TEST RESULTS

SAN DIEGO HIGH SCHOOL BUILDIING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants



Description	Symbol	Sample Location	Depth (ft)	Shear Strength	Cohesion (psf)	Friction Angle (degrees)	Soil Type
Silty SANDSTONE	—●—	B-8	5.0-6.5	Peak	90	29	Formation
Silty SANDSTONE	– – X – –	B-8	5.0-6.5	Ultimate	70	29	Formation

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 3080

FIGURE B-9

DIRECT SHEAR TEST RESULTS

SAN DIEGO HIGH SCHOOL BUILDIING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

Ninyo & Moore
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SAMPLE LOCATION	SAMPLE DEPTH (ft)	INITIAL MOISTURE (percent)	COMPACTED DRY DENSITY (pcf)	FINAL MOISTURE (percent)	VOLUMETRIC SWELL (in)	EXPANSION INDEX	POTENTIAL EXPANSION
B-3	1.0-4.0	8.5	116.0	18.2	0.029	29	Low
HA-7	3.0-4.3	12.5	100.9	23.1	0.079	79	Medium

PERFORMED IN GENERAL ACCORDANCE WITH ☐ UBC STANDARD 18-2 ☑ ASTM D 4829

FIGURE B-10

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

EXPANSION INDEX TEST RESULTS

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598002 | 1/19

SAMPLE LOCATION	SAMPLE DEPTH (ft)	pH [1]	RESISTIVITY [1] (ohm-cm)	SULFATE CONTENT [2]		CHLORIDE CONTENT [3] (ppm)
				(ppm)	(%)	
B-3	1.0-4.0	8.1	2,600	70	0.007	105
HA-7	3.0-4.3	6.1	760	1,000	0.100	435

[1] PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 643
[2] PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 417
[3] PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 422

FIGURE B-11

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

CORROSIVITY TEST RESULTS

SAN DIEGO HIGH SCHOOL BUILDIING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

SAMPLE LOCATION	SAMPLE DEPTH (ft)	SOIL TYPE	R-VALUE
HA-3	0.6-1.5	Silty SAND (SM)	46
HA-10	0.0-2.0	Silty SANDSTONE [excavated as silty SAND (SM)]	49

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 2844/CT 301

FIGURE B-12

R-VALUE TEST RESULTS

SAN DIEGO HIGH SCHOOL BUILDING 700 AND ADDITIONAL SITE IMPROVEMENTS
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

Ninyo & Moore
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APPENDIX C

Agronomic Testing

Anaheim Office
Lab No: 18-339-0010
December 17, 2018

Ninyo and Moore
5710 Ruffin Road
San Diego, CA 92123

PROJECT: SAN DIEGO HIGH SCHOOL – SAN DIEGO- JOB # 108598002

Attached are the results of the analysis performed on three soil samples that were collected from the above mentioned project site by the client and received by our laboratory on 12/05/2019. These samples were analyzed for nutrient levels and soil suitability in regards to a new landscape installation.

Analytical Results

The reaction of the soils range from strongly acidic (5.0) in the AG-3-0-2.5 sample to moderately acidic at (5.9) in the AG-1-0-2 sample. Strongly acidic reactions of 5.0 and 5.1 are lower than preferred by most ornamental plants. A reaction of 5.9 is slightly lower than preferred. Incorporating calcium carbonate lime will increase the pH to the depth of incorporation. Qualitative lime is absent throughout.

Salinity (ECe) is safely low in the AG-2 and AG-3-0-2.5 samples. Salinity (ECe) is elevated in the AG-1-0-2 sample with a reading of 4.6 dS/m which can cause tip and marginal burning on foliage of salt sensitive plant material and restrict the growth of very salt sensitive plants. Soluble sodium is elevated in the AG-1-0-2 sample and contributing to salinity with a reading of 28.5 meq/L. Salinity in this sample is also due to an abundance of soluble calcium sulfate which are not as injurious as other salts, such as sodium.

Sodium is not properly balanced by calcium and magnesium in the AG-1-0-2 and AG-3-0-2.5 samples as indicated by the slightly elevated sodium adsorption ration SAR values in the range of 6.3-6.4. These imbalances could have a negative impact on soil structure and infiltration. Sodium is properly balanced in the AG-2 sample.

Boron is safely low in all three samples and may be below optimum for plant nutrition in the AG-1-0-2 sample.

Nitrogen and potassium levels are low in all three samples. Phosphorus is low optimum in the AG-3-0-2.5 sample while very low in the remaining two samples. Calcium and magnesium levels are sufficient for plant nutrition. For the micronutrients, copper is ample in all three samples. Zinc is optimum in AG-1-0-2, well supplied in AG-2 at four times optimum, and moderate in AG-3-0-2.5. Manganese and iron are levels are low in all three samples.

The textures of the soils are classified as ‘sandy loam’ based off the USDA classification system. The estimated infiltration rates are in the range of 0.33 -0.37 inches per hour. Infiltration rates may vary depending on the degree of soil compaction on site. Organic content is low in all three samples with readings in the range of 1.2-1.4% by total dry weight of the samples.

Comments

In order to adjust the salinity (ECe) downward in the AG-1-0-2 location, organic material and lime should be incorporated followed by thorough leaching irrigations. Be sure to apply leaching irrigations in a manner that avoids run off and pooling. The soil should be allowed to dry slightly between irrigations to avoid creating anaerobic soil conditions. The amount of good quality water estimated to bring salinity to a safely low level of below 3.5 dS/m in the surface 6 inches of soil is estimated at 2 inches. Once ECe and SAR values have reached safely low levels in the root zone, fertilizer can be applied at the provided rates.

As salts are leached out of the root zone, the subsoil may remain saline. Plants that are chosen for the AG-1-0-2 location of the project should have some tolerance for salinity.

Recommendations

Surface Soil Preparation for Turf, Groundcover and Mass Planting

If feasible, prior to amending the areas where severe compaction exists, the surface soil should be ripped or tilled to a 9-inch depth. Uniformly broadcast and blend the following with existing soil to a 6-inch depth.

Materials	Amount per 1000 sq.ft.	Sample Location(s)
Nitrogen fortified organic amendment (compost* or redwood or fir sawdust)	4 cu. yards	All locations
Lime (calcium carbonate)	25 lbs.	AG-1-0-2
Lime (calcium carbonate)	60 lbs.	AG-2
Lime (calcium carbonate)	75 lbs.	AG-3-0-2.5
Calcium nitrate (15.5-0-0)	10 lbs.	All locations
Triple superphosphate (0-45-0)	8 lbs.	AG-1-0-2, AG-2
Triple superphosphate (0-45-0)	3 lbs.	AG-3-0-2.5
Potassium sulfate (0-0-50)	6 lbs.	All locations

*Rates and fertilizers may have to be adjusted depending on analysis of selected compost.

Tree and Shrub Planting Guidelines

1. Excavate planting pits at least twice the diameter of the rootball.
2. The top of the rootball should be at or slightly above final grade.
3. To improve soil chemistry, uniformly blend 1.5 lbs. of calcium carbonate lime per cubic yard of backfill soil in the AG-1-0-2 sample location and 3.5 lbs. of calcium carbonate lime per cubic yard of backfill in the AG-3-0-2.5 and AG-2 sample locations.
4. Organic material is not required in the backfill; however, if you wish, the amended surface soil or a soil blend consisting of no more than 20% by volume organic matter can be placed in the upper 12 inches of backfill only. Soil below this depth should not contain any added organic matter because of the threat of plant disease and/or anaerobic soil conditions developing.
5. Place slow release fertilizer tablets in the upper 12 inches of backfill at manufacturer's recommended rates. If fertilizer amended soil is used as a backfill the addition of slow release fertilizer tablets is not necessary.
6. Do not cover the original rootball with other soil. Ideally, a temporary soil berm is often constructed around the outer edge of the rootball to help channel water into the rootball and then into surrounding soil until roots are established in the backfill and the rootball is no longer the sole source of water for the plants.
7. Ideally, a weed and turf free zone, preferably 2-3 ft. in diameter, should be maintained just beyond the diameter of the planting hole. A 2-4 inch deep layer of coarse mulch can be placed around the tree or shrub; mulch should be kept a minimum 4-6 inches from the trunk.

Maintenance Fertilization

For turf, groundcover, and mass planting areas, uniformly broadcast calcium nitrate (15.5-0-0) at the rate of 7 lbs. per 1000 sq. ft. The first application should occur approximately 45 days after planting, with repeat applications every 60-90 days or as growth and color dictate. In early fall and spring, substitute a complete fertilizer such as 16-6-8, or equal, for the calcium nitrate (15.5-0-0) at the rate of 6 lbs. per 1000 sq. ft. to ensure continuing supplies of phosphorus and potassium. Tree and shrub plantings can be maintained with the above fertilizers; however, the frequency between applications should be every 90-120 days, or as color and growth dictate, with the first application 90 days after planting. Follow each fertilization with a thorough irrigation. When plants have become well established, fertilizer applications can be less frequent.

As noted above, some of the micronutrients are below optimum. When these nutrients are low, deficiencies can sometimes show in the plants. If deficiencies show once plants have become established, they may be addressed upon the first sign of deficiency. Symptoms of manganese deficiency may be seen as a general loss of color in the young leaves, followed by yellowing between veins and brownish-black spots appearing. Iron and zinc deficiency symptoms are often characterized by yellow, almost white, interveinal chlorosis on the youngest growth. If these symptoms are apparent once plants are established, then an application of iron, zinc, and/or manganese chelate at the manufacturer's label rate may improve appearance. Chelates are generally more effective than some of the other forms of trace elements.

If we can be of any further assistance, please feel free to contact us.

Joe Kiefer

Ninyo & Moore
5710 Ruffin Road

San Diego CA 92123

Waypoint ANALYTICAL

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Anaheim, CA 92807
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www.waypointanalytical.com

Project : San Diego High School - San Diego
Job #: 108598002

COMPREHENSIVE SOIL ANALYSIS

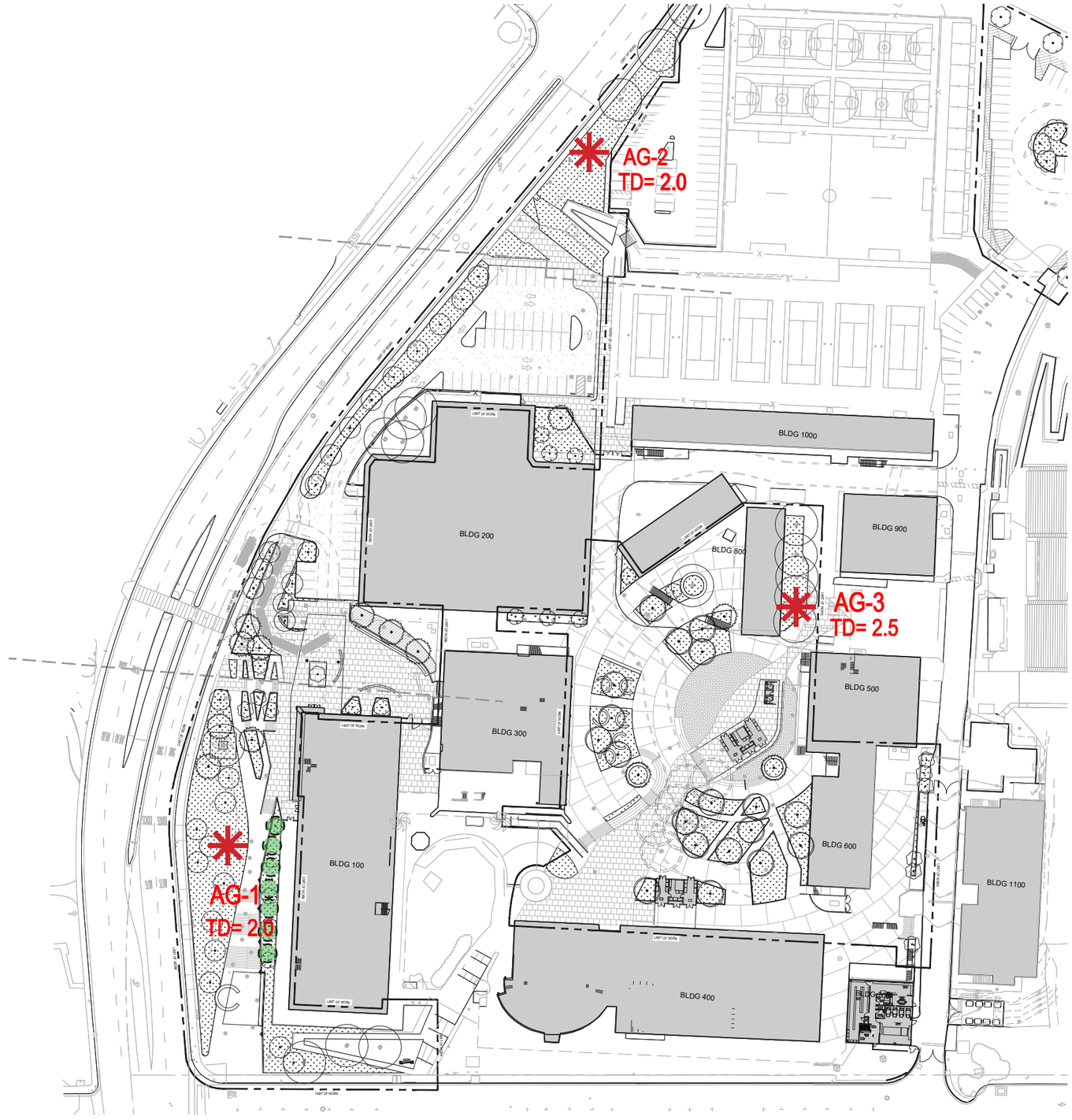
Report No : **18-339-0010**
Purchase Order :
Date Recd : 12/05/2018
Date Printed : 12/17/2018
Page : 1 of 1

Sample Description - Sample ID	Half Sat % / TEC	pH / Qual Lime	ECe dS/m	NO_3-N ppm	NH_4-N ppm	PO_4-P ppm	K ppm	Ca ppm	Mg ppm	Cu ppm	Zn ppm	Mn ppm	Fe ppm	Organic % dry wt.	Lab No.
	Sufficiency Factors														
AG-1-0-2	14	5.9	4.6	7	8	1	46	1552	251	1.3	6.4	2	15	1.4	00124
	102	N		0.5		0	0.5	1.3	1.6	1.4	1.8	0.2	0.4		
AG-2	17	5.1	0.9	2	5	3	17	961	219	1.1	14.6	1	2	1.2	00125
	73	N		0.2		0.2	0.2	0.8	1.4	1.3	4.2	0.1	0.1		
AG-3-0-2.5	17	5.0	1.2	2	5	16	38	1298	332	0.8	2.7	0	5	1.2	00126
	107	N		0.2		0.8	0.4	0.9	1.8	0.7	0.6	0	0.1		

Saturation Extract Values						SAR	Gravel %		Percent of Sample Passing 2 mm Screen					USDA Soil Classification	Lab No.
									Sand						
Ca meq/L	Mg meq/L	Na meq/L	K meq/L	B ppm	SO_4 meq/L		Coarse 5 - 12	Fine 2 - 5	Very Coarse 1 - 2	Coarse 0.5 - 1	Med. to Very Fine 0.05 - 0.5	Silt .002-.05	Clay 0-.002		
29.6	9.5	28.5	0.6	0.13	34.3	6.4	4.3	3.3	6.0	16.8	44.3	16.1	16.7	Sandy Loam	00124
2.4	1.1	6.1	0.1	0.26	3.7	4.7	1.2	3.6	0.6	1.6	70.9	12.1	14.7	Sandy Loam	00125
2.8	1.4	9.2	0.1	0.24	6.6	6.3	8.9	3.7	4.8	9.6	66.7	6.1	12.7	Sandy Loam	00126

Sufficiency factor (1.0=sufficient for average crop) below each nutrient value. N factor based on 200 ppm constant feed. SAR = Sodium adsorption ratio. Half Saturation %=approx field moisture capacity. Nitrogen(N), Potassium(K), Calcium(Ca) and Magnesium(Mg) by sodium chloride extraction. Phosphorus(P) by sodium bicarbonate extraction. Copper(Cu), Zinc(Zn), Manganese(Mn) & Iron(Fe) by DTPA extraction. Sat. ext. method for salinity (ECe as dS/m),Boron (B), Sulfate(SO_4), Sodium(Na). Gravel fraction expressed as percent by weight of oven-dried sample passing a 12mm(1/2 inch) sieve. Particle sizes in millimeters. Organic percentage determined by Walkley-Black or Loss on Ignition.

* LOW , SUFFICIENT , HIGH



AG-3
TD= 2.5

LEGEND

- SOIL SAMPLE LOCATIONS
  TD= TOTAL DEPTH IN FEET
- BOTTLE TREE RELOCATIONS
- NEW FENCE LOCATION (TBD)

Encountered Soil:
Fill: Brown, moist, medium dense, silty SAND (SM), scattered roots and gravel

PLAN NORTH
0' 50' 100'

REVIEWED BY — DATE
DISTRICT ARCHITECT
ASSISTANT DISTRICT ARCHITECT
SITE ADMINISTRATOR
OTHER
OTHER
OTHER
DSA
CONSULTANT
ARCHITECT/CONSULTANT

LICENSED ARCHITECT
ED HOLAK IEW CZ
NO. C 31100
REN 6-30-19
STATE OF CALIFORNIA

SAN DIEGO UNIFIED SCHOOL DISTRICT

PREPARED FOR THE
BOARD OF EDUCATION
SAN DIEGO UNIFIED SCHOOL DISTRICT
SAN DIEGO, CALIFORNIA

PREPARED BY THE
ARCHITECTS
MOSHER DREW

OVERALL SITE PLAN

SAN DIEGO HIGH SCHOOL
WHOLE SITE MODERNIZATION

1405 PARK BLVD, SAN DIEGO, CA 92101
SAN DIEGO, CA 92126

PROJECT NO. 17002.10
- -
FILE NAME
DATE 09.10.2018
DRAWN EVT
CHECKED DWM
REVISIONS
SHEET NO. -
OF _ SHEETS

landscape architecture | environmental planning | urban design

APPENDIX D

Infiltration Testing

Test Date:	11/20/2018					Infiltration Test No.:	HA-1	
Test Hole Diameter, D (inches):	6.0					Excavation Depth (feet):	2.0	
Test performed and recorded by:	GSW					Pipe Length (feet):	2.00	
t_1	d_1 (feet)	t_2	d_2 (feet)	Δt (min)	ΔH (feet)	Percolation Rate (min/in)	H_{avg} (feet)	Infiltration Rate (in/hr)
7:40	1.00	8:05	2.00	25	1.00	2.08	0.50	5.76
8:05	1.00	8:30	1.90	25	0.90	2.31	0.55	4.80
8:30	1.00	8:40	1.80	10	0.80	1.04	0.60	9.93
8:40	1.00	8:50	1.78	10	0.78	1.07	0.61	9.55
8:50	1.00	9:00	1.79	10	0.79	1.05	0.61	9.74
9:00	1.00	9:10	1.80	10	0.80	1.04	0.60	9.93
9:10	1.00	9:20	1.80	10	0.80	1.04	0.60	9.93
9:20	1.00	9:30	1.80	10	0.80	1.04	0.60	9.93

Test Date:	11/20/2018					Infiltration Test No.:	HA-2	
Test Hole Diameter, D (inches):	6.0					Excavation Depth (feet):	2.0	
Test performed and recorded by:	GSW					Pipe Length (feet):	2.00	
t_1	d_1 (feet)	t_2	d_2 (feet)	Δt (min)	ΔH (feet)	Percolation Rate (min/in)	H_{avg} (feet)	Infiltration Rate (in/hr)
7:42	1.00	8:07	1.30	25	0.30	6.94	0.85	1.11
8:07	1.00	8:32	1.27	25	0.27	7.72	0.87	0.98
8:32	1.00	9:02	1.25	30	0.25	10.00	0.88	0.75
9:02	1.00	9:32	1.25	30	0.25	10.00	0.88	0.75
9:32	1.00	10:02	1.26	30	0.26	9.62	0.87	0.78
10:02	1.00	10:32	1.26	30	0.26	9.62	0.87	0.78
10:32	1.00	11:02	1.25	30	0.25	10.00	0.88	0.75
11:02	1.00	11:32	1.24	30	0.24	10.42	0.88	0.72
11:32	1.00	12:02	1.24	30	0.24	10.42	0.88	0.72
12:02	1.00	12:32	1.24	30	0.24	10.42	0.88	0.72
12:32	1.00	1:02	1.24	30	0.24	10.42	0.88	0.72
1:02	1.00	1:32	1.24	30	0.24	10.42	0.88	0.72

Notes:

t_1 = initial time when filling or refilling is completed

d_1 = initial depth to water in hole at t_1

t_2 = final time when incremental water level reading is taken

d_2 = final depth to water in hole at t_2

Δt = change in time between initial and final water level readings

ΔH = change in depth to water or change in height of water column (i.e., $d_2 - d_1$)

in/hr = inches per hour

Percolation Rate to Infiltration Rate Conversion [1]

$$I_t = \frac{\Delta H \times 60 \times r}{\Delta t(r + 2H_{avg})}$$

I_t = tested infiltration rate, inches/hour

ΔH = change in head over the time interval, inches

Δt = time interval, minutes

r = effective radius of test hole

H_{avg} = average head over the time interval, inches

[1] Based on the "Porchet Method" as presented in:
Riverside County Flood Control, 2011, Design Handbook for Low Impact Development Best Management Practices: dated September.

Test Date:	11/20/2018					Infiltration Test No.:	HA-4	
Test Hole Diameter, D (inches):	6.0					Excavation Depth (feet):	3.0	
Test performed and recorded by:	GSW					Pipe Length (feet):	3.00	
t_1	d_1 (feet)	t_2	d_2 (feet)	Δt (min)	ΔH (feet)	Percolation Rate (min/in)	H_{avg} (feet)	Infiltration Rate (in/hr)
7:45	2.00	8:10	2.56	25	0.56	3.72	0.72	2.39
8:10	2.00	8:35	2.35	25	0.35	5.95	0.83	1.33
8:35	2.00	9:05	2.38	30	0.38	6.58	0.81	1.22
9:05	2.00	9:35	2.38	30	0.38	6.58	0.81	1.22
9:35	2.00	10:05	2.38	30	0.38	6.58	0.81	1.22
10:05	2.00	10:35	2.37	30	0.37	6.76	0.82	1.18
10:35	2.00	11:05	2.36	30	0.36	6.94	0.82	1.14
11:05	2.00	11:35	2.36	30	0.36	6.94	0.82	1.14
11:35	2.00	12:05	2.36	30	0.36	6.94	0.82	1.14
12:05	2.00	12:35	2.36	30	0.36	6.94	0.82	1.14
12:35	2.00	1:05	2.36	30	0.36	6.94	0.82	1.14
1:05	2.00	1:35	2.36	30	0.36	6.94	0.82	1.14

Test Date:	11/20/2018					Infiltration Test No.:	HA-5	
Test Hole Diameter, D (inches):	6.0					Excavation Depth (feet):	4.0	
Test performed and recorded by:	GLC					Pipe Length (feet):	5.33	
t_1	d_1 (feet)	t_2	d_2 (feet)	Δt (min)	ΔH (feet)	Percolation Rate (min/in)	H_{avg} (feet)	Infiltration Rate (in/hr)
12:06	3.11	12:31	4.73	25	1.62	1.29	1.41	3.80
12:34	3.31	12:59	4.65	25	1.34	1.55	1.35	3.27
1:00	2.85	1:10	4.33	10	1.48	0.56	1.74	7.14
1:11	1.96	1:21	4.20	10	2.24	0.37	2.25	8.49
1:22	2.51	1:32	4.14	10	1.63	0.51	2.01	6.89
1:33	2.25	1:43	4.19	10	1.94	0.43	2.11	7.81
1:45	2.56	1:55	4.25	10	1.69	0.49	1.93	7.42
1:57	2.21	2:07	4.12	10	1.91	0.44	2.17	7.51
2:08	2.88	2:18	4.22	10	1.34	0.62	1.78	6.33

Notes:

t_1 = initial time when filling or refilling is completed

d_1 = initial depth to water in hole at t_1

t_2 = final time when incremental water level reading is taken

d_2 = final depth to water in hole at t_2

Δt = change in time between initial and final water level readings

ΔH = change in depth to water or change in height of water column (i.e., $d_2 - d_1$)

in/hr = inches per hour

Percolation Rate to Infiltration Rate Conversion [1]

$$I_t = \frac{\Delta H \times 60 \times r}{\Delta t\left(r + 2H_{avg}\right)}$$

I_t = tested infiltration rate, inches/hour

ΔH = change in head over the time interval, inches

Δt = time interval, minutes

r = effective radius of test hole

H_{avg} = average head over the time interval, inches

[1] Based on the "Porchet Method" as presented in:
Riverside County Flood Control, 2011, Design Handbook for Low Impact Development Best Management Practices: dated September.

Test Date:	11/20/2018					Infiltration Test No.:	HA-6	
Test Hole Diameter, D (inches):	6.0					Excavation Depth (feet):	5.0	
Test performed and recorded by:	GSW					Pipe Length (feet):	5.00	
t_1	d_1 (feet)	t_2	d_2 (feet)	Δt (min)	ΔH (feet)	Percolation Rate (min/in)	H_{avg} (feet)	Infiltration Rate (in/hr)
7:47	4.00	8:12	4.57	25	0.57	3.65	0.72	2.44
8:12	4.00	8:37	4.45	25	0.45	4.63	0.78	1.80
8:37	4.00	9:07	4.36	30	0.36	6.94	0.82	1.14
9:07	4.00	9:37	4.37	30	0.37	6.76	0.82	1.18
9:37	4.00	10:07	4.37	30	0.37	6.76	0.82	1.18
10:07	4.00	10:37	4.36	30	0.36	6.94	0.82	1.14
10:37	4.00	11:07	4.35	30	0.35	7.14	0.83	1.11
11:07	4.00	11:37	4.35	30	0.35	7.14	0.83	1.11
11:37	4.00	12:07	4.35	30	0.35	7.14	0.83	1.11
12:07	4.00	12:37	4.35	30	0.35	7.14	0.83	1.11
12:37	4.00	1:07	4.35	30	0.35	7.14	0.83	1.11
1:07	4.00	1:37	4.35	30	0.35	7.14	0.83	1.11

Test Date:	11/20/2018					Infiltration Test No.:	HA-7	
Test Hole Diameter, D (inches):	6.0					Excavation Depth (feet):	4.3	
Test performed and recorded by:	GLC					Pipe Length (feet):	5.00	
t_1	d_1 (feet)	t_2	d_2 (feet)	Δt (min)	ΔH (feet)	Percolation Rate (min/in)	H_{avg} (feet)	Infiltration Rate (in/hr)
8:29	2.79	8:54	3.03	25	0.24	8.68	2.09	0.39
8:54	2.79	9:19	2.99	25	0.20	10.42	2.11	0.32
9:19	2.99	9:49	3.24	30	0.25	10.00	1.89	0.37
9:51	2.41	10:21	2.79	30	0.38	6.58	2.40	0.45
10:22	2.34	10:52	2.71	30	0.37	6.76	2.48	0.43
10:52	2.24	11:22	2.67	30	0.43	5.81	2.55	0.48
11:23	2.11	11:53	2.58	30	0.47	5.32	2.66	0.51
11:54	2.09	12:24	2.57	30	0.48	5.21	2.67	0.52
12:24	2.25	12:54	2.76	30	0.51	4.90	2.50	0.58
12:55	1.89	1:25	2.51	30	0.62	4.03	2.80	0.64
1:26	1.82	1:56	2.46	30	0.64	3.91	2.86	0.64
1:57	1.88	2:27	2.51	30	0.63	4.00	2.81	0.64

Notes:

t_1 = initial time when filling or refilling is completed

d_1 = initial depth to water in hole at t_1

t_2 = final time when incremental water level reading is taken

d_2 = final depth to water in hole at t_2

Δt = change in time between initial and final water level readings

ΔH = change in depth to water or change in height of water column (i.e., d_2 - d_1)

in/hr = inches per hour

Percolation Rate to Infiltration Rate Conversion [1]

$$I_t = \frac{\Delta H \times 60 \times r}{\Delta t\left(r + 2H_{avg}\right)}$$

I_t = tested infiltration rate, inches/hour

ΔH = change in head over the time interval, inches

Δt = time interval, minutes

r = effective radius of test hole

H_{avg} = average head over the time interval, inches

[1] Based on the "Porchet Method" as presented in:
Riverside County Flood Control, 2011, Design Handbook for Low Impact Development Best Management Practices: dated September.

Test Date:	11/20/2018			Infiltration Test No.:	HA-10
Test Hole Diameter, D (inches):	6.0			Excavation Depth (feet):	4.2
Test performed and recorded by:	GLC			Pipe Length (feet):	5.00

t_1	d_1 (feet)	t_2	d_2 (feet)	Δt (min)	ΔH (feet)	Percolation Rate (min/in)	H_{avg} (feet)	Infiltration Rate (in/hr)
8:23	2.70	8:48	4.95	25	2.25	0.93	1.18	6.23
8:51	3.07	9:16	4.90	25	1.83	1.14	1.02	5.78
9:16	2.86	9:26	4.35	10	1.49	0.56	1.40	8.82
9:30	2.65	9:40	4.21	10	1.56	0.53	1.57	8.28
9:42	2.29	9:52	4.11	10	1.82	0.46	1.80	8.51
9:54	2.35	10:04	3.96	10	1.61	0.52	1.85	7.36
10:05	2.41	10:15	3.98	10	1.57	0.53	1.81	7.32
10:16	2.62	10:26	4.07	10	1.45	0.57	1.66	7.33

Notes:

t_1 = initial time when filling or refilling is completed

d_1 = initial depth to water in hole at t_1

t_2 = final time when incremental water level reading is taken

d_2 = final depth to water in hole at t_2

Δt = change in time between initial and final water level readings

ΔH = change in depth to water or change in height of water column (i.e., $d_2 - d_1$)

in/hr = inches per hour

Percolation Rate to Infiltration Rate Conversion [1]

$$I_t = \frac{\Delta H \times 60 \times r}{\Delta t(r + 2H_{avg})}$$

I_t = tested infiltration rate, inches/hour

ΔH = change in head over the time interval, inches

Δt = time interval, minutes

r = effective radius of test hole

H_{avg} = average head over the time interval, inches

[1] Based on the "Porchet Method" as presented in:
Riverside County Flood Control, 2011, Design Handbook for Low Impact Development Best Management Practices: dated September.

Worksheet C.4-1: Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions[9]

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A[10]
Part 1 - Full Infiltration Feasibility Screening Criteria	
DMA(s) Being Analyzed:	Project Phase:
San Diego High School Building 700 & Site Improvements	Planning
Criteria 1: Infiltration Rate Screening	
1A	Is the mapped hydrologic soil group according to the NRCS Web Soil Survey or UC Davis Soil Web Mapper Type A or B and corroborated by available site soil data[11]? ☐ Yes; the DMA may feasibly support full infiltration. Answer "Yes" to Criteria 1 Result or continue to Step 1B if the applicant elects to perform infiltration testing. ☐ No; the mapped soil types are A or B but is not corroborated by available site soil data (continue to Step 1B). ☐ No; the mapped soil types are C, D, or "urban/unclassified" and is corroborated by available site soil data. Answer "No" to Criteria 1 Result. ☒ No; the mapped soil types are C, D, or "urban/unclassified" but is not corroborated by available site soil data (continue to Step 1B).
1B	Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1? ☒ Yes; Continue to Step 1C. ☐ No; Skip to Step 1D.
1C	Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1 greater than 0.5 inches per hour? ☐ Yes; the DMA may feasibly support full infiltration. Answer "Yes" to Criteria 1 Result. ☒ No; full infiltration is not required. Answer "No" to Criteria 1 Result.
1D	**Infiltration Testing Method.** Is the selected infiltration testing method suitable during the design phase (see Appendix D.3)? Note: Alternative testing standards may be allowed with appropriate rationales and documentation. ☐ Yes; continue to Step 1E. ☐ No; select an appropriate infiltration testing method.

[9] Note that it is not required to investigate each and every criterion in the worksheet, a single "no" answer in Part 1, Part 2, Part 3, or Part 4 determines a full, partial, or no infiltration condition.

[10] This form must be completed each time there is a change to the site layout that would affect the infiltration feasibility condition. Previously completed forms shall be retained to document the evolution of the site storm water design.

[11] Available data includes site-specific sampling or observation of soil types or texture classes, such as obtained from borings or test pits necessary to support other design elements.

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A[10]
1E	**Number of Percolation/Infiltration Tests.** Does the infiltration testing method performed satisfy the minimum number of tests specified in Table D.3-2? ☐ Yes; continue to Step 1F. ☐ No; conduct appropriate number of tests.
IF	**Factor of Safety.** Is the suitable Factor of Safety selected for full infiltration design? See guidance in D.5; Tables D.5-1 and D.5-2; and Worksheet D.5-1 (Form I-9). ☐ Yes; continue to Step 1G. ☐ No; select appropriate factor of safety.
1G	**Full Infiltration Feasibility.** Is the average measured infiltration rate divided by the Factor of Safety greater than 0.5 inches per hour? ☐ Yes; answer "Yes" to Criteria 1 Result. ☐ No; answer "No" to Criteria 1 Result.
Criteria 1 Result	Is the estimated reliable infiltration rate greater than 0.5 inches per hour within the DMA where runoff can reasonably be routed to a BMP? ☐ Yes; the DMA may feasibly support full infiltration. Continue to Criteria 2. ☒ No; full infiltration is not required. Skip to Part 1 Result.

Summarize infiltration testing methods, testing locations, replicates, and results and summarize estimates of reliable infiltration rates according to procedures outlined in D.5. Documentation should be included in project geotechnical report.

Reliable infiltration rates at the site were measured between 0.32 and 4.9 inches per hour. For infiltration testing method, locations, data, and results, please refer to the Geotechnical Evaluation report prepared by Ninyo & Moore (2018).

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[10]	
Criteria 2: Geologic/Geotechnical Screening			
2A	If all questions in Step 2A are answered "Yes," continue to Step 2B. For any "No" answer in Step 2A answer "No" to Criteria 2, and submit an "Infiltration Feasibility Condition Letter" that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.		
2A-1	Can the proposed full infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick below the infiltrating surface?	☐ Yes	☐ No
2A-2	Can the proposed full infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	☐ Yes	☐ No
2A-3	Can the proposed full infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	☐ Yes	☐ No
2B	When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1. If all questions in Step 2B are answered "Yes," then answer "Yes" to Criteria 2 Result. If there are "No" answers continue to Step 2C.		
2B-1	**Hydroconsolidation.** Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP. Can full infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?	☐ Yes	☐ No
2B-2	**Expansive Soils.** Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs. Can full infiltration BMPs be proposed within the DMA without increasing expansive soil risks?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[10]	
2B-3	**Liquefaction**. If applicable, identify mapped liquefaction areas. Evaluate liquefaction hazards in accordance with Section 6.4.2 of the City of San Diego's Guidelines for Geotechnical Reports (2011 or most recent edition). Liquefaction hazard assessment shall take into account any increase in groundwater elevation or groundwater mounding that could occur as a result of proposed infiltration or percolation facilities. Can full infiltration BMPs be proposed within the DMA without increasing liquefaction risks?	☐ Yes	☐ No
2B-4	**Slope Stability**. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required. Can full infiltration BMPs be proposed within the DMA without increasing slope stability risks?	☐ Yes	☐ No
2B-5	**Other Geotechnical Hazards.** Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1). Can full infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?	☐ Yes	☐ No
2B-6	**Setbacks.** Establish setbacks from underground utilities, structures, and/or retaining walls. Reference applicable ASTM or other recognized standard in the geotechnical report. Can full infiltration BMPs be proposed within the DMA using established setbacks from underground utilities, structures, and/or retaining walls?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[10]	
2C	**Mitigation Measures.** Propose mitigation measures for each geologic/geotechnical hazard identified in Step 2B. Provide a discussion of geologic/geotechnical hazards that would prevent full infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures. Can mitigation measures be proposed to allow for full infiltration BMPs? If the question in Step 2 is answered "Yes," then answer "Yes" to Criteria 2 Result. If the question in Step 2C is answered "No," then answer "No" to Criteria 2 Result.	☐ Yes	☐ No
Criteria 2 Result	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?	☐ Yes	☐ No
Summarize findings and basis; provide references to related reports or exhibits.			

Part 1 Result – Full Infiltration Geotechnical Screening [12]	Result
If answers to both Criteria 1 and Criteria 2 are "Yes", a full infiltration design is potentially feasible based on Geotechnical conditions only. If either answer to Criteria 1 or Criteria 2 is "No", a full infiltration design is not required.	☐ Full infiltration Condition ☒ Complete Part 2

[12] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A[10]
Part 2 – Partial vs. No Infiltration Feasibility Screening Criteria	
DMA(s) Being Analyzed:	Project Phase:
San Diego High School Building 700 & Site Improvements	Planning
Criteria 3 : Infiltration Rate Screening	
3A	**NRCS Type C, D, or "urban/unclassified":** Is the mapped hydrologic soil group according to the NRCS Web Soil Survey or UC Davis Soil Web Mapper is Type C, D, or "urban/unclassified" and corroborated by available site soil data? ☐ Yes; the site is mapped as C soils and a reliable infiltration rate of 0.15 in/hr. is used to size partial infiltration BMPS. Answer "Yes" to Criteria 3 Result. ☐ Yes; the site is mapped as D soils or "urban/unclassified" and a reliable infiltration rate of 0.05 in/hr. is used to size partial infiltration BMPS. Answer "Yes" to Criteria 3 Result. ☒ No; infiltration testing is conducted (refer to Table D.3-1), continue to Step 3B.
3B	**Infiltration Testing Result:** Is the reliable infiltration rate (i.e. average measured infiltration rate/2) greater than 0.05 in/hr. and less than or equal to 0.5 in/hr? ☒ Yes; the site may support partial infiltration. Answer "Yes" to Criteria 3 Result. ☐ No; the reliable infiltration rate (i.e. average measured rate/2) is less than 0.05 in/hr., partial infiltration is not required. Answer "No" to Criteria 3 Result.
Criteria 3 Result	Is the estimated reliable infiltration rate (i.e., average measured infiltration rate/2) greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour at any location within each DMA where runoff can reasonably be routed to a BMP? ☒ Yes; Continue to Criteria 4. ☐ No: Skip to Part 2 Result.
Summarize infiltration testing and/or mapping results (i.e. soil maps and series description used for infiltration rate). Reliable infiltration rates at the site were measured between 0.32 and 4.9 inches per hour. For infiltration testing method, locations, data, and results, please refer to the Geotechnical Evaluation report prepared by Ninyo & Moore (2018).	

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[10]	
Criteria 4: Geologic/Geotechnical Screening			
4A	If all questions in Step 4A are answered "Yes," continue to Step 2B. For any "No" answer in Step 4A answer "No" to Criteria 4 Result, and submit an "Infiltration Feasibility Condition Letter" that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.		
4A-1	Can the proposed partial infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick?	☒ Yes	☐ No
4A-2	Can the proposed partial infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	☒ Yes	☐ No
4A-3	Can the proposed partial infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	☒ Yes	☐ No
4B	When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1 If all questions in Step 4B are answered "Yes," then answer "Yes" to Criteria 4 Result. If there are any "No" answers continue to Step 4C.		
4B-1	**Hydroconsolidation.** Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP. Can partial infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?	☒ Yes	☐ No
4B-2	**Expansive Soils.** Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs. Can partial infiltration BMPs be proposed within the DMA without increasing expansive soil risks?	☐ Yes	☒ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[10]	
4B-3	**Liquefaction**. If applicable, identify mapped liquefaction areas. Evaluate liquefaction hazards in accordance with Section 6.4.2 of the City of San Diego's Guidelines for Geotechnical Reports (2011). Liquefaction hazard assessment shall take into account any increase in groundwater elevation or groundwater mounding that could occur as a result of proposed infiltration or percolation facilities. Can partial infiltration BMPs be proposed within the DMA without increasing liquefaction risks?	☒ Yes	☐ No
4B-4	**Slope Stability**. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required. Can partial infiltration BMPs be proposed within the DMA without increasing slope stability risks?	☒ Yes	☐ No
4B-5	**Other Geotechnical Hazards.** Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1). Can partial infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?	☒ Yes	☐ No
4B-6	**Setbacks.** Establish setbacks from underground utilities, structures, and/or retaining walls. Reference applicable ASTM or other recognized standard in the geotechnical report. Can partial infiltration BMPs be proposed within the DMA using recommended setbacks from underground utilities, structures, and/or retaining walls?	☒ Yes	☐ No
4C	**Mitigation Measures.** Propose mitigation measures for each geologic/geotechnical hazard identified in Step 4B. Provide a discussion on geologic/geotechnical hazards that would prevent partial infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures. Can mitigation measures be proposed to allow for partial infiltration BMPs? If the question in Step 4C is answered "Yes," then answer "Yes" to Criteria 4 Result. If the question in Step 4C is answered "No," then answer "No" to Criteria 4 Result.	☐ Yes	☒ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[10]	
Criteria 4 Result	Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without increasing the risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?	☐ Yes	☒ No
Summarize findings and basis; provide references to related reports or exhibits. As discussed in the Geotechnical Evaluation Report prepared by Ninyo & Moore (2018), reliable/factored infiltration rates at the site were measured between 0.32 and 4.9 inches per hour. However, our laboratory testing indicates that site soils have expansion index greater than 20. Additionally, potential lateral migration can adversely affect existing and proposed structures, retaining walls, underground utilities, and slopes.			

Part 2 – Partial Infiltration Geotechnical Screening Result[13]	Result
If answers to both Criteria 3 and Criteria 4 are "Yes", a partial infiltration design is potentially feasible based on geotechnical conditions only. If answers to either Criteria 3 or Criteria 4 is "No", then infiltration of any volume is considered to be infeasible within the site.	☐ Partial Infiltration Condition ☒ No Infiltration Condition

[13] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

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EIR Appendix D2

Fault Hazard Evaluation – Proposed Building 400

Fault Hazard Evaluation

Proposed Building 400
San Diego High School
1405 Park Boulevard
San Diego, California

Architects Mosher Drew

1775 Hancock Street, Suite 150 | San Diego, California 92110

March 16, 2020 | Project No. 108598004



Ninyo & Moore

Geotechnical & Environmental Sciences Consultants

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Fault Hazard Evaluation
Proposed Building 400
San Diego High School
1405 Park Boulevard
San Diego, California

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1775 Hancock Street, Suite 150 | San Diego, California 92110

March 16, 2020 | Project No. 108598004

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1 INTRODUCTION

In accordance with your request and authorization, we have performed a fault hazard evaluation for the proposed Building 400 project at San Diego High School, San Diego, California (Figure 1). Our fault hazard evaluation was performed in conformance with Chapter 18A of Title 24, Part 2, Volumes 1 and 2 of the 2019 California Building Code (CBC), and California Geological Survey (CGS) Special Publication 42. Due to the site location within the City of San Diego's Downtown Special Fault Zone and the trends of active and/or potentially active faults toward the project area, this site-specific fault study was performed to evaluate the potential presence or absence of active and/or potentially active faulting on the subject site. This report presents our preliminary findings, conclusions, and recommendations regarding the fault hazards at the project site based on the subsurface data collected for this study. A geotechnical report and a fault hazard evaluation report for the adjacent Building 700 were previously submitted (Ninyo & Moore, 2019a and 2019b). Information from the previous reports has been incorporated into this fault evaluation report where appropriate.

2 SCOPE OF SERVICES

Our scope of services for this fault hazard evaluation included the following:

- Review of readily available published and in-house geotechnical literature, fault hazard and geotechnical reports for the project site and adjacent areas, topographic maps, geologic maps, fault maps, and stereoscopic aerial photographs.
- Review of readily available fault hazard evaluation reports available at the City of San Diego.
- Preparation of traffic control plans for work within the City of San Diego right-of-way. Traffic control was also provided during our fieldwork.
- Acquisition of the City of San Diego Right-of-way and Traffic Control permits.
- Performance of a field reconnaissance to observe the existing site conditions and to locate and mark the subsurface exploration locations.
- Coordination with Underground Service Alert (USA) to clear the subsurface exploration locations for the potential presence of underground utilities. Additionally, a private utility locating company was utilized to clear the exploration locations.
- Excavating, logging, and sampling of six exploratory trenches varying in length along the northern and southern sides of Building 400 in areas currently accessible. The trenches were excavated to depths necessary to observe in-place formational materials. The trench walls were shored to facilitate safe entry. The excavations were backfilled with compactive effort. Geologists from our firm logged the trenches under supervision of a California Certified Engineering Geologist.
- Compilation and analysis of the data obtained from our background review and subsurface exploration.

- Preparing this fault hazard evaluation report for the subject site presenting our findings. The report will address the presence of on-site and nearby faults, fault setbacks (if required), and suitability of the area for future construction.

3 SITE AND PROJECT DESCRIPTION

The San Diego High School campus is located at 1405 Park Boulevard within the downtown area of San Diego, California (Figures 1 and 2). The campus encompasses approximately 30 acres of land bounded by Park Boulevard to the west and northwest, Interstate 5 to the northeast and east, and Russ Boulevard and San Diego City College campus to the south. The project site coordinates are 32.719728° North latitude and -117.152182° West longitude. While the site was first developed as a school campus in 1882, much of the existing site improvements were constructed in the mid 1970's (SDUSD, 2013). The campus currently supports various classroom, administration, and multi-purpose buildings, baseball and softball fields, basketball courts, a stadium, and parking lots. Topographically, the campus slopes gently down to the south and southwest. The school stadium is situated on the east side of the campus and consists of a relatively lower terrace with slopes ranging from 20 to 50 feet in height along the eastern, northern, and western boundaries. Elevations on the San Diego High School campus range from approximately 110 feet above mean sea level (MSL) along Russ Boulevard south of the stadium to approximately 180 feet MSL in the northern portion of the campus.

Based on our discussions with client, we understand that as part of the proposed improvements to the SDHS campus, Building 400 will be demolished and a new structure will be constructed. The layout and details of the new structure are not available to us at this time.

4 BACKGROUND

Ninyo & Moore previously prepared geotechnical evaluations at the San Diego High School campus for Building 1100 (Ninyo & Moore, 2008a) and for improvements to the stadium, baseball field, softball field (Ninyo & Moore, 2014), and Building 700 (Ninyo & Moore, 2019a and 2019b). The geotechnical evaluation for Building 1100 included subsurface evaluation consisting of four small-diameter borings and an exploratory trench. Subsequent to the geotechnical evaluation, a fault hazard evaluation was also performed for Building 1100, consisting of large-diameter borings and geophysical resistivity surveys (Ninyo & Moore, 2008b). The geotechnical evaluation for the stadium, baseball field, and softball field improvements consisted of 20 small-diameter borings. We performed a desktop-level geologic reconnaissance study for the proposed Building 700 (Ninyo & Moore, 2018), including review of available reports prepared by other consultants for projects at San Diego High School (Woodward-Gizienski, 1973; SCS&T, 1993; Geocon, 2001; and TerraPacific, 2009) as well as the City

College campus to the south (Rore, Inc., 2008 and Group Delta, 2011, 2012 and 2016). Additionally, we recently performed a geotechnical evaluation for the proposed Building 700 improvements and additional site improvements that consisted of drilling, logging, and sampling of 21 small diameter borings. A subsequent fault hazard evaluation was performed for the proposed Building 700 improvements that consisted of 12 large-diameter (30-inch) exploratory borings. The findings from these studies are incorporated into this report, as appropriate.

5 AREA STUDIES

As part of our evaluation, we have reviewed various fault maps, geologic maps, geotechnical reports, and fault hazard reports for the project vicinity. Based on our review of the documents discussed above, this site-specific fault evaluation was undertaken to evaluate the presence or absence of active or potentially active faulting at the Building 400 site.

5.1 Faulting and Seismicity

Based on our review of the referenced geologic maps, geotechnical report, and stereoscopic aerial photographs, the subject site is not currently mapped as being underlain by known active or potentially active faults (i.e., faults that exhibit evidence of ground displacement in the last 11,000 years and 2,000,000 years, respectively). Figure 4 shows the approximate site location relative to the major faults in the region. The subject site is not located within a State of California Earthquake Fault Zone (formerly known as Alquist-Priolo Special Studies Zone) (CGS, 2003; Hart and Bryant, 1997). However, an Earthquake Fault Zone is mapped along a portion of the south perimeter of the site, as shown in Figures 5 and 6. Active faults within this zone are mapped approximately 450 feet southwest of the campus and are considered part of the Downtown Graben, a transtensional zone of the Rose Canyon fault zone (Treiman, 2002). Furthermore, the site is within the City of San Diego's Downtown Special Fault Zone (Figure 5; City of San Diego, 2008). Potentially active faults, identified as the Florida Canyon Fault and the Texas Street Fault, are mapped approximately 1,000 and 5,000 feet east of the eastern perimeter of the site, respectively.

Previous available fault evaluations in the area are depicted on Figure 7. In two previous fault evaluations performed at the school campus (Ninyo & Moore, 2008b and Geocon, 2001); evidence of faulting was not observed. These evaluations on the school campus were performed prior to construction of the existing Building 1100 and Building 900, respectively. A fault evaluation performed for City College did not encounter evidence of faulting in a fault trench located on Russ Boulevard on the south side of Building 400 (Group Delta, 2011, 2012, and 2016). Two previous fault evaluations have encountered evidence of potentially active faulting south and southeast of

Building 400. Potentially active faulting was encountered approximately 900 feet south on Building 400 in fault trenches performed for the City College campus to the south (Rore, Inc., 2008), and in large diameter borings performed along Russ Boulevard approximately 80 feet southeast of Building 400 (Ninyo & Moore, 2019b).

6 SUBSURFACE EXPLORATION

Our subsurface fault hazard exploration for Building 400 was conducted between December 23, 2019 and January 30, 2020, and consisted of the excavating and logging of six exploratory fault trenches (T-1 through T-6). The purpose of the trench excavations was to provide information regarding the presence of active or potentially active faulting. The approximate locations of the 28-inch wide exploratory trenches are shown on Figure 2. The trench logs are included as Figures 8 through 14. Details regarding the subsurface exploration methodology and means are presented below.

6.1 Methodology

As discussed in Section 5 of this report, our review of geologic and fault maps indicates that active faults are located as close as approximately 450 feet southwest of the subject site (Figures 5 and 6). Based on the general north-south trend of these faults and others in San Diego Bay and the downtown area, we excavated our subsurface exploratory trenches generally perpendicular to the anticipated fault trend. The preferred orientation of fault trenches is generally perpendicular to that of known faults in the area. The trenches were excavated utilizing a rubber-tired backhoe to depths of up to approximately 11 feet and lengths of up to approximately 138 feet. The trenches were logged by engineering geologists from our firm. Subsequent to the excavating and logging of a trench, the trench was backfilled with on-site spoil material using compactive effort.

7 GEOLOGY AND SUBSURFACE CONDITIONS

The following sections provide information regarding the geologic conditions relative to the project site.

7.1 Regional Geologic Setting

The project site is situated in the coastal foothill section of the Peninsular Ranges Geomorphic Province. The Province encompasses an area that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin on the north to the southern tip of Baja California on the south (Norris and Webb, 1990; Harden, 2004). The Province varies in width from approximately 30 to 100 miles. In general, the Province consists of rugged mountains underlain

by Jurassic-aged metavolcanic and metasedimentary rocks, and Cretaceous-aged igneous rocks of the southern California batholith.

The Peninsular Ranges Province is traversed by a group of sub-parallel faults and fault zones trending roughly northwest (Jennings, 2010). Several of these faults are considered active. The Elsinore, San Jacinto, and San Andreas faults are active fault systems located east and northeast of the project area and the Rose Canyon, Coronado Bank, San Diego Trough, and San Clemente faults are active faults located west of the project site (Figure 4). Major tectonic activity associated with these and other faults within the regional tectonic framework consists primarily of right-lateral, strike-slip movement. Specifics of faulting are discussed in following sections of this report.

7.2 Site Geology

Geologic units encountered during our field reconnaissance and subsurface exploration included fill, colluvium, and San Diego Formation. Based on our review of the referenced evaluations previously performed at the site, terrace deposits have also been encountered on the school campus (Woodward-Gizienski, 1973). Generalized descriptions of these earth units are provided below. The geology of the site vicinity is shown on Figure 3. Additional descriptions are provided on the trench logs (Figures 8 through 14).

7.2.1 Fill

Undocumented fill soils were encountered in each of our exploratory trenches from the ground surface and extending to depths of up to approximately 7 feet. As encountered, the fill materials generally consisted of various shades of brown, dry to moist, loose to medium dense, silty to clayey sand. Roots, gravel, cobbles, and construction debris were encountered in the fill soils. Documentation regarding placement of these fills was not available for review.

7.2.2 Colluvium/Residual Soil

Colluvium and residual soil deposits were encountered in trenches T-1, T-2, T-4, and T-5 beneath the fill materials extending to the top of the San Diego Formation. As encountered, the colluvium and residual soil deposits generally consisted of various shades of brown, gray, and yellow, moist, medium dense, clayey sand. Scattered amounts of gravel were also encountered in the colluvium and residual soils.

7.2.3 San Diego Formation

Materials of the late Pliocene to early Pleistocene-aged San Diego Formation were encountered in trenches T-1 through T-6 beneath the fill materials and/or colluvium, and extended to the total depths explored. For the purpose of this evaluation, units encountered within the San Diego Formation are described below.

7.2.3.1 Unit A

Unit A was encountered in trenches T-1 and T-2 beneath the fill soils, and varied in thickness from approximately 1½ to 3½ feet. As encountered, Unit A generally consisted of interbedded yellowish gray, moderately cemented, silty, fine sandstone with thin laminations, and reddish yellow to yellow, moderately cemented silty, fine to coarse sandstone with undulatory coarse sand layers. Unit A grades from unjointed to blocky jointing. A rounded gravel and cobble bed was encountered at the bottom of Unit A. Unit A defined the top of the San Diego Formation deposits encountered in trenches T-1 and T-2.

7.2.3.2 Unit B

Unit B was encountered in trenches T-1 and T-2. In trench T-1, Unit B was encountered underlying the fill soils in the western portion and Unit B in the eastern portion. In trench T-2, Unit B was encountered underlying Unit A. Unit B varied in thickness from approximately 3 to 4½ feet. As encountered, Unit B generally consisted of mottled reddish yellow and yellowish gray, moderately cemented, silty, fine sandstone.

7.2.3.3 Unit C

Unit C was encountered in trenches T-1 and T-2 underlying Unit B, and varied in thickness from approximately 6 inches to 1½ feet. As encountered, Unit C generally consisted of gray, weakly cemented, silty, fine sandstone. Unit C was generally friable.

7.2.3.4 Unit D

Unit D was encountered in trenches T-1 and T-2 underlying Units B and C, and varied in thickness from approximately 6 inches to 2½ feet. As encountered, Unit D generally consisted of mottled reddish yellow and yellowish gray, moderately cemented, silty, fine sandstone. A rounded gravel and cobble bed was encountered at the bottom of Unit D.

7.2.3.5 Unit E

Unit E was encountered in trenches T-1 and T-2 underlying Unit D and in trench T-3 underlying the fill soils. Unit E varied in thickness up to approximately 6 feet. As encountered, Unit E generally consisted of laminated gray and yellow, moderately to well cemented, silty, fine sandstone. A bed of rounded gravel and cobble was encountered at the bottom of Unit E.

7.2.3.6 Unit F

Unit F was encountered in trench T-3 underlying the fill soils and Unit E, and varied in thickness from approximately 6 inches to 2 feet. As encountered, Unit F generally consisted of interbedded reddish yellow, moderately cemented, silty coarse sandstone. Scattered clypeasteroida (sand dollar) fossils were encountered at the base of Unit F. Unit F was interbedded with Unit J in areas of trench T-3.

7.2.3.7 Unit G

Unit G was encountered in trench T-3 underlying Unit F, and varied in thickness up to approximately 2½ feet. As encountered, Unit G generally consisted of gray, weakly cemented, silty fine sandstone with scattered caliche blebs near the top of the unit.

7.2.3.8 Unit H

Unit H was encountered in trench T-3 underlying Unit G, and varied in thickness from approximately 6 to 12 inches. As encountered, Unit H generally consisted of a gravel and cobble bed with a yellow, moderately cemented, silty fine sandstone matrix.

7.2.3.9 Unit I

Unit I was encountered underlying Unit K in trench T-3 and underlying fill and residual soils in trench T-4. Unit I varied in thickness up to approximately 2 feet. As encountered, Unit I generally consisted of mottled reddish yellow and yellow, moderately cemented, silty fine to coarse sandstone with cross bedding, oxidized sand beds, caliche stringers, and blocky jointing with $^{1}/_{8}$-inch-wide clay infilling.

7.2.3.10 Unit J

Unit J was encountered in trench T-4 underlying Unit I and in trench T-5 underlying the residual soil. Unit J extended to the total depths explored where encountered. As encountered, Unit J generally consisted of yellowish gray, moderately cemented, silty fine sandstone.

7.2.3.11 Unit K

Unit K was encountered in trench T-5 underlying the residual soils, and varied in thickness from approximately 6 to 8 inches. As encountered, Unit K generally consisted of laminated reddish brown, moderately to well cemented, silty medium to coarse sandstone.

7.2.3.12 Unit L

Unit L was encountered in trench T-5 underlying Unit K, and extended to the total depths explored where encountered. As encountered, Unit L generally consisted of mottled yellowish brown, well cemented, silty fine sandstone, with carbonate stringers and iron oxide staining along joints.

7.2.3.13 Unit M

Unit M was encountered in trench T-6 beneath the fill soils, and varied in thickness up to approximately 1 foot. As encountered, Unit M generally consisted of reddish brown, moist, weakly to moderately cemented, medium to coarse grained sandstone. Unit M defined the top of the San Diego Formation deposits encountered in T-6.

7.2.3.14 Unit N

Unit N was encountered in trench T-6 underlying Unit M, and varied in thickness up to approximately 1 foot. As encountered, Unit N generally consisted of light grayish brown, moist, weakly cemented, sandy siltstone.

7.2.3.15 Unit O

Unit O was encountered in trench T-6 underlying Unit N, and varied in thickness up to approximately 2 inches. As encountered, Unit O generally consisted of reddish brown, moist, medium grained gravel.

7.2.3.16 Unit P

Unit P was encountered in trench T-6 underlying Unit O, and varied in thickness up to approximately 1 foot. As encountered, Unit P generally consisted of light grayish brown, moist, weakly cemented, silty, fine to medium grained sandstone.

7.2.3.17 Unit Q

Unit Q was encountered in trench T-6 underlying Unit P, and varied in thickness from approximately 3 to 4 feet. As encountered, Unit Q generally consisted of interbedded reddish brown, moist, fine to medium grained sandstone with dark gray laminations, scattered clay stringers, and interbedded fine gravel layers.

7.2.3.18 Unit R

Unit R was encountered in trench T-6 underlying Unit Q, and varied in thickness up to approximately 1 foot. As encountered, Unit R generally consisted of light grayish brown, moist, weakly cemented, silty sandstone with reddish brown laminations, and scattered clay stringers.

7.2.3.19 Unit S

Unit S was encountered in trench T-6 underlying Unit R, and varied in thickness up to approximately 3 feet. As encountered, Unit S generally consisted of reddish brown, moist, weakly cemented, medium grained sandstone with interbedded rounded gravel and cobble beds.

7.2.3.20 Unit T

Unit T was encountered in trench T-6 underlying Unit S, and extended to the depths explored where encountered. As encountered, Unit T generally consisted of light gray, moist, weakly cemented, medium grained sandstone. Unit T was generally friable. A disarticulated shell bed was encountered in the upper 2 inches of Unit T.

8 INTERPRETATION OF GEOLOGIC CROSS SECTIONS

To evaluate the presence of faulting at the project site, we have developed six interpreted fault trench logs using data collected during our field evaluation (Figures 8 through 14). As discussed in Section 7.1 of this report, these alignments were performed generally perpendicular to that of known faults in the area.

Stratigraphic sub-units within the San Diego Formation were defined within the trenches based on observations of the encountered soils in our logged trenches. Evidence for faulting, including high-angle abrupt stratigraphic discontinuities, truncated units, fault gouge, and clay and root infills and stringers, were encountered in trench T-5. Due to the absence of relatively younger geologic materials deposited on top of the San Diego Formation in the areas where faulting was

observed, the age of most recent movement on the encountered fault could not be determined. Discussion of the findings shown on each trench log is presented below.

8.1 Fault Trench T-1

Trench T-1 was excavated along an approximate orientation of N75°E within the campus and north of Building 400. T-1 was excavated to a depth of up to approximately 12 feet, and a length of approximately 75 feet (Figure 8). The eastern and central portions of the trench were observed to consist of fill soils overlying Units A through E of the San Diego Formation. The western portion of the trench was observed to consist of fill soils overlying Units B through E of the San Diego Formation. In trench T-1, Unit B consisted of an upper gray layer and a lower reddish yellow layer. The reddish yellow layer pinches out in the central portion of the trench and the unit becomes mottled gray and reddish yellow. Unit C was encountered in the central and eastern portion of the trench and pinches out towards the west. The gravel and cobble layer at the base of Unit D was observed to be continuous along the lower portion of Trench T-1, and did not exhibit any displacement or offset.

8.2 Fault Trench T-2

Trench T-2 was excavated along a generally north-south orientation within the campus and north of Building 400. The purpose of the change in orientation from the general east-west oriented trench T-1 to the north-south orientation in T-2 was to provide coverage further north of Building 400. Trench T-2 was excavated to a depth of up to approximately 11 feet, and a length of approximately 95 feet (Figure 9). T-2 was observed to consist of fill soils and colluvium overlying Units A through E of the San Diego Formation. The contact between Unit A and Unit B was observed to be generally flat. The basal gravel and cobble layer in Unit A was observed to be generally continuous. The trench was deepened in the central portion and the basal gravel and cobble bed in Unit D was observed to be generally continuous and did not exhibit any displacement, offset, or other evidence of faulting. While the contacts between Units D and Ewere observed to be undulating. Units C, D, and E were observed to be continuous throughout T-2 and did not exhibit any displacement, offset, or other evidence of faulting.

8.3 Fault Trench T-3

Trench T-3 was excavated along a generally east-west orientation in a landscaped area outside of the campus and on the south side of Building 400. Trench T-3 was excavated to a depth of up to approximately 10 feet and a length of approximately 70 feet (Figure 10). T-3 was observed to consist of fill soils overlying Units E through I. On the eastern portion of the trench, Units F through

I were generally flat lying. On the western portion, Units E through G dip slightly to the west. The contact between Unit F and Unit G was observed to be continuous, included traceable clypeasteroida (sand dollar) fossil and caliche bleb marker beds, and did not exhibit any displacement or offset.

8.4 Fault Trench T-4

Trench T-4 was excavated to a depth of up to approximately 5 feet and a length of approximately 13 feet, along a measured orientation of N25°E (Figure 11). T-4 was located on a slope southeast of Building 700. The location of T-4 was limited by the slope inclination, the presence of utilities, and presence of tree stumps. T-4 was observed to consist of fill soils and residual soil overlying Units I and J. The contact between the units was observed to be generally flat and continuous. The units encountered in T-4 did not exhibit any displacement, offset, or other evidence of faulting.

8.5 Fault Trench T-5

Trench T-5 was excavated to a depth of up to approximately 9 feet and a length of approximately 15 feet, along a measured orientation of N20°E (Figure 12). T-5 was located on a slope southeast of Building 700. The location of T-5 was limited by the slope inclination and the presence of utilities. T-5 was located downslope of T-4 approximately 4 feet and oriented generally parallel to T-4. The southwestern portion of T-5 overlapped with the northeastern portion of T-4. T-5 was observed to consist of fill soils, residual soil, and Units J through L. Unit K and L were observed to be generally flat lying. Both Units K and L are truncated in the central portion of T-5 by a high-angle, northeast dipping zone of brown to dark brown, moist, soft, silty clay, approximately 0.5 to 1 foot in thickness. Units K and L and the exposed fault trace are in contact with Unit J in the southwest portion of the trench. The abrupt stratigraphic discontinuity indicative of faulting within the San Diego Formation was encountered at a depth of approximately 2 to 3 feet and exposed on the northwest sidewall and across the majority of the trench bottom. Measurements on the northwest sidewall of T-6 and the trench bottom indicate the fault trace is generally trending N10°W 68°NE and N14°W 88°NE. The measurement taken on the encountered fault is consistent with a northwestward projection of the fault encountered in our previous fault evaluation for Building 700 (Ninyo & Moore, 2019). A detailed trench log of the fault zone encountered in trench T-5 is presented in Figure 12.

8.6 Fault Trench T-6

Trench T-6 was excavated to a depth of up to approximately 12 feet and a length of approximately 138 feet, along a generally east-west orientation. T-6 was located in Russ Boulevard south of Building 400 (Figure 14). T-6 was observed to consist of fill soils overlying Units M through T. The units encountered in T-6 were generally flat lying with flat to undulatory contacts. The gravel layer that comprises Unit O and interbedded gravel layers in Units Q and S were observed to be continuous throughout the length of T-6, and did not exhibit any displacement or offset.

8.7 Fault Activity

As discussed above, evidence indicative of faulting was observed within the San Diego Formation in fault trench T-5. Based on measurements taken within trench T-5, and the observed depths and locations of the encountered fault, the fault has a measured strike (orientation) between approximately N10°W to N14°W. Offset sub-units observed within the San Diego Formation are considered to be early Pleistocene to late Pliocene in age (i.e. 1.8 to 3.6 million years old). Due to the absence of relatively younger geologic materials that would have been deposited above the Plio-Pleistocene-aged San Diego Formation, and the absence of age-datable materials (i.e., organic matter for radiocarbon dating), the age of most recent movement on the encountered faults is undetermined. The observed faults are therefore classified as “age-undetermined faults” (CGS, 2018). According to California Geological Survey Special Publication 42, “age-undetermined faults” within regulatory Earthquake Fault Zones are considered Holocene-active until proven otherwise” (CGS, 2018). San Diego High School is located within the City of San Diego’s “Downtown Special Fault Zone” (City of San Diego, 2008), which is considered a regulatory Earthquake Fault Zone.

8.8 Correlation with Area Studies

As previously discussed, we have reviewed several geotechnical and fault hazard reports for the project vicinity. The reports reviewed for the project vicinity included, but were not limited to, geotechnical and fault hazard reports prepared by other consultants for projects at San Diego High School (Woodward-Gizienski, 1973; SCS&T, 1993; Geocon, 2001; and TerraPacific, 2009) as well as the City College campus to the south (Rore, Inc., 2008 and Group Delta, 2011, 2012, 2016).

Per our review of previously performed fault evaluations for San Diego High School (Ninyo & Moore, 2008b and Geocon, 2001), evidence of active faulting was not found underlying Building 900 located approximately 900 feet to the north of Building 400 or underlying Building 1100 located approximately 100 feet northeast of Building 400(Geocon, 2001, and Ninyo & Moore, 2008b). In a previous fault evaluation performed at several locations for the City

College campus located to the south (Rore, Inc., 2008, and Group Delta, 2011, 2012, 2016), evidence of northwest-southeast trending, potentially active, faulting was observed in trenches excavated approximately 900 feet southeast of Building 400.

A fault evaluation performed along Russ Boulevard for Building 700 encountered evidence of faulting in large diameter borings. That fault zone was characterized by near-vertical stratigraphic displacement with a possible strike-slip component that trends at approximately N30°W at the western portion of the fault zone to N15°W at the eastern portion of the fault zone. The width of the fault zone has been interpreted as being between approximately 30 to 45 feet wide. Stratigraphic offsets of Plio-Pleistocene aged San Diego Formation indicate that age-undetermined, presumed Holocene-active faulting occurs within the fault zone. Vertical offsets among sub-units of the San Diego Formation ranged from approximately less than one inch up to at least 25 feet. The observed faults are interpreted to cross the site of Building 700, but the length of the faults is unknown.

9 CONCLUSIONS AND RECOMMENDATIONS

Due to the site location within the City of San Diego's Downtown Special Fault Zone and the trends of active and/or potentially active faults toward the project area, this site-specific fault study was performed to evaluate the potential presence or absence of active and/or potentially active faulting on the subject site. The site specific evaluation generally followed the State of California and City of San Diego technical guidelines for fault-rupture hazard reports (California Geological Survey, 2018; City of San Diego, 2011). An active fault is defined as a fault which has had surface displacement within Holocene time (about the last 11,000 years) and a potentially active fault is considered to have been active during Quaternary time (last 2 million years). Our evaluation consisted of review of available maps and reports in and around the site vicinity, and a subsurface exploration consisting of excavating and logging of multiple exploratory trenches.

Based on the findings from this study, we have interpreted the presence of a fault zone that trends towards the existing Building 700. This fault zone is characterized by near-vertical stratigraphic displacement with a possible strike-slip component that trends through the subject site at approximate orientation of between N10°W to N14°W (Figure 2). Stratigraphic offsets of Plio-Pleistocene aged San Diego Formation indicate that age-undetermined, presumed Holocene-active faulting occurs within the fault zone. Vertical offsets among sub-units of the San Diego Formation was observed to be approximately 6 feet as encountered in trench T-5. The observed fault is interpreted to cross the site of Building 700, however, the observed fault trace is interpreted to be located outside of the Building 400 footprint. The length of the faults was not determined during this evaluation and is

unknown. Further field evaluation may be warranted to develop additional interpretation of the length, width, and projection of the fault zone to the north of Building 400.

In accordance with the Alquist-Priolo Act, the proposed building structures for human occupancy should be setback 25 feet from the closest suspected fault location. A “structure for human occupancy” is defined in California Geological Survey (CGS) Special Publication 42 (2018) as any structure used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year.

10 LIMITATIONS

The field evaluation and geotechnical analyses presented in this fault evaluation report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be encountered during construction. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface evaluation will be performed upon request. Please also note that our evaluation was limited to assessment of the geotechnical aspects of the project, and did not include evaluation of structural issues, environmental concerns, or the presence of hazardous materials.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions. If geotechnical conditions different from those described in this report are encountered, our office should be notified, and additional recommendations, if warranted, will be provided upon request. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

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FIGURES



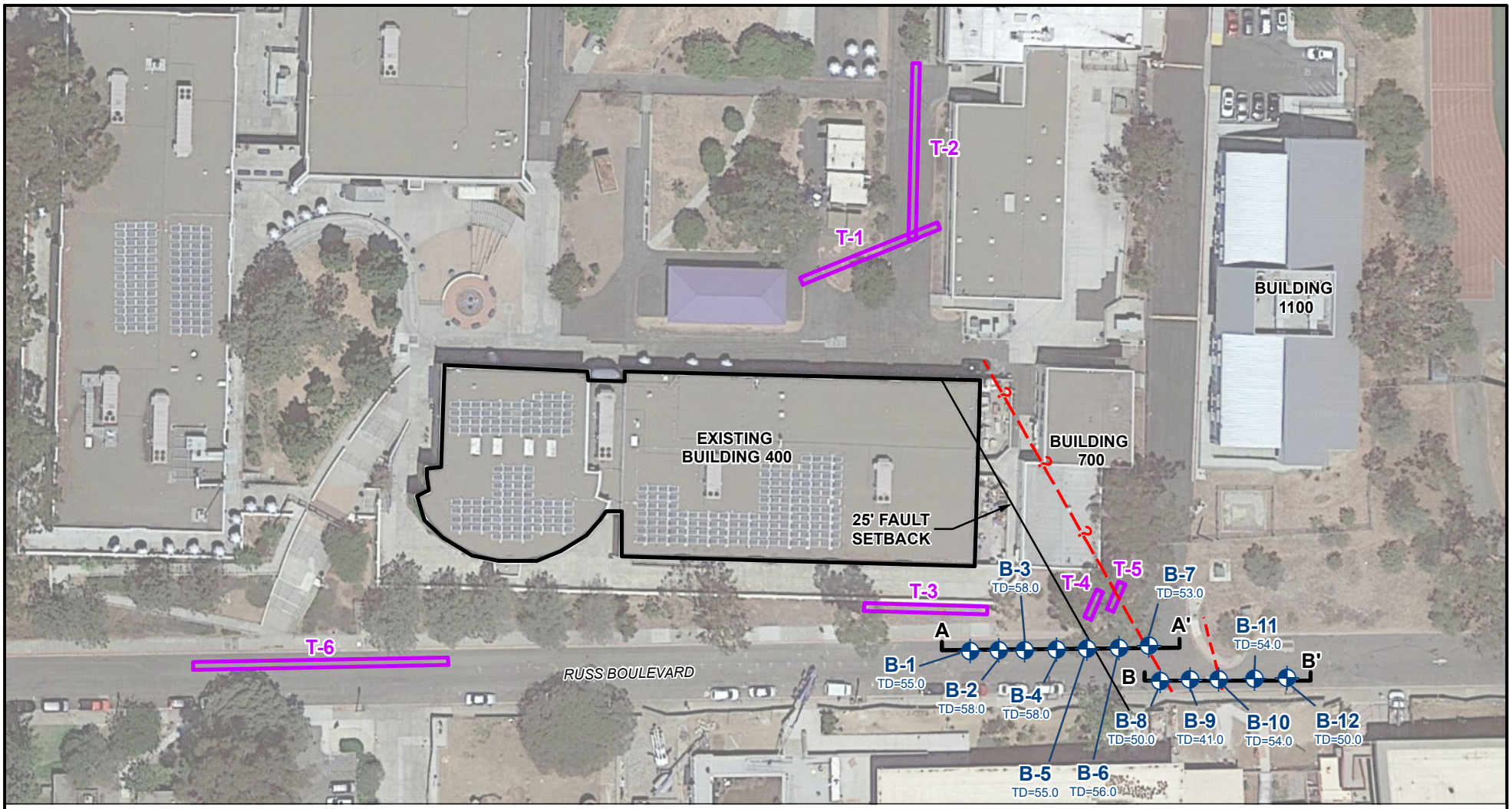
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCE: ESRI WORLD TOPO, 2017

1_108598004_SL.mxd 3/9/2020 AOB

FIGURE 1

SITE LOCATION
PROPOSED BUILDING 400
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598004 | 3/20

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants



LEGEND

T-6 TRENCH (NINYO & MOORE, 2020)

FAULT (SOLID WHERE ENCOUNTERED, DASHED WHERE INFERRED)

B-12 TD=50.0 BORING (NINYO & MOORE, 2019) TD=TOTAL DEPTH IN FEET

B B' GEOLOGIC CROSS SECTION (NINYO & MOORE, 2019)

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCE: GOOGLE EARTH, 2020

N

FEET 0 80 160

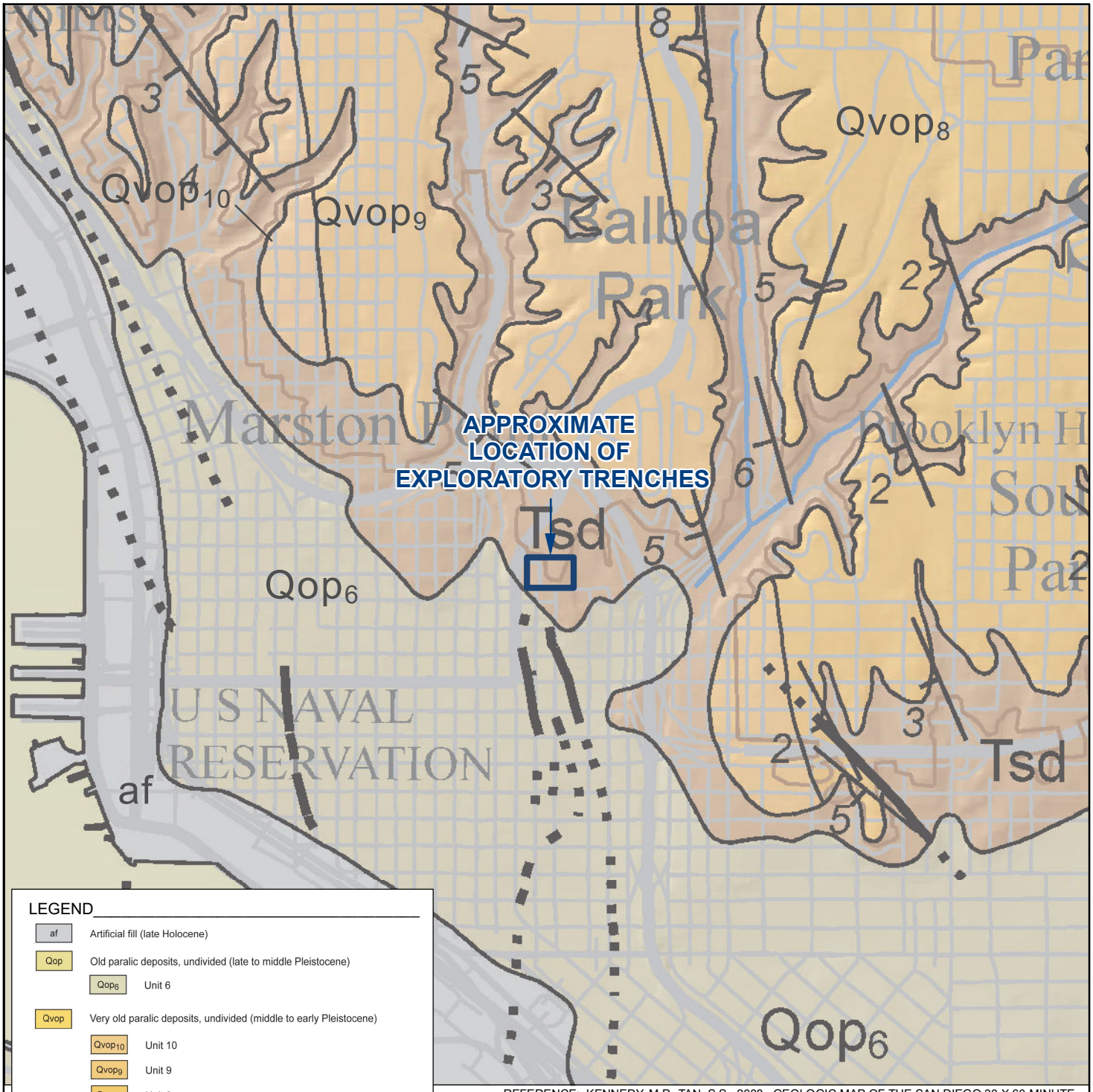
2_108598004_TL.mxd 3/16/2020 AOB

FIGURE 2

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

EXPLORATION LOCATION PLAN

PROPOSED BUILDING 400
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598004 | 3/20



REFERENCE: KENNEDY, M.P., TAN, S.S., 2008, GEOLOGIC MAP OF THE SAN DIEGO 30 X 60-MINUTE QUADRANGLE, CALIFORNIA

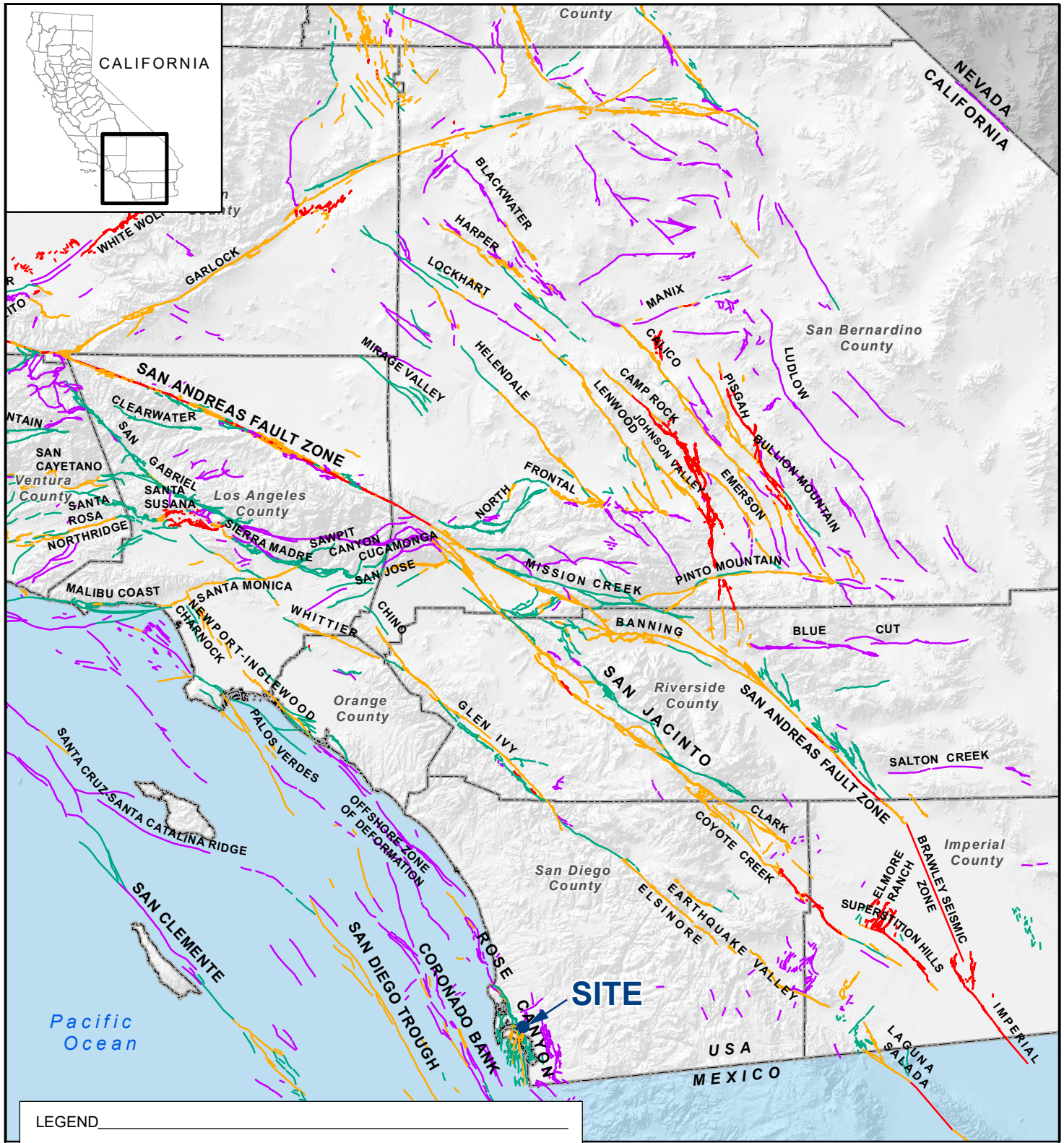
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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FIGURE 3

GEOLOGY
PROPOSED BUILDING 400
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598004 | 3/20

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants



SOURCE: U.S. GEOLOGICAL SURVEY AND CALIFORNIA GEOLOGICAL SURVEY, 2006, QUATERNARY FAULT AND FOLD DATABASE FOR THE UNITED STATES.

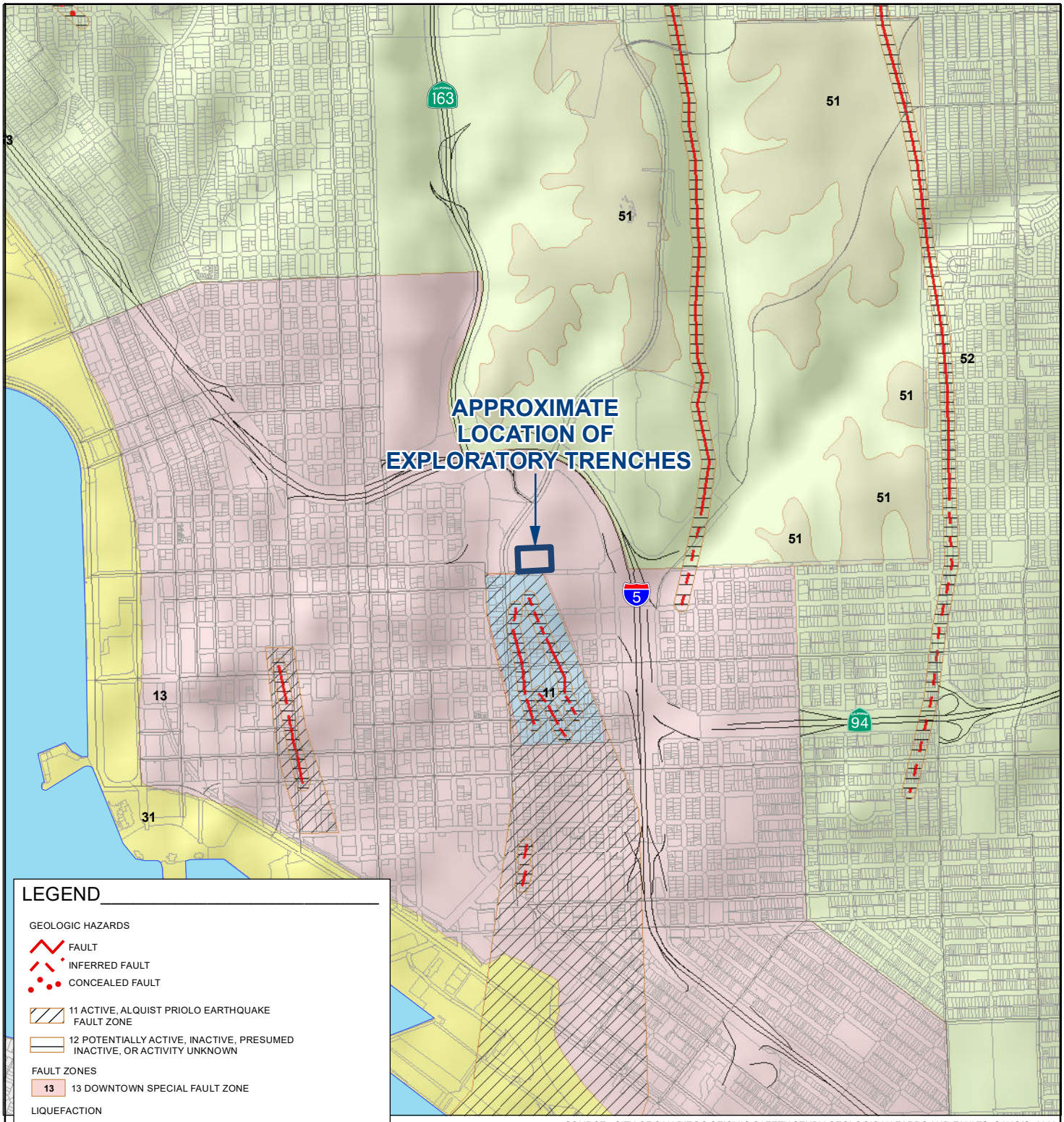
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

4_108598004_FL.mxd 3/9/2020 AOB

FIGURE 4

FAULT LOCATIONS
PROPOSED BUILDING 400
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598004 | 3/20

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants



SOURCE: CITY OF SAN DIEGO SEISMIC SAFETY STUDY GEOLOGIC HAZARDS AND FAULTS, SANGIS, 2008

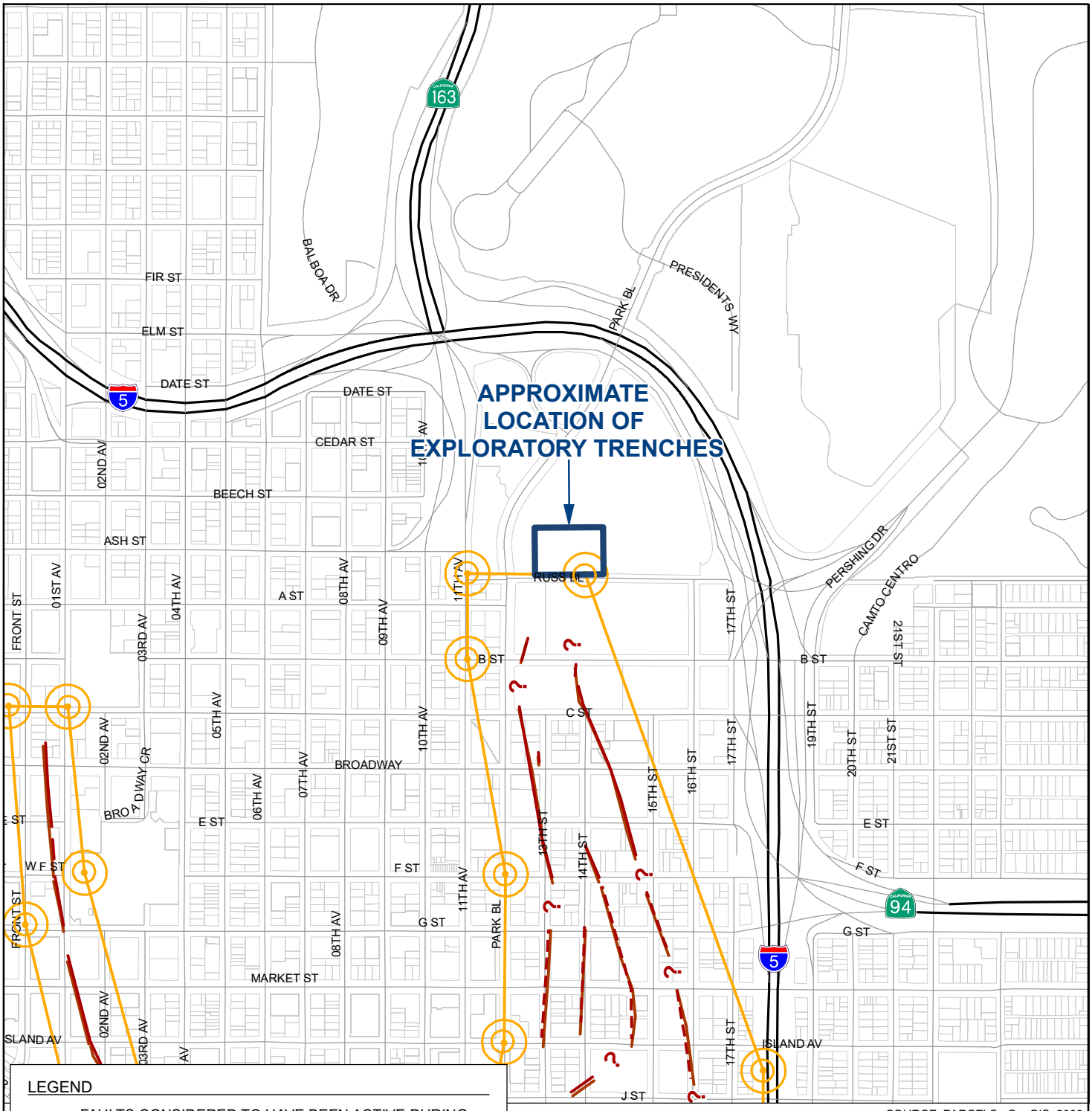
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

5_108598004_GH.mxd 3/9/2020 AOB

FIGURE 5

GEOLOGIC HAZARDS
PROPOSED BUILDING 400
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598004 | 3/20

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants



LEGEND

FAULTS CONSIDERED TO HAVE BEEN ACTIVE DURING HOLOCENE TIME AND HAVE POTENTIAL FOR SURFACE RUPTURE; SOLID LINE WHERE ACCURATELY LOCATED, LONG DASH WHERE APPROXIMATELY LOCATED, SHORT DASH WHERE INFERRED. (CGS, 2003)

THESE ARE DELINEATED AS STRAIGHT-LINE SEGMENTS THAT CONNECT ENCIRCLED TURNING POINTS SO AS TO DEFINE EARTHQUAKE FAULT ZONE SEGMENTS. (CGS, 2003)

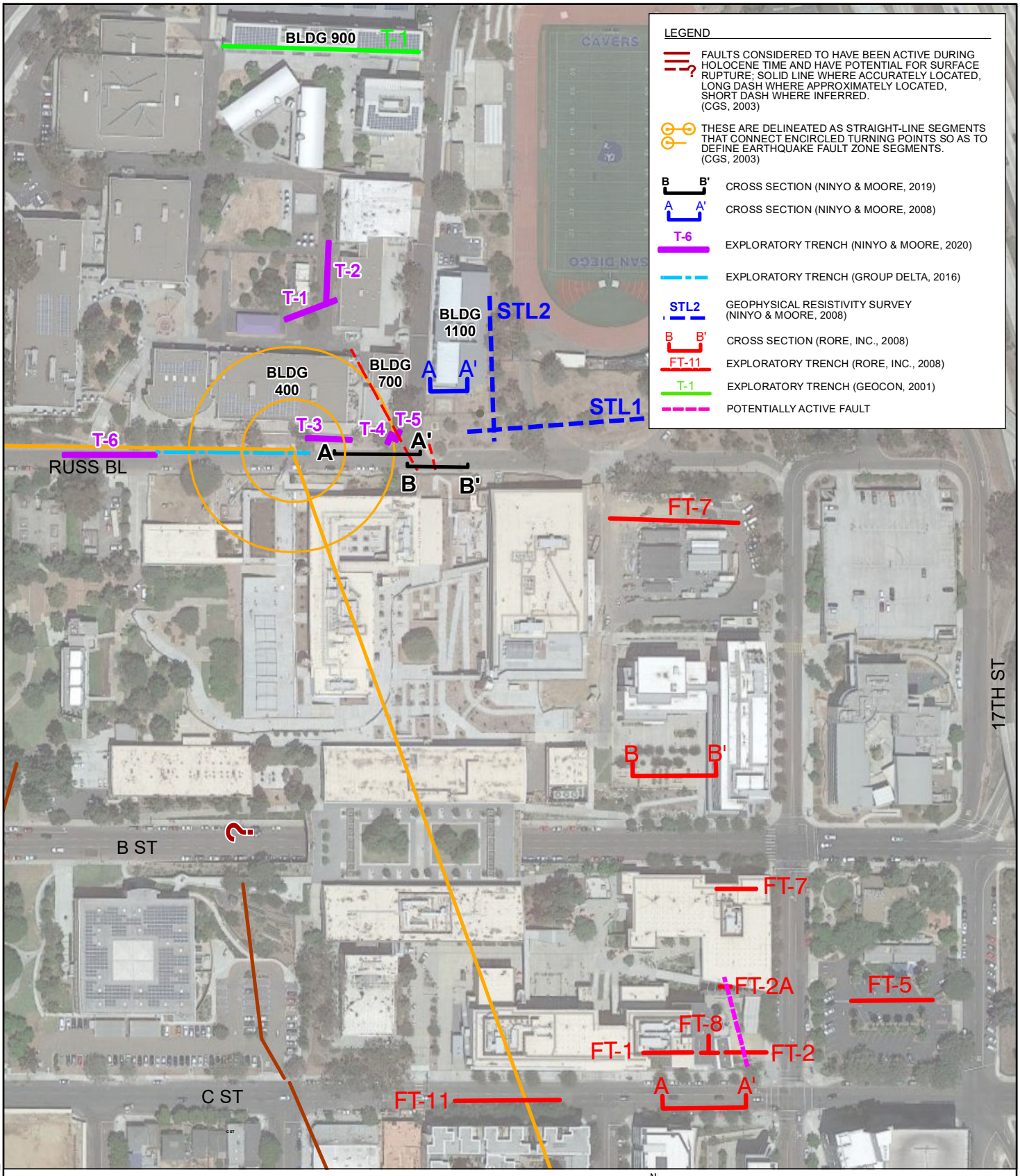
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

6_108598004_EFZ.mxd 3/9/2020 AOB

FIGURE 6

EARTHQUAKE FAULT ZONES
PROPOSED BUILDING 400
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598004 | 3/20

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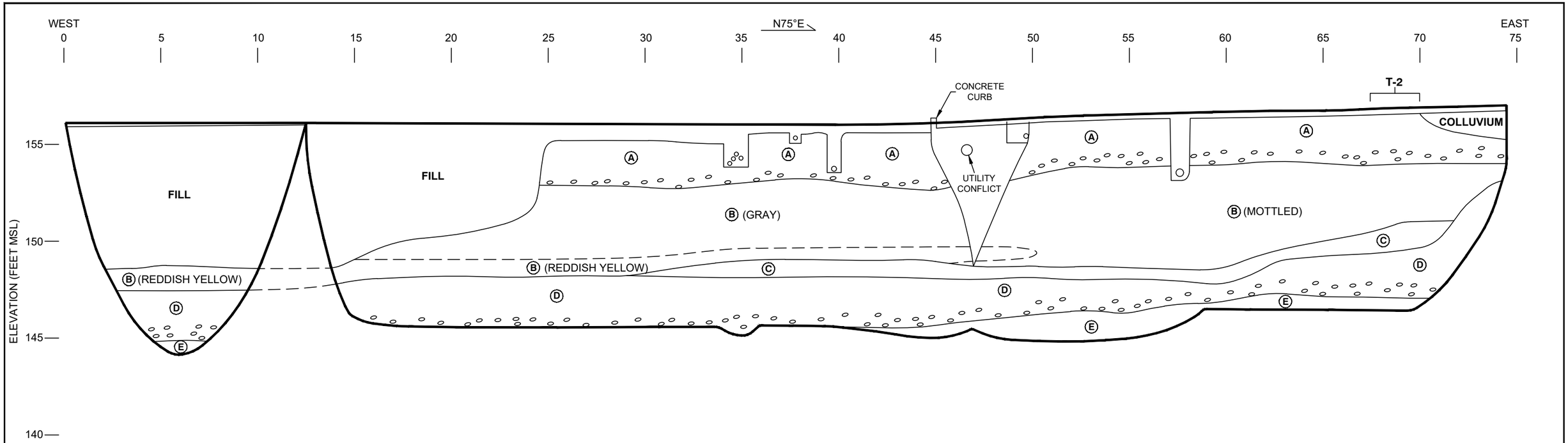
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

7_108598004_Faults.mxd 3/16/2020 AOB

FIGURE 7

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

AREA FAULT STUDIES
PROPOSED BUILDING 400
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598004 | 3/20



LEGEND

FILL	Brown, moist, medium dense, silty to clayey SAND, trace gravel and construction debris
COLLUVIUM	Dark brown, moist, medium dense, clayey SAND, trace rounded gravel
Ⓐ	Reddish yellow, yellow and yellowish gray, moderately cemented, silty fine to coarse, SANDSTONE, interbedded undulatory coarse sand layers, increased cementation and blocky jointing to the east, with basal rounded gravel and cobble bed
Ⓑ	Mottled reddish yellow and yellowish gray, moderately cemented, silty fine SANDSTONE, mottling decrease towards west
Ⓒ	Gray, weakly cemented, silty fine SANDSTONE, friable
Ⓓ	Mottled reddish yellow and yellowish gray, moderately cemented, silty fine SANDSTONE, with basal rounded gravel and cobble bed
Ⓔ	Gray, moderately cemented, silty fine SANDSTONE, laminated
	Gravel

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

FEET
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8 108598004 TL T-1.DWG AOB

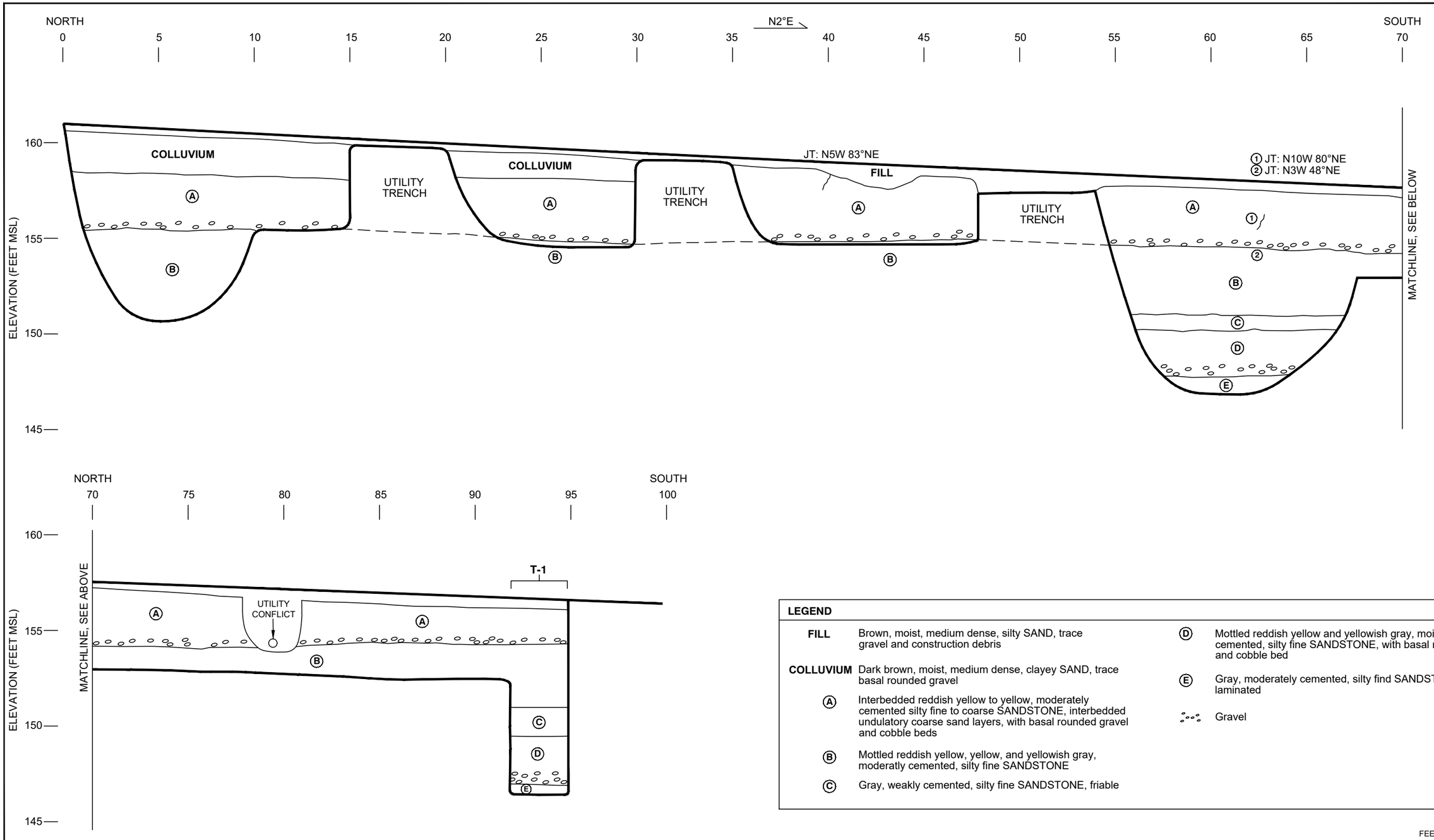
FIGURE 8

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

TRENCH LOG T-1, NORTH WALL

SAN DIEGO HIGH SCHOOL BUILDING 400
4105 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598004 I 3/20



LEGEND			
FILL	Brown, moist, medium dense, silty SAND, trace gravel and construction debris	Ⓓ	Mottled reddish yellow and yellowish gray, moist, moderately cemented, silty fine SANDSTONE, with basal rounded gravel and cobble bed
COLLUVIUM	Dark brown, moist, medium dense, clayey SAND, trace basal rounded gravel	Ⓔ	Gray, moderately cemented, silty find SANDSTONE laminated
Ⓐ	Interbedded reddish yellow to yellow, moderately cemented silty fine to coarse SANDSTONE, interbedded undulatory coarse sand layers, with basal rounded gravel and cobble beds		Gravel
Ⓑ	Mottled reddish yellow, yellow, and yellowish gray, moderatly cemented, silty fine SANDSTONE		
Ⓒ	Gray, weakly cemented, silty fine SANDSTONE, friable		

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

FEET
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9 108598004 TL T-2.DWG AOB

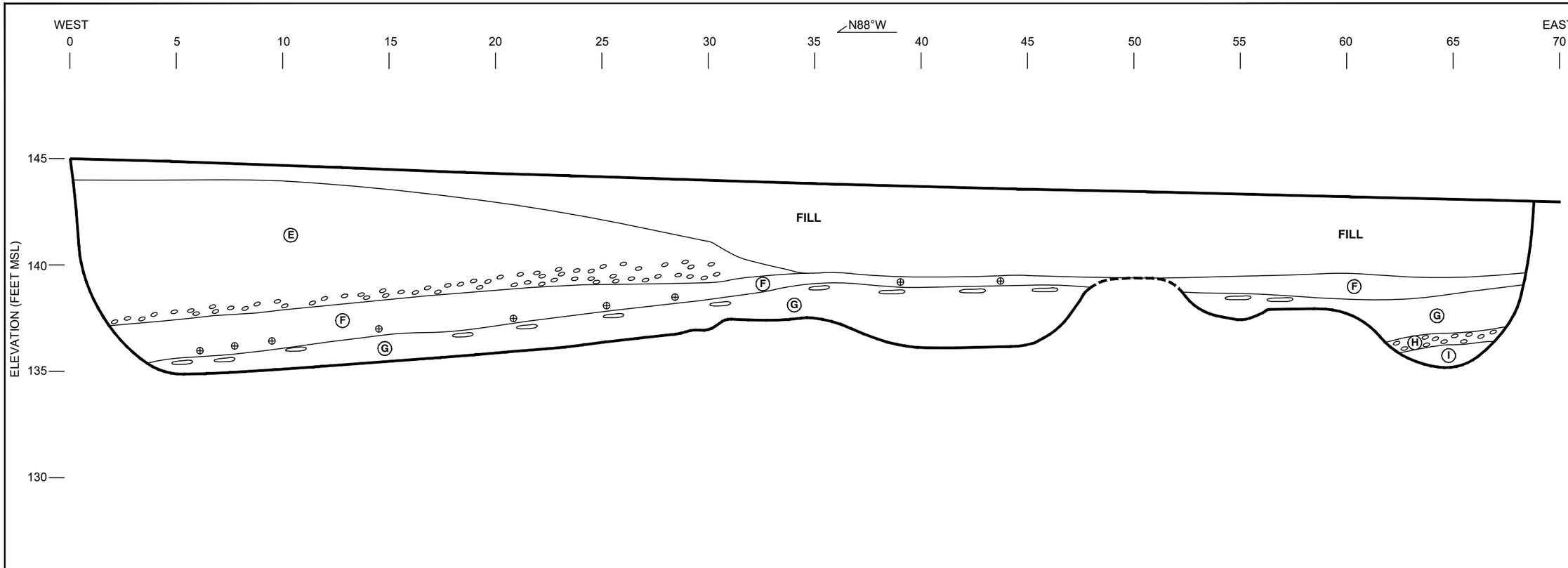
FIGURE 9

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Geotechnical & Environmental Sciences Consultants

TRENCH LOG T-2, EAST WALL

SAN DIEGO HIGH SCHOOL BUILDING 400
4105 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598004 I 3/20



LEGEND

FILL	Brown, dry to moist, medium dense, silty to clayey SAND; trace gravel, cobbles and construction debris
Ⓔ	Gray, yellow and yellowish brown, well cemeted, silty SANDSTONE, with basal gravel and cobble bed
Ⓕ	Interbedded reddish yellow, moderately cemented, silty coarse SANDSTONE, trace sand dollar fossils to the west
Ⓖ	Gray, weakly cemented, silty fine SANDSTONE, trace caliche blebs
Ⓗ	Yellow, moist, moderately cemented, silty fine SANDSTONE with gravel and cobbles
Ⓘ	Mottled, reddish yellow, moderately cemented, silty fine to medium coarse SANDSTONE
	Gravel
⊕	Fossil
	Caliche blebs

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

FEET
0 5 10

10 108598004 TL T-3.DWG AOB

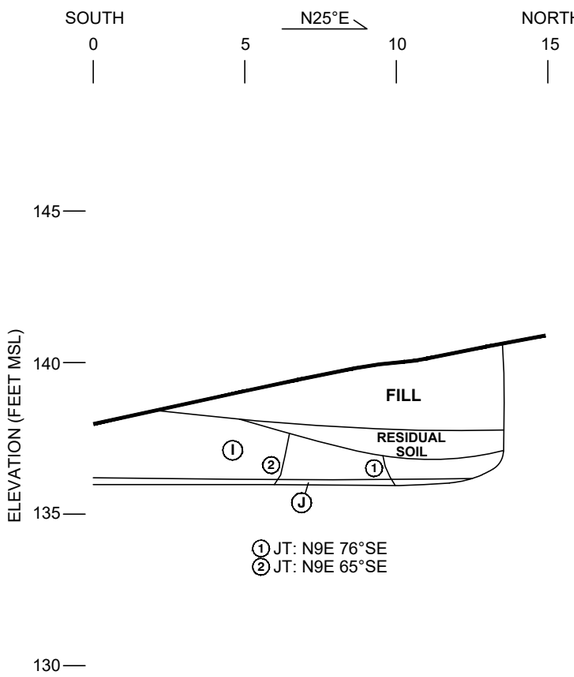
FIGURE 10

TRENCH LOG T-3, NORTH WALL

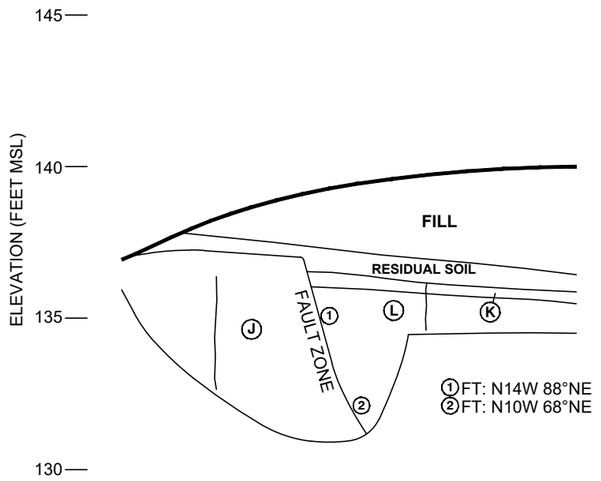
SAN DIEGO HIGH SCHOOL BUILDING 400
4105 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598004 I 3/20

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TRENCH LOG T-4, NORTHWEST WALL



TRENCH LOG T-5, NORTHWEST WALL

LEGEND	
FILL	Brown, dry to moist, loose to medium dense, silty SAND; trace gravel
RESIDUAL SOIL	Mottled brown, gray and yellow, medium dense, clayey fine to coarse SAND; trace rootlets
(I)	Yellow, moderately cemented, silty, fine to coarse SANDSTONE, cross bedded, oxidized sand beds, caliche stringers, grade to blocky jointing, 1/8-inch clay infill along joints.
(J)	Yellowish gray, moderately cemented, silty fine SANDSTONE

LEGEND	
FILL	Brown, dry, loose to medium dense, silty SAND; trace gravel
RESIDUAL SOIL	Mottled brown, gray, and yellow, medium dense, clayey fine to coarse SAND; trace rootlets
(J)	Yellowish gray, weakly cemented, silty fine SANDSTONE; friable, micaceous, thinly laminated, clay infill and carbonate stringers along fracture surfaces
(K)	Reddish brown, moderately to well cemented, medium to coarse, SANDSTONE; laminated
(L)	Yellowish brown, well cemented, silty fine SANDSTONE; mottled, iron oxide staining along joints, carbonate stringers
FAULT ZONE	1-inch brown to dark brown, moist, soft, silty CLAY; 1/16-1/4 inch clay infill along joints

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

FEET
0 5 10

FIGURE 11

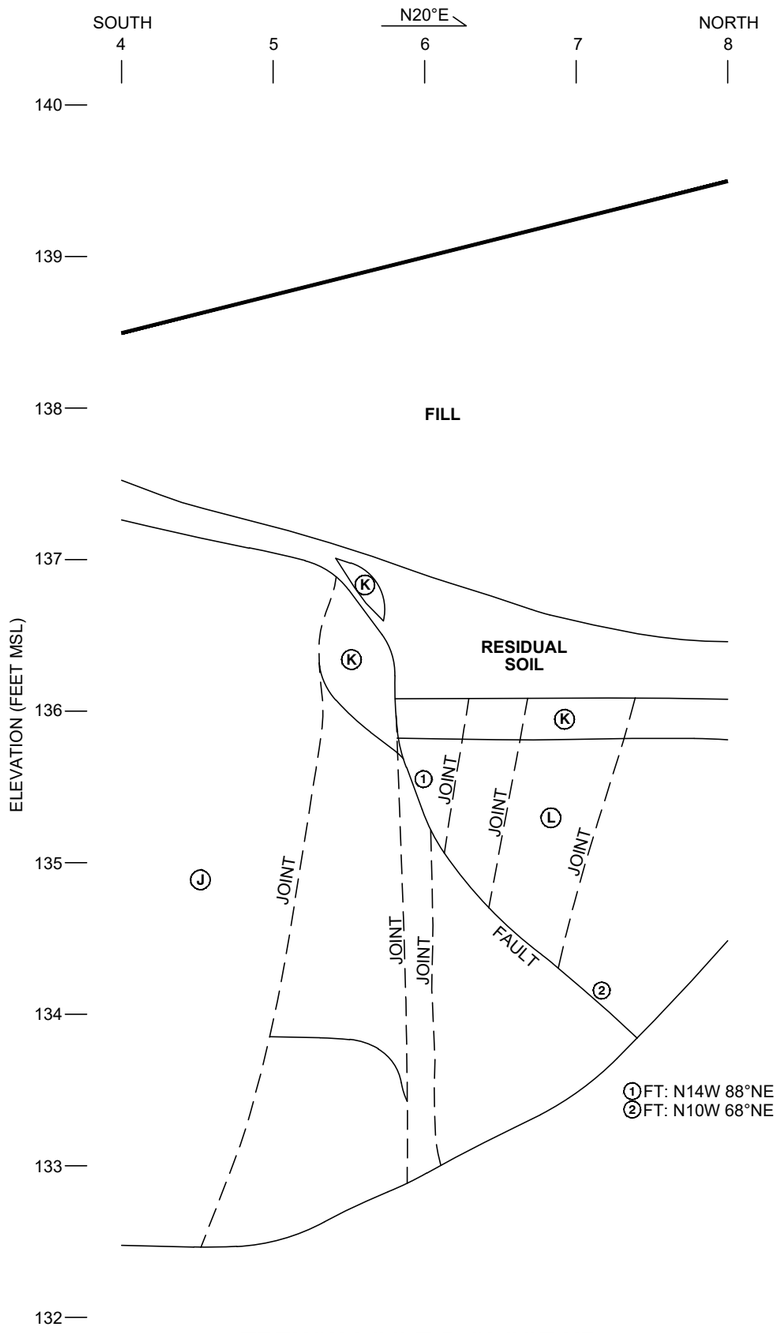
TRENCH LOG T-4 AND T-5, NORTHWEST WALL

SAN DIEGO HIGH SCHOOL BUILDING 400
4105 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598004 I 3/20

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11 108598004 TL T-4 T-5.DWG AOB



LEGEND	
FILL	Brown, dry, loose to medium dense, silty SAND; trace gravel
RESIDUAL SOIL	Mottled brown, gray, and yellow, medium dense, clayey fine to coarse SAND; trace rootlets
(J)	Yellowish gray, weakly cemented, silty fine SANDSTONE; friable, micaceous, thinly laminated, clay infill and carbonate stringers along fracture surfaces
(K)	Reddish brown, moderately to well cemented, medium to coarse, SANDSTONE; laminated
(L)	Yellowish brown, well cemented, silty fine SANDSTONE; mottled, iron oxide staining along joints, carbonate stringers
FAULT ZONE	1-inch brown to dark brown, moist, soft, silty CLAY; 1/16-1/4 inch clay infill along joints

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

FEET
0 1 2

TRENCH LOG T-5, CLOSE UP

FIGURE 12

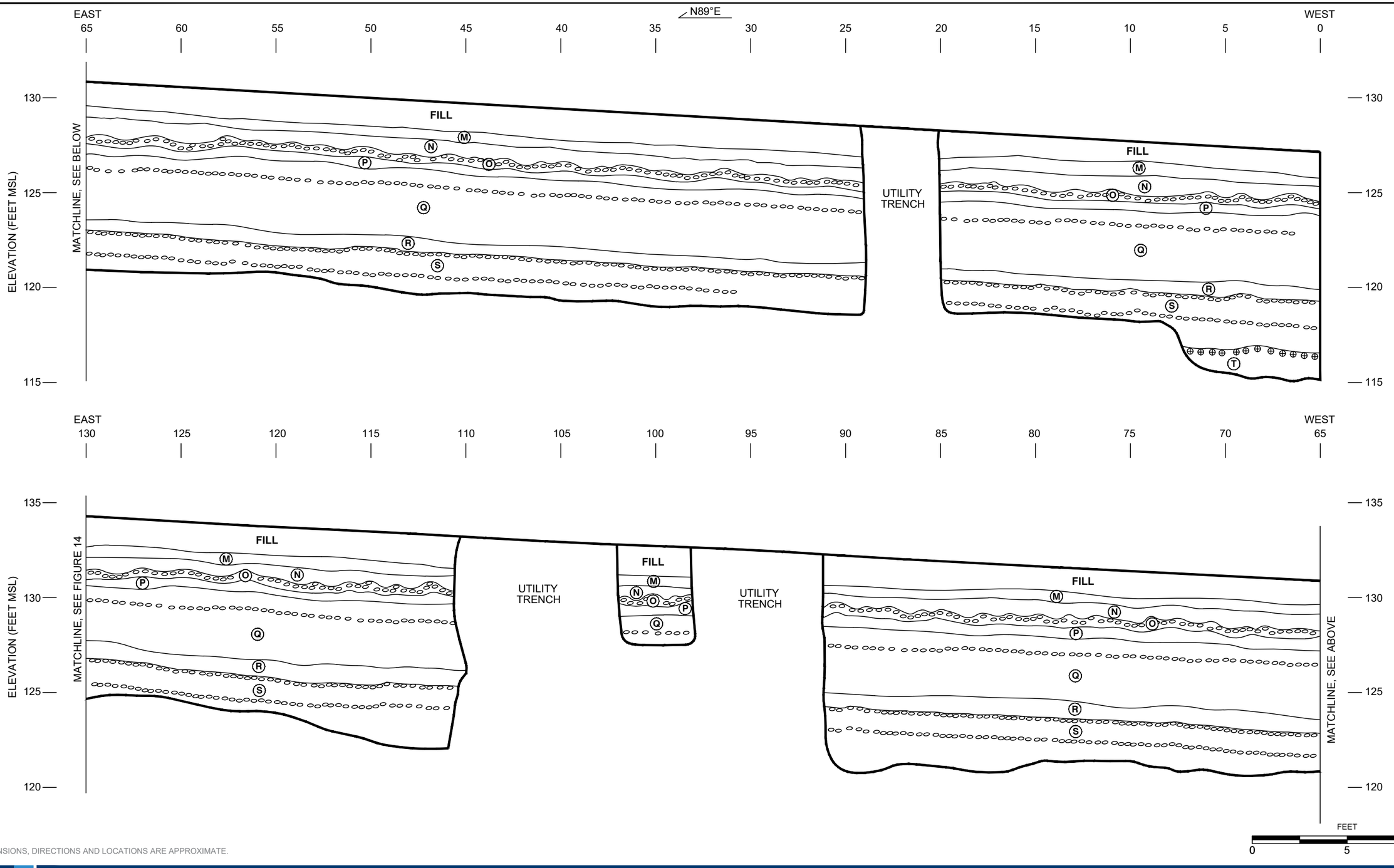
TRENCH LOG T-5, CLOSE UP

SAN DIEGO HIGH SCHOOL BUILDING 400
4105 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598004 I 3/20

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12 108598004 TL T-5.DWG AOB



NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

13 108598004 TL T-6.DWG AOB

FIGURE 13

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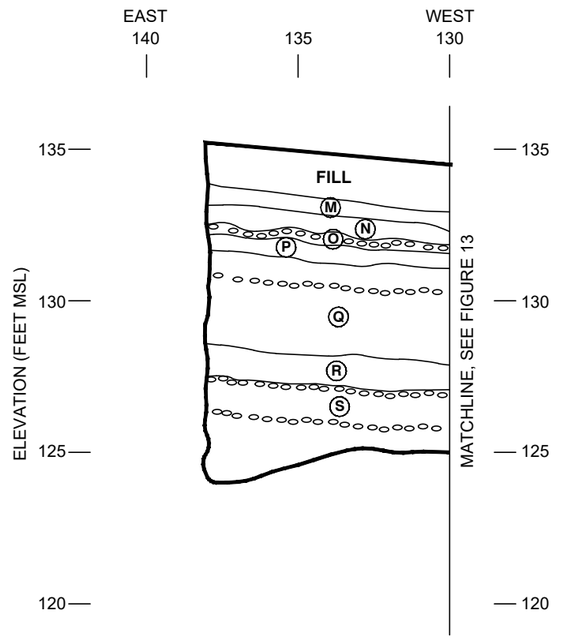
TRENCH LOG T-6, SOUTH WALL

SAN DIEGO HIGH SCHOOL BUILDING 400
4105 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598004 I 3/20

LEGEND

FILL	Asphalt cement-treated base
Ⓜ	Reddish brown, moist, weakly to moderately cemented; medium to coarse grained SANDSTONE
Ⓝ	Light grayish brown, moist, weakly cemented, sandy SILTSTONE
Ⓞ	Reddish brown, moist, medium grained, GRAVEL; undulates 2" thick
Ⓟ	Light grayish brown, moist, weakly cemented, fine to medium grained silty SANDSTONE
Ⓠ	Reddish brown, moist, fine to medium grained SANDSTONE; scattered clay stringers; pebble layer; dark gray laminations
Ⓡ	Light grayish brown, moist, weakly cemented, silty SANDSTONE; scattered clay stringers; reddish brown laminations
Ⓢ	Reddish brown, moist, weakly cemented, medium grained SANDSTONE; interbedded rounded cobble beds
Ⓣ	Light gray; moist, weakly cemented, medium-grained SANDSTONE; friable, with disarticulated shell layer in upper 2 inches
	Gravel
⊕	Shell fossils



NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

FEET
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14 108598004 TL T-6.DWG AOB

FIGURE 14

TRENCH LOG T-6, SOUTH WALL

SAN DIEGO HIGH SCHOOL BUILDING 400
4105 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598004 I 3/20

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5710 Ruffin Road | San Diego, California 92618 | p. 858.576.1000

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EIR Appendix D3

Fault Hazard Evaluation – Proposed Building 700

Fault Hazard Evaluation

Proposed Building 700
San Diego High School
1405 Park Boulevard
San Diego, California

Architects Mosher Drew

1775 Hancock Street, Suite 150 | San Diego, California 92110

May 15, 2019 | Project No. 108598003



Ninyo & Moore

Geotechnical & Environmental Sciences Consultants

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

Fault Hazard Evaluation
Proposed Building 700
San Diego High School
1405 Park Boulevard
San Diego, California

Ms. Audrey Stratton
Architects Mosher Drew
1775 Hancock Street, Suite 150 | San Diego, California 92110

May 15, 2019 | Project No. 108598003

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Principal Geologist

GSW/TCS/MAC/GTF/KHM/cas

Distribution: (1) Addressee (via e-mail)

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6 – Earthquake Fault Zones
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8A – Interpreted Cross Section A-A’
8B – Interpreted Cross Section B-B’

APPENDICES

A – Boring Logs
B – Photographs

1 INTRODUCTION

In accordance with your request and authorization, we have performed a fault hazard evaluation for the proposed Building 700 project at San Diego High School, San Diego, California (Figure 1). Our fault hazard evaluation was performed in conformance with Chapter 18A of Title 24, Part 2, Volumes 1 and 2 of the 2016 California Building Code (CBC), and California Geological Survey (CGS) Special Publication 42. Due to the site location within the City of San Diego's Downtown Special Fault Zone and the trends of active and/or potentially active faults toward the project area, this site-specific fault study was performed to evaluate the potential presence or absence of active and/or potentially active faulting on the subject site. This report presents our preliminary findings, conclusions, and recommendations regarding the fault hazards at the project site based on the subsurface data collected for this study. A geotechnical report for the project was previously submitted (Ninyo & Moore, 2019).

2 SCOPE OF SERVICES

Our scope of services for this preliminary fault hazard evaluation included the following:

- Review of readily available published and in-house geotechnical literature, fault hazard and geotechnical reports for the project site and adjacent areas, topographic maps, geologic maps, fault maps, and stereoscopic aerial photographs.
- Review of preliminary and conceptual site plans, as well as other documents provided by the client relating to the project development.
- Acquisition of the City of San Diego Right-of-way and Traffic Control permits.
- Acquisition of a boring permit from the County of San Diego Department of Environmental Health (DEH). Work was conducted under DEH boring permit LMWP-003874.
- Performance of a field reconnaissance to observe the existing site conditions and to locate and mark the subsurface exploration locations.
- Coordination with Underground Service Alert (USA) to clear the subsurface exploration locations for the potential presence of underground utilities. Additionally, private utility locating companies were utilized to clear the exploration locations and to excavate the upper 5 feet of each exploration location prior to drilling.
- Performance of a subsurface exploration consisting of the advancement of 12 large-diameter borings to depths of up to approximately 58 feet. The borings were downhole logged by Ninyo & Moore geologists from beneath the existing pavements to the total depths or near the total depths explored.
- Compilation and analysis of the data obtained from our background review and subsurface exploration.
- Preparation of this report presenting our preliminary findings, conclusions, and recommendations regarding the presence of faulting at the site.

3 SITE AND PROJECT DESCRIPTION

The San Diego High School campus is located at 1405 Park Boulevard within the downtown area of San Diego, California (Figures 1 and 2). The campus encompasses approximately 30 acres of land bounded by Park Boulevard to the west and northwest, Interstate 5 to the northeast and east, and Russ Boulevard and San Diego City College campus to the south. The project site coordinates are 32.7197° North latitude and -117.1515° West longitude. While the site was first developed as a school campus in 1882, much of the existing site improvements were constructed in the mid 1970's (SDUSD, 2013). The campus currently supports various classroom, administration, and multi-purpose buildings, baseball and softball fields, basketball courts, a stadium, and parking lots. Topographically, the campus slopes gently down to the south and southwest. The school stadium is situated on the east side of the campus and consists of a relatively lower terrace with slopes ranging from 20 to 50 feet in height along the eastern, northern, and western boundaries. Elevations on the San Diego High School campus range from approximately 110 feet above mean sea level (MSL) along Russ Boulevard south of the stadium to approximately 180 feet MSL in the northern portion of the site. The topography along Russ Boulevard in the vicinity of Building 700 steadily descends towards the east, with approximate elevations of 143 feet MSL at boring B-1 and 126 ½ feet MSL at boring B-12 (BWE, 2019).

Based on our review of project documents (Architects Mosher Drew, 2018) the proposed project includes the construction of new structures at various locations on campus. In the southern portion of the campus, existing Building 700 is planned to be demolished and replaced by a new two-story, approximately 7,500 square feet, building that will serve as the Food Service and Custodial Building. Also in the southern portion of campus, existing shade structure will be demolished and two to three new food kiosk structures (approximately 1,500 square feet each) will be constructed that will be located west of the existing Buildings 500 and 600. In the northern portion of the campus at the baseball and softball fields, two new structures that will house concessions and dugouts will be constructed. An existing portable restroom will also be removed and replaced. Retaining walls are also anticipated to be constructed at new Building 700. Fault hazard evaluations for food kiosk buildings will be provided under separate cover at a later date, subject to the determination of human occupancy rate by others.

4 BACKGROUND

Ninyo & Moore previously prepared geotechnical evaluations at the San Diego High School campus for Building 1100 (Ninyo & Moore, 2008a) and for improvements to the stadium, baseball field, softball field (Ninyo & Moore, 2014), and Building 700 (Ninyo & Moore, 2019).

The geotechnical evaluation for Building 1100 included subsurface evaluation consisting of four small-diameter borings and an exploratory trench. Subsequent to the geotechnical evaluation, a fault hazard evaluation was also performed for Building 1100, consisting of large-diameter borings and geophysical resistivity surveys (Ninyo & More, 2008b). The geotechnical evaluation for the stadium, baseball field, and softball field improvements consisted of 20 small-diameter borings. We performed a desktop-level geologic reconnaissance study for the proposed Building 700 (Ninyo & Moore, 2018), including review of available reports prepared by other consultants for projects at San Diego High School (Woodward-Gizienski, 1973; SCS&T, 1993; Geocon, 2001; and TerraPacific, 2009) as well as the City College campus to the south (Rore, Inc., 2008). Additionally, we recently performed a geotechnical evaluation for the proposed Building 700 and additional site improvements that consisted of drilling, logging, and sampling of 21 small diameter borings. The findings from these studies are incorporated into this report, as appropriate.

5 AREA STUDIES

As part of our evaluation, we have reviewed various fault maps, geologic maps, geotechnical reports, and fault hazard reports for the project vicinity. Based on our review of the documents discussed above, this site-specific fault evaluation was undertaken to evaluate the presence or absence of active or potentially active faulting at the site.

5.1 Faulting and Seismicity

Based on our review of the referenced geologic maps, geotechnical report, and stereoscopic aerial photographs, the subject site is not currently mapped as being underlain by known active or potentially active faults (i.e., faults that exhibit evidence of ground displacement in the last 11,000 years and 2,000,000 years, respectively). Figure 4 shows the approximate site location relative to the major faults in the region. The subject site is not located within a State of California Earthquake Fault Zone (formerly known as Alquist-Priolo Special Studies Zone) (CGS, 2003; Hart and Bryant, 1997). However, an Earthquake Fault Zone is mapped along a portion of the south perimeter of the site, as shown in Figures 5 and 6. Active faults within this zone are mapped approximately 450 feet southwest of the campus and are considered part of the Downtown Graben, a transtensional zone of the Rose Canyon fault zone (Treiman, 2002). Furthermore, the site is within the City of San Diego's Downtown Special Fault Zone (Figure 5; City of San Diego, 2008). Potentially active faults, identified as the Florida Canyon Fault and the Texas Street Fault, are mapped approximately 1,000 and 5,000 feet east of the eastern perimeter of the site, respectively.

In two previous fault evaluations performed at the school campus (Ninyo & Moore, 2008b and Geocon, 2001), evidence of faulting was not observed. These evaluations were performed prior to construction of the existing Building 1100 and Building 900, respectively. In a previous fault evaluation performed at several locations for the City College campus to the south (Rore, Inc., 2008), evidence of potentially active faulting was observed in trenches excavated approximately 850 feet south of the San Diego High School campus.

6 SUBSURFACE EXPLORATION

Our subsurface fault hazard exploration for Building 700 was conducted between March 25 and April 9, 2019, and consisted of the drilling and logging of 12 large-diameter (30-inch) exploratory borings (B-1 through B-12) within Russ Boulevard. The approximate locations of the large-diameter exploratory borings are shown on Figure 2. The boring logs are included in Appendix A. Representative photographs of our field activities are included in Appendix B. Details regarding the subsurface exploration methodology and means are presented below.

6.1 Methodology

As discussed in Section 5 of this report, our review of geologic and fault maps indicates that active faults are located as close as approximately 450 feet southwest of the subject site (Figures 5 and 6). Based on the general north-south trend of these faults and others in San Diego Bay and the downtown area, we performed our subsurface exploration along the west-east trending alignment of Russ Boulevard (immediately south of Building 700) to evaluate the presence or absence of faulting at the subject site. The preferred orientation of subsurface fault hazard evaluations is generally perpendicular to that of known faults in the area. While trenching is generally the preferred method of fault hazard evaluation, trenching was not feasible at the subject site due to site access constraints, the anticipated presence of deep fills on the order of 15 feet in thickness, and various conflicts with marked and unmarked utilities. Deep fill soils on the order of 27 feet were also encountered in a previous evaluation for the nearby Building 1100 (Ninyo & Moore, 2008b). Therefore, our fault hazard evaluation is based on data obtained from closely spaced, continuously downhole logged, large-diameter borings.

6.2 Large Diameter Borings

Twelve large-diameter borings (B-1 through B-12) were drilled along two west-to-east alignments on the northern and southern portions of Russ Boulevard. A truck-mounted drill rig equipped with a 30-inch diameter bucket auger was used to drill to depths of up to approximately 58 feet below existing ground surface. In general, the borings were drilled such

that spacing between borings was from approximately 15 to 20 lateral feet. The purpose of these borings was to obtain subsurface data within the underlying materials to be correlated as generally continuous or discontinuous between borings in order to indicate the presence of faulting.

7 GEOLOGY AND SUBSURFACE CONDITIONS

The following sections provide information regarding the geologic conditions relative to the project site.

7.1 Regional Geologic Setting

The project site is situated in the coastal foothill section of the Peninsular Ranges Geomorphic Province. The Province encompasses an area that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin on the north to the southern tip of Baja California on the south (Norris and Webb, 1990; Harden, 2004). The Province varies in width from approximately 30 to 100 miles. In general, the Province consists of rugged mountains underlain by Jurassic-aged metavolcanic and metasedimentary rocks, and Cretaceous-aged igneous rocks of the southern California batholith.

The Peninsular Ranges Province is traversed by a group of sub-parallel faults and fault zones trending roughly northwest (Jennings, 2010). Several of these faults are considered active. The Elsinore, San Jacinto, and San Andreas faults are active fault systems located east and northeast of the project area and the Rose Canyon, Coronado Bank, San Diego Trough, and San Clemente faults are active faults located west of the project site (Figure 4). Major tectonic activity associated with these and other faults within the regional tectonic framework consists primarily of right-lateral, strike-slip movement. Specifics of faulting are discussed in following sections of this report.

7.2 Site Geology

Geologic units encountered during our field reconnaissance and subsurface exploration included fill and San Diego Formation. Based on our review of the referenced evaluations previously performed at the site, topsoil/colluvium and terrace deposits have also been encountered on the school campus (Woodward-Gizienski, 1973). Generalized descriptions of these earth units are provided below. The geology of the site vicinity is shown on Figure 3. Additional descriptions are provided on the boring logs in Appendix A. Geologic cross sections are shown on Figures 8A and 8B.

7.2.1 Fill

Fill materials were encountered underlying the pavement sections in each of our exploratory borings. The fill materials encountered in our borings extended to depths of up to 15 feet. As encountered, the fill materials generally consisted of various shades of brown, moist, loose to medium dense, clayey and silty sand. Roots, gravel, cobbles, and construction debris were encountered in the fill materials. Documentation regarding placement of these fills was not available for review.

7.2.2 San Diego Formation

Materials of the late Pliocene to early Pleistocene-aged San Diego Formation were encountered in each of our exploratory borings underlying the fill materials and extending to the total depths explored. As encountered, these materials generally consisted of various shades of yellow, gray, and brown, moist, weakly to strongly cemented, silty fine to coarse grained sandstone, and weakly to strongly indurated, sandy siltstone. Strongly cemented zones, shells, gravel, and cobbles were encountered in the San Diego Formation.

Within our large-diameter borings, multiple stratigraphic sub-units were encountered within the San Diego Formation. The first sub-unit, “A” generally consisted of predominantly yellowish brown and gray silty fine grained sandstone with a shell, gravel, and cobble sequence, and calcium carbonate interbeds. The second sub-unit, “B” generally consisted of multiple sequences of shells, gravel and cobbles, with interbedded layers of siltstone, cross-bedded siltstone, and undulatory brown clay beds. The third sub-unit, “C” generally consisted of a relatively thick, gray, weakly indurated and friable, massive siltstone sequence followed by a strongly cemented shell, gravel, and cobble cementation. Sub-units A-C were encountered in borings B-1 through B-8 and are delineated within our cross sections in Figures 8A and 8B. The fourth sub-unit, “D” generally consisted of reddish brown, moderately to strongly cemented, silty fine to coarse grained sandstone with multiple gravel and cobble layers. The fifth sub-unit, “E”, generally consisted of interbedded siltstone, sandstone, and gravel and cobble layers. The sixth sub-unit, “F”, generally consists of gray, weakly indurated and friable, sandy siltstone with micaceous bedding and laminations, and manganese nodules. Sub-units D-F were encountered in borings B-11 and B-12 and are delineated within our cross section in Figure 8B. It should be noted that shell beds were not encountered in borings B-11 or B-12 (i.e. sub-units D-F).

8 INTERPRETATION OF GEOLOGIC CROSS SECTIONS

To evaluate the presence of faulting at the project site, we have developed two interpreted geologic cross sections using the boring log data collected along generally west-east alignments immediately south and southeast of Building 700 (Figures 8A and 8B). As discussed in Section 6.1 of this report, these alignments were performed perpendicular to that of known faults in the area. The cross sections include:

- Geologic Cross Section A-A' is located along the northern portion of Russ Boulevard immediately south of the existing Building 700 and includes borings B-1 through B-7.
- Geologic Cross Section B-B' is located along the southern portion of Russ Boulevard southeast of the existing Building 700 and includes borings B-8 through B-12.

Stratigraphic sub-units were defined within the cross sections based on observations of the encountered soils in our downhole-logged borings. Evidence for faulting including truncated and offset calcium carbonate or shell beds, fault gouge, and clay and root infills and stringers were observed in borings B-7 and B-10 (Figures 8A and 8B). Due to the absence of relatively younger geologic materials deposited on top of the Plio-Pleistocene-aged San Diego Formation, the age of most recent movement on the observed faults could not be determined. Discussion of the findings shown on each cross section is presented below.

8.1 Geologic Cross Section A-A'

Abrupt stratigraphic discontinuities indicative of faulting were encountered in sub-unit A of the San Diego Formation along geologic cross section A-A', specifically within boring B-7, as shown in Figure 8A. In this boring, two calcium carbonate beds within sub-unit A of the San Diego Formation exhibit an east-side down truncation, as displayed by the beds' "down-drag". The "down-drag" is ascribed to deformation or dragging associated with movement on the fault. The fault was encountered within boring B-7 from an approximate depth of 12 feet within the western sidewall continuing to approximately 17.5 feet within the eastern sidewall. Measurements taken on the fault plane indicate it is trending approximately N30°W. The displacement of the truncated calcium carbonate beds was not measureable at the time of our field evaluation, since B-7 was the eastern most boring within cross section A-A'. Evidence of faulting was not observed along geologic cross section A-A' between borings B-1 through B-6, as reflected by continuous stratigraphy and near horizontal bedding within the San Diego Formation and its sub-units.

8.2 Geologic Cross Section B-B'

Along geologic cross section B-B', multiple stratigraphic discontinuities indicative of faulting were interpreted between borings B-8 and B-9, B-9 and B-10, and B-10 and B-11, as well as within boring B-10. Stratigraphic discontinuities between boring B-8 and B-9 are consistent with a southeastward projection of the encountered fault within boring B-7. The sub-units and elevations of the San Diego Formation encountered in boring B-8 are consistent with those found in borings B-1 through B-6, as well as B-7 below a depth of 17.5 feet (i.e. below the encountered fault in B-7). Between borings B-9 and B-10, multiple sub-units within the San Diego Formation exhibit stratigraphic discontinuity and cannot be laterally correlated. Within boring B-10, a near-vertical shear zone was encountered from beneath the fill at approximately 8 feet extending to a depth of approximately 33 feet, with stratigraphic discontinuities present on the western and eastern sidewalls of boring B-10. Measurements taken on the near vertical shear zone indicate it is trending approximately N15°W. The potential vertical offset of the sub-units within boring B-10 is on the order of at least 25 feet. Also within boring B-10, an approximate 1.5 foot, east-side down offset was encountered within a shell bed, as measured on the base of the shell bed at an approximate depth of 44.5 feet to 46 feet below grade. Between borings B-10 and B-11, multiple sub-units exhibit stratigraphic discontinuity that cannot be laterally correlated. Minor joints and fractures with ½ inch or less of offset were encountered within Borings B-11 and B-12 at depths of approximately 25 feet and 38 feet, respectively. Further evidence of faulting was not observed along geologic cross section B-B' between B-11 and B-12, as reflected by continuous stratigraphy and near horizontal bedding within the San Diego Formation. It should be noted that the sub-units encountered in borings B-11 and B-12 are not the same sub-units that were encountered in borings B-1 through B-8. As previously discussed, site access constraints, numerous conflicts with underground utilities, and the presence of deep fills, as encountered in borings B-5 and B-6, prevented utilization of the method of trenching for this fault evaluation.

8.3 Fault Activity

As discussed above, evidence of faulting was observed within the San Diego Formation as interpreted in geologic cross sections A-A', and B-B' (Figures 8A and 8B). Based on the depths and locations of the encountered faults, the western portion of the fault zone (encountered in boring B-7) has a measured strike (orientation) of approximately N30°W, while the eastern portion of the fault zone (encountered in boring B-10) has a measured strike of approximately N15°W. Offset sub-units observed within the San Diego Formation are considered to be early Pleistocene to late Pliocene in age (i.e. 1.8 to 3.6 million years old). Due to the absence of relatively younger geologic materials that would have been deposited above the

Plio-Pleistocene-aged San Diego Formation, and the absence of age-datable materials (i.e. organic matter for radiocarbon dating), the age of most recent movement on the encountered faults is undetermined. The observed faults are therefore classified as "age-undetermined faults" (CGS, 2018). According to California Geological Survey Special Publication 42, "age-undetermined faults within regulatory Earthquake Fault Zones are considered Holocene-active until proven otherwise" (CGS, 2018). San Diego High School is located within the City of San Diego's "Downtown Special Fault Zone" (City of San Diego, 2008), which is considered a regulatory Earthquake Fault Zone.

8.4 Correlation with Area Studies

As previously discussed, we have reviewed several geotechnical and fault hazard reports for the project vicinity. The reports reviewed for the project vicinity included, but were not limited to, geotechnical and fault hazard reports prepared by other consultants for projects at San Diego High School (Woodward-Gizienski, 1973; SCS&T, 1993; Geocon, 2001; and TerraPacific, 2009) as well as the City College campus to the south (Rore, Inc., 2008).

Two previous fault evaluations were performed within the San Diego High School campus (Ninyo & Moore, 2008b and Geocon, 2001), and evidence of faulting was not observed. These evaluations were performed prior to construction of the existing Building 1100 and Building 900, respectively. In a previous fault evaluation performed at several locations for the City College campus located to the south (Rore, Inc., 2008), evidence of northwest-southeast trending, potentially active, faulting was observed in trenches excavated approximately 850 feet southeast of cross section B-B'.

As noted previously, we did not encounter evidence of faulting across Borings B-1 through B-6, B-11 and B-12. Per our review of previously performed fault evaluations for San Diego High School (Ninyo & Moore, 2008b and Geocon, 2001), evidence of active faulting was not found underlying Building 900 approximately 600 feet to the northwest or Building 1100 approximately 100 feet northeast (Geocon, 2001, and Ninyo & Moore, 2008b).

9 CONCLUSIONS AND RECOMMENDATIONS

Due to the site location within the City of San Diego's Downtown Special Fault Zone and the trends of active and/or potentially active faults toward the project area, this site-specific fault study was performed to evaluate the potential presence or absence of active and/or potentially active faulting on the subject site. The site specific evaluation generally followed the State of California and City of San Diego technical guidelines for fault-rupture hazard reports (California

Geological Survey, 2018; City of San Diego, 2011). An active fault is defined as a fault which has had surface displacement within Holocene time (about the last 11,000 years) and a potentially active fault is considered to have been active during Quaternary time (last 2 million years). Our evaluation consisted of review of available maps and reports in and around the site vicinity, and a subsurface exploration consisting of drilling and downhole-logging of large diameter borings.

Based on the findings from this study, we have interpreted the presence of a fault zone that trends towards the existing Building 700. This fault zone is characterized by near-vertical stratigraphic displacement with a possible strike-slip component that trends through the subject site at approximately N30°W at the western portion of the fault zone to N15°W at the eastern portion of the fault zone. The width of the fault zone has been interpreted as being approximately 45 feet wide at the northern portion of the site and narrows to approximately 30 feet wide at southern portion of the site (Figure 2). Stratigraphic offsets of Plio-Pleistocene aged San Diego Formation indicate that age-undetermined, presumed Holocene-active faulting occurs within the fault zone. Vertical offsets among sub-units of the San Diego Formation ranged from approximately less than one inch up to at least 25 feet. The observed faults are interpreted to cross the site of Building 700, but the length of the faults is unknown. Further field evaluation may be warranted to develop additional interpretation of the length, width, and projection of the fault zone.

In accordance with the Alquist-Priolo Act, the proposed building structures for human occupancy should be offset 50 feet from the closest suspected fault location. A “structure for human occupancy” is defined in California Geological Survey (CGS) Special Publication 42 (2018) as any structure used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year.

10 LIMITATIONS

The field evaluation and geotechnical analyses presented in this fault evaluation report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be encountered during construction. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface evaluation will be performed upon request.

Please also note that our evaluation was limited to assessment of the geotechnical aspects of the project, and did not include evaluation of structural issues, environmental concerns, or the presence of hazardous materials.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions. If geotechnical conditions different from those described in this report are encountered, our office should be notified, and additional recommendations, if warranted, will be provided upon request. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

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FIGURES



NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCE: ESRI WORLD TOPO, 2017

1_108598003_SL.mxd 5/15/2019 AOB

FIGURE 1

SITE LOCATION
PROPOSED BUILDING 700
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598003 | 5/19

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants



LEGEND

B-12 TD=50.0 — BORING
TD=TOTAL DEPTH IN FEET

B B' — GEOLOGIC CROSS SECTION

FAULT (SOLID WHERE ENCOUNTERED, DASHED WHERE INFERRED)

FAULT ZONE

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

SOURCE: GOOGLE EARTH, 2019.

N

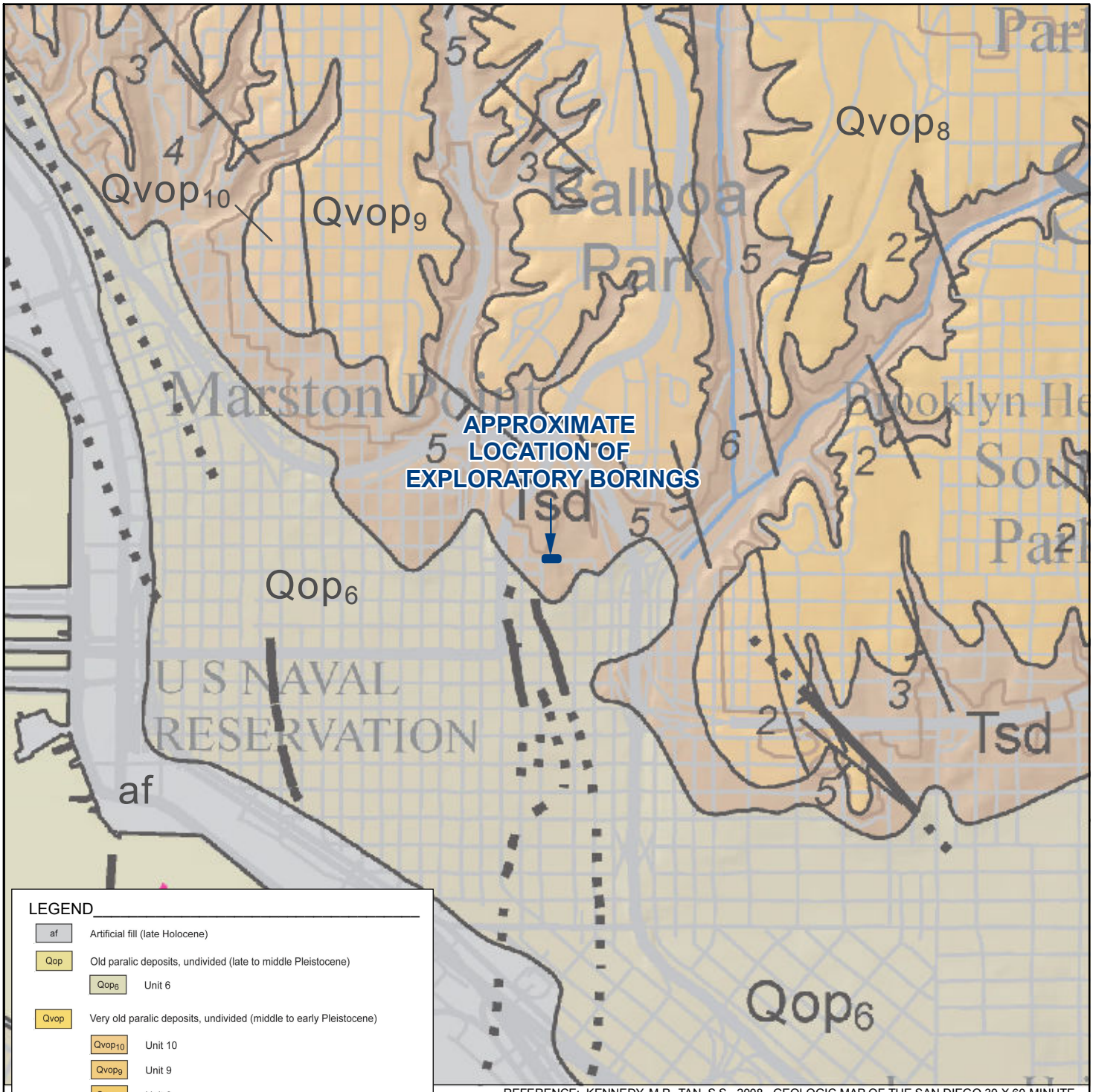
FEET
0 50 100

2_108598003_BL.mxd 5/10/2019 AOB

FIGURE 2

BORING LOCATIONS
PROPOSED BUILDING 700
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598003 | 5/19

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants



REFERENCE: KENNEDY, M.P., TAN, S.S., 2008, GEOLOGIC MAP OF THE SAN DIEGO 30 X 60-MINUTE QUADRANGLE, CALIFORNIA

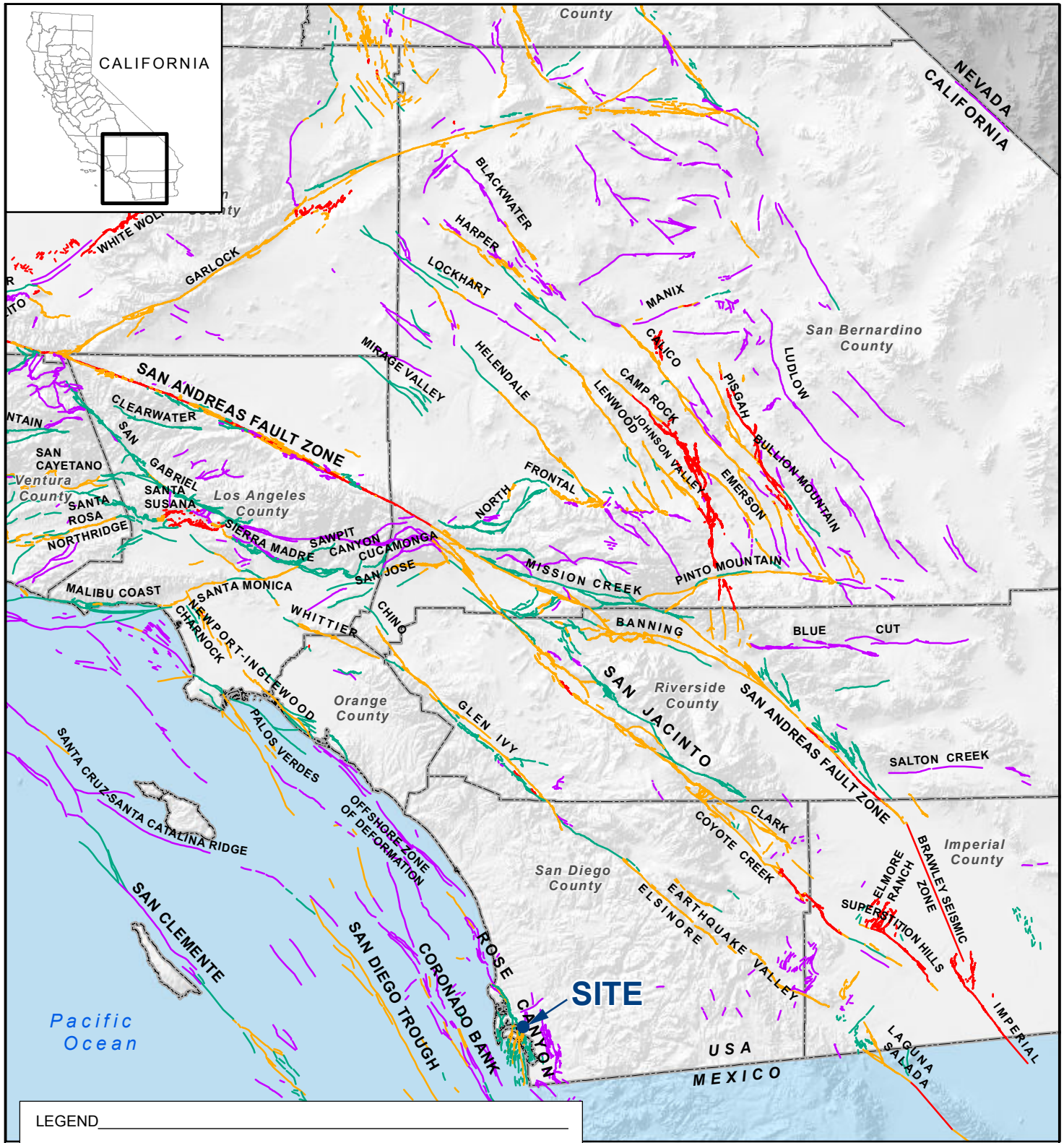
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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FIGURE 3

GEOLOGY
PROPOSED BUILDING 700
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598003 | 5/19

Ninyo & Moore
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SOURCE: U.S. GEOLOGICAL SURVEY AND CALIFORNIA GEOLOGICAL SURVEY, 2006, QUATERNARY FAULT AND FOLD DATABASE FOR THE UNITED STATES.

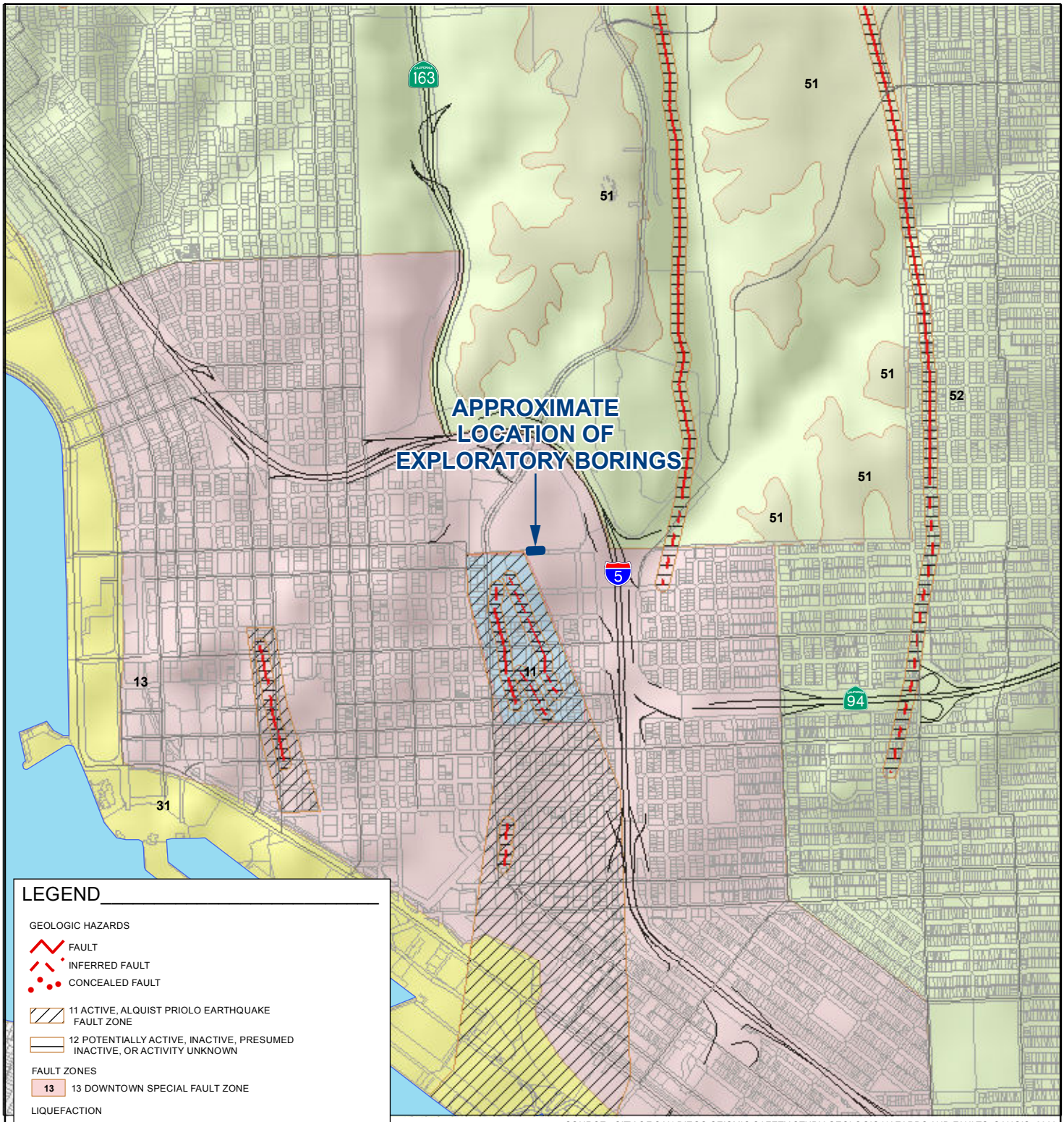
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

4_108598003_FL.mxd 5/1/2019 AOB

FIGURE 4

FAULT LOCATIONS
PROPOSED BUILDING 700
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598003 | 5/19

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SOURCE: CITY OF SAN DIEGO SEISMIC SAFETY STUDY GEOLOGIC HAZARDS AND FAULTS, SANGIS, 2008

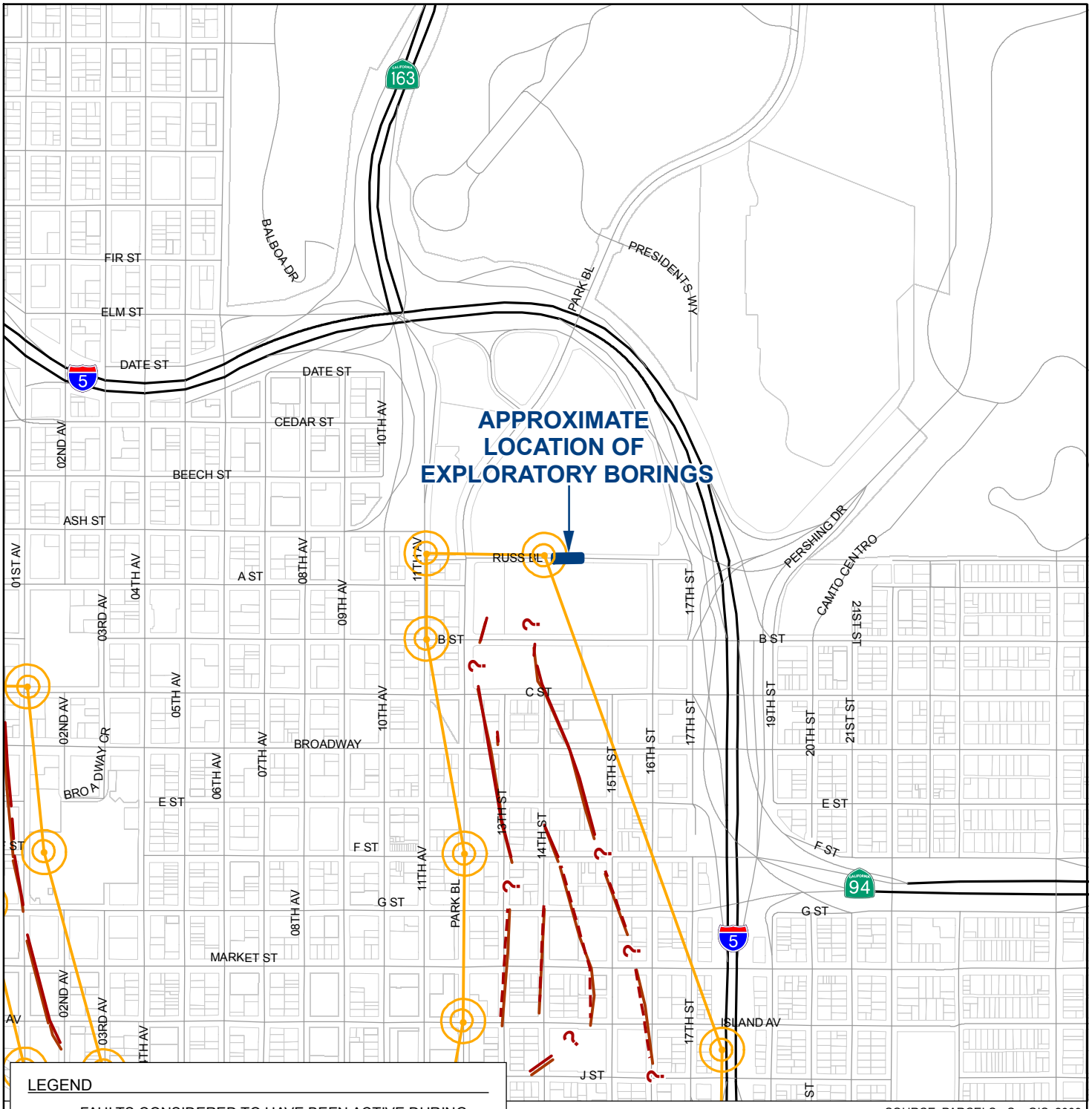
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

5_108598003_GH.mxd 5/15/2019 AOB

FIGURE 5

GEOLOGIC HAZARDS
PROPOSED BUILDING 700
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598003 | 5/19

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SOURCE: PARCELS - SanGIS, 2009

LEGEND

FAULTS CONSIDERED TO HAVE BEEN ACTIVE DURING HOLOCENE TIME AND HAVE POTENTIAL FOR SURFACE RUPTURE; SOLID LINE WHERE ACCURATELY LOCATED, LONG DASH WHERE APPROXIMATELY LOCATED, SHORT DASH WHERE INFERRED. (CGS, 2003)

THESE ARE DELINEATED AS STRAIGHT-LINE SEGMENTS THAT CONNECT ENCIRCLED TURNING POINTS SO AS TO DEFINE EARTHQUAKE FAULT ZONE SEGMENTS. (CGS, 2003)

N

FEET
0 1,000 2,000

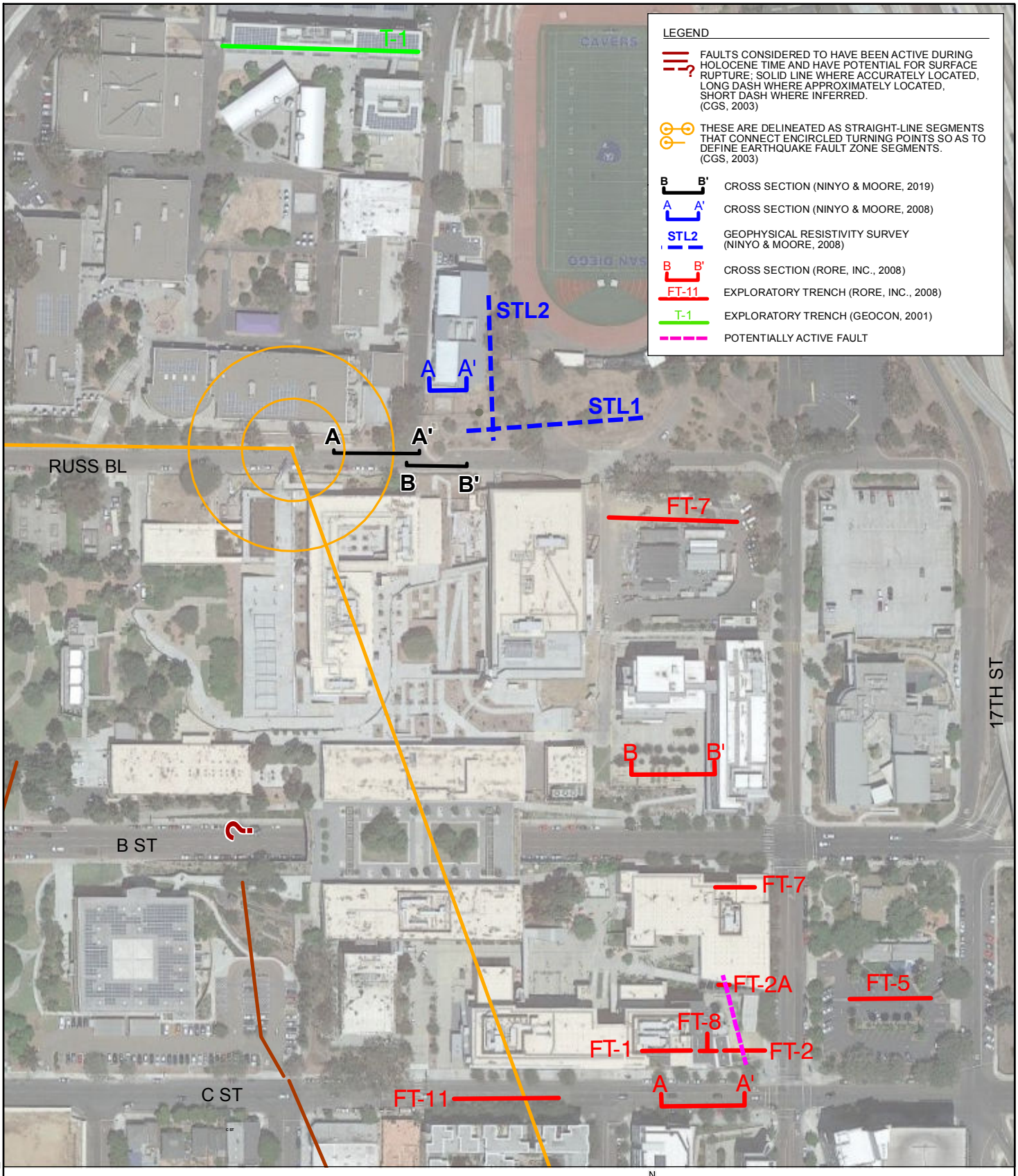
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

6_108598003_EFZ.mxd 5/15/2019 AOB

FIGURE 6

EARTHQUAKE FAULT ZONES
PROPOSED BUILDING 700
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598003 | 5/19

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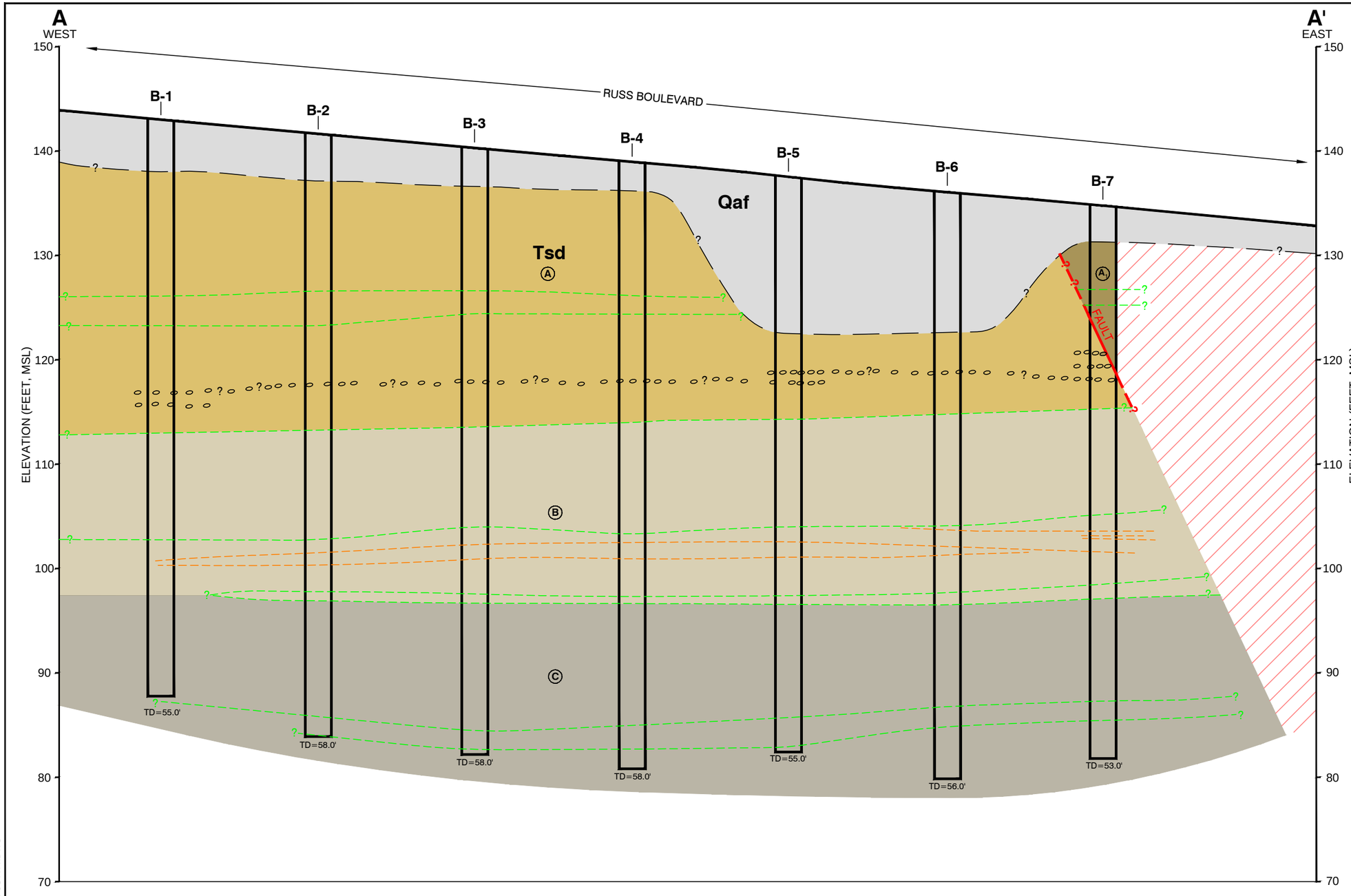
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

7_108598003_Faults.mxd 5/15/2019 AOB

FIGURE 7

AREA FAULT STUDIES
PROPOSED BUILDING 700
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598003 | 5/19

Ninyo & Moore
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LEGEND

- Marine deposition (shells, gravel, cobble), queried where uncertain
- Brown clay beds
- Fault, dashed where approximate, queried where uncertain
- Interpreted fault zone
- (A) Yellowish brown/gray SANDSTONE, with gravel, shell, cobble, $CaCO_3$, and siltstone interbeds
- (A1) Yellowish brown to reddish brown SANDSTONE, with gravel, shell, cobble, $CaCO_3$, and siltstone interbeds
- (B) Gravel, shell and cobble deposits with siltstone and brown clay interbeds
- (C) Gray, massive/friable SILTSTONE
- $CaCo_3$ beds, queried where inferred

FEET
0 10 20

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE. I REFERENCE:

8A 108598003 CS A-A'.DWG

FIGURE 8A

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Geotechnical & Environmental Sciences Consultants

GEOLOGIC CROSS SECTION A-A'

PROPOSED BUILDING 700
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598003 I 5/19

B
WEST

B'
EAST

ELEVATION (FEET, MSL)

RUSS BOULEVARD

B-8 B-9 B-10 B-11 B-12

Qaf

Tsd

Red brown SANDSTONE

Gray SILTSTONE

Gray

Calcium carbonate with cross-bedding

FAULT PROJECTED (B-7)

FAULT

Red brown SANDSTONE wiith gravel, cobble interbeds, rootlets

Grayish brown massive SILTSTONE wiith gravel, interbeds, manganese nodules, fractures, stringers, roots

SILTSTONE

TD=41.0'

TD=50.0'

TD=54.0'

TD=54.0'

TD=50.0'

LEGEND

- Geologic contact, queried where uncertain
- Marine deposition (shells, gravel, cobble), queried where uncertain
- Brown clay beds
- Fault, dashed where approximate, queried where uncertain
- Interpreted fault zone
- Ⓐ Yellowish brown/gray SANDSTONE, with gravel, shell, cobble, $CaCo_3$, and siltstone interbeds
- Ⓑ Gravel, shell and cobble deposits with siltstone and brown clay interbeds
- Ⓒ Gray, massive/friable SILTSTONE
- Ⓓ Reddish brown SANDSTONE with gravel/ cobble interbeds
- Ⓔ Yellowish brown to gray SILTSTONE with sandstone, gravel and cobble interbeds
- Ⓕ Gray, massive/friable SILTSTONE; micaceous laminations and manganese nodules
- $CaCo_3$ beds, queried where inferred

FEET
0 10 20

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE. I REFERENCE:

8B 108598003 CS B-B'.DWG

FIGURE 8B

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

GEOLOGIC CROSS SECTION B-B'

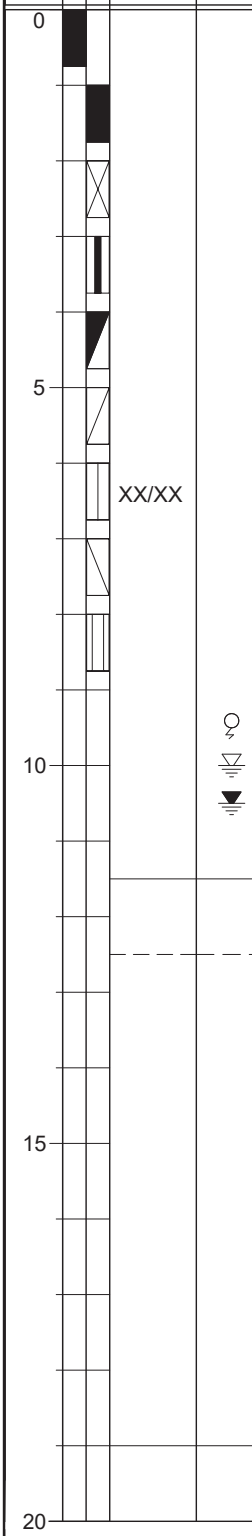
PROPOSED BUILDING 700
SAN DIEGO HIGH SCHOOL
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

108598003 I 5/19

APPENDIX A

Exploration Logs

BORING LOG EXPLANATION SHEET



Bulk sample.

Modified split-barrel drive sampler.

No recovery with modified split-barrel drive sampler.

Sample retained by others.

Standard Penetration Test (SPT).

No recovery with a SPT.

Shelby tube sample. Distance pushed in inches/length of sample recovered in inches.

No recovery with Shelby tube sampler.

Continuous Push Sample.

Seepage.

Groundwater encountered during drilling.

Groundwater measured after drilling.

SM

MAJOR MATERIAL TYPE (SOIL):

Solid line denotes unit change.

CL

Dashed line denotes material change.

Attitudes: Strike/Dip
b: Bedding
c: Contact
j: Joint
f: Fracture
F: Fault
cs: Clay Seam
s: Shear
bss: Basal Slide Surface
sf: Shear Fracture
sz: Shear Zone
sbs: Shear Bedding Surface

The total depth line is a solid line that is drawn at the bottom of the boring.

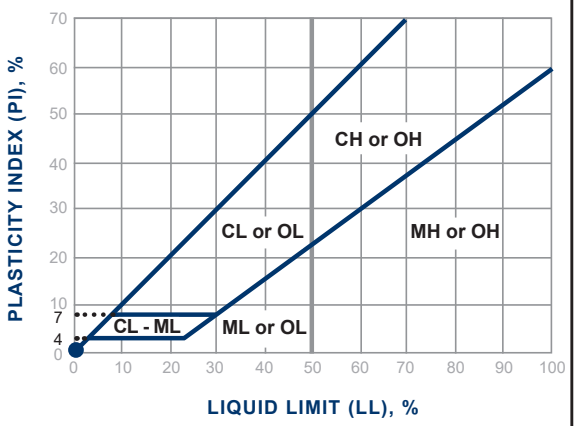
Soil Classification Chart Per ASTM D 2488

Primary Divisions			Secondary Divisions	
			Group Symbol	Group Name
COARSE-GRAINED SOILS more than 50% retained on No. 4 sieve	**GRAVEL** more than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVEL less than 5% fines	GW	well-graded GRAVEL
			GP	poorly graded GRAVEL
		GRAVEL with DUAL CLASSIFICATIONS 5% to 12% fines	GW-GM	well-graded GRAVEL with silt
			GP-GM	poorly graded GRAVEL with silt
			GW-GC	well-graded GRAVEL with clay
			GP-GC	poorly graded GRAVEL with clay
		GRAVEL with FINES more than 12% fines	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND 50% or more of coarse fraction passes No. 4 sieve	CLEAN SAND less than 5% fines	SW	well-graded SAND
			SP	poorly graded SAND
		SAND with DUAL CLASSIFICATIONS 5% to 12% fines	SW-SM	well-graded SAND with silt
			SP-SM	poorly graded SAND with silt
			SW-SC	well-graded SAND with clay
			SP-SC	poorly graded SAND with clay
		SAND with FINES more than 12% fines	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOILS 50% or more passes No. 200 sieve	**SILT and CLAY** liquid limit less than 50%	INORGANIC	CL	lean CLAY
			ML	SILT
			CL-ML	silty CLAY
		ORGANIC	OL (PI > 4)	organic CLAY
			OL (PI < 4)	organic SILT
	SILT and CLAY liquid limit 50% or more	INORGANIC	CH	fat CLAY
			MH	elastic SILT
		ORGANIC	OH (plots on or above "A"-line)	organic CLAY
			OH (plots below "A"-line)	organic SILT
	Highly Organic Soils		PT	Peat

Grain Size

Description		Sieve Size	Grain Size	Approximate Size
Boulders		> 12"	> 12"	Larger than basketball-sized
Cobbles		3 - 12"	3 - 12"	Fist-sized to basketball-sized
Gravel	Coarse	3/4 - 3"	3/4 - 3"	Thumb-sized to fist-sized
	Fine	#4 - 3/4"	0.19 - 0.75"	Pea-sized to thumb-sized
Sand	Coarse	#10 - #4	0.079 - 0.19"	Rock-salt-sized to pea-sized
	Medium	#40 - #10	0.017 - 0.079"	Sugar-sized to rock-salt-sized
	Fine	#200 - #40	0.0029 - 0.017"	Flour-sized to sugar-sized
Fines		Passing #200	< 0.0029"	Flour-sized and smaller

Plasticity Chart



Apparent Density - Coarse-Grained Soil

Apparent Density	Spooling Cable or Cathead		Automatic Trip Hammer	
	SPT (blows/foot)	Modified Split Barrel (blows/foot)	SPT (blows/foot)	Modified Split Barrel (blows/foot)
Very Loose	≤ 4	≤ 8	≤ 3	≤ 5
Loose	5 - 10	9 - 21	4 - 7	6 - 14
Medium Dense	11 - 30	22 - 63	8 - 20	15 - 42
Dense	31 - 50	64 - 105	21 - 33	43 - 70
Very Dense	> 50	> 105	> 33	> 70

Consistency - Fine-Grained Soil

Consis-tency	Spooling Cable or Cathead		Automatic Trip Hammer	
	SPT (blows/foot)	Modified Split Barrel (blows/foot)	SPT (blows/foot)	Modified Split Barrel (blows/foot)
Very Soft	< 2	< 3	< 1	< 2
Soft	2 - 4	3 - 5	1 - 3	2 - 3
Firm	5 - 8	6 - 10	4 - 5	4 - 6
Stiff	9 - 15	11 - 20	6 - 10	7 - 13
Very Stiff	16 - 30	21 - 39	11 - 20	14 - 26
Hard	> 30	> 39	> 20	> 26

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USCS METHOD OF SOIL CLASSIFICATION

DATE DRILLED 4/01/19 BORING NO. B-1

GROUND ELEVATION 143' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	ASPHALT CONCRETE: Approximately 4 inches thick. FILL: Brown, moist, medium dense, silty SAND; scattered gravel and cobble.
								SAN DIEGO FORMATION: Light brown to yellowish brown, moist, moderately to strongly cemented, silty fine-grained SANDSTONE. @ 5'9": b: N20E, 6°E @ 5'9" to 8'2": Calcium carbonate (CaCO3) stringer with rootlets. @ 8' to 12': Manganese nodules.
10								@ 12' to 16': Calcium carbonate stringers; rootlets. @ 12'9" to 13'6": Fine laminations; micaceous. @ 15': CaCO3 vertical stringer; rootlet. @ 15': Laminations.
20								@ 17': Top of shell layer. @ 17' to 17'8": Broken up shell fragments in sandstone matrix; irregular erosional contact. @ 18': Carbonate bed, continues around boring. @ 18.5' to 19.5': Gravel; cobble; chalky white carbonate; high energy deposition. @ Below 19.5': Caving, cohesionless, belling out. @ 20': Gray, friable. @ 20': Gray, moist, weakly indurated, interbedded sandy SILTSTONE; micaceous; finely laminated. @ 22': Resistant 2" layer: discontinuous around boring. @ 22': b: N60E; 14°E @ 22'2" to 27': Cross bedded.
30								@ 26'9" to 27': Hard CaCO3 layer; generally horizontal. @ 28' to 28'3": Hard CaCO3 layer; generally horizontal. @ 31'3" to 31'6": Shell layer with gravel and cobbles approximately 4 inches in diameter; near horizontal. @ 32'6" to 34'3": Shells, gravel, and cobbles approximately 6 inches in diameter; high energy deposition; iron-oxide staining.
40								@ 35'3" to 41': Shells, gravel, and cobble, massive, high energy deposition. Iron-oxide staining. @ 39' to 41'6": Strongly cemented layer.

FIGURE A- 1

Ninyo & Moore
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SAN DIEGO HIGH SCHOOL BUILDING 700
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

DATE DRILLED 4/01/19 BORING NO. B-1

GROUND ELEVATION 143' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40								SAN DIEGO FORMATION: (Continued) @ 41'6" to 42': Cross bedding. @ 42'5": b: N80E, 3°S, approximately 2 inches thick; brown, clay layer. @ 43'3": b: N40W, 8°S @ 48'6" to 52'6": Belling out and caving, gray, massive, weakly indurated.
50								Total Depth = 55 feet. Logged to 52.5 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling with approximately 6 inches of bentonite for every 5 feet of soil cuttings; 2 feet of bentonite placed at bottom of boring; patched with cold patch asphalt on 4/01/19. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
60								
70								
80								

DATE DRILLED 4/09/19 BORING NO. B-2

GROUND ELEVATION 142' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								ASPHALT CONCRETE: Approximately 4 inches thick on approximately 9 inches of base material.
							SM	FILL: Brown, moist, medium dense, silty SAND; scattered gravel and cobble.
								SAN DIEGO FORMATION: Light brown to yellowish brown, moist, moderately cemented, silty fine-grained SANDSTONE; laminated. @ 5' to 14': Carbonate infilled joints. @ 5' to 14': Manganese nodules.
10								@ 14.5': Iron-oxide mottling. @ 15.5' to 16': Crushed small shells, continuous around boring. @ 15.5': b: N55E, 8°S @ 16' to 16'2": Siltstone interbed. @ 16'2" to 16.5': Shell interbed. @ 16'8" to 18.5': Carbonate, rounded gravel, cobbles approximately 3 inches in diameter. @ 18.5': Belling out, friable gray sandstone. @ 18.5' to 23.5': Cross bedding; micaceous.
20								@ 23.5': Gray to yellowish brown interbedded SILTSTONE; finely laminated; generally flat. @ 25': Discontinuous carbonate fragment layer. @ 25'9" to 26'3": Cross bedding. @ 26': Grades to gray; bedding flat. @ 27'9" to 29': Iron-oxide staining. @ 28.9': Larger shell layer. @ 29.5' to 29'9": Carbonate and gravel layer. @ 29'9" to 30.5': Gray siltstone interbed. @ 30.5' to 31.5': Hard carbonate shell layer.
30								@ 32' to 32.5': More shells. @ 32.5' to 33.5': Gray SILTSTONE interbed. @ 33.5': Flat shells; approximately 2 to 3 inches thick. @ 33'9" to 34': Spiral gastropod shells. @ 36' to 38': Iron-oxide staining. @ 36.5': Oyster shells. @ 38': More oyster shells.
40								@ 39'4": Carbonate layer.

DATE DRILLED 4/09/19 BORING NO. B-2

GROUND ELEVATION 142' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40								@ 39.5': Siltstone. SAN DIEGO FORMATION (Continued): @ 40.5': Yellowish brown. @ 41': Brown clay bed; flat. @ 41.5': Brown clay bed; flat. @ 43': Cross bedding. @ 44': Discontinuous brown clay bed; flat. @ 44'3" to 47': Carbonate and oyster shells. @ 47': Belling out; caving; weakly indurated. @ 49.5': j: N15W; 74°W @ 56' to 58': Strongly cemented gravel shell carbonate bed.
50								
60								Total Depth = 58 feet. Logged to 56 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling with approximately 6 inches of bentonite for every 5 feet of soil cuttings; 2 feet of bentonite placed at the bottom of boring; patched with cold asphalt on 4/09/19. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
70								
80								

DATE DRILLED 4/08/19 BORING NO. B-3

GROUND ELEVATION 140.5' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								ASPHALT CONCRETE: Approximately 4 inches thick on approximately 9 inches of base material.
							SM	FILL: Brown, moist, medium dense, silty SAND; scattered gravel and cobbles.
								SAN DIEGO FORMATION: Light brown to yellowish brown, moist, moderately cemented, silty fine-grained SANDSTONE; black micaceous laminations. @ 5' to 9': Manganese nodules. @ 6': Vertical carbonate stringer.
10								@ 10' to 13': Vertical joint with root infill; no offset.
								@ 13': Minor carbonate. @ 14': Crushed small shell layer approximately 0 to 4 inches thick. @ 15' to 16': Blocky chalk carbonate with rounded gravel and cobble. @ 16': Grades to gray, friable; iron-oxide boundary present; continuous; micaceous; generally flat. @ 17': Approximately 1/4" diameter roots.
20								@ 19.5' to 21': Belling out, caving; cross bedding. @ 20': j: N25W, 69°E (no offset).
								Gray to olive, moist, moderately indurated, interbedded, sandy SILTSTONE; friable.
								@ 23'4": Approximately 1 inch thick; hard carbonate layer; generally flat.
								@ 25': Becomes yellowish brown. @ 26': Micaceous bedding/laminations. @ 27': Grades to gray; few flat larger shells.
								@ 28.5': Carbonate fragments.
30								@ 30'3" to 31'2": Gravel and cobble and iron-oxide staining. @ 31'2" to 31'4": Flat shell layer; continuous. @ 31'4" to 32': Gray laminated siltstone interbed. @ 32': Top of shell sequence; small crushed flat shells approximately 3 thick. @ 32'3" to 32'9": Spiral gastropod shells. @ 32'9" to 33'3": Siltstone interbed. @ 33'3": Shell, round gravel, cobbles approximately 6 inches in diameter. @ 34.5': Iron-oxide staining. @ 36': Hard CaCO3 to 37'9" (bottom of sequence).
								@ 38' to 38'7": Interbedded siltstone with laminations. @ 38'7": Grades to yellowish brown. @ 39'4", 40'1", 40'8": Center lines of brown clay layers approximately 3 to 4 inches thick;
40								

DATE DRILLED 4/08/19 BORING NO. B-3

GROUND ELEVATION 140.5' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40								undulatory; generally flat. SAN DIEGO FORMATION: (Continued) @ 41'10": Brown, clay layer approximately 3 to 4 inches thick; cross bedding between clay layers. @ 43'8" to 45': Hard carbonate. Becomes yellow brown, massive. @ 45'2" to 48': Belling/caving; friable; weakly indurated. @ 49.5': Discontinuous irregular carbonate layer. @ 56' to 58': Gravel/shell strongly cemented carbonate bed.
50								
60								Total Depth = 58 feet. Logged to 58 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling with approximately 6 inches of bentonite for every 5 feet of soil cuttings; 2 feet of bentonite placed at bottom of boring; patched with cold patch asphalt on 4/08/19. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
70								
80								

DATE DRILLED 4/05/19 BORING NO. B-4

GROUND ELEVATION 139' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								ASPHALT CONCRETE: Approximately 4 inches thick on approximately 8 inches of base material.
							SM	FILL: Brown, moist, medium dense, silty SAND with scattered gravel and cobbles.
								SAN DIEGO FORMATION: Light brown to yellowish brown, moist, moderately cemented, silty fine-grained SANDSTONE. @ 5' to 13': Thin clay stringers with rootlets.
10								@ 11': Rootlets. @ 12' to 12.5': Yellowish brown; generally flat. @ 13' to 14.5': Top of high energy cobble/carbonate layer. @ 14.5': Gray, friable, belling out, micaceous. @ 14.5': b: N70E, 5°E @ 16': Iron-oxide staining, continuous around boring; approximately 2 to 3 inches thick.
								Grades to interbedded SILTSTONE. @ 19' to 21.5': Belling out, friable.
20								@ 20': Rootlets. @ 20': Becomes yellowish brown; cross bedding 20 to 22.5 feet. @ 21' to 22': Few shell fragments. @ 22.5': Approximately 1 to 2 inches thick; hard carbonate layer. @ 23': Grades to gray (23 to 24 feet), few shells at approximately 24': cross bedding. @ 24'3" to 24'7": Gray siltstone, layer; laminated. @ 24'10": 1-inch crushed shell layers (small shells); flat. @ 25'7" to 26': Gravel, cobbles, carbonate layer.
30								@ 28'5": Cobbles approximately 6 inches in diameter; gravel; chalk; flat. @ 28'6": CaCO3 layer. @ 29'9": Top of shell sequence. @ 30' to 30'3": Flat crushed shells with iron-oxide staining. @ 30'3" to 31': Spiral gastropod shells. @ 31' to 32': Larger shells with rounded gravel. @ 32.5': Mineralized oyster shells. @ 33'8" to 34': Iron-oxide staining; oyster shells. @ 35'6": High energy sequence continuous to approximately 35.5 feet; erosional contact; gray siltstone with iron oxide. @ 37'4": Brown clay layer approximately 1/4 to 1.5 inches thick. @ 37'4": b: N50W, 6°E @ 37'10": Center of approximately 2- to 3-inch thick layer. @ 37'10": b:N85E, 6°S
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FIGURE A- 7

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SAN DIEGO HIGH SCHOOL BUILDING 700
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

DATE DRILLED 4/05/19 BORING NO. B-4

GROUND ELEVATION 139' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40								@ 38'4": Clay bed fragments, discontinuous. @ 38' to 41': Finely laminated; cross bedding. SAN DIEGO FORMATION: (Continued) @ 42' to 43': Oyster shells. @ 43': Becomes friable; light gray; with iron-oxide staining. @ 43' to 48': Belling out, caving; weakly indurated. @ 47': b: N80E, 6°S @ 48': Less friable.
50								@ 53.5' to 56': CaCO3 cemented chunks, gravel/shell/strongly cemented cobble layer followed by yellowish brown SILTSTONE.
60								Total Depth = 58 feet. Logged to 56 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling with approximately 6 inches of bentonite for every 5 feet of soil cuttings; 2 feet of bentonite placed at bottom of boring; patched with cold patch asphalt on 4/05/19. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 4/04/19 BORING NO. B-5

GROUND ELEVATION 137.5' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								ASPHALT CONCRETE: Approximately 4 inches thick on approximately 9 inches of base material.
							SM	FILL: Brown, moist, medium dense, silty coarse SAND; scattered gravel and cobbles.
								@ 7.5' to 15': Cohesionless coarse sand.
10								@ 10': Plastic/paper debris.
								Gray to yellowish brown; fairly continuous.
								SAN DIEGO FORMATION: Gray, moist, weakly to moderately cemented, silty fine-grained SANDSTONE; friable. @ 15.5': Roots.
								@ 18': Minor fractures (<1") with rootlets. @ 17'10": b:N50E, 5°S
20								Grades to interbedded SILTSTONE. @ 18' to 21': Cross bedding. @ 19': Few sea shells, calcium carbonate, cobbles at approximately 19.5 to 21 feet.
								@ 21.5': Belling out/caving. @ 22' to 22.5': Rootlets. @ 22.5' to 23.5': Friable, "crushed". @ 22.5' to 23.5': Finely laminated. @ 23.5' to 24': Shells, generally flat "crushed". @ 24'4": Hard CaCO3 layer approximately 1 foot thick; continuous. (Flat)
								@ 26.5' to 27'8": Top of shell unit, gray, iron-oxide mottled siltstone interbed.
								@ 27'8": Top of crushed shell fragments (flat).
30								@ 28'8" to 28'10": Spiral gastropod shell layer followed by 2 inches of SILTSTONE. @ 29'2": More shells. @ 30': Iron-oxide layer.
								@ 32': Oyster shells.
								@ 33'6": Bottom of sequence followed by mottled yellowish brown, iron-oxide stained siltstone. @ 35' to 39': Cross bedding. @ 35'8": Center of approximately 3- to 4-inch thick clay layer (flat).
								@ 37': Center of approximately 3- to 4-inch thick clay layer (flat). @ 37' to 38': East sidewall; Krotovina (animal burrow). @ 38'2": Center of approximately 3- to 4-inch thick clay layer (flat). @ 38'2": b:N80E, 6°S @ 38'3": b:N70W, 5°S
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FIGURE A- 9

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SAN DIEGO HIGH SCHOOL BUILDING 700
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

DATE DRILLED 4/04/19 BORING NO. B-5

GROUND ELEVATION 137.5' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40								SAN DIEGO FORMATION: (Continued) Caving and belling out below 40 feet: unsafe. @ 40'2" to 40'9": Carbonate shells/iron-oxide staining. @ 40' to 41': Shells, gravel, cobbles. @ 40'9": Belling out; friable.
50								@ 49' to 54': Gravel, strongly cemented, shell, carbonate, large cobbles.
60								Total Depth = 55 feet. Downhole logged to 43 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling with approximately 6 inches of bentonite for every 5 feet of soil cuttings; 2 feet of bentonite placed at bottom of boring; patched with cold patch asphalt on 4/04/19. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 4/03/19 BORING NO. B-6

GROUND ELEVATION 136' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								ASPHALT CONCRETE: Approximately 4 to 5 inches thick on approximately 10 inches of base material.
							SM	FILL: Brown, moist, medium dense, silty coarse SAND; scattered gravel, cobble, and concrete debris up to approximately 14 niches. @ 5': 2' x 2' concrete slab (abandoned sidewalk). @ 7.5' to 8.5': Roots. @ 8.5': Reddish brown to gray, moist, loose to medium dense, silty coarse SAND; friable; scattered trash debris. (washed sand; cohesionless)
10								SAN DIEGO FORMATION: Gray, moist, moderately cemented, silty fine-grained SANDSTONE; friable. @ 13.5': Roots (thick). @ 13.5': b:N60°W, 10°5W. @ 14' to 17': Gray laminations.
								Yellowish brown, moderately indurated, interbedded sandy SILTSTONE; generally flat. @ 17.5': b: N8W, 4°W. @ 18'2": Strongly cemented carbonate layer.
20								@ 21': 2-inch shell layer; continuous; generally flat. @ 21'4": Strongly indurated. @ 22'2": Approximately 1 inch thick shell bed with carbonate fragments. Note: Shells above approximately 23 feet are broken up and small.
								@ 24'8": Thin bed of iron-oxide stained medium-grained SANDSTONE interbed; with gravel and cobble. @ 25'9": Top of shell sequence; high energy deposition. Followed by gray siltstone with iron-oxide mottling. @ 26'3" to 26'8": Spiral gastropod shells. @ 26'8" to 31'9": Siltstone interbeds.
30								@ 31'9": Bottom of shell sequence. @ 31'9": Gray sandy siltstone; moderately indurated; iron-oxide staining. @ 32'2" to 32'6": Brown clay layer; undulatory. @ 33': Becomes yellowish brown. @ 35' to 35'3": Brown clay layer. @ 35.5': Laminations. @ 37' to 38': Strongly cemented carbonate chunks. @ 38.5' to 39': Shell layer. @ 39' to 40': Becomes friable; belling out; laminations; generally flat.
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FIGURE A- 11

DATE DRILLED 4/03/19 BORING NO. B-6

GROUND ELEVATION 136' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40								SAN DIEGO FORMATION: (Continued) @ 40' to 50': Massive siltstone; iron-oxide staining.
50								@ 49' to 51': Strongly cemented; interbedded gravel/shell/carbonate/ chunks with cobbles. @ 51' to 54': Siltstone.
60								Total Depth = 56 feet. Downhole logged to 54 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling with approximately 6 inches of bentonite for every 5 feet of soil cuttings; 2 feet of bentonite placed at bottom of boring; patched with cold patch asphalt on 4/03/19. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 4/02/19 BORING NO. B-7

GROUND ELEVATION 135' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	ASPHALT CONCRETE: Approximately 4 inches thick. FILL: Brown, moist, medium dense, silty SAND; scattered gravel and cobbles.
								SAN DIEGO FORMATION: Reddish brown to light brown, moist, moderately cemented, silty fine SANDSTONE. @ 4': Vertical brown clay infill/stringer; approximately 1/4 to 1 inch thick; continues to approximately 8 feet. @ 4'6": Reddish brown; no offsets. @ 5': Light bed.
10								@ 9' to 11': Jumbled discontinuous chalk, gravel, and shells, shells are laying horizontal. @ 11': Grades to gray, moist, moderately cemented, silty fine sandstone; micaceous; laminated. @ 12': Top of fault; rootlets growing along fault plane. @ 13.5' to 14': Rootlets; discontinuous iron-oxide band. @ 13'9": South sidewall; "down drag". @ 15'10": F:N30°W, 62°E @ 15'4": Discontinued 1.5" chalk bed; dives into fault; truncated. @ 16'2": Truncated chalk bed. @ 16'4": Slickensides in fault gouge. @ 16.5' to 18': Belling out. @ 17.5': Bottom of fault. Becomes gray, continuous around boring. @ 17.5': b:N15W, 13°E
20								@ 18': Gray, moist, weakly indurated, interbedded sandy SILTSTONE. @ 19'10": Top of small shell layer. @ 20' to 21': Siltstone on top of 6- to 8-inch cobbles with gravel; (high energy environment). @ 21.5': Shell layer, jumbled up, gray siltstone matrix; hard CaCO3 fragments; carbonate chunks. @ 23' to 23'3": Thinly laminated; friable. @ 24'3" to 29'6": Massive shell bed, gravel (high energy).
30								@ 28': Iron-oxide staining/layer. @ 29.5': Cobbles approximately 8 inches in diameter. @ 30': Friable; iron-oxide laminations. @ 31': Grades to yellowish brown; generally flat. @ 31'6": Center of approximately 2-inch thick brown clay layer. @ 32': Center of approximately 2-inch thick brown clay layer. @ 34' to 25': Discontinuous brown clay chunks. @ 35'6": Hard carbonate layer. @ 36'6" to 37': Shells. @ 37.5': Interbed of medium coarse sandstone with shells followed by massive siltstone, continuing to approximately 47.5 feet.
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FIGURE A- 13

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SAN DIEGO HIGH SCHOOL BUILDING 700
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA
108598003 | 5/19

DATE DRILLED 4/02/19 BORING NO. B-7

GROUND ELEVATION 135' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40								SAN DIEGO FORMATION: (Continued)
								@ 47.5' to 49': Gravel and shell/carbonate strongly cemented zone.
50								
								Total Depth = 53 feet. Downhole logged to 51 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling with approximately 6 inches of bentonite for every 5 feet of soil cuttings; 2 feet of bentonite placed at bottom of boring; patched with cold patch asphalt on 4/02/19. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 3/27/19 BORING NO. B-8

GROUND ELEVATION 134' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	ASPHALT CONCRETE: Approximately 4 inches thick. FILL: Brown, moist, medium dense, silty SAND.
								SAN DIEGO FORMATION: Light to yellowish brown and gray, moist, moderately cemented, silty fine-grained SANDSTONE. @ 7': Vertical clay infills and stringers; discontinuous. @ 8'7" to 8'10": Shell bed-in red, medium-grained sandstone matrix: b:N40W,8°E.
10								@ 9.5' to 10'8": Gravel, shell, and cobble layer; high energy deposition. @ 10'8" to 11": Micaceous fine sand layer. Tan. @ 14': Rootlets approximately 1/8 inch thick. @ 15': Rootlets approximately 1/8 inch thick.
								@ 16': b:N45E, 10°SE, 2" layer of sandy siltstone with carbonate fragments (gradational change to interbedded SILTSTONE). @ 16'11": CaCO3 layer approximately 1 inch thick: N85E, 10°S. @ 17': Tan with gray laminations. @ 19' to 19.5': Shell bed, scattered CaCO3 to 21 feet, gravel and cobble up to 6 inches.
20								@ 22'3" to 23': Shells, gravel and cobble in a reddish brown, micaceous, friable fine sand matrix; b:N45E, 10°S. @ 24' to 29.5': Oysters shells, gravel, cobble layer, iron-oxide staining, high energy deposition sequence. @ 25': Shells.
30								@ 29.5' to 31': Thinly laminated; iron-oxide staining; cross bedding. @ 31': Yellowish brown to gray, moist, weakly indurated sandy SILTSTONE interbed; trace clay. @ 31': b: N20E, 5°S @ 31' to 34': Finely laminated, cross bedding.
								@ 35' to 35'8": Oyster shells, undulatory layer. @ 36' to 36.5': Shell layer. @ 36' to 40': Yellowish brown. @ 39': Friable, laminations.
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FIGURE A- 15

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SAN DIEGO HIGH SCHOOL BUILDING 700
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

DATE DRILLED 3/27/19 BORING NO. B-8

GROUND ELEVATION 134' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40								SAN DIEGO FORMATION: (Continued) @ 40'9": Strongly cemented carbonate layer. @ 40'9": b: N65°W, 10°W: near horizontal. N18W, 5°-10°SW @ 41': No laminations. Yellowish to reddish brown, moist, moderately cemented, medium- to coarse-grained silty sandstone interbed. @ 48' to 49': Strongly cemented shell/gravel/carbonate/cobble bed with cobbles approximately 4 inches in diameter.
50								Total Depth = 50 feet. Downhole logged to 49 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling with approximately 6 inches of bentonite for every 5 feet of soil cuttings; 2 feet of bentonite placed at bottom of boring; patched with cold patch asphalt on 3/27/19. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 3/25/19 BORING NO. B-9

GROUND ELEVATION 132' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SC	ASPHALT CONCRETE: Approximately 5 inches in thickness. FILL: Brown, moist, medium dense, clayey SAND.
								SAN DIEGO FORMATION: Light brown to reddish, moist, moderately cemented silty fine-grained SANDSTONE; micaceous; some clay. @ 6' to 6.5': Silt lense/layer.
10								@ 9' to 11': Gravel and cobble layer. @ 11': Becomes reddish brown, medium- to coarse-grained. @ 12.5': Erodable gravel layer.
								@ 14.5': Light brown to gray, moist, moderately indurated, sandy SILTSTONE; slightly micaceous. @ 16' to 19': 1/4" to 1/8" thick brown clay infill/seam: N60E, 41°SE
20								@ 23.5' to 24': Gravel and cobble layer. @ 24': Iron-oxide staining. @ 24' to 26': Sea shells (8 to 10 inches thick) with gravel and iron-oxide staining; high energy deposition. @ 26': Light brown to gray, moist, moderately cemented, silty fine-grained sandstone interbed; slightly micaceous.
30								@ 29'4" to 29'8": White, becomes strongly indurated; discontinuous. @ 30.5': Dark brown layer. @ 32': 1-inch thick sea of hard calcium carbonate. @ 33': 1-inch thick sea of hard calcium carbonate. @ 33.5': White "jumbled" layer of calcium carbonate. @ 34.5' to 35': Finely laminated, iron-oxide staining.
								@ 36.5': b: N53E, 25°SE @ 36.5' to 38': Irregular shell bed with iron-oxide staining and scattered gravel and cobbles; high energy deposition.
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FIGURE A- 17

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Geotechnical & Environmental Sciences Consultants

SAN DIEGO HIGH SCHOOL BUILDING 700
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

DATE DRILLED 3/25/19 BORING NO. B-9

GROUND ELEVATION 132' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40								SAN DIEGO FORMATION: (Continued)
								Total Depth = 41 feet. Downhole logged to 38 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling with approximately 6 inches of bentonite for every 5 feet of soil cuttings; 2 feet of bentonite placed at bottom of boring; patched with cold patch asphalt on 3/25/19. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 3/29/19 BORING NO. B-10

GROUND ELEVATION 130' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SC	ASPHALT CONCRETE: Approximately 4 inches thick. FILL: Dark brown, moist, medium dense, clayey SAND; scattered cobbles.
10								SAN DIEGO FORMATION: Reddish to yellowish brown, moist, moderately cemented, silty medium-grained SANDSTONE; scattered cobbles. @ 9' to 33': East side of boring is reddish brown sandstone, west side is grayish olive siltstone. (Shear zone) @ 9': Dark brown, moist, clay infill; approximately 2 to 3 inches thick. @ 9.5': Vertical clay stringers. @ 11': Gravel; hard drilling. Very strongly cemented. @ 13': Mostly reddish brown (3/4) of boring, (1/4) of boring is gray siltstone. @ 14': Gravel and cobbles up to approximately 9 inches in diameter.
20								@ 17' to 18.5': Cobble zone. @ 17.5': Cobble approximately 12 inches in diameter removed. @ 19': No continuous bed; clay infills near vertical. @ 19': Clay infill: 1/2-inch thick. @ 19'3": b:N25W, 15°S discontinuous bed. @ 20': Clay seam; west side friable siltstone. @ 21': East side boring: cobble. @ 23': Vertical clay seam, still two different materials on either side of boring. (Shear zone continues)
30								@ 26.5': Yellowish brown to gray, moderately sandy SILTSTONE not continuous around boring. @ 27': 3-inch wide clay joint/fracture with rootlets, 64°NE dipping (can not determine strike). @ 29': 1-foot wide shear zone, clay on both sides. @ 30': Rounded gravel (approximately 1 inch in diameter) layer; discontinuous around boring. @ 30.5': Olive gray, manganese-oxide staining. @ 31.5': F:N15W, 79°NE; fault/shear zone.
40								@ 33': Grayish brown, continuous, massive, sandy SILTSTONE; black manganese staining. Unit is same around; can not confirm bedding. @ 36': Vertical stringers. @ 37': Rootlets. @ 37' to 38': Friable. @ 38': Laminations slightly offset (fractures). @ 38': 2-inch offset/fracture of 2.5-inch thick bedding.

FIGURE A- 19

DATE DRILLED 3/29/19 BORING NO. B-10

GROUND ELEVATION 130' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40								@ 39': Gravel and cobbles. SAN DIEGO FORMATION: (Continued) Friable. @ 43': Cobbles up to approximately 6 to 9 inches in diameter on top of shell bed. @ 43': F:N30W, 70°E @ 43.5' to 46'3": Shell oyster bed, approximately 2.75 feet thick (downthrown bed thickness). @ 46' to 46.5': Bottom of clay layer offset, different materials. @ 46': F: N30W, 65°E (approximately 1.5 feet of offset). @ 47': Light brown siltstone. @ 49.5': Small shells, flat laying shell bed, shell fragments. @ 51': Belling out, caving, unsafe.
50								
60								Total Depth = 54 feet. Downhole logged to 51 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling with approximately 6 inches of bentonite for every 5 feet of soil cuttings; 2 feet of bentonite placed at bottom of boring; patched with cold patch asphalt on 3/29/19. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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DATE DRILLED 3/28/19 BORING NO. B-11

GROUND ELEVATION 128' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	ASPHALT CONCRETE: Approximately 4 inches thick. FILL: Brown, moist, medium dense, silty SAND; scattered cobbles.
10								SAN DIEGO FORMATION: Light brown to reddish brown, moist, moderately to strongly cemented, silty medium-grained SANDSTONE; vertical clay stringers. @ 13' to 14': Angular gravel in coarse sandy matrix. @ 14' to 19': Vertical clay stringers. @ 15.5': Gravel layer approximately 2 inches thick. @ 16' to 17.5': Cobble layer. @ 16.5': Carbonate cementations. @ 17.5': b: N55°E, 10°S @ 18' to 19': Carbonate stringers. @ 19' to 19'9": Fine grained; laminations. @ 19'9" to 20': Coarse-grained bed; cobble approximately 4 inches in diameter.
20								@ 20'1": b: N35E, 5°SE. Grades to SILTSTONE; moderately indurated; thinly laminated. @ 22'7" to 23'2": Cobble/gavel/layer. @ 24' to 26': Minor clay joints; micaceous 2 inches layer. @ 24': b: N60E, 5°SE @ 25': Mica rip-up clasts and manganese nodules. @ 27': b:N40°E, 10°S @ 27' to 28.5': High energy deposition. @ 28': Rounded gravel and rounded cobble up to 6 inches in diameter. @ 29': Manganese nodules in bedding.
30								@ 30'10": iron-oxide staining, coarse reddish brown sand bed with approximately 3/8-inch in diameter gravel: b: N82W, 5°S @ 31': Yellowish brown, friable, silty fine sandstone interbed; micaceous; laminations. @ 33' to 35': Becomes gray. @ 35' to 36': Rounded gravel approximately 2 inches in diameter. @ 36': Reddish brown to yellowish brown, medium to coarse sandstone interbed. @ 37': b: N80E, 5°S @ 38' to 38.5': Rounded gravel bed approximately 1 inch thick. @ 39': Cross bedding, iron-oxide staining.
40								

FIGURE A- 21

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SAN DIEGO HIGH SCHOOL BUILDING 700
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

DATE DRILLED 3/28/19 BORING NO. B-11

GROUND ELEVATION 128' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40								SAN DIEGO FORMATION: (Continued) @ 40': Reddish to yellowish brown, medium to coarse sandstone interbed; micaceous; cross bedding. @ 40'4"; b:N75E. 10°S @ 40.5': b:N85W, 9°S @ 40.5': Becomes gray, sandy, friable; laminations continue to 52 feet; manganese nodules in bedding.
50								@ 52': Gravel layer.
								Total Depth = 54 feet. Downhole logged to 52 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling with approximately 6 inches of bentonite for every 5 feet of soil cuttings; 2 feet of bentonite placed at bottom of boring; patched with cold patch asphalt on 3/28/19. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
60								
70								
80								

DATE DRILLED 3/26/19 BORING NO. B-12

GROUND ELEVATION 126.5' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	ASPHALT CONCRETE: Approximately 5 inches thick. FILL: Brown, moist, medium dense, silty SAND; scattered brick fragments.
10								SAN DIEGO FORMATION: Reddish to yellow brown, moist, moderately cemented, silty SANDSTONE; scattered cobbles and gravel. @ 10': Reddish brown; medium-grained. @ 10' to 11': Gravel and cobble layer; generally flat. @ 12'3" to 12'6": Siltstone lense/bed approximately 3 inches thick; generally flat. @ 13' to 15': Cobbles approximately 6 to 8 inches in diameter; highly energy deposition; massive. @ 15'9" to 18': Reddish brown, fine-grained; fine bedding. @ 16'2": b: N80E, 16°S @ 17'6" to 18'6": Medium- to coarse-grained; massive. @ 18': Layer of gravel and cobble (2 inches thick). @ 18'6" to 20'6": Fine-grained; gradational change to SILTSTONE.
20								@ 20'3": Gravel and approximately 6 inches in diameter cobble layer. @ 20'3" to 21'3": High energy; deposition; generally flat. @ 20'6" to 21': Gravel and cobble approximately 6 inches in diameter; cobbles approximately 6 to 8 inches thick. @ 21'3" to 23': Fine- to medium-grained. @ 22': Reddish brown. Brown to olive, moist, strongly indurated, sandy siltstone interbed. @ 23"6' to 26': Coarse-grained layer approximately 2 inches thick. @ 25'6" to 26'2": Gravel and cobble layer; N60E, 15°S @ 26' to 28': Slightly micaceous. @ 26'2": Bottom of high energy sequence. Olive, moist, weakly indurated siltstone interbed; black and yellowish brown laminations.
30								@ 30': Friable, laminated. @ 30.5' to 32': b:N55W, 5°S @ 32'8" to 33'8": b:N60E, 18°S Olive to gray, moist, strongly cemented, silty fine- to coarse-grained sandstone interbed; iron-oxide staining. @ 34'9": b:N30°E. 12°S @ 35'10" to 36': Gravel bed approximately 2 inches in thickness. @ 37' to 48': Black and reddish brown, micaceous, laminations. @ 37'9": Micaceous bedding; relatively flat. @ 38': b:N75°E, 20°S (mica bed) @ 38': f: N10W, 68°E, approximately 1/2-inch fracture/ offset.
40								

FIGURE A- 23

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SAN DIEGO HIGH SCHOOL BUILDING 700
1405 PARK BOULEVARD, SAN DIEGO, CALIFORNIA

DATE DRILLED 3/26/19 BORING NO. B-12

GROUND ELEVATION 126.5' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 30" Diameter Bucket (Pacific Drilling)

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY GSW/TCS LOGGED BY GSW/TCS REVIEWED BY GTF

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40								@ 38'6": Becomes massive friable siltstone; brown mottling; friable; extends to approximately 43 feet. SAN DIEGO FORMATION: (Continued) @ 41 to 48': Manganese nodules. @ 43'6": b:N80°E, 18°S Downhole logged to approximately 48 feet.
50								Total Depth = 50 feet. Downhole logged to 48 feet. Groundwater not encountered during drilling. Backfilled shortly after drilling with approximately 6 inches of bentonite for every 5 feet of soil cuttings; 2 feet of bentonite placed at bottom of boring; patched with cold patch asphalt on 3/26/19. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
60								
70								
80								

APPENDIX B

Photographs

Photograph 1: View of fault gouge and truncated calcium carbonate bed encountered in boring B-7 at approximately 15 feet below grade, facing south.



Photograph 2: View of fault plane and truncated calcium carbonate beds encountered in boring B-7, facing north.



FIGURE B-2

PHOTOGRAPHS

San Diego High School Building 700
San Diego, California

108598003 | 5/19

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

Photograph 3: View of top of offset shell bed encountered in boring B-10, facing northwest.



FIGURE B-3

PHOTOGRAPHS

San Diego High School Building 700
San Diego, California

108598003 | 5/19

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

Photograph 4: View of middle of offset shell bed encountered in boring B-10 facing northwest.



FIGURE B-4

PHOTOGRAPHS

San Diego High School Building 700
San Diego, California

108598003 | 5/19

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

Photograph 5: **Bottom of offset shell bed encountered in boring B-10, facing northwest.**



FIGURE B-5

PHOTOGRAPHS

San Diego High School Building 700
San Diego, California

108598003 | 5/19

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Ninyo & Moore

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EIR Appendix E

Noise Analysis Letter Report

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November 4, 2020 SDU-02.18

Paul Garcia-Craivanu
San Diego Unified School District
4860 Ruffner Street
San Diego, CA 92111

Subject: **San Diego High School Whole Site Modernization and Long-Range Facilities Master Plan Project – Noise Analysis**

Dear Mr. Garcia-Craivanu:

HELIX Environmental Planning, Inc. (HELIX) has performed an analysis of noise and vibration impacts related to the construction, operation, and traffic associated with the proposed San Diego High School Whole Site Modernization (WSM) and Long-Range Facilities Master Plan (LRFMP) Project (project). This letter summarizes the methodology and results of the noise and vibration analysis.

PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING

The District currently holds a lease from the City to operate San Diego High School on the site that expires in 2024. The high school serves students in grades 9 through 12 and generally consists of 11 permanent buildings (buildings 100 through 1100) in the southwest part of the campus that surround a student quad area. Balboa Stadium occupies most of the eastern part of campus along with a large paved parking lot along the eastern campus boundary adjacent to Interstate 5 (I-5). Paved hardtop areas, parking, and ballfields, as well as 10 relocatables that are not in use and previously were a part of East Village High School, occupy the northern part of the campus (refer to Attachment A, *Existing Campus Layout*).

The proposed project involves a lease between the City and the District and the WSM and LRFMP upgrades. The lease would extend the permission for the District to continue operations at the project site consistent with existing use for an additional 99 years from the date of the lease.

Campus-wide WSM improvements would generally involve interior and exterior improvements to existing school buildings. Campus-wide updates would involve interior and exterior improvements and reconfigurations of school buildings, the addition of building identification graphics, a public address system for emergency use, surveillance cameras, and new and existing interior and exterior lighting upgrades and improvements. Other WSM components include, but are not limited to, demolition of the existing student quads and construction of new quads; improvements to the east parking lot; improvements to the athletic fields; and the addition of 700 square feet onto building 100. The LRFMP improvements would primarily involve the demolition of three school buildings (buildings 400, 600, and

700) and the construction of seven school buildings (the performing arts building, parking structure, auxiliary gymnasium, new classroom building 400, food service and custodial building 700, field house, and aquatic center). Other improvements would involve upgrades at Balboa Stadium, new campus entrances/exits via Park Boulevard and Russ Boulevard, and site enhancements consisting of landscape and hardscape improvements, west of building 100 near the corner of Russ Boulevard and Park Boulevard (refer to Attachment B, *Site Plan [Long-Range Facilities Master Plan]*). Completion of the WSM improvements and LRFMP improvements would not result in an increase in classroom capacity and is not anticipated to result in an increase in enrollment.

The project site is located within the Centre City Community of the City of San Diego at the existing school site of San Diego High School, at 1405 Park Boulevard, San Diego, CA 92101. The site is bound by Park Boulevard to the west, I-5 freeway to the north and east, and Russ Boulevard to the south. Areas adjacent and south of the project site along Russ Boulevard between Park Boulevard and 16th Street include the San Diego City College, which comprises single- and multi-story buildings south of Russ Boulevard for several blocks until Broadway, a major east-west street. Areas further south include multi-story residential development in the East Village neighborhood. Areas east and north of the campus include I-5 as it loops around and adjacent to the campus; however, the school campus is separated from I-5 by an approximately 30-foot sloped bank and the campus occurs at a higher elevation than I-5. Areas west of the proposed project site include educational buildings associated with San Diego City College, followed by State Route (SR-) 163, which occurs about 300 feet west of the project site.

FUNDAMENTALS OF NOISE/SOUND AND VIBRATION

Noise/Sound

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, with a specified duration.

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver contribute to the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. A logarithmic scale is used to describe sound pressure level (SPL) in terms of dBA units. The threshold of hearing for the human ear is approximately 0 dBA, which corresponds to 20 micro Pascals (mPa).

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions.

Vibration

Vibration is defined as any oscillatory motion induced in a structure or mechanical device as a direct result of some type of input excitation. Sources of ground-borne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or manufactured (explosions, trains, machinery, traffic, construction equipment, etc.). Vibration sources may be transient, steady-state (continuous), or pseudo steady-state. Examples of transient construction vibrations are those that occur from blasting with explosives, impact pile driving, demolition, and wrecking balls.

Ambient and source vibration information are expressed in terms of the peak particle velocity (PPV) in inches per second (in/sec). The root mean square (RMS) of a signal is the average of the squared amplitude of the signal in decibels (relative to 1 micro-in/sec). Because the net average of a vibration signal is zero, the RMS amplitude is used to describe the “smoothed” vibration amplitude. The RMS amplitude is always less than the PPV and is always positive. The RMS average is typically calculated over a one-second period.

The background vibration velocity level in residential areas is usually 50 vibration decibels (VdB) or lower; this is well below the level perceptible by humans, which is approximately 65 VdB. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible ground borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

NOISE MODELING SOFTWARE

Project construction noise was analyzed using the Roadway Construction Noise Model (RCNM; USDOT 2008), which utilizes estimates of sound levels from standard construction equipment.

EXISTING SENSITIVE LAND USES

Noise sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise and generally include residences, hospitals, schools, hotels, resorts, libraries, sensitive wildlife habitat, or similar facilities where quiet is an important attribute of the environment. The nearest NSLU to the project site is San Diego City College located to the south of the project site across Russ Boulevard. Additionally, the site itself is a school and is therefore considered an NSLU.

EXISTING NOISE SETTING

The proposed project site is in an urban area surrounded by academic and commercial land uses. Existing noise sources in the vicinity of the project site include aircraft operations associated with San Diego International Airport and vehicular traffic along Park Boulevard and I-5. An ambient noise measurement survey was conducted on January 20, 2020 at the project site and included five 15-minute measurements (refer to Attachment C, *Noise Measurement Locations*). Noise measurement locations and results are shown in Table 1, *Ambient Noise Measurement Survey*.

Table 1
AMBIENT NOISE MEASUREMENT SURVEY

Measurement	Location	Time	Noise Level (dBA L_{EQ})
M1	Basketball courts	10:46 a.m. – 11:01 a.m.	64.6
M2	West side of Balboa Stadium	10:22 a.m. – 10:39 a.m.	62.5
M3	East side of Balboa Stadium	9:53 a.m. – 10:08 a.m.	64.2
M4	South of Building 1100	11:16 a.m. – 11:31 a.m.	59.6
M5	Intersection of Park Boulevard and Russ Boulevard	11:40 a.m. – 11:55 a.m.	65.0

NOISE REGULATIONS

City of San Diego Municipal Code

The City's Municipal Code Chapter 5, Article 9.5, Division 4, §59.5.0404 (Construction Noise) lists the following noise regulations:

(a) It shall be unlawful for any person, between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with exception of Columbus Day and Washington's Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator. In granting such permit, the Administrator shall consider whether the construction noise in the vicinity of the proposed work site would be less objectionable at night than during the daytime because of different population densities or different neighboring activities; whether obstruction and interference with traffic particularly on streets of major importance, would be less objectionable at night than during the daytime; whether the type of work to be performed emits noises at such a low level as to not cause significant disturbances in the vicinity of the work site; the character and nature of the neighborhood of the proposed work site; whether great economic hardship would occur if the work were spread over a longer time; whether proposed night work is in the general public interest; and he shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise levels as he deems to be required in the public interest.

(b) Except as provided in subsection (c) hereof, it shall be unlawful for any person, including the City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 dBA during the 12-hour period from 7:00 a.m. to 7:00 p.m.

(c) The provisions of subsection (b) of this section shall not apply to construction equipment used in connection with emergency work, provided the Administrator is notified within 48 hours after commencement of work.

Operational noise within the City of San Diego is regulated by the City's Municipal Code Section 59.5.0401, which establishes the allowable noise limits at the property boundaries for different land use zones. The relevant parts are cited below:

(a) It shall be unlawful for any person to cause noise by any means to the extent that the one–hour average sound level exceeds the applicable limit given in the following table, at any location in the City of San Diego on or beyond the boundaries of the property on which the noise is produced. The noise subject to these limits is that part of the total noise at the specified location that is due solely to the action of said person.

(b) The sound level limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts. Permissible construction noise level limits shall be governed by Section 59.5.0404 of this article.

The noise limits for the various land use zones are summarized in Table 2, *City of San Diego Property Line Noise Limits*. The applicable requirement is a function of the time-of-day and land use zone.

Table 2
CITY OF SAN DIEGO PROPERTY LINE NOISE LIMITS

Receiving Land Use	7 a.m. to 7 p.m. (dBA L_{EQ})	7 p.m. to 10 p.m. (dBA L_{EQ})	10 p.m. to 7 a.m. (dBA L_{EQ})
Single-family Residential	50	45	40
Multi-family Residential	55	50	45
All Other Residential	60	55	50
Commercial	65	60	60
Industrial or Agricultural	75	75	75

dBA = A-weighted sound level, the sound pressure level in decibels as measured using the A weighting filter network, which de-emphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear;
L_{EQ} = equivalent sound level, the average of the sound energy occurring over the measurement period.

The project site and San Diego City College, the nearest NSLU to the project site, are zoned as Centre City Planned District - Public/Civic (CCPD-PC) and Centre City Planned District – Open Space (CCPD-OS). These are institutional/educational land uses, with no direct land use equivalent in Table 2. This analysis conservatively uses the property line noise limits for multi-family residential land uses.

City of San Diego Significance Determination Thresholds

The City's CEQA Significance Determination Thresholds guide the assessment of impacts, relative to CEQA, for projects within the City. For noise impacts, the City's Significance Determination Thresholds specify that temporary construction noise exceeding 75 dBA L_{EQ} (12 hour) at a sensitive receptor would result in significant impacts. Additionally, where temporary construction noise would substantially interfere with normal business communication, or affect sensitive receptors, such as day care facilities, a significant noise impact may be identified.

ANALYSIS AND IMPACTS

Construction Noise Levels

Construction of the WSM improvements would involve improvements to existing school buildings, adding an additional 700 square feet onto an existing building, and demolishing and repaving the existing paved quad. Construction of the LRFMP improvements would involve the demolition of three school buildings, the construction of seven buildings, upgrades at Balboa Stadium, new campus entrances/exits via Park Boulevard and Russ Boulevard, and site enhancements consisting of landscape and hardscape improvements. The magnitude of the impact would depend on the type of construction activity, equipment, duration of each construction phase, distance between the noise source and receiver, and intervening structures. Construction would generate elevated noise levels that may by audible at nearby educational and commercial uses in the vicinity of the project site.

Construction equipment would not all operate at the same time or location. Furthermore, construction equipment would not be in constant use during a typical 8-hour operating day. Table 3, *Construction Equipment Noise Levels*, provides the 50-foot distance noise levels for expected construction equipment.

Table 3
CONSTRUCTION EQUIPMENT NOISE LEVELS

Unit	Percent Operating Time	dBA L_{MAX} at 50 feet	dBA L_{EQ} at 50 feet
Backhoe	40	77.6	73.6
Breaker	10	90.0	80.0
Compactor	20	83.2	76.2
Compressor	40	77.7	73.7
Concrete Mixer Truck	40	78.8	74.8
Concrete Pump Truck	20	81.4	74.4
Concrete Saw	20	89.6	82.6
Crane	16	80.6	76.7
Dump Truck	40	76.5	72.5
Drum Mixer	50	80.0	77.0
Excavator	40	80.7	76.7
Front-End Loader	40	79.1	75.1
Paver	50	77.2	74.2
Roller	20	80.0	73.0

Source: USDOT 2008

Noise generated at the closest on-site and off-site NSLUs during the loudest anticipated construction activities are shown in Table 4, *Noise Levels During Construction*.

Table 4
NOISE LEVELS DURING CONSTRUCTION

Activity	Equipment	Distance to NSLU (feet)	Noise Level (dBA L_{EQ})	Significant Impact?[1]
Quad Demolition	Concrete Saw	50	82.6	**Yes**
Quad Demolition	Backhoe/Dump Truck	50	76.1	**Yes**
Quad Demolition	Concrete Saw	300	67.0	No
Quad Demolition	Backhoe/Dump Truck	300	60.5	No
Lay Building Foundation	Concrete Mixer Truck	30	79.3	**Yes**
Lay Building Foundation	Concrete Pump Truck	30	78.8	**Yes**
Lay Building Foundation	Concrete Mixer Truck	400	56.8	No
Lay Building Foundation	Concrete Pump Truck	400	56.3	No
Building Demolition	Breaker	50	80.0	**Yes**
Building Demolition	Excavator	50	76.7	**Yes**
Building Demolition	Dump Truck	50	72.5	No
Building Demolition	Breaker	150	70.5	No
Building Demolition	Excavator	150	67.2	No
Building Demolition	Dump Truck	150	62.9	No
Building Construction	Excavator	50	76.7	**Yes**
Building Construction	Compactor	50	76.2	**Yes**
Building Construction	Concrete Mixer Truck	50	74.8	No
Building Construction	Concrete Pump Truck	50	74.4	No
Building Construction	Excavator	150	67.2	No
Building Construction	Compactor	150	66.7	No
Building Construction	Concrete Mixer Truck	150	65.3	No
Building Construction	Concrete Pump Truck	150	64.9	No

[1] Significant impacts based on the construction noise limit of 75 dBA L_{EQ} (12 hour)

During construction of the WSM improvements, the construction activities that would generate the highest noise levels would be the demolition of the existing pavement in the quad and the construction of the foundation for the addition of 700 square feet onto an existing building. A concrete saw, backhoe, and dump truck would likely be loudest pieces of equipment used during the demolition of the quad. The demolition would occur at an average distance of 50 feet from the surrounding academic buildings, which are considered on-site NSLUs. At 50 feet, a concrete saw would generate a noise level of 82.6 dBA L_{EQ}. The simultaneous use of a backhoe and dump truck would generate a noise level of 76.1 dBA L_{EQ} at 50 feet. The nearest off-site NSLU would be San Diego City College, located south of Russ Boulevard. The concrete demolition would occur at an average distance of 300 feet from San Diego City College. At 300 feet, a concrete saw would generate a noise level of 67.0 dBA L_{EQ}, and the simultaneous use of a backhoe and dump truck would generate a noise level of 60.5 dBA L_{EQ}.

The loudest pieces of equipment anticipated to be used while laying the foundation for the 700 square foot addition onto an existing school building would be a concrete mixer truck and a concrete pump truck. The equipment would be used at an average distance of 30 feet from the nearest on-site NSLUs. At 30 feet, a concrete mixer truck would generate a noise level of 79.3 dBA L_{EQ}, and a concrete pump

truck would generate 78.8 dBA L_{EQ}. Additionally, the equipment would be used at an average distance of 400 feet from the nearest off-site NSLU. At 400 feet, a concrete mixer truck would generate a noise level of 56.8 dBA L_{EQ}, and a concrete pump truck would generate 56.3 dBA L_{EQ}.

During construction of the LRFMP improvements, the loudest activities would be building demolition and building construction. The loudest pieces of equipment anticipated to be utilized during building demolition are a breaker, excavator, and dump truck. Building demolition that would occur closest to an on-site NSLU would be the demolition of building 600, which is immediately south of building 500. The demolition of building 600 would occur at an average distance of 50 feet from the nearest on-site NSLU. At 50 feet, a breaker would generate a noise level of 80.0 dBA L_{EQ}, an excavator would generate 76.7 dBA L_{EQ}, and a dump truck would generate 72.5 dBA L_{EQ}. The building demolition that would occur closest to an off-site NSLU would be the demolition of building 400, occurring at an average distance of 150 feet from San Diego City College. At 150 feet, a breaker would generate a noise level of 70.5 dBA L_{EQ}, an excavator would generate 67.2 dBA L_{EQ}, and a dump truck would generate 62.9 dBA L_{EQ}.

The loudest pieces of equipment anticipated to be used during building construction would be an excavator, compactor, concrete mixer truck, and concrete pump truck. Building construction that would occur closest to an on-site NSLU would be the construction of the parking structure, which is immediately north of building 900. The construction of the parking structure would occur at an average distance of 50 feet from the nearest on-site NSLU. At 50 feet, an excavator would generate a noise level of 76.7 dBA L_{EQ}, a compactor would generate 76.2 dBA L_{EQ}, a concrete mixer truck would generate 74.8 dBA L_{EQ}, and a concrete pump truck would generate 74.4 dBA L_{EQ}. Construction of building 400 and building 700 would be the building construction that would occur closest to an off-site NSLU. Construction would occur at an average of 150 feet from San Diego City College. At 150 feet, an excavator would generate a noise level of 67.2 dBA L_{EQ}, a compactor would generate 66.7 dBA L_{EQ}, a concrete mixer truck would generate 65.3 dBA L_{EQ}, and a concrete pump truck would generate 64.9 dBA L_{EQ}.

Construction of both the WSM improvements and the LRFMP improvements would generate noise exceeding the 75 dBA L_{EQ} (12 hour) limit established by the City's Municipal Code. Specifically, the following construction activities would exceed the 75 dBA L_{EQ} noise limit:

- Demolition of the concrete in the student quad area during WSM improvements would generate noise levels exceeding 75 dBA L_{EQ} at on-site NSLUs.

- Laying the foundation for the 700 square foot addition onto building 100 during WSM improvements would exceed 75 dBA L_{EQ} at on-site NSLUs.

- Demolition of building 600 during LRFMP improvements would generate noise levels exceeding 75 dBA L_{EQ} at on-site NSLUs. It is conservatively anticipated that all building demolition (e.g., demolition of buildings 400, 600, and 700) may generate noise levels exceeding the 75 dBA L_{EQ} threshold.

- Construction of the parking structure during LRFMP improvements would generate noise levels exceeding 75 dBA L_{EQ} at on-site NSLUs. It is conservatively anticipated that construction of all proposed buildings (e.g. construction of building 400, building 700, the field house, aquatic

center, parking structure, auxiliary gymnasium, and performing arts building) may generate noise levels exceeding the 75 dBA L_{EQ} threshold.

Therefore, potential impacts during construction may occur and mitigation would be required. The following mitigation measure would be implemented to minimize impacts related to noise generated during construction.

NOI-1 **Construction Noise Control Measures.** Construction noise control measures shall be implemented to ensure compliance with the City's Municipal Code, which limits construction noise to 75 dBA L_{EQ} (12 hour). The District shall be responsible for ensuring that contractors adhere to the following noise abatement measures:

- No demolition or debris removal shall occur during active classes within 325 feet of a classroom.
- No excavations or major subsurface work shall occur during active classes within 200 feet of a classroom.
- No cement deliveries or pumping shall occur during active classes within 225 feet of a classroom.
- No materials deliveries or materials truck unloading shall occur during active classes within 225 feet of a classroom.
- No construction vehicles or equipment shall occur in the central quad area of the campus during active classes.
- All lift and portable equipment for exterior or interior work above foundation (during active classes) is limited to the exterior area outside the central campus quad.
- All lift and portable equipment used for exterior and interior work above the foundation (during active classes) must be shielded from direct line-of-sight view of classrooms within 150 feet including second floor classrooms by Sound Transmission Cass (STC) 21 (or higher) noise blankets or other similar or greater STC level noise control methods. This includes classrooms and administrative offices at the nearby City College.
- All building exterior construction work (above foundation) must be shielded from direct line of sight of classrooms within 150 feet with noise control blankets STC 21 (interior work with closed windows in place in building shell are excluded from this condition).

If desired by the District and/or their contractor, these barriers may be left in place beyond the minimum durations specified above, but such an extension is not required. The minimum height of the barriers shall be 8 feet above ground level. The barriers shall be constructed from acoustical blankets hung over or from a supporting frame. The blankets shall provide a minimum STC 21 or higher, a minimum noise reduction coefficient (NRC) of 0.80, and be firmly secured to the framework, with the sound-absorptive side of the blankets oriented toward the construction equipment. The blankets shall be overlapped by at least 4 inches at seams and taped and/or

closed with hook-and-loop fasteners (i.e., Velcro®) or other methods so that no gaps exist. The largest blankets available should be used to minimize the number of seams. The blankets shall be draped to the ground to eliminate any gaps at the base of the barrier.

In addition, the following noise control measures may be implemented to ensure noise reduction at nearby noise-sensitive land uses:

- All construction equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification.

- All mobile or fixed construction equipment used on the proposed project that is regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of proposed project activity.

- All construction equipment shall be properly maintained. (Poor maintenance of equipment may cause excessive noise levels.)

- All construction equipment shall be operated only when necessary and shall be switched off when not in use.

- Construction employees shall be trained in the proper operation and use of the equipment. (Careless or improper operation or inappropriate use of equipment can increase noise levels. Poor loading, unloading, excavation, and hauling techniques are examples of how a lack of adequate guidance and training may lead to increased noise levels.)

- Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.

- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.

- Construction site speed limits shall be established and enforced during the construction period.

- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.

- The contractor shall provide advance written notification of construction activities to noise-sensitive land uses around the construction site. Notification shall include a brief overview of the proposed construction activity and its purpose and schedule. It also shall include the name and contact information of the project manager or representative responsible for resolving any noise concerns.

Through the implementation of mitigation measure NOI-1, the proposed project would not result in a violation of the City's construction noise standards, and impacts would be less than significant.

Construction Vibration

The primary source of vibration during project construction would be a vibratory roller (primarily used to achieve soil compaction for new pavement and building foundation). Due to its mobile nature of operations, the use of a vibratory roller during construction would occur at an average distance, over the course of a workday, of 50 feet from the nearest on-site NSLU during soil compaction activities for new pavement for the student quad and new building foundation. A vibratory roller generates approximately 0.21 in/sec PPV at a distance of 25 feet. At a distance of 50 feet, a vibratory roller would generate a PPV of 0.10 in/sec.[1] This would exceed the distinctly perceptible vibration annoyance potential criteria of 0.04 in/sec PPV as provided in the California Department of Transportation's (Caltrans') Transportation and Construction Vibration Guidance Manual (Caltrans 2013) for continuous/ frequent intermittent sources. Therefore, a significant impact would occur to on-site NSLUs and mitigation would be required.

Pavement compaction would occur closest to an off-site NSLU during construction of building 400, which would occur at an average distance of 150 feet from San Diego City College. As previously stated, a vibratory roller creates approximately 0.21 in/sec PPV at a distance of 25 feet. At a distance of 150 feet, a vibratory roller would create a PPV of 0.03 in/sec. This would be below the distinctly perceptible vibration annoyance potential criteria of 0.04 in/sec PPV as provided in the Caltrans' Transportation and Construction Vibration Guidance Manual (Caltrans 2013) for continuous/frequent intermittent sources. Though vibration levels may be perceptible to people at nearby land uses, the levels would be low and would occur for short periods of time. As such, vibration impacts to off-site NSLUs during pavement compaction would be less than significant.

The following mitigation measure would be implemented to minimize vibration impacts to on-site NSLUs during construction.

NOI-2 **Implement Vibration Avoidance Measure.** The District shall require that no soil compaction occurs within 110 feet of a classroom during active classes by requiring that a similar statement be included on the contractor's construction plans. The District Project Manager shall coordinate with the construction contractor to either plan for soil compaction when school is not in session or when a distance of at least 110 feet from active classrooms can be maintained.

Through the implementation of mitigation measure NOI-2, the proposed project would not result in excessive vibration to on-site NSLUs, and impacts would be less than significant.

Operation Noise Levels

Long-term operational noise sources associated with the implementation of the proposed project include onsite activities and noise generated by increased project traffic on local streets.

[1] Equipment PPV = Reference PPV * $(25/D)^n$(in/sec), where Reference PPV is PPV at 25 feet, D is distance from equipment to the receptor in feet, and n= 1.1 (the value related to the attenuation rate through the ground); formula from Caltrans 2013.

Onsite Activities

Operational use of the proposed project would be similar to existing conditions as there would be no net change to student enrollment on campus. The only project component that is expected to differ from existing operational noise sources would be the addition of the aquatic center during the LRFMP improvements. All other operational noise would be similar to existing conditions, and would not result in a significant increase in noise to nearby NSLUs.

The proposed aquatic center would include a public address system to be used for announcements. The public address system would not be used to play music, so it would not create a continuous noise source at the site. However, the sporadic use of the public address system to make announcements may exceed the property line noise limits established by the City's Municipal Code. As previously discussed, this analysis conservatively uses the property line noise limits for multi-family residential land uses for the project site and San Diego City College, which are the closest NSLUs. Specific designs for the aquatic center and its public address system are not available at this time. Therefore, implementation of the project has the potential to cause significant impacts related to operational noise resulting from the proposed aquatic center's public address system. The following mitigation measure would be implemented to minimize impacts related to noise generated during project operation. However, noise impacts related to operation of the proposed aquatic center would remain significant and unavoidable.

NOI-3 **Project Public Address System Design.** During the architectural and engineering design phases of the proposed project, and prior to the issuance of any building permits for the school buildings, an acoustical consultant shall be retained by the District to evaluate the design of the aquatic center's public address system and provide recommendations, as necessary, to ensure that the associated one-hour average noise level would not exceed 55 dBA L_{EQ} at the property line with San Diego City College during the daytime hours of 7:00 a.m. to 7:00 p.m. If the aquatic center's public address system would operate during the evening hours of 7:00 p.m. to 10:00 p.m., the applicable one-hour noise limits shall be reduced to 50 dBA L_{EQ}; if the aquatic center's public address system would operate during the nighttime hours of 10:00 p.m. to 7:00 a.m., the applicable noise limits shall be further reduced to 45 dBA L_{EQ}. To comply with the Municipal Code, design considerations may include, but are not limited to, the selection of a quieter public address system, changes in unit locations/orientations, and acoustical louvers or screens.

Through the implementation of mitigation measure NOI-3, onsite activities associated with the proposed project would not result in a violation of the City's operational noise standards, and impacts would be less than significant.

Project Traffic

As previously discussed, operation of the proposed project would be similar to existing conditions as there would be no net change to student enrollment on campus. The only project component that would differ from existing traffic conditions would be the addition of the aquatic center during the LRFMP improvements. There is currently no traffic associated with the project site on the weekends during the school year, and during summer, winter, and spring breaks. With implementation of the project, the aquatic center would be open to the public during these times.

Although there would be an increase in traffic associated with the proposed project, the traffic generated as a result of the aquatic center would be minimal. Average daily traffic along Park Boulevard would be approximately 14,500 vehicles (SANDAG 2019). Doubling of a noise source would lead to a 3 dBA increase, which would be a significant impact. Because project traffic would not double the existing traffic volumes of Park Boulevard, the increase in noise would not exceed 3 dBA, and would not be perceptible. As such, impacts related to noise generated by operational traffic would be less than significant.

CONCLUSIONS

Construction of the proposed project has the potential to result in significant impacts related to noise and vibration. Specifically, the project may result in substantial noise to on- and off-site NSLUs, excessive groundborne vibration to on-site NSLUs, and substantial noise during project operation. Implementation of mitigation measures NOI-1 and NOI-2 would reduce impacts related to construction noise and vibration to a less than significant level. Implementation of mitigation measure NOI-3 would reduce noise impacts related to project operation; however, impacts would remain significant and unavoidable.

CLOSING

We appreciate the opportunity to work with you on this project. Please let us know if you have any questions or require any further information.

Regards,



Charles Terry
Principal Specialist, Noise, Acoustics & Vibration



Kristen Garcia
Noise Analyst

Attachments:

Attachment A – Existing Campus Layout
Attachment B – Site Plan (Long-Range Facilities Master Plan)
Attachment C – Noise Measurement Locations

REFERENCES

California Department of Transportation (Caltrans). 2013. Transportation and Construction Vibration Guidance Manual. September.

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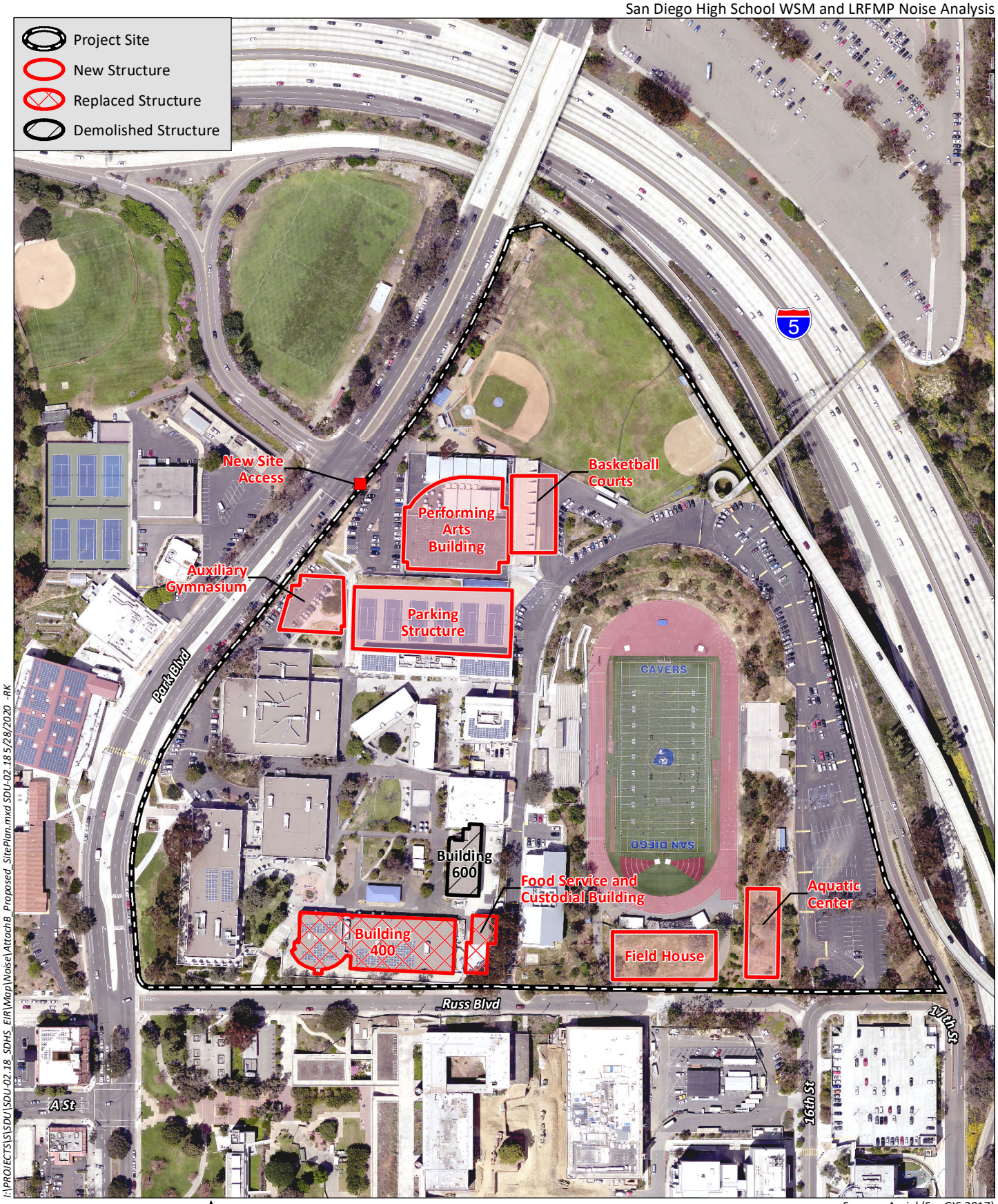
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Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Existing Campus Layout

Attachment A



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Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Site Plan (Long-Range Facilities Master Plan)

Attachment B



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Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Noise Measurement Locations

Attachment C

EIR Appendix F

Transportation Memorandum

Kimley»Horn

MEMORANDUM

To: Paul Garcia-Craivanu, San Diego Unified School District
Aaron Brownwood, Helix Environmental

From: Leo Espelet, P.E., T.E.
Kimley-Horn and Associates, Inc.

Date: December 21, 2020

Subject: San Diego High School Modernization Project
CEQA Analysis and Transportation Study

The following memorandum was prepared to summarize the CEQA analysis and results for the San Diego Unified School District's (SDUSD) modernization project at the San Diego High School site. In addition, a transportation study was performed which includes an evaluation of project trip generation, safety, and expected construction traffic.

Project Background

The proposed project involves a lease renewal between the City of San Diego and SDUSD and upgrades to existing campus. The lease would extend the permission for the District to operate at the project site on or before the expiration of the existing lease and operating agreement in 2024 for up to an additional 99 years. Most of the existing San Diego High School campus was constructed between 1976 and 2001, and while the high school has been updated over the years, much of the site needs renovations, repairs, and/or upgrades. These improvements would occur as part of Propositions S and Z and Measure YY in the near-term (referred to as WSM improvements) and new structures and facilities in the long-term (referred to as LRFMP improvements).

Campus-wide WSM improvements would generally involve interior and exterior improvements to existing school buildings. School buildings would be upgraded with plumbing, windows, lighting, painting, signage, and roof improvements, as well as new or replaced heating, ventilation, air conditioning (HVAC). Interior finish upgrades would consist of replacing interior flooring and base, painting walls, ceilings and doors, removing existing casework and providing movable storage, and new window blinds. Other WSM components include, but are not limited to, removal of excess relocatable classrooms, reconfiguration of the upper and lower quad including construction of new food kiosks, improvements to the east parking lot, and construction of new athletic field amenities.

The LRFMP improvements would involve the demolition of buildings 400, 600, and 700 and the construction of several new buildings and facilities on campus. Specifically, the LRFMP projects include the construction of a new two-story classroom building with a lower level parking area, new food service and custodial building, a new aquatic center, a new performing art building with parking, auxiliary gymnasium, parking structure with tennis courts, and field house. Other LRFMP components to improve project circulation and access include the interior realignment of the existing driveway with I-5 near the

new proposed performing arts center and the interior realignment of the 16th Street entrance into the project site.

Existing enrollment at San Diego High School is estimated at 2,664 students (with a program capacity for up to 2,916 students) (SDUSD 2020). The campus consists of several single- and multi-story buildings including 118 permanent classrooms and 8 portable classroom buildings. Completion of the WSM improvements and LRFMP improvements would not result in an increase in the number of classrooms or classroom capacity and are not anticipated to result in an increase in enrollment. Implementation of the LRFMP projects is dependent on the availability of funding. **Attachment A** includes a Site Plan for the project showing the proposed improvements and modernizations.

CEQA Analysis

Senate Bill (SB) 743 was approved by the California legislature in September 2013, requiring changes to the California Environmental Quality Act (CEQA) methodology, specifically directing the Governor's Office of Planning and Research (OPR) to develop alternative metrics to the use of vehicular "level of service" (LOS) for evaluating transportation projects. OPR published the Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) in December 2018 providing recommendations for the preparation of transportation impact analysis under SB 743, suggesting Vehicle Miles Traveled (VMT) to replace LOS as the primary measure of transportation impacts. The Technical Advisory required local agencies to update their transportation procedures by July 1, 2020. State guidelines went into effect at this time for agencies that had not adopted their own guidelines.

The City of San Diego's (City's) Transportation Study Manual (TSM) provides guidance on preparing transportation studies for the City pursuant to SB 743. The manual addresses the shift from LOS analysis to VMT analysis for CEQA.

The City's TSM establishes VMT as the performance metric for measuring transportation environmental impacts according to CEQA. The manual provides VMT screening criteria, significance thresholds, analysis methodologies, and mitigation measures for land development or transportation projects under CEQA.

Initial CEQA Screening

Projects are compared against initial screening criteria outlined in the City's TSM, as shown in **Attachment B**, to determine if the project can be considered less than significant for VMT impact based on project features regarding location, size, and use. The City's screening criteria for exempting land development projects for performing full VMT analysis include the following:

- **VMT Efficient Location** – Projects located in a VMT Efficient Location per the SANDAG Screening Map
    - Residential or commercial employment – 15% or more below the base year average household VMT/capita or employee VMT/employee
    - Industrial employment – average or below average base year VMT/employee
- **Small Project (Trip-based)** – less than 300 daily unadjusted driveway trips

- **Locally Serving Retail** – 100,000 square feet gross floor area or less and serves a population of roughly 25,000 people or less based on a market area study
- **Locally Serving Public Facilities** – serves the surrounding community such as transit centers, public schools, libraries, post offices, park-and-ride lots, police and fire facilities, and government offices, or a public facility that is a passive use such as utility buildings, water sanitation, and waste management
- **Affordable Housing Project** – provides access to transit and meets one of the following criteria: affordable to persons with a household income equal to or less than 50% of the area median, housing for senior citizens, or housing for transitional foster youth, disabled veterans, or homeless persons
- **Mixed Use Project** – can use screening criteria above for each land use
- **Redevelopment Project** - results in a net decrease in total project VMT

If the project does not meet the screening criteria listed above, a detailed VMT analysis is required.

Results

The San Diego High School Modernization Project is considered a locally serving public facility. Therefore, based on the initial screening criteria, the project is screened out from further VMT analysis and has less than significant transportation impacts per CEQA.

Local Transportation Study

INITIAL LMA SCREENING

Projects are compared against initial screening criteria outlined in the City's TSM, as shown in **Attachment B**, to determine if the requires a Local Mobility Analysis (LMA) or not. The City's screening criteria for determining land development projects requiring an LMA include the following:

- **Small Project (Trip-based)** – consistent with Community Plan Zoning: less than 1,000 daily unadjusted driveway trips; inconsistent with Community Plan Zoning: less than 500 daily unadjusted trips
- **Projects in the Downtown Community Planning Area** – less than 2,400 daily unadjusted trips

If the project does not meet the screening criteria listed above, a detailed LMA analysis is required.

TRIP GENERATION

Since the enrollment for the site would not increase as a result of the project, only the operations of the Aquatic Center would have an increase on daily and peak-hour trips anticipated by the site. It should be noted that the performance art center could also generate additional trips, however, these trips would occur after hours or during weekend and would not overlap with existing site or commuter traffic. All other amenities including the auxiliary gym will support existing operations rather than expanding operations and generating more traffic than existing conditions.

The proposed 10,000 square feet aquatic center will be located southeastern part of the campus. The center will include a 25-yard by 38-yard swimming pool, restrooms, changing rooms, pool equipment room, storage room, and concessions. The pool area would include a pool deck, bleachers, spectator area, diving board, pool lighting, and pool fencing and gates. The capacity of the aquatic center is estimated to accommodate up to 439 persons and would be a shared facility between the school and the public. The anticipated aquatic center schedule is provided below in **Table 1**.

TABLE 1
AQUATIC CENTER SCHEDULE

	Public	SDUSD
School Year (37 weeks)		
Weekdays	7:00 a.m. – 9:30 a.m.	9:30 a.m. – 6:00 p.m.
Saturdays	7:00 a.m. – 11:00 a.m.[1]	7:00 a.m. – 11:00 a.m.[1]
Sundays	12:00 – 3:00 p.m.	None
Winter and Spring Breaks (4 weeks)		
Weekdays	7:00 a.m. – 9:30 a.m.	10:00 a.m. – 4:00 p.m.
Saturdays	7:00 a.m. – 11:00 a.m.	None
Sundays	12:00 – 4:00 p.m.	None
Summer Break (7 weeks)		
Weekdays	7:00 a.m. - 7:00 p.m.	None
Saturdays	7:00 a.m. – 4:00 p.m.	None
Sundays	12:00 – 4:00 p.m.	None

1. Pool use on Saturdays during the school year is anticipated up to 6 times by the SDUSD on and up to 31 times by the public.

As shown, public use is expected in the early mornings on weekdays, on Saturday mornings, and on Sunday afternoons for most of the year (i.e., 37 weeks during the school year and four weeks winter and spring breaks). For seven weeks in the summer when school is not in session, school use would not occur, and public use would be expanded to weekday morning and afternoons, Saturday mornings and afternoons, and Sunday afternoons. The aquatic center would be closed for four weeks leading up to the end of the school year.

Within the City of San Diego, for the purpose of estimating trip generation for development project, either the City of San Diego's Trip Generation Manual, revised May 2003, or the ITE Trip Generation Manual, 10th Edition are typically used. However, neither of these two documents have rates that would accurately replicate the purpose or activities associated with a dedicated aquatic center within a public school site. The closest land use that was considered from the ITE Trip Generation Manual was the “Recreational Community Center” land use which includes “stand-alone public facilities similar to and including YMCAs” and offer a wide variety of classes and facilities for adults and children ranging from daycare, basketball, weightlifting equipment, swimming pools, exercise classes, and more. It was determined that the “Recreational Community Center” land use was significantly different than the aquatic center land use with a much larger set of activities than what the future San Diego High School Aquatic Center would be expected to provide. Therefore, using the Recreational Community Center

rate could significantly overestimate the potential traffic generation by the proposed Aquatic Center use.

To better estimate the potential traffic generation for the San Diego High School Aquatic Center, an analysis of the anticipated activities was completed including assumptions regarding the time and number of participants for each activity. It was assumed that the San Diego High School Aquatic Center would provide public lap swimming and a class (Masters Swim) from 7-8:00 AM, provide open lap swimming from 8-9:30 AM, and be reserved for high school classes, sports and swim team activities after 9:30 AM.

Based on the size of the pool, it is estimated that 14 lanes will be provided. The following assumptions were made for the trip generation calculations:

- 4 laps would be dedicated to the Masters Swim class when in session; the remaining 10 would be open for lap swimming.
- As a conservative approach, the lap swimming lanes would be full at all times with one person, and each person would spend a half hour in the lane.
- Each person attending the Masters Swim class or using the lap lanes would drive alone and would account for 2 trips within the same hour.

Therefore, from 7 to 8 AM, 4 people would attend the Masters Swim class, and 20 people would use the lap lanes over the course of the hour (1 person per lane per half hour using 10 lanes). From 8 to 9 AM, 28 people would use the lap lanes over the course of the hour (1 person per lane per half hour using 14 lanes). From 9 to 9:30 AM, 14 people would use the lap lanes for the half hour (1 person per lane using 14 lanes). For the remainder of the day, the school swim activities would not be anticipated to generate trips.

As a result of the daily activities trip generation analysis for the anticipated San Diego High School Aquatic Center, **Table 2** was generated. Table 2 illustrates the anticipated trip generation of the San Diego High School Aquatic Center during the typical school year schedule.

TABLE 2
AQUATIC CENTER TRIP GENERATION - SCHOOL YEAR SCHEDULE

Land Use	ADT	AM Peak-Hour								
		7-8 AM			8-9 AM			9-9:30 AM		
		In	Out	Total	In	Out	Total	In	Out	Total
Aquatic Center										
Masters Swim	**16**	8	8	16	0	0	0	0	0	0
Lap Pool	**124**	20	20	40	28	28	56	14	14	28
Total	140	28	28	56	28	28	56	14	14	28

As provided in Table 2, the San Diego High School Aquatic Center is estimated to generate 140 weekday public daily trips, 56 (28 in, 28 out) morning peak-hour trips, and no afternoon peak-hour trips.

The chosen trip generation was based upon the more typical peak trip generations between the anticipated summer and school year schedule.

Dependent on the project trip generation, the San Diego High School Modernization Project is considered a small project and does not create more than the screening criteria trips. Therefore, based on the initial screening criteria, the project does not require a detailed LMA.

SAFETY ANALYSIS

Crash data between January 1, 2015 to available 2019 was obtained from the California Highway Patrol's (CHP) Statewide Integrated Traffic Records System (SWITRS) for the roadways adjacent to San Diego High School in Downtown San Diego. The data was filtered to focus on collisions occurring Monday through Friday, one hour before school begins until after school activities commence, from 6 AM to 10:00 PM. A total of 35 collisions fit these criteria and are summarized in **Attachment C**. No fatalities or serious injuries occurred within the study period (2015-2019). The most common collision types that occurred were broadside collisions between two vehicles (10 collisions), followed by collisions between a pedestrian and vehicle (8 collisions), and rear-end collisions between two vehicles (7 collisions).

Locations with high collisions include Park Boulevard along the west side of San Diego High School with 14 collisions between Presidents Way and B Street, as well as the A Street and 11th Avenue intersection with 9 collisions. On Park Boulevard, 8 collisions occurred at the B Street intersection and involved traffic signal violations between southbound and westbound vehicles. All of the collisions at the A Street and 11th Avenue intersection occurred during the morning or evening peak period between 7 AM and 11 AM or between 5 PM and 8 PM. Pedestrians were involved in 2 of these collisions, and 2 of the collisions were sideswipes between eastbound vehicles.

Out of the 8 total pedestrian-involved collisions, 4 of them involved a pedestrian that was not crossing within a crosswalk, 3 of those were along Park Boulevard (2 at B Street, and 1 north of Russ Boulevard). There was 1 bicycle-involved collision on Park Boulevard as well, involving only the bicyclist. It is possible that a pothole caused this collision, as it occurred prior to roadway resurfacing and restriping to provide the buffered bike lane that exists today.

Lastly, there were 3 collisions on Russ Boulevard, 1 of which involved a school bus traveling westbound that sideswiped a vehicle traveling northbound at 16th Street.

Field Observations

The following intersections were observed in the field to further understand the environment and identify any causes to the collisions that could be resolved by physical improvements.

- State Route 163 (SR 163)/11th Avenue and Russ Boulevard
- 11th Avenue and A Street

- Park Boulevard and B Street
- 16th Street and Russ Boulevard

Recommended Improvements

Pedestrians

As previously mentioned, there were a total of 8 pedestrian-involved collisions during the study period between 2015 and 2019. The pedestrian-involved collisions occurred at the following locations and recommendations are provided for locations where trends or causes are discernable, and improvements can be made to address the issue and prevent future pedestrian collisions of similar nature:

- 11th Avenue and A Street (2)
  - Recommendation: SDUSD to request for the City to install "NO PEDESTRIAN CROSSING" sign in northwest corner of intersection to further discourage pedestrians from crossing the west leg of the intersection.
- Park Boulevard and Presidents Way (2)
  - Recommendation: SDUSD to request for the City to install high-visibility crosswalks for all legs of the intersection and evaluate pedestrian clearance intervals to ensure pedestrians can clear the crosswalk.
- Park Boulevard and B Street (2)
  - No trend or cause can be discerned to make a recommendation
- Park Boulevard and Russ Boulevard (1)
  - No trend or cause can be discerned to make a recommendation
- B Street and 16th Street
  - Recommendation: SDUSD to request for the City to install high-visibility crosswalks for the north, east, and south legs of the intersection.

SR 163/11th Avenue and Russ Boulevard

The intersection at SR 163/11th Avenue and Russ Boulevard was a hit-object collision that occurred as a result of a vehicle making an improper left turn from westbound Russ Boulevard to southbound SR 163/11th Avenue. At this location, SR 163/11th Avenue is a one-way roadway northbound with a raised median dividing SR 163 ramps from 11th Avenue. Currently, there is a "No Left Turn" sign and a "One Way" sign on the northeast corner as well as a "Do Not Enter/Wrong Way" sign combination on the southeast corner. Based on the field visit the "One Way" sign is obstructed by vegetation, and the other signs on the southwest corner are no longer visible once a vehicle has reached the stop bar.

> *Recommendation*: SDUSD to request for the City to install "One Way" or chevron signs within median to discourage vehicles from attempting to turn left onto the one-way roadway, and request that the City College trim vegetation on their site.

11th Avenue and A Street

A total of 9 collisions have occurred at the intersection at 11th Avenue and A Street within school hours of operation, 5 of which were caused by eastbound vehicles. A Street is a one-way roadway eastbound, and the east leg has pavement markings that are faded and difficult to distinguish. Within the intersection there are also large potholes and poor / uneven pavement conditions. While observing in the field, many of the vehicles driving eastbound in the right-most eastbound lane swerved into the next lane to avoid the uneven pavement from the manhole and entered the receiving side of the intersection straddling two lanes.

> *Recommendation:* SDUSD to request for the City and Caltrans to coordinate to repave intersection and restripe A Street between 11th Avenue and Park Boulevard

Park Boulevard and B Street

At the intersection of Park Boulevard and B Street, 8 collisions occurred during school hours between 2015 and 2019. Three were 5 broadside collisions and 1 overturned vehicle collision, all of which involved a southbound and a westbound vehicle. Westbound yellow time was observed to be approximately 3 seconds and the all-red time was 1 second. Considering the width of the intersection, the all-red time could be increased to ensure westbound vehicles have cleared the intersection before the northbound / southbound phase is green.

> *Recommendation*: SDUSD to request for the City to increase all-red time following westbound phase.

16th Street and Russ Boulevard

Lastly, a collision between a northbound passenger car and westbound school bus on the wrong side of the road occurred at the intersection of 16th Street and Russ Boulevard. The three-legged intersection is stop-controlled on the west leg. The west leg is a one-way eastbound alley that borders the south edge of the school. The south leg also a steep grade, reducing the sight distance for northbound vehicles.

> *Recommendation:* The location should be observed when school is back in session to see if near-misses occur that could be prevented by installing flexible delineators along the centerline. SDUSD may want to consider reevaluating the bus circulation route if near-misses are occurring based on the field study.

CONSTRUCTION TRAFFIC EVALUATION

The anticipated construction schedules for the WSM and LRFMP improvements are provided in **Table 3** and **Table 4**, respectively.

Table 3
ANTICIPATED WSM IMPROVEMENTS CONSTRUCTION SCHEDULE

Construction Activity	Construction Period		
	Start	End	Number of Working Days
Demolition	6/1/2021	6/7/2021	5
Site Preparation	6/8/2021	6/14/2021	5
Grading	6/15/2021	6/21/2021	5
Building Construction	6/22/2021	8/30/2021	50

Table 4
ANTICIPATED LRFMP IMPROVEMENTS CONSTRUCTION SCHEDULE

Construction Activity	Construction Period		
	Start	End	Number of Working Days
Demolition	1/1/2024	1/26/2024	20
Site Preparation	1/27/2024	2/2/2024	5
Grading	2/3/2024	2/14/2024	8
Building Construction	2/15/2024	1/1/2025	230
Paving	1/2/2025	1/27/2025	18
Architectural Coating	1/28/2025	2/20/2025	18

Construction Trip Generation

The temporary construction traffic generation and distribution was evaluated to determine whether construction traffic would adversely affect the existing transportation system surrounding the school site. Although each phase of the construction would generate a different number of delivery trucks and workers trips, it was determined that the highest number of truck trips for all project alternatives would occur during the WSM grading phase of construction, which is anticipated to last five days (see Table 3).

The earthwork is estimated to include approximately 4,313 cubic yards (CY) of exported soil, and approximately 4,000 CY of imported soil. At an estimated 16 CY per truckload, this would require a total

of approximately 520 truckloads (8,313 CY / 16 = 520 truckloads). Project information indicated grading work for the WSM phase would be performed over five days of grading operations.

Based on this information, it was determined that the proposed project would require approximately 104 truckloads per day (520 truckloads / 5 days = 104 trucks / day). It was assumed that each truck would be two trips (one inbound and one outbound), for a total of 208 daily truck trips. It should be noted that it is feasible for the same truck bringing soil to the site (import) to be also used for removing soil (export), reducing the overall truck trips. However, as a conservative approach for the purpose of this evaluation, it was assumed that both soil operations would require independent trucks. It was also assumed there would be an even distribution of trucks throughout the eight-hour work day. Therefore, the project would generate approximately 13 truckloads per hour (104 truckloads / 8 hours = 13 truckloads / hour).

A Passenger Car Equivalent (PCE) factor of 2.5 was used to convert the peak-hour truck trips into vehicle peak-hour trips. An adjusted volume of 65 PCE vehicle trips per hour (13 trucks x 2.5 PCE x 2 trips = 65 PCE trips) would be generated by the trucks.

Project information also indicated the site would require 4 workers on site per day during WSM phase grading operations based on CalEEMod calculations, equating to 4 additional peak-hour trips. It is assumed that workers will not carpool to the site. Although the workers trips would be generated in advance of the 8-hour work day and will not overlap with the truck trips, as a conservative approach it was assumed that during one of the peak-hours these two components would overlap for a total of 69 peak-hour PCE trips (65+4=69).

Construction Traffic Route

All construction-vehicle truck traffic would use appropriate truck routes to the extent feasible, however, access to the site will require truck traffic to travel on local roadways including Park Boulevard, 16th Street, Russ Boulevard, B Street, and 11th Avenue. Therefore, truck traffic would utilize the same roadways as school pick-up and drop-off circulation vehicles. Due to the number of construction vehicle trucks anticipated during grading operations, it is recommended that grading operations occur outside of school pick-up and drop-off hours for San Diego High School.

The contractor would be required to prepare traffic control plans to minimize traffic safety hazards, due to temporary construction-related lane closures. The traffic control plan's requirements will include temporary signage, advanced detour notification, and provisions for safe pedestrian and bicycle passage or detours. Implementation of the traffic control plan will require approval from the City of San Diego and/ or Caltrans. All construction staging would occur within the boundaries of the Project site and impacts would be less than significant.

Findings

The following conclusions and recommendations were identified as a result of a transportation evaluation for the San Diego High School Modernization Project.

CEQA Analysis

The City of San Diego's Transportation Study Manual provides a list of screening criteria for land use projects to determine whether detailed VMT analysis is required. A project would have less than significant transportation impacts per CEQA if the project meets any of the screening criteria. The San Diego High School Modernization Project is considered a locally serving public facility. Therefore, **the project is screened out from further VMT analysis and would be considered to have less than significant transportation impacts per CEQA.**

Trip Generation

The City of San Diego's *Transportation Study Manual* (TSM) outlines screening criteria that results in the requirement of a Local Mobility Analysis (LMA) and is shown in Attachment B. Based on the estimated trip generation, the proposed project would not generate traffic in excess of the TSM's threshold of 2,400 daily trips in the Downtown Community. Based on the City's TSM screening criteria for trip generation, **the project would not generate enough trips to require a detailed LMA**.

Safety Analysis

Based on the data collected and field observations, the following improvements should be considered:

- **SR 163/11th Avenue and Russ Boulevard** – SDUSD to request the City to install an additional "One Way" or chevron sign on the center median to assist in informing vehicles approaching the intersection from Russ Boulevard of the one-way operations. This could also be accomplished by installing delineators in the median or painting the curb of the raised median. SDUSD to also request the City College to trim vegetation on their site to enhance visibility.

- **11th Avenue and A Street**

    - SDUSD to request the City and Caltrans to coordinate to repave intersection and restripe portion of A Street between 11th Avenue and Park Boulevard. Additional turning movement markings at the receiving end of east leg would also be beneficial.

    - SDUSD to request the City and Caltrans to coordinate to install "NO PEDESTRIAN CROSSING" sign in the northwest corner of the intersection.

- **Park Boulevard and B Street** – SDUSD to request the City to consider signal timing modifications, such as extending the all-red time to ensure eastbound vehicles clear the intersection.

- **16th Street and Russ Boulevard**

    - SDUSD to observe operations when school is in session to determine if the one collision involving a school bus at this location is a pattern resulting in near-misses that are not reported. SDUSD should consider installing delineators approaching the curve along the south and east legs to prevent vehicles from going into the wrong lane.

- SDUSD may want to consider reevaluating the bus circulation route if near-misses are occurring based on the field study.

- **Park Boulevard and Presidents Way –** SDUSD to request the City to install high-visibility crosswalks for all legs of the intersection, and evaluate pedestrian clearance intervals to ensure pedestrians have sufficient time to clear the intersection.

- **B Street and 16th Street –** SDUSD to request for the City to install high-visibility crosswalks for the north, east, and south legs of the intersection.

Construction Traffic Evaluation

The highest number of construction trips is anticipated to occur during grading operations for the WSM phase. Specifically, the import and export operations during the WSM grading phase is anticipated to generate approximately 69 PCE vehicle trips per hour over a 5-day period. As a result, it is recommended that grading operations occur outside of school pick-up and drop-off hours to avoid increased congestion.

If you have any questions, comments, or concerns, please feel free to contact me at leo.espelet@kimley-horn.com or by phone at 619.744.0136. Thank you.

Attachments:

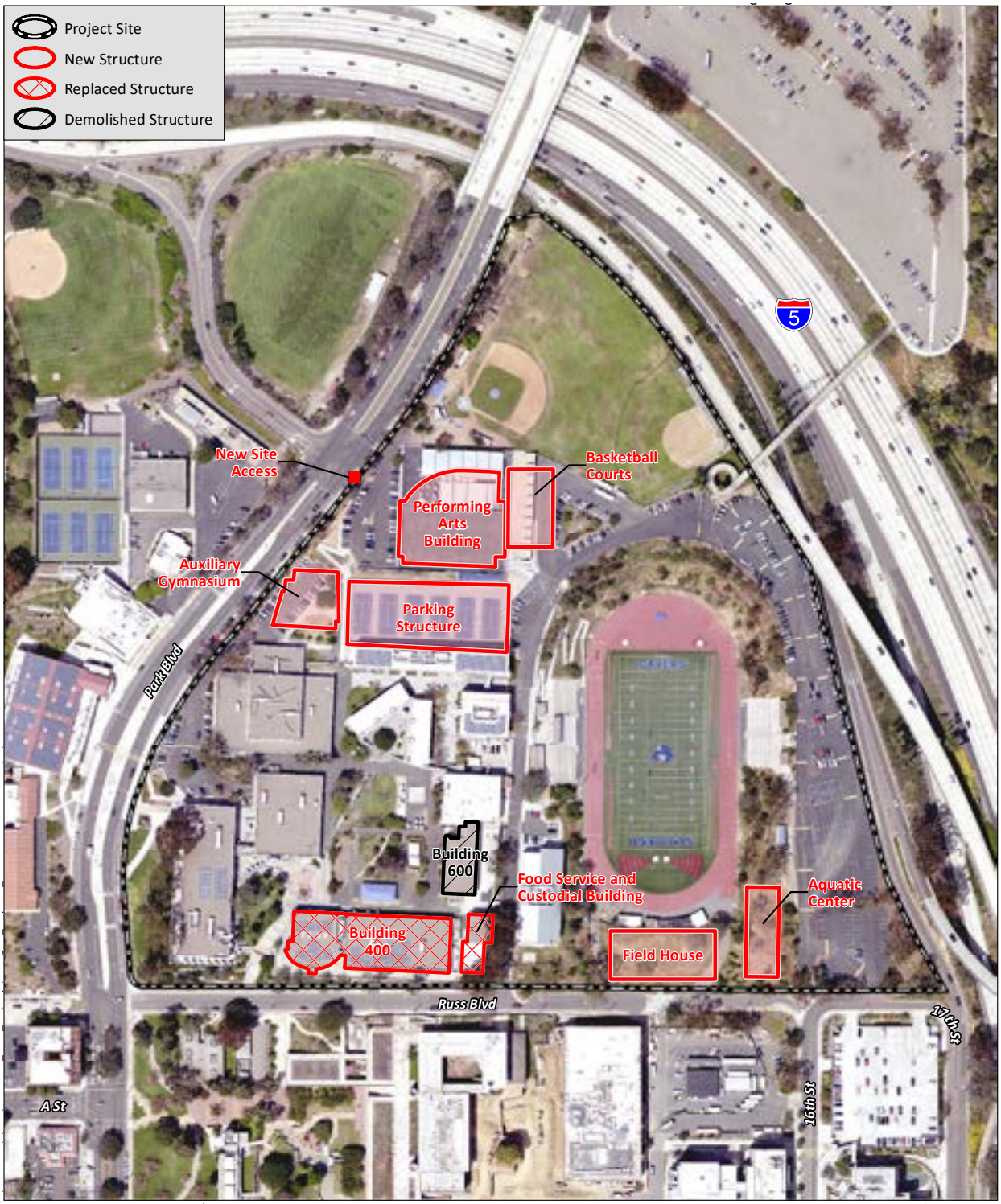
Attachment A - Project Site Plan

Attachment B - The City of San Diego's *Transportation Study Manual* – Screening Criteria

Attachment C - Collisions During School Hours Separated by Type

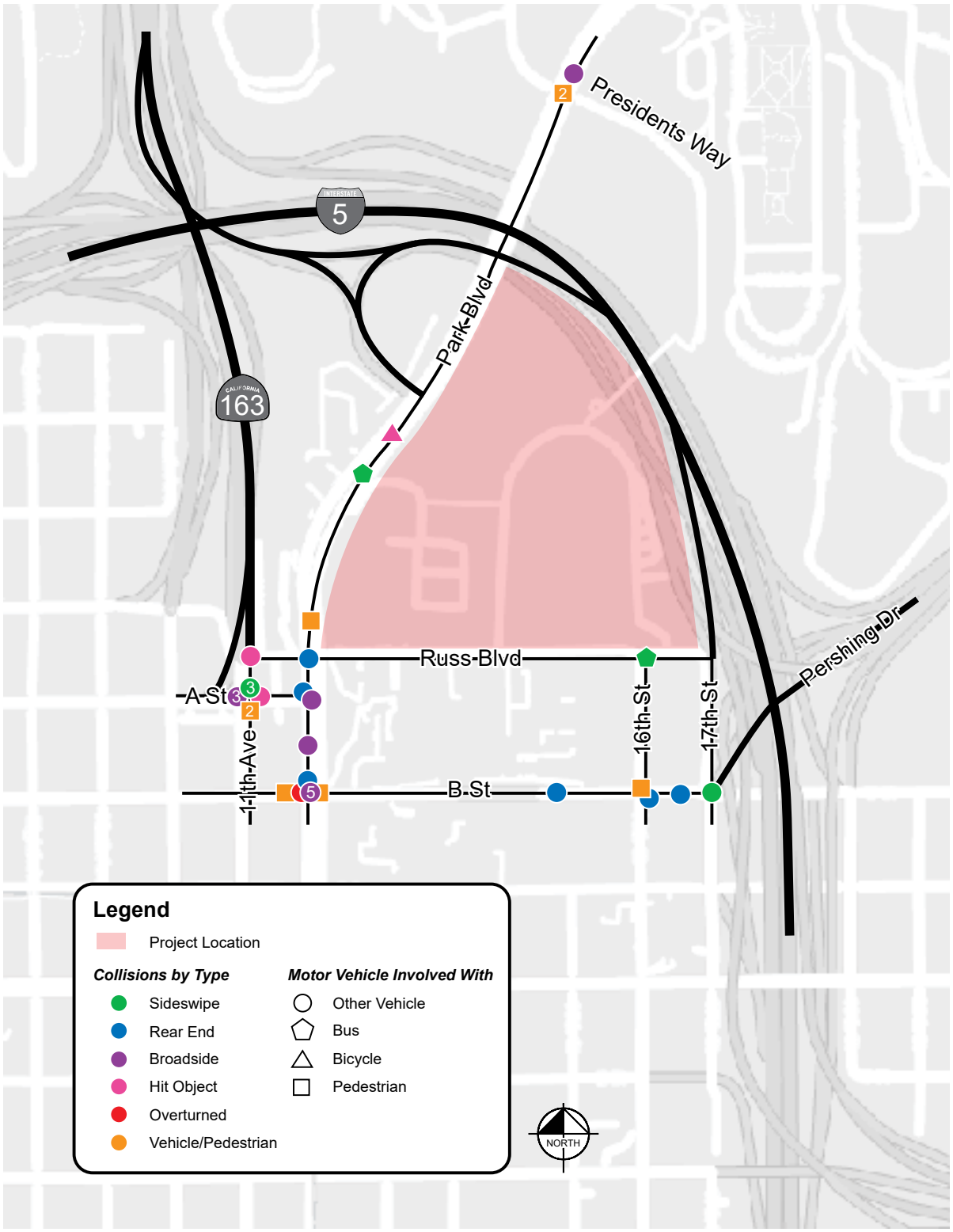
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Attachment A. Project Site Plan



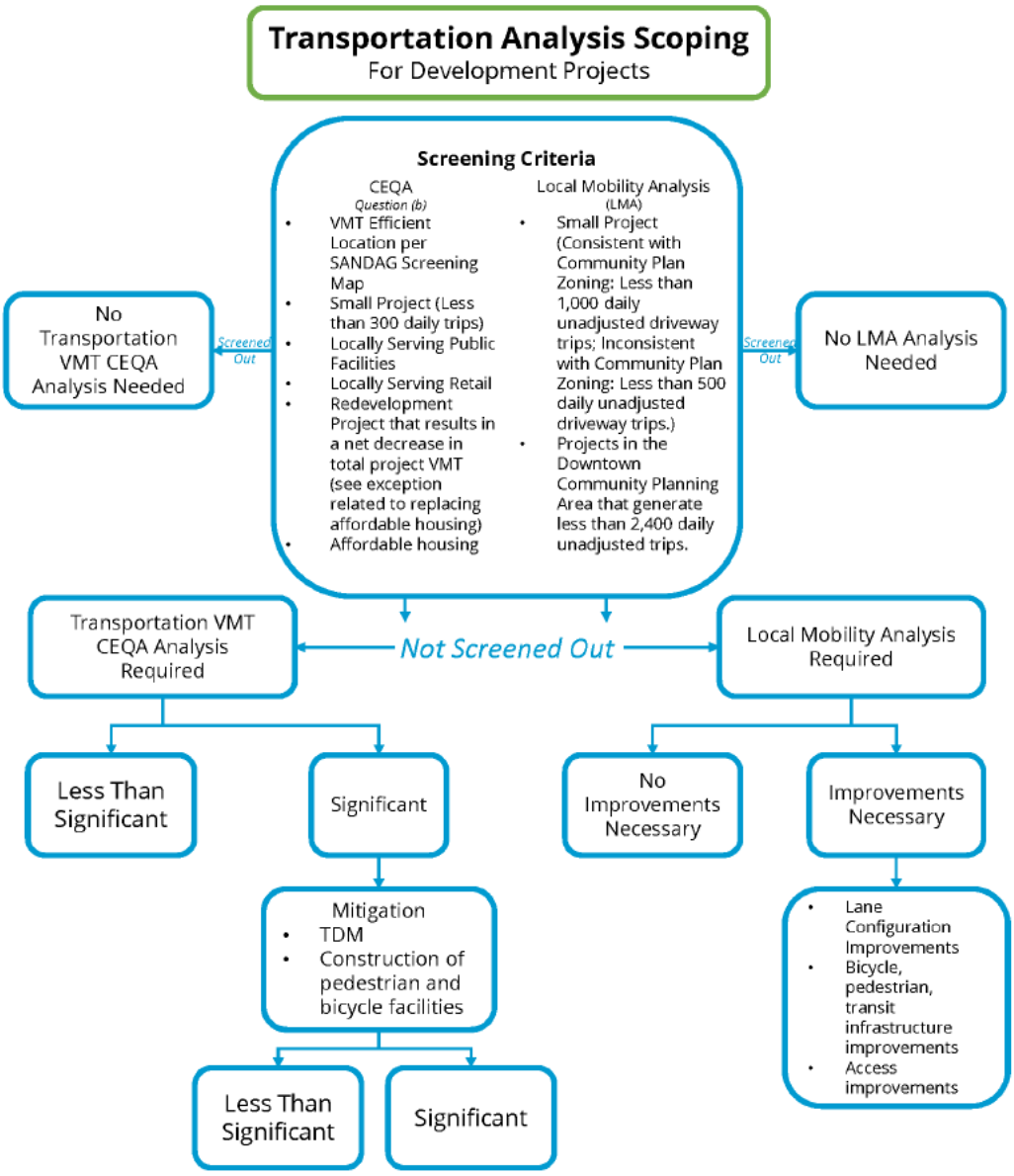
Source: Aerial (SanGIS 2017)

Attachment C. Collisions During School Hours Separated by Type



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Attachment B. The City of San Diego's *Transportation Study Manual* - Screening Criteria



* City staff may request analysis or additional study requirements due to location, project complexity, local transportation system complexity, and other local context despite meeting the screening criteria listed in the flow chart.