APPENDIX A
NOTICE OF PREPARATION AND SCOPING COMMENTS

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IRVINE UNIFIED SCHOOL DISTRICT
Facilities Planning and Construction Services Department
2015 Roosevelt, Irvine, California 92620 ● 949/936-8730 ● FAX 949/936-5329 ● www.iusd.org

NOTICE OF PREPARATION
OF A DRAFT ENVIRONMENTAL IMPACT REPORT

Lead Agency: Irvine Unified School District (IUSD)

Project Title: Woodbridge High School Field Lighting Improvement Project

Notice of Preparation Review Period: Wednesday, May 28, 2025 to Thursday, June 26, 2025 (30 days)

Scoping Meeting: Tuesday, June 10, 2025

NOTICE IS HEREBY GIVEN that the Irvine Unified School District (IUSD or District), as Lead Agency under the California Environmental Quality Act (CEQA), will prepare a Draft Environmental Impact Report (Draft EIR) for the Woodbridge High School Field Lighting Improvement Project pursuant to the California Public Resources Code (PRC), Division 13, Section 21000 et seq. (CEQA Statute) and the California Code of Regulations (CCR), Title 14, Division 6, Chapter 3, Section 15000 et seq. (CEQA Guidelines).

The purpose of the Notice of Preparation is to (1) serve as a public notice of an EIR pursuant to the CEQA Guidelines Section 15082 that a Draft Environmental Impact Report (DEIR) will be prepared; (2) advise and solicit comments and suggestions regarding the scope and content of the DEIR to be prepared; and (3) provide notice of the public scoping meeting. The District, as Lead Agency, respectfully requests that any responsible and trustee agencies responding to this notice respond in a manner consistent with CEQA Guidelines Section 15082(b). Comments and suggestions should, at a minimum, identify the significant environmental issues, reasonable alternatives, and mitigation measures that should be explored in the EIR, in addition to whether the responding agency will be a responsible or trustee agency for the proposed project, and any related issues raised by interested parties.

In compliance with CEQA Guidelines Section 15060(d) and 15082, the District will not be preparing an initial study and will begin work directly on the Draft EIR.

PROJECT LOCATION: The Woodbridge High School campus is located at 2 Meadowbrook (Assessor's Parcel Numbers [APNs] 452-011-08 and 452-011-09) in the City of Irvine, California. The Woodbridge High School Field Lighting Improvement Project would be developed within approximately 4.96 acres of the northwestern portion of the existing 22.1-acre high school campus (project site). The campus is bound by West Yale Loop and San Diego Creek to the north, San Diego Creek to the east, Meadow Brook and Lake Road to the south, and Alton Parkway to the west. Regional access to the Woodbridge HS campus is provided by Interstate 405 (I-405), approximately 0.9 miles south of the campus (see Figure 1, *Regional Location*).

PROJECT DESCRIPTION: The proposed project would consist of four athletic field lights and a Public Address (PA) system (proposed project). The proposed project may also consist of trenching for the installation of an electrical line to provide electricity for the four athletic field lights. Two athletic field light poles with athletic field lights would be located on the northwest

border of the track and field and two athletic field light poles with athletic field lights would be located on the southeast border of the track and field. Each athletic field light pole would be approximately 70 feet in height, include 12 light fixtures, and have a load capacity of 57.52 kilowatts (kW).

The proposed project is anticipated to include the installation of a new permanent PA system, which would consist of four (4) speakers with one (1) speaker attached to each lighting pole. The speakers may be oriented towards the audience in the spectator areas (see Figure 2, *Conceptual Site Plan*).

The expansion of hardscaping would be limited to the installation of the athletic field light poles and installation of the power distribution equipment and lighting control equipment. No existing structures would be demolished and no new buildings would be demolished. No changes to the student capacity or to the number of staff would occur as a result from the project. The proposed project would disturb approximately 1,500 square feet.

The proposed improvements at Woodbridge HS may be used for sporting events and practices, other school events, and non-school events. Sporting events and practices are anticipated to consist of tackle football, flag football, girls and boys soccer, girl's and boy's lacrosse, track and field, and band. The track and field may also be used for other school events, such as graduation and non-school events. The proposed event scheduling is contingent upon District operational needs and may be modified at the District's discretion.

POTENTIAL ENVIRONMENTAL EFFECTS: In accordance with Section 15082 of the CEQA Guidelines, the District has prepared this NOP to provide agencies, organizations, and interested parties with information describing the proposed project and its potential environmental effects. Consistent with Appendix G of the CEQA Guidelines, the following environmental topics may be analyzed in an EIR:

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

The District has determined that the proposed project could potentially affect 10 of the 20 environmental topic areas identified in Appendix G. These 10 topical areas are aesthetics, air quality, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, transportation, tribal cultural resources, and utilities and service systems. These impacts will be analyzed in detail in the EIR. Feasible mitigation measures will be proposed for impacts that are determined to be potentially significant and reasonable alternatives will be considered. The proposed project is expected to have no impact on agricultural and forestry resources, biological resources, greenhouse gas emissions, land use and planning, mineral resources, population and housing, public services, recreation, and wildfire; therefore, the EIR will not present a detailed analysis of the project's impact on this topic.

PUBLIC REVIEW PERIOD: The 30-day public review period for the NOP is from **Wednesday, May 28, 2025** to **Thursday, June 26, 2025**. In accordance with the time limits mandated by State law, if there are any concerns about the scope

and content of the information to be addressed in EIR, please send written comments to the District, at the address below, at the earliest possible date but not later than 5:00 p.m. on **Thursday, June 26, 2025**. This NOP is also available at:

- Irvine Unified School District, Facilities Planning and Construction Services Department (address below)
- Irvine Unified School District website: https://iusd.org/business-services/facilities-planning-construction-services/bidder-information-public-notices

PUBLIC COMMENTS: Please send your comments to:

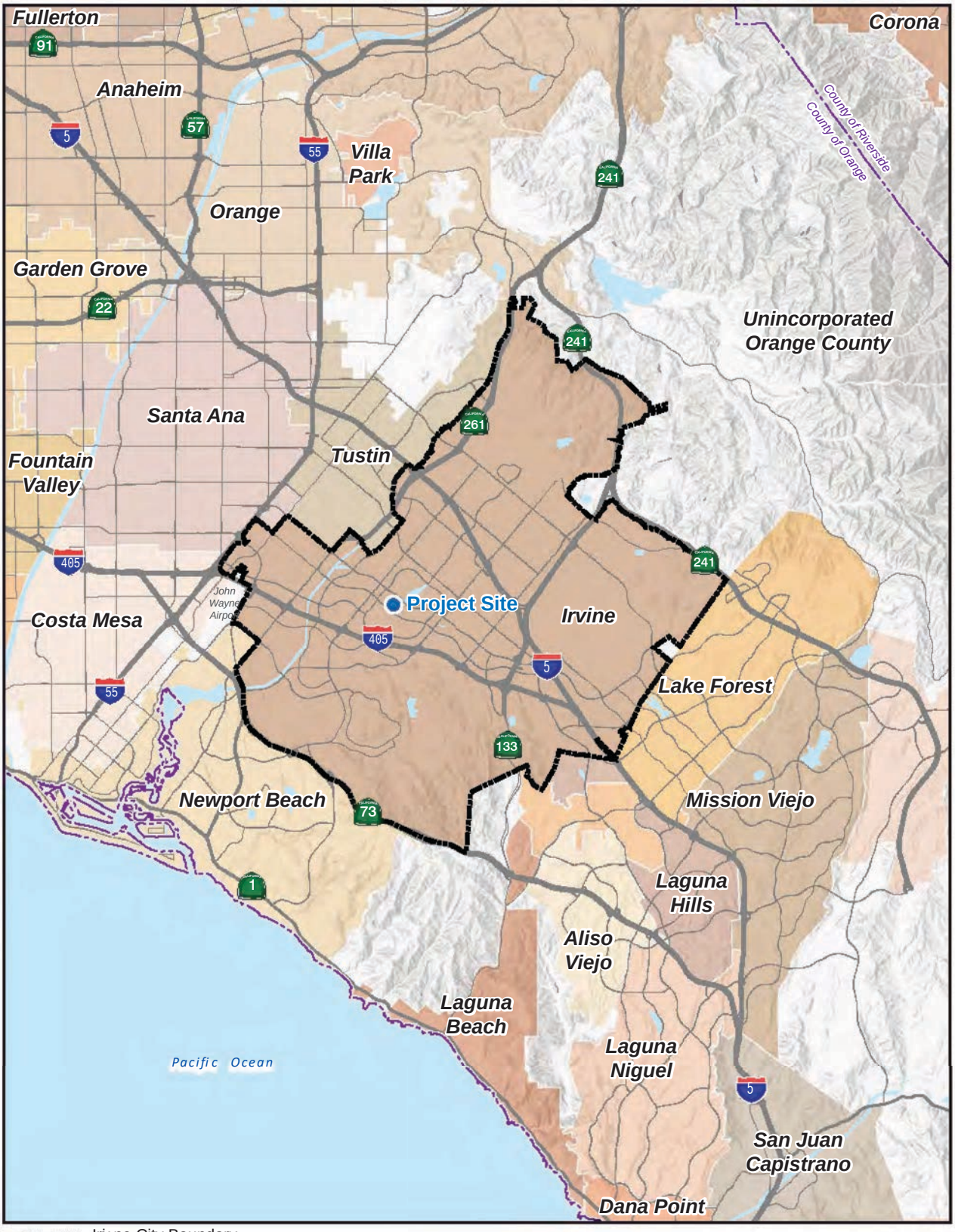
ATTN: Jesse Barron, Coordinator, Facilities Planning
Mailing Address: Irvine Unified School District
Facilities Planning and Construction Services Department
2015 Roosevelt, Irvine, CA 92620

Comments can also be sent via e-mail to jessebarron@iusd.org. Please include **"Woodbridge High School Field Lighting Improvement Project"** in the subject line. If you require additional information, please contact Jesse Barron at (949) 936-5316.

SCOPING MEETING: The District will hold a scoping meeting at 6:00 p.m., on **Tuesday, June 10, 2025**. The meeting will be held in-person at **2 Meadowbrook, Irvine CA 92604, in the Woodbridge High School Teachers' Lounge**.

The purpose of the scoping meeting is to present the proposed project, describe the EIR process, and to receive public comments. The District invites interested parties to participate in the scoping meeting for the proposed project in order to learn more about the project, ask questions, and submit comments.

Figure 1 - Regional Location



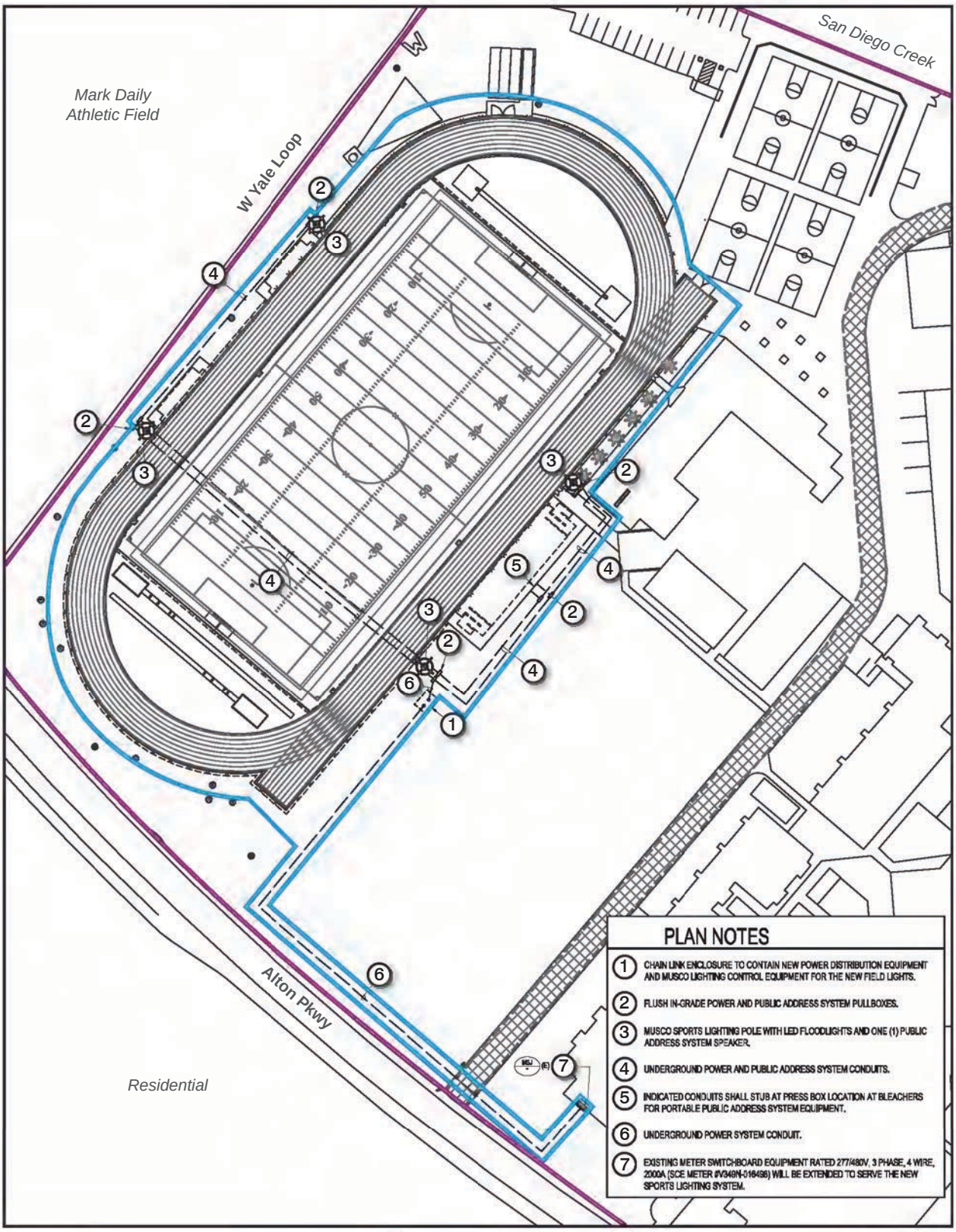
Irvine City Boundary

0 3
Scale (Miles)

Note: Unincorporated county areas are shown in white.
Source: Generated using ArcMap 2025.

PlaceWorks

Figure 2 - Conceptual Site Plan



Source: Ruhnau Clarke Architects 2025.

NATIVE AMERICAN HERITAGE COMMISSION

May 30, 2025

Kelvin Okino
Irvine Unified School District
2015 Roosevelt
Irvine CA 92620

Re: 2025051366 Woodbridge High School Field Lightning Improvement Project, Orange County

Dear Mr. Okino:

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

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

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 (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

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

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

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

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

GABRIELEÑO BAND OF MISSION INDIANS - KIZH NATION
Historically known as The San Gabriel Band of Mission Indians recognized by the State of California as the aboriginal tribe of the Los Angeles basin

Monday, June 2, 2025

Kelvin Okino
Executive Director, Facilities and Construction
Irvine Unified School District
2015 Roosevelt, Irvine, California 92620

Subject: Formal Request for Government-to-Government Consultation -***Woodbridge High School Field Lighting Improvement Project***

Dear Kelvin Okino

On behalf of the Gabrieleno Band of Mission Indians Kizh Nation, I am formally requesting government-to-government consultation with the Irvine Unified School District pursuant to Assembly Bill 52 (AB 52) and the California Environmental Quality Act (CEQA) regarding the proposed ***Woodbridge High School Field Lighting Improvement Project***. Our tribe has ancestral and cultural ties to this area, and we are concerned that the project may impact Tribal Cultural Resources (TCRs) within our traditional territory.

Under AB 52, lead agencies are required to engage in meaningful government-to-government consultation with our tribe who is ancestrally traditionally and culturally affiliated with the project area when the project undergoes CEQA review, in accordance with the law.

We request that formal consultation be initiated within the required timeframe, and we are prepared to meet at your earliest convenience. Please confirm receipt of this request and provide available dates for an initial consultation meeting.

For scheduling or further discussion, please contact me at gabrielenoindians@gmail.com or (844) 390 - 0787. We appreciate your commitment to ensuring compliance with AB 52 and protecting the cultural heritage of our tribal community.

Best regards,

Hereditary Chief Andrew Salas
Gabrieleño Band of Mission Indians–Kizh Nation

I am writing to express my opposition to the proposed lighting and loud speakers to be installed at the high school's athletic field. I am the president of the Alders HOA, the community that borders Alton, Culver and West Yale Loop, directly across from the Mark Daily Athletic Field. I am writing as a homeowner, and not as president of the HOA, although I have made certain that our Board members are aware of this proposal and they may be contacting you as well.

Our community has been already impacted by the bright overhead lights in the field at the Mark Daily Athletic Field, the sound traveling into our community from the outdoor speakers announcing at the high school, the marching band practicing early in the morning, in addition to the inconvenience and trash left behind by high schoolers cutting through our community to walk and/or park in our HOA's already-limited parking spaces. In addition, our community continues to experience the annoyance of constantly increasing traffic, sirens, trucks, speeding cars, and most recently the street widening directly next to our property at the corner of Culver and Alton.

I am not in favor of evening outdoor speakers and bright lights shining into the windows of our community members that would result, to say nothing of increased traffic, potential parking in our lots by students and visitors who would attend evening events.

Please take our community's needs into account when making your decision. Thank you,

Karen Davis
38 Greenfield
Irvine 92614
714 321-2722

Margie Jesswein Paul
110 Greenfield
Irvine, CA 92614
(714) 318-2075
EPaulMJess@aol.com
November 1, 2024

Sent Via Email Only

Adriana Olivas-Facilities Planning Tech
Facilities Planning
Irvine Unified School District
2015 Roosevelt
Irvine, CA 92620
AdrianaOlivas@iusd.org

Re: Community Feedback Meeting Re High School Lighting
November 7, 2024: 6 PM
Woodbridge High School-Staff Lounge
2 Meadowbrook, Irvine, CA 92604

Dear Ms. Olivas:

I am the homeowner of the address listed in my letterhead. It is in the Alders HOA which is located within Woodbridge Village Master Association. My residence is kitty-corner from Woodbridge High School and directly across Alton Parkway from the Alton Athletic Park, called Mark Daily Athletic Park, owned by the City of Irvine. I am on the corner of Alton and West Yale Loop. There is a great deal of student foot traffic within this intersection in the afternoons and many students pass though the Alders, the subject condominium development, and right past my home. In the past, trash, such as candy wrappers and other items have landed in and around my garden area. Beyond the condominium buildings is the residential parking area for all of the Alders' condo owners and their guests. It has limited spaces available as there is only one assigned space per condo and most condos have more than one occupant.

I have lived here since 1997 and so have seen many changes. My late husband and I were/are real estate lawyers. We have endured traffic, including emergency vehicles, fire and ambulances, driving by our house at all hours on Alton. This,

despite the improvement of double paned windows. We have seen the athletic park across the street expand and obtain bright evening lighting for evening athletic games. It has definitely increased the traffic in the area in the evenings. We have seen and heard the high school band, every year in the Fall, begin practice at 7:00 AM. We have endured Grad Night many years where the carnival set up and continued past 2:00AM, despite calls to the Irvine Police that we could not sleep and had important trial and/or court appearances the next day. We have also endured the lighted monument broadcasting the high school's registration and other deadlines, as well as the audio speaker announcing the class periods.

The Alders Homeowner's Association (HOA) is definitely impacted by the location of the high school as the landscaping is impacted by the high schoolers passage through and around the homes. I suspect that many cars owned by high school students and/or their parents park in the limited spaces available at the Alders to go to the athletic park across Alton, now. It will be much worse if the high school installs field lighting for their evening events.

There have been many disruptions to our peace and quiet but this suggestion for a further intrusion for more traffic, noise and sleep interruption is strenuously objected to. Our homeowners' dues pay for the impact to the landscaping and parking problems that are further expected. It is believed that the dues are already the highest in Woodbridge at $555 a month. Further reference is made to the drop in the value of our homes due to these many intrusions into our quiet enjoyment of our property. I object to and request that this "enhancement to the school's facilities… [for] field lights… to extend the usability of [the] sports fields …" not be allowed.

Thank you for your consideration of my concerns.

If you have any questions, please feel free to contact me.

Very truly yours,

By *Margie Jesswein Paul*
Margie Jesswein Paul

cc: Lisa Terry, Total Prop. Man
Juan Reynoso,108 Greenfield
Karen Davis, Alders President

APPENDIX B
MUSCO LIGHTING PLANS

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Woodbridge High School
Irvine, CA

Lighting System

Pole/Fixture Summary

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
F1-F4	70'	70'	9	TLC-LED-1500	12.69 kW	A
		60'	1	TLC-LED-550	0.54 kW	B
		16'	2	TLC-BT-575	1.15 kW	A
4			**48**		**57.52 kW**	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Football	55.36 kW	44
B	Egress	2.16 kW	4

Fixture Type Summary

Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8
TLC-LED-1500	LED 5700K - 75 CRI	1410W	181,000	>120,000	>120,000	>120,000	36
TLC-LED-550	LED 5700K - 75 CRI	540W	67,000	>120,000	>120,000	>120,000	4

Single Luminaire Amperage Draw Chart

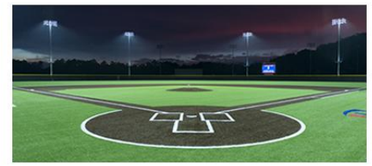
Driver Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-BT-575	3.3	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-1500	8.4	7.9	7.3	6.3	5.0	4.6	3.6
TLC-LED-550	3.2	3.0	2.8	2.4	1.9	1.8	1.4

Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
150'	Horizontal Illuminance	0.0115	0.00	0.04	-	-	A,B	48
150'	Max Candela Metric	1087.2924	20.17	3606.38	178.800	53.907	A,B	48
150'	Max Vertical Illuminance Metric	0.0364	0.00	0.10	335.912	119.865	A,B	48
Away Bleacher 1	Horizontal Illuminance	17.22	13	20	1.57	1.33	B	4
Away Bleacher 2	Horizontal Illuminance	17.90	13	22	1.73	1.42	B	4
Blanket Grid	Horizontal	15.63	0	59	468949.56	124794.03	A,B	48
Bleacher	Horizontal Illuminance	12.99	9	15	1.58	1.41	B	4
Football	Horizontal Illuminance	50.93	44	57	1.30	1.16	A	44
Property +20'	Horizontal Illuminance	0.3163	0.00	1.62	-	-	A,B	48
Property +20'	Max Candela Metric	7995.8750	5.76	25734.42	4468.798	1388.489	A,B	48
Property +20'	Max Vertical Illuminance Metric	0.5788	0.00	2.59	-	-	A,B	48
Soccer	Horizontal Illuminance	51.36	44	59	1.36	1.18	A	44
Track	Horizontal Illuminance	30.09	3	57	16.30	8.62	A	44

From Hometown to Professional



Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	9	0
				60'	TLC-LED-550	1	0	1
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	44	4

*Above Grade level relative to the field

Woodbridge High School

Irvine, CA

Grid Summary

Name	**Football**
Size	360' x 160'
Spacing	30.0' x 30.0'
Height	3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average	**50**
Scan Average	50.93
Maximum	57
Minimum	44
Avg/Min	1.16
Guaranteed Max/Min	**2**
Max/Min	1.30
UG (adjacent pts)	1.14
CU	0.47
No. of Points	72
LUMINAIRE INFORMATION	
Applied Circuits	A
No. of Luminaires	**44**
Total Load	55.36 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 50

0' 50' 100'

ENGINEERED DESIGN By: D.Palmer • File #238923A • 05-Sep-24

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Woodbridge High School

Irvine, CA

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	9	0
				60'	TLC-LED-550	1	0	1
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	44	4

*Above Grade level relative to the field

Grid Summary

Name	**Track**
Size	Irregular
Spacing	30.0' x 30.0'
Height	3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average	**30.09**
Maximum	57
Minimum	3
Avg/Min	8.62
Max/Min	**16.30**
UG (adjacent pts)	0.00
CU	0.19
No. of Points	48
LUMINAIRE INFORMATION	
Applied Circuits	A
No. of Luminaires	**44**
Total Load	55.36 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 50

0' 50' 100'

ENGINEERED DESIGN By: D.Palmer • File #238923A • 05-Sep-24

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Woodbridge High School

Irvine, CA

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	9	0
				60'	TLC-LED-550	1	0	1
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	44	4

*Above Grade level relative to the field

Grid Summary

Name	**Soccer**
Size	360' x 195'
Spacing	30.0' x 30.0'
Height	3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average	**50**
Scan Average	51.36
Maximum	59
Minimum	44
Avg/Min	1.18
Guaranteed Max/Min	**2**
Max/Min	1.36
UG (adjacent pts)	1.13
CU	0.55
No. of Points	84
LUMINAIRE INFORMATION	
Applied Circuits	A
No. of Luminaires	**44**
Total Load	55.36 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 50

0' 50' 100'

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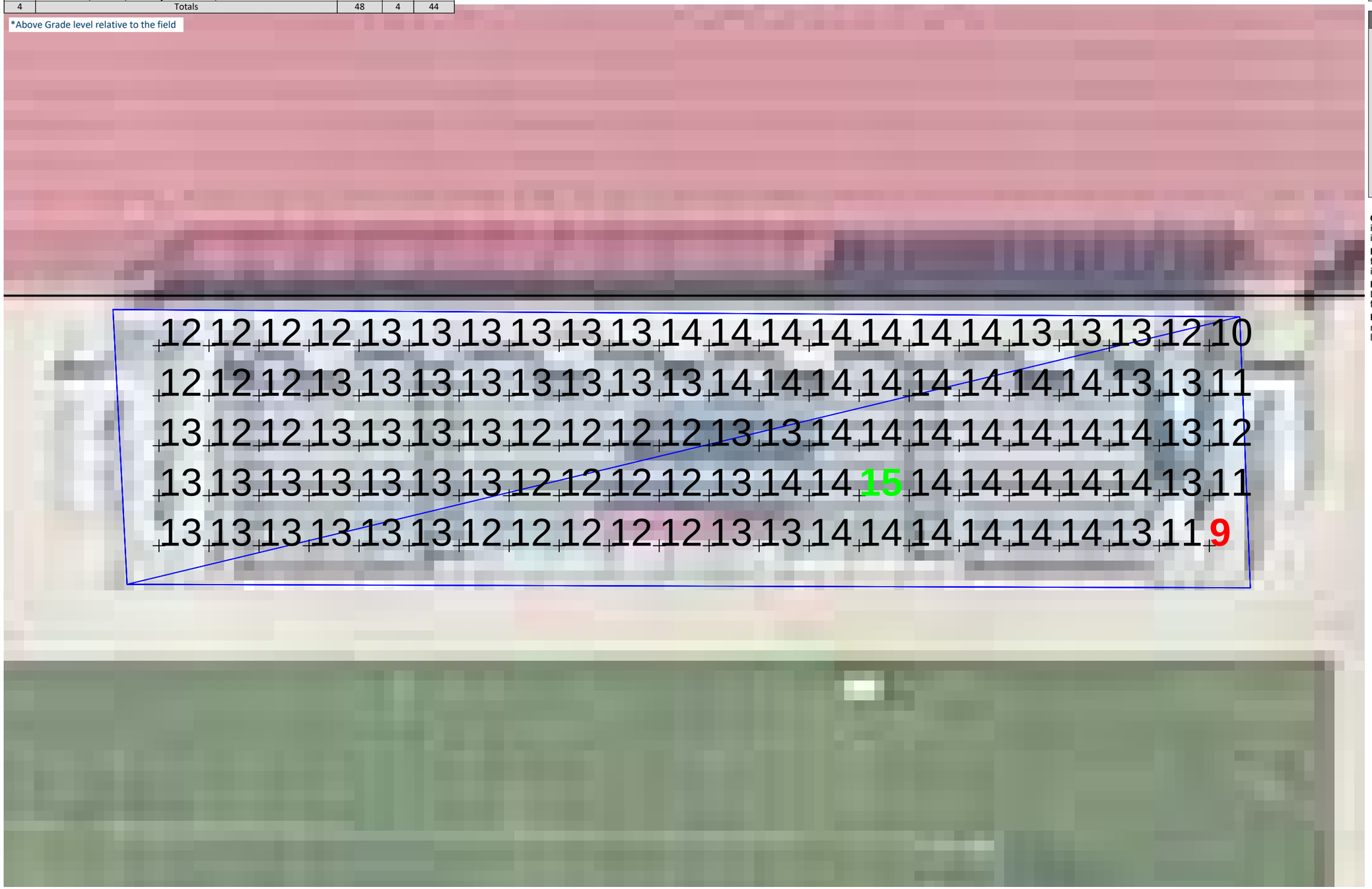
Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	0	9
				60'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	0	2
4	Totals					48	4	44

*Above Grade level relative to the field



SCALE IN FEET 1 : 10

0' 10' 20'

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Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Woodbridge High School

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Grid Summary

Name	**Bleacher**
Spacing	5.0' x 5.0'
Height	12.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average	**12.99**
Maximum	15
Minimum	9
Avg/Min	1.41
Max/Min	**1.58**
UG (adjacent pts)	0.00
CU	0.13
No. of Points	110
LUMINAIRE INFORMATION	
Applied Circuits	B
No. of Luminaires	**4**
Total Load	2.16 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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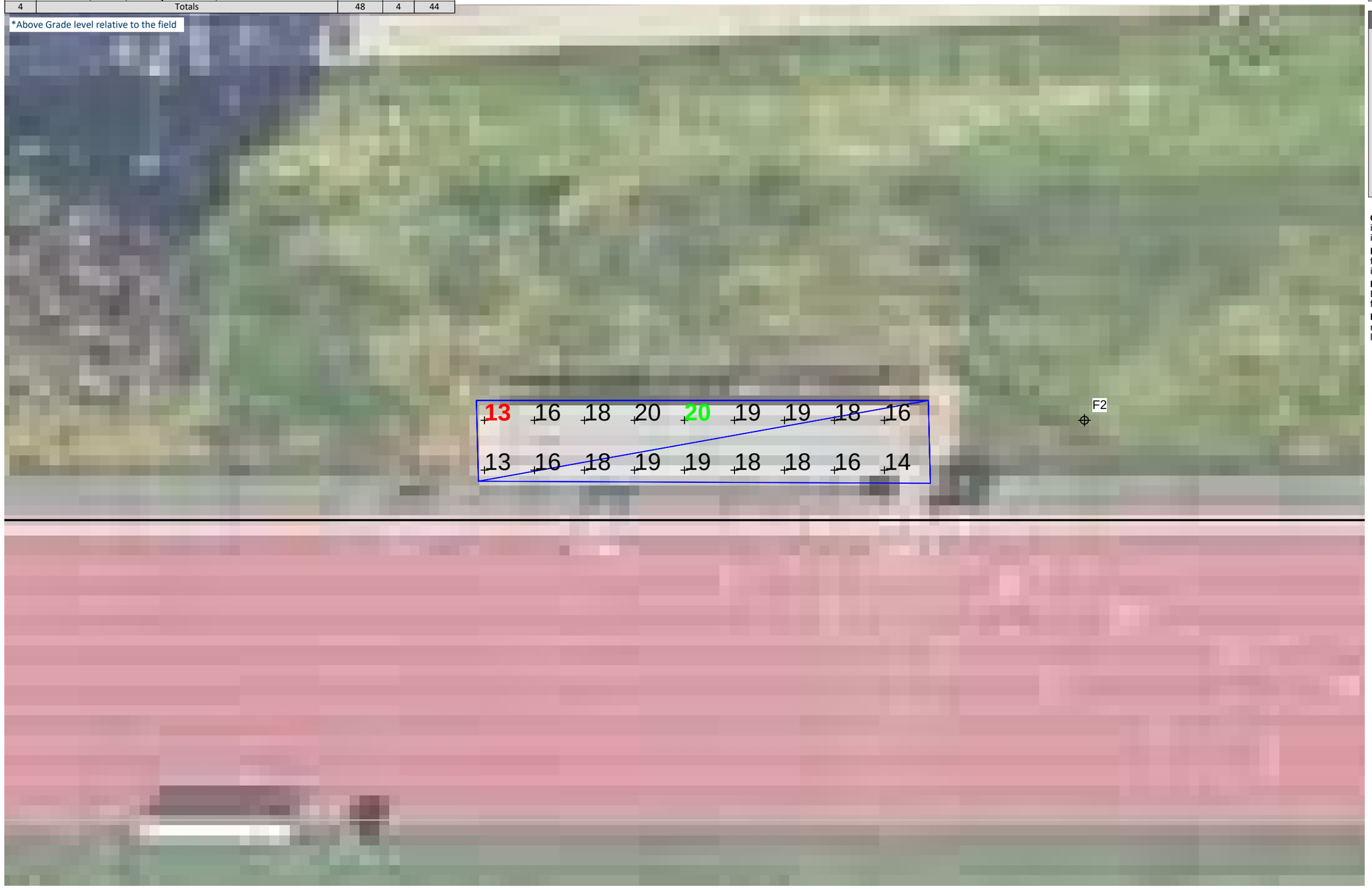
Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	0	9
				60'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	0	2
4	Totals					48	4	44

*Above Grade level relative to the field



Grid Summary

Name	**Away Bleacher 1**
Spacing	5.0' x 5.0'
Height	3.4' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average	**17.22**
Maximum	20
Minimum	13
Avg/Min	1.33
Max/Min	**1.57**
UG (adjacent pts)	0.00
CU	0.03
No. of Points	18
LUMINAIRE INFORMATION	
Applied Circuits	B
No. of Luminaires	**4**
Total Load	2.16 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 10

0' 10' 20'

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Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

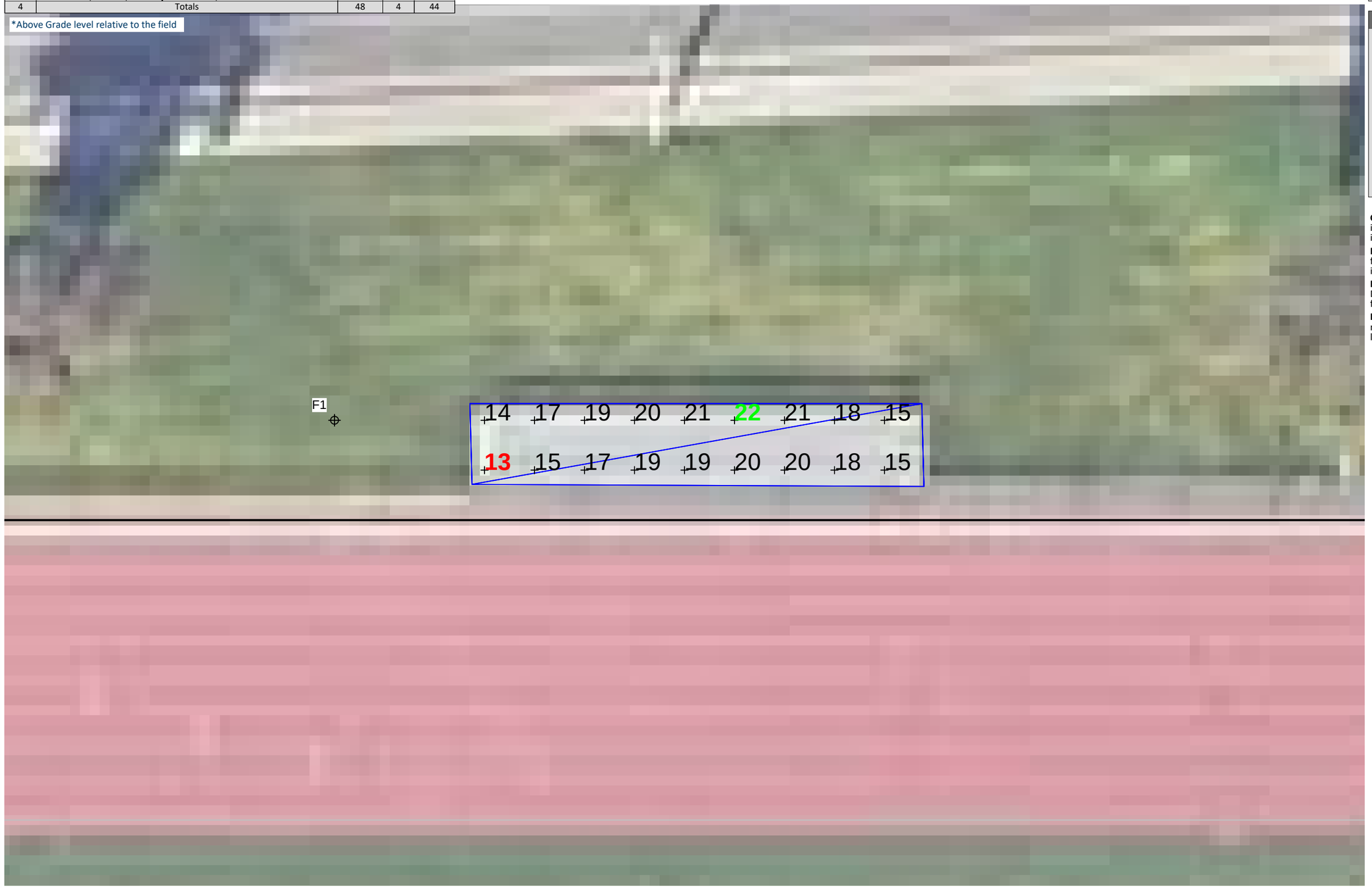
Woodbridge High School

Irvine, CA

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	0	9
				60'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	0	2
4	Totals					48	4	44

*Above Grade level relative to the field



Grid Summary

Name	**Away Bleacher 2**
Spacing	5.0' x 5.0'
Height	3.5' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average	**17.90**
Maximum	22
Minimum	13
Avg/Min	1.42
Max/Min	**1.73**
UG (adjacent pts)	0.00
CU	0.03
No. of Points	18
LUMINAIRE INFORMATION	
Applied Circuits	B
No. of Luminaires	**4**
Total Load	2.16 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 10

0' 10' 20'

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Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Irvine, CA

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	9	0
				60'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	48	0

*Above Grade level relative to the field

SCALE IN FEET 1 : 80

0' 80' 160'

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Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Grid Summary

Name	**Blanket Grid**
Spacing	10.0' x 10.0'
Height	-0.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES	Entire Grid
Scan Average	**15.63**
Maximum	59
Minimum	0
Avg/Min	124794.03
Max/Min	**468949.56**
UG (adjacent pts)	3.45
CU	0.93
No. of Points	4345
LUMINAIRE INFORMATION	
Applied Circuits	A,B
No. of Luminaires	**48**
Total Load	57.52 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

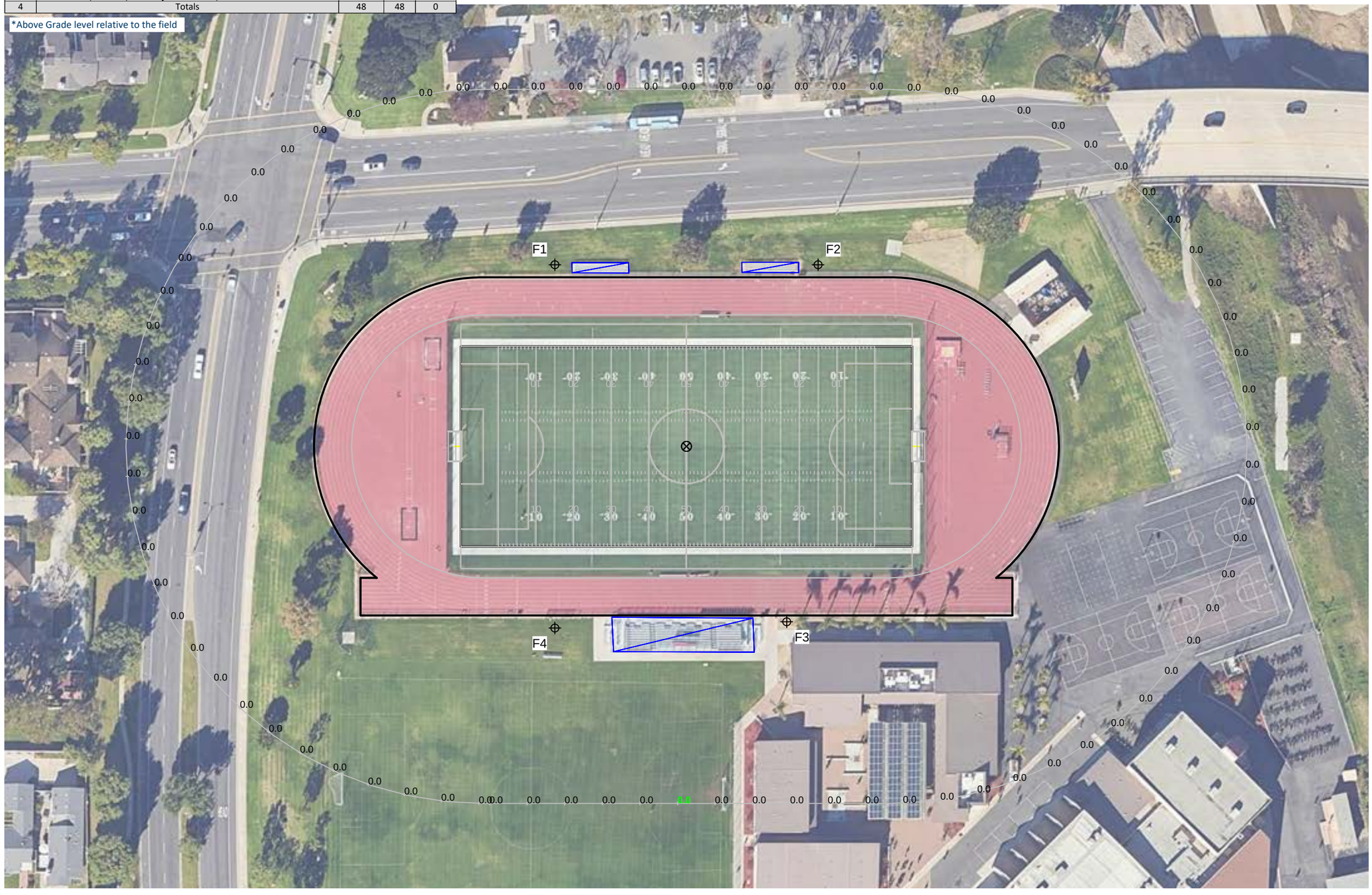
Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	9	0
				60'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	48	0

*Above Grade level relative to the field



Woodbridge High School

Irvine, CA

Grid Summary

Name	**150'**
Spacing	30.0' x 30.0'
Height	3.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average	**0.0115**
Maximum	0.04
Minimum	0.00
CU	0.00
No. of Points	82
LUMINAIRE INFORMATION	
Applied Circuits	A,B
No. of Luminaires	**48**
Total Load	57.52 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

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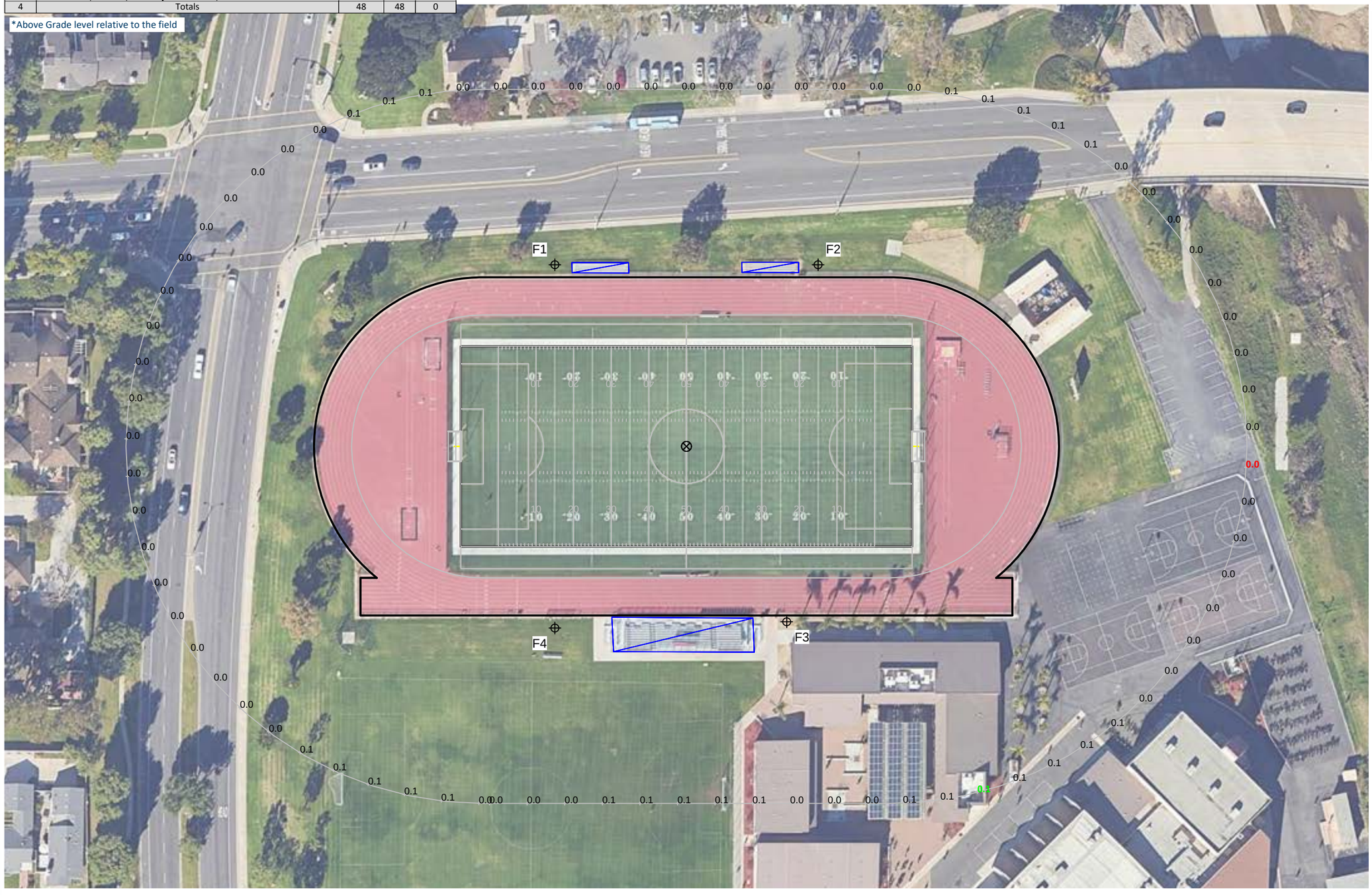
Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

We Make It Happen.

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	9	0
				60'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	48	0

*Above Grade level relative to the field



Woodbridge High School

Irvine, CA

Grid Summary

Name	**150'**
Spacing	30.0' x 30.0'
Height	3.0' above grade

Illumination Summary

	MAINTAINED MAX VERTICAL FOOTCANDLES
	Entire Grid
Scan Average	**0.0364**
Maximum	0.10
Minimum	0.00
CU	0.00
No. of Points	82
LUMINAIRE INFORMATION	
Applied Circuits	A,B
No. of Luminaires	**48**
Total Load	57.52 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

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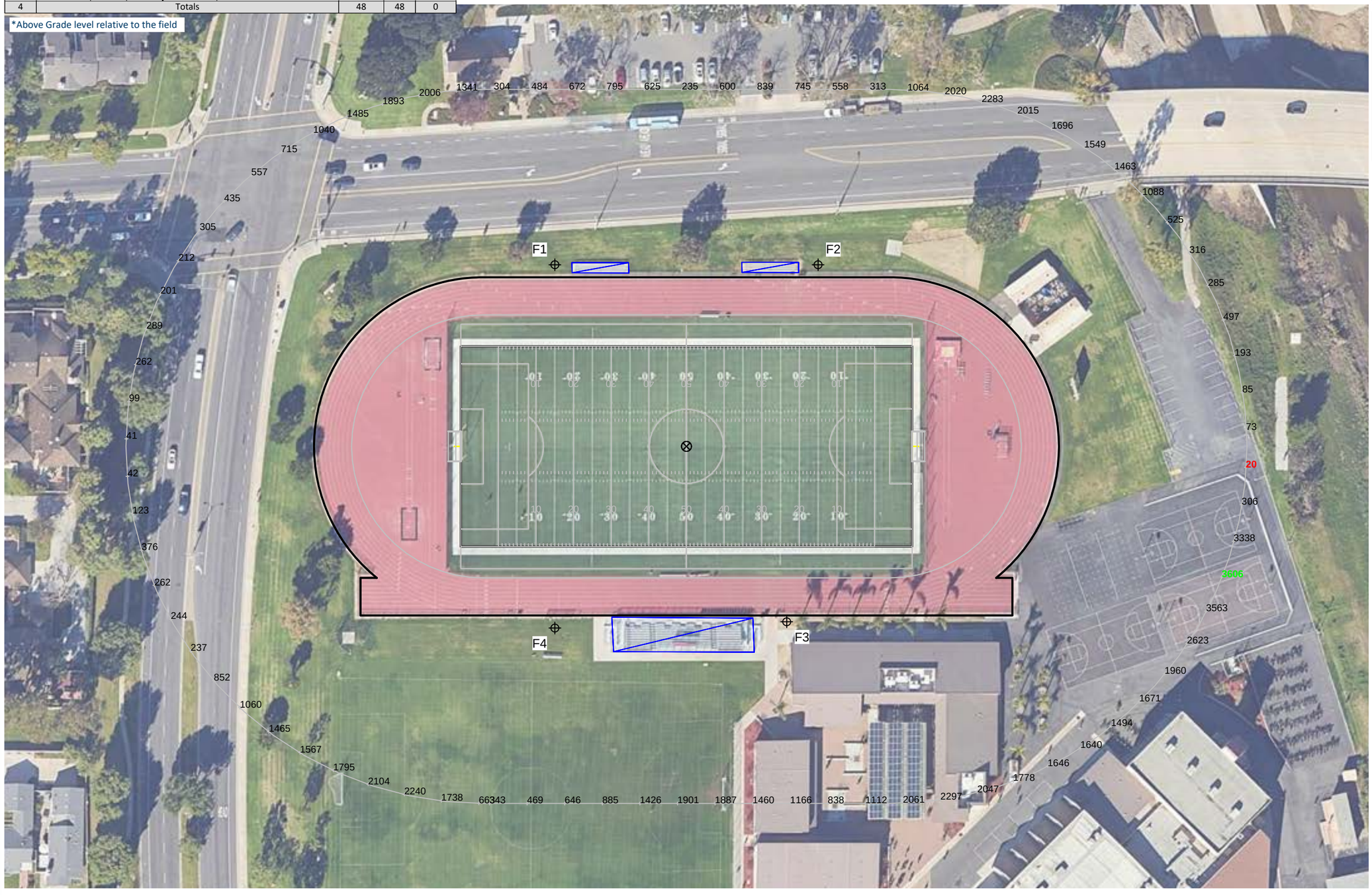
Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

We Make It Happen.

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	9	0
				60'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	48	0

*Above Grade level relative to the field



SCALE IN FEET 1 : 80

0' 80' 160'

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Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Woodbridge High School

Irvine, CA

Grid Summary

Name	**150'**
Spacing	30.0' x 30.0'
Height	3.0' above grade

Illumination Summary

	MAINTAINED CANDELA (PER FIXTURE)
	Entire Grid
Scan Average	**1087.2924**
Maximum	3606.38
Minimum	20.17
CU	0.00
No. of Points	82
LUMINAIRE INFORMATION	
Applied Circuits	A,B
No. of Luminaires	**48**
Total Load	57.52 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

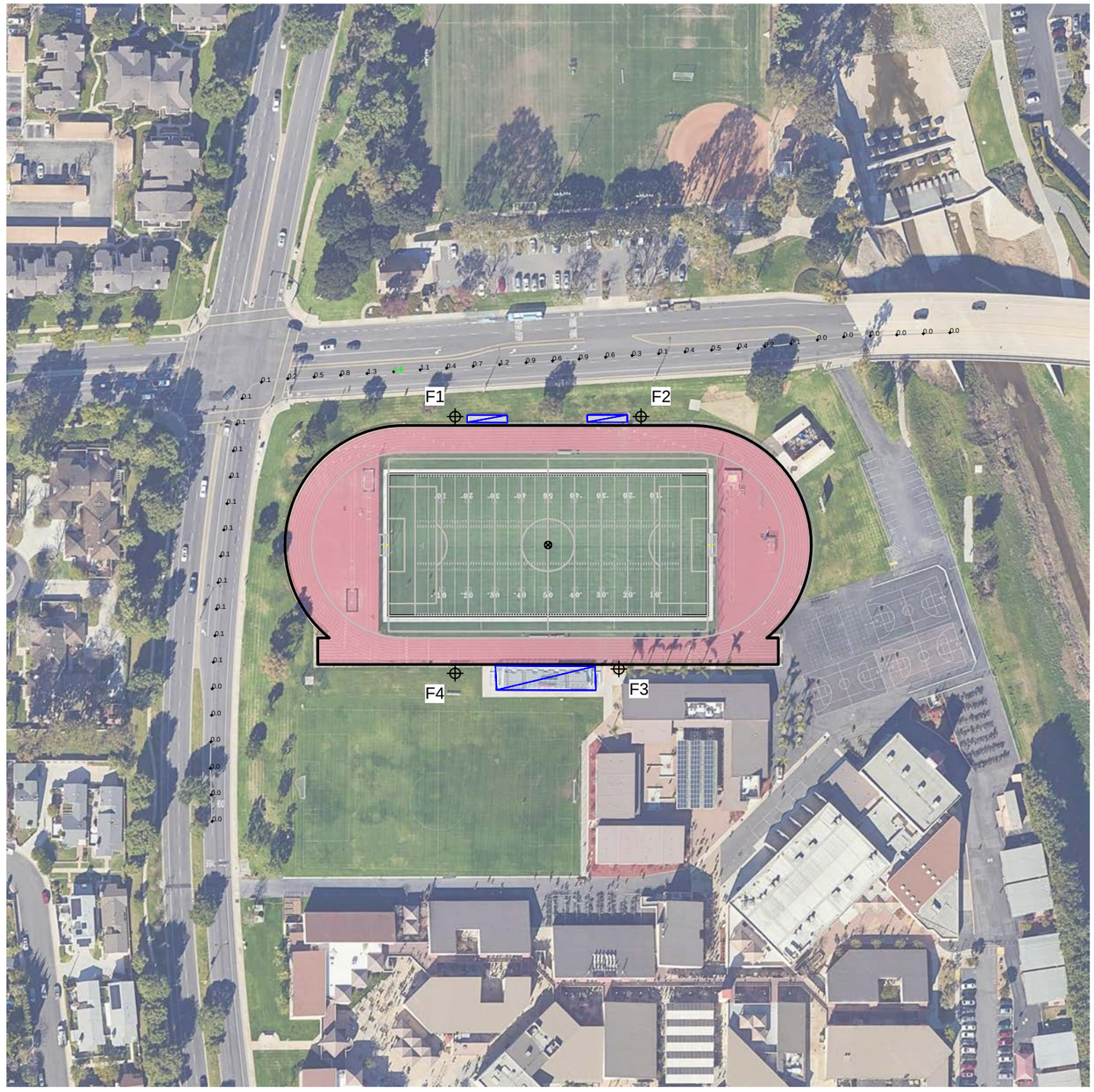
Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	9	0
				60'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	48	0

*Above Grade level relative to the field



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Grid Summary

Name	**Property +20'**
Spacing	30.0' x 30.0'
Height	0.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average	**0.3163**
Maximum	1.62
Minimum	0.00
CU	0.00
No. of Points	44
LUMINAIRE INFORMATION	
Applied Circuits	A,B
No. of Luminaires	**48**
Total Load	57.52 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 150

0' 150' 300'

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Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

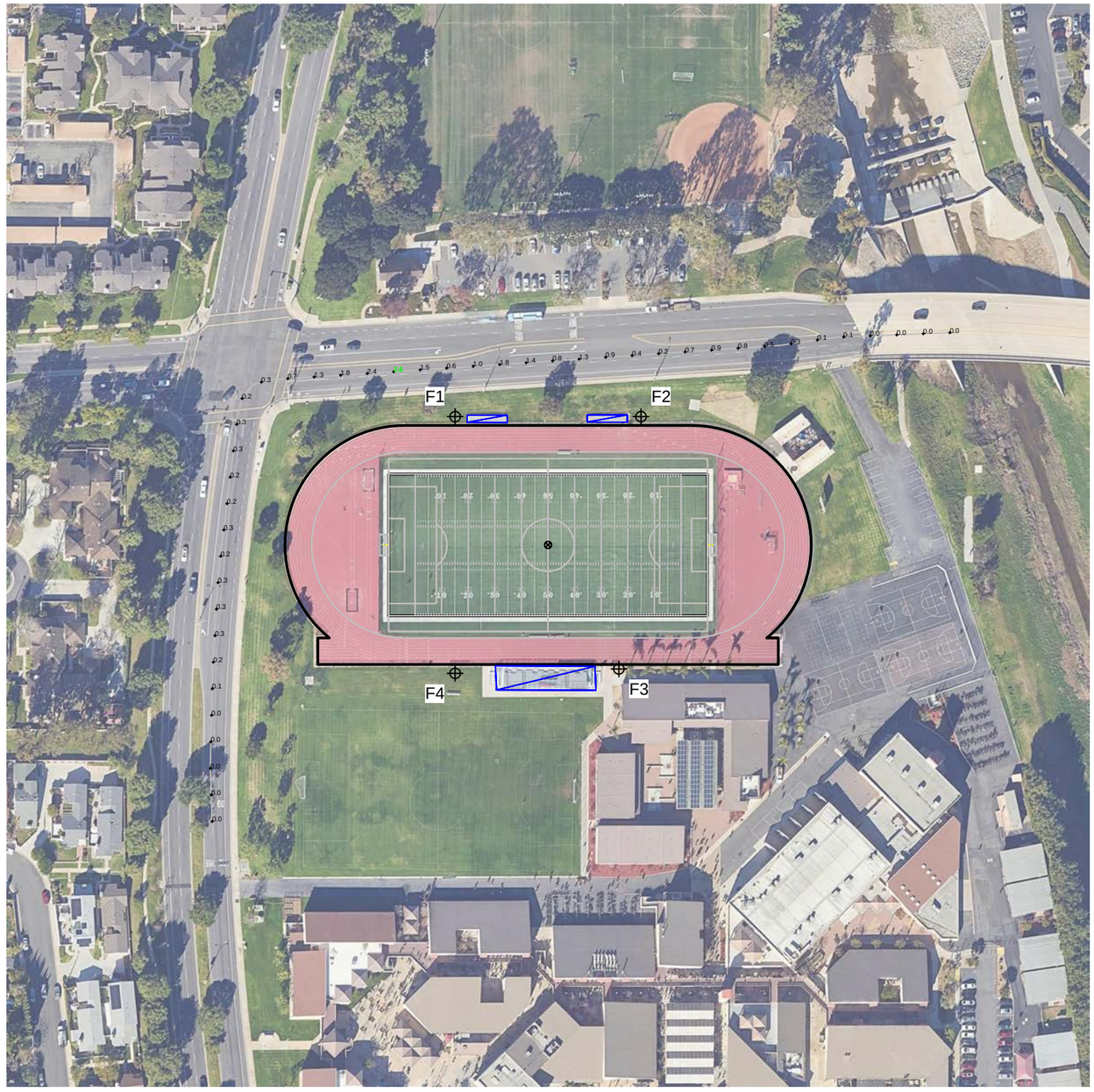
Woodbridge High School

Irvine, CA

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	9	0
				60'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	48	0

*Above Grade level relative to the field



Grid Summary

Name	**Property +20'**
Spacing	30.0' x 30.0'
Height	0.0' above grade

Illumination Summary

	MAINTAINED MAX VERTICAL FOOTCANDLES
	Entire Grid
Scan Average	**0.5788**
Maximum	2.59
Minimum	0.00
CU	0.00
No. of Points	44
LUMINAIRE INFORMATION	
Applied Circuits	A,B
No. of Luminaires	**48**
Total Load	57.52 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 150

0' 150' 300'

ENGINEERED DESIGN By: D.Palmer • File #238923A • 05-Sep-24

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

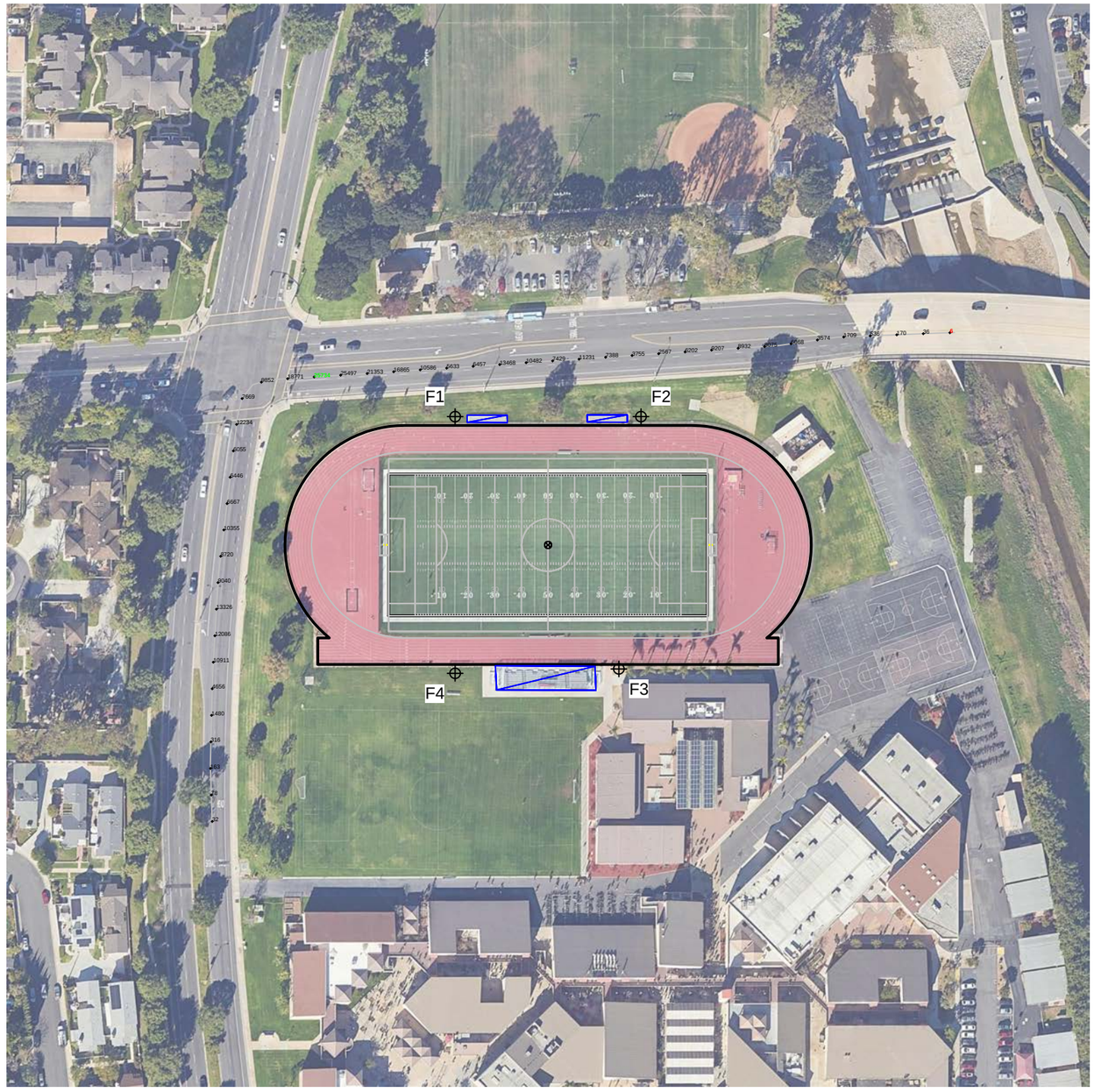
Woodbridge High School

Irvine, CA

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	70'	-	70'	TLC-LED-1500	9	9	0
				60'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	48	0

*Above Grade level relative to the field



Grid Summary

Name	**Property +20'**
Spacing	30.0' x 30.0'
Height	0.0' above grade

Illumination Summary

	MAINTAINED CANDELA (PER FIXTURE)
	Entire Grid
Scan Average	**7995.8750**
Maximum	25734.42
Minimum	5.76
CU	0.00
No. of Points	44
LUMINAIRE INFORMATION	
Applied Circuits	A,B
No. of Luminaires	**48**
Total Load	57.52 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 150

0' 150' 300'

ENGINEERED DESIGN By: D.Palmer • File #238923A • 05-Sep-24

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Woodbridge High School

Irvine, CA

Equipment Layout

INCLUDES:
· Football
· Soccer
· Track

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

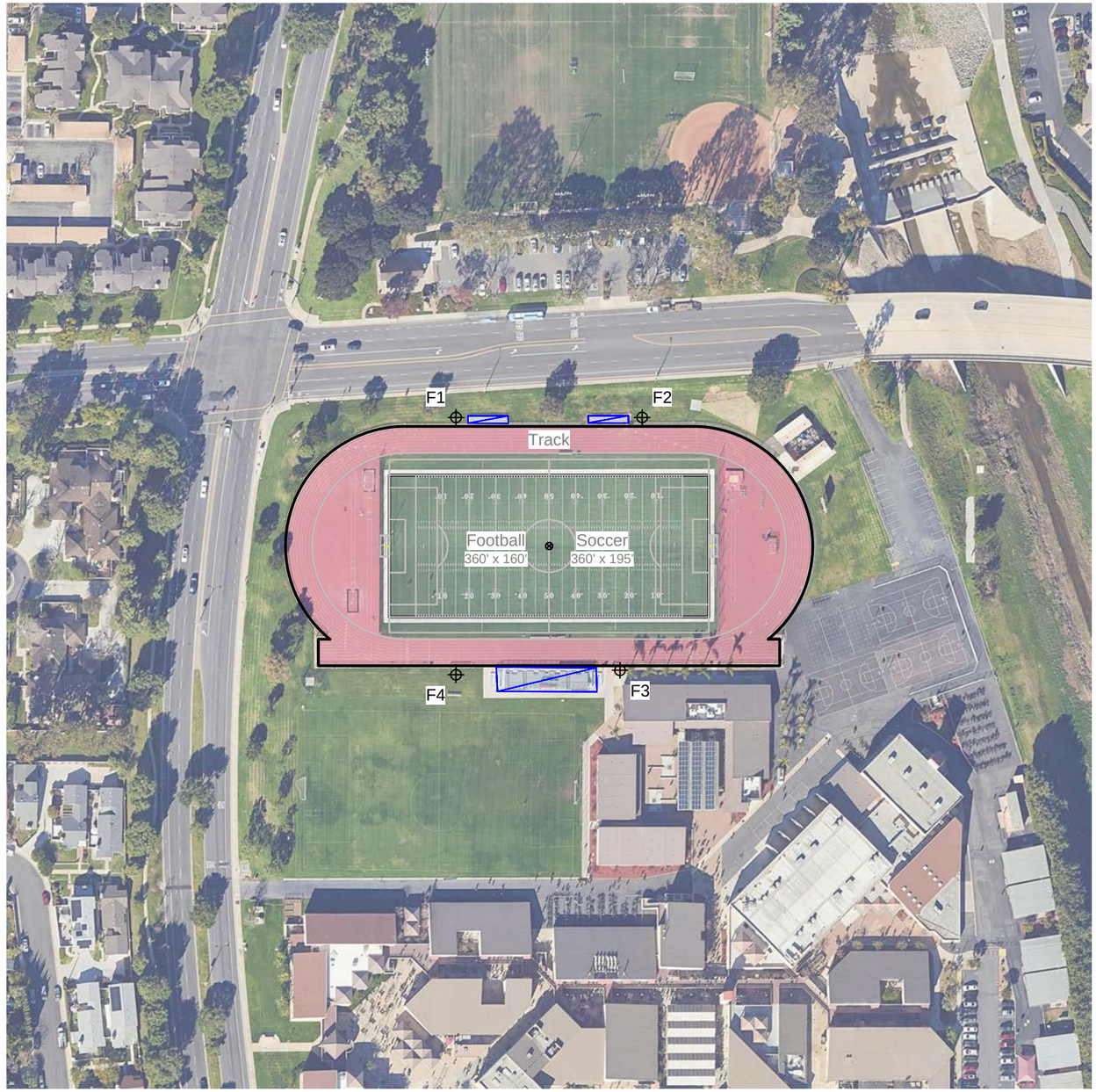
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Equipment List For Areas Shown

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE
4	F1-F4	70'	-	70'	TLC-LED-1500	9
				60'	TLC-LED-550	1
				15.5'	TLC-BT-575	2
4	Totals					48

Single Luminaire Amperage Draw Chart

Driver Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-BT-575	3.3	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-1500	8.4	7.9	7.3	6.3	5.0	4.6	3.6
TLC-LED-550	3.2	3.0	2.8	2.4	1.9	1.8	1.4



SCALE IN FEET 1 : 150

0' 150' 300'

ENGINEERED DESIGN By: D.Palmer • File #238923A • 05-Sep-24

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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We Make It Happen.

APPENDIX C
AIR QUALITY AND GREENHOUSE GAS EMISSIONS ANALYSIS

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Air Quality and Greenhouse Gas Appendix

Air Quality and Greenhouse Gas Background and Modeling Data

GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,[1] carbon (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[2] The major GHG are briefly described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.

- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are

[1] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

[2] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2017). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.

- ***Chlorofluorocarbons (CFCs***) are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

- ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

- ***Sulfur Hexafluoride (SF_6)*** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

- ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.

- ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs (IPCC 2001; US EPA 2025).

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 1, *GHG Emissions and Their Relative Global Warming Potential Compared to CO_2*. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fifth Assessment Report (AR5) GWP values for CH_4, a project that generates 10 MT of CH_4 would be equivalent to 280 MT of CO_2.[3]

[3] The global warming potential of a GHG is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

Table 1 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO_2[1]	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO_2[1]	Sixth Assessment Report (AR6) Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	1	1	1
Methane[2] (CH_4)	25	28	30
Nitrous Oxide (N_2O)	298	265	273

Source: IPCC 2007, 2013, and 2023.

Notes: The IPCC published updated GWP values in its Sixth Assessment Report (AR6) that reflect latest information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, GWP values identified in AR5 are used by the 2022 Scoping Plan for long-term emissions forecasting.

1 Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.

2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

GHG Regulatory Setting

REGULATION OF GHG EMISSIONS ON A NATIONAL LEVEL

The US Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (US EPA 2009).

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the project's GHG emissions inventory because they constitute the majority of GHG emissions and, per South Coast AQMD guidance, are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 MT or more of CO_2 per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2021 to 2026)

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. On March 30, 2020, the EPA finalized an updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021 to 2026. Under SAFE, the fuel economy

standards will increase 1.5 percent per year compared to the 5 percent per year under the CAFE standards established in 2012. Overall, SAFE requires a fleet average of 40.4 MPG for model year 2026 vehicles (85 Federal Register 24174 (April 30, 2020)).

On December 21, 2021, under direction of Executive Order (EO) 13990 issued by President Biden, the National Highway Traffic Safety Administration repealed Safer Affordable Fuel Efficient Vehicles Rule Part One, which had preempted state and local laws related to fuel economy standards. In addition, on March 31, 2022, the National Highway Traffic Safety Administration finalized new fuel standards in response to EO 13990. Fuel efficiency under the standards proposed will increase 8 percent annually for model years 2024 to 2025 and 10 percent annual for model year 2026. Overall, the new CAFE standards require a fleet average of 49 MPG for passenger vehicles and light trucks for model year 2026, which would be a 10 MPG increase relative to model year 2021 (NHTSA 2022).

On June 7, 2024, NHTSA announced final CAFE standards for passenger cars and light trucks built in model years 2027-2031 and final fuel efficiency standards for heavy-duty pickup trucks and vans built in model years 2030-2035. The final rules establish standards that would require an industry fleet-wide average of approximately 50.4 mpg for passenger cars and light trucks in model year 2031, by increasing fuel economy by 2 percent year over year for passenger cars (model years 2027-2031) and for light trucks (model years 2029-2031). For heavy-duty pickup trucks and vans, the final rule would increase fuel efficiency at a rate of 10 percent per year (model years 2030-2032) and 8 percent per year (model years 2033-2035) (NHTSA 2024).

EPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the Clean Air Act, the EPA has developed regulations for new, large, stationary sources of emissions, such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the EPA issued the final Affordable Clean Energy (ACE) rule, which became effective on August 19, 2019. The ACE rule was crafted under the direction of President Trump's Energy Independence EO. It officially rescinded the Clean Power Plan rule issued during the Obama Administration and set emissions guidelines for states in developing plans to limit CO_2 emissions from coal-fired power plants. The Affordable Clean Energy rule was vacated by the United States Court of Appeals for the District of Columbia Circuit on January 19, 2021. The Biden Administration is assessing options on potential future regulations.

REGULATION OF GHG EMISSIONS ON A STATE LEVEL

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in EO S-03-05 and EO B-30-15, EO B-55-18, Assembly Bill 32 (AB 32), Senate Bill 32 (SB 32), and SB 375.

Executive Order S-3-05

Executive Order S-3-05, signed June 1, 2005. Executive Order S-3-05 set the following GHG reduction targets for the State:

- 2000 levels by 2010

- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Assembly Bill 32, the Global Warming Solutions Act (2006)

AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in EO S-03-05. CARB prepared the 2008 Scoping Plan to outline a plan to achieve the GHG emissions reduction targets of AB 32.

Executive Order B-30-15

EO B-30-15, signed April 29, 2015, set a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. EO B-30-15 also directed CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in EO S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, "Safeguarding California", in order to ensure climate change is accounted for in state planning and investment decisions.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed SB 32 and AB 197 into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

Executive Order B-55-18

Executive Order B-55-18, signed September 10, 2018, set a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive Order B-55-18 directs CARB to work with relevant state agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning that not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions should be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Assembly Bill 1279

AB 1279, signed by Governor Newsom in September 2022, codified the carbon neutrality targets of EO B-55-18 for year 2045 and sets a new legislative target for year 2045 of 85 percent below 1990 levels for anthropogenic GHG emissions. SB 1279 also requires CARB to update the Scoping Plan to address these new targets.

2022 Climate Change Scoping Plan

CARB adopted the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on December 15, 2022, which lays out a path to achieve carbon neutrality by 2045 or earlier and to reduce the State's

anthropogenic GHG emissions (CARB 2022). The Scoping Plan provides updates to the previously adopted 2017 Scoping Plan and addresses the carbon neutrality goals of EO B-55-18 (discussed below) and the ambitious GHG reduction target as directed by AB 1279. Previous Scoping Plans focused on specific GHG reduction targets for our industrial, energy, and transportation sectors—to meet 1990 levels by 2020, and then the more aggressive 40 percent below that for the 2030 target. The 2022 Scoping Plan updates the target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. Carbon neutrality takes it one step further by expanding actions to capture and store carbon including through natural and working lands and mechanical technologies, while drastically reducing anthropogenic sources of carbon pollution at the same time.

The path forward was informed by the recent Sixth Assessment Report (AR6) of the IPCC and the measures would achieve 85 percent below 1990 levels by 2045 in accordance AB 1279. CARB's 2022 Scoping Plan identifies strategies as shown in Table 2, *Priority Strategies for Local Government Climate Action Plans*, that would be most impactful at the local level for ensuring substantial process towards the State's carbon neutrality goals.

Table 2 Priority Strategies for Local Government Climate Action Plans

Priority Area	Priority Strategies
Transportation Electrification	Convert local government fleets to zero-emission vehicles (ZEV) and provide EV charging at public sites.
	Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as building standards that exceed state building codes, permit streamlining, infrastructure siting, consumer education, preferential parking policies, and ZEV readiness plans).
VMT Reduction	Reduce or eliminate minimum parking standards.
	Implement Complete Streets policies and investments, consistent with general plan circulation element requirements.
	Increase access to public transit by increasing density of development near transit, improving transit service by increasing service frequency, creating bus priority lanes, reducing or eliminating fares, microtransit, etc.
	Increase public access to clean mobility options by planning for and investing in electric shuttles, bike share, car share, and walking
	Implement parking pricing or transportation demand management pricing strategies.
	Amend zoning or development codes to enable mixed-use, walkable, transit-oriented, and compact infill development (such as increasing allowable density of the neighborhood).
	Preserve natural and working lands by implementing land use policies that guide development toward infill areas and do not convert "greenfield" land to urban uses (e.g., green belts, strategic conservation easements)
Building Decarbonization	Adopt all-electric new construction reach codes for residential and commercial uses.
	Adopt policies and incentive programs to implement energy efficiency retrofits for existing buildings, such as weatherization, lighting upgrades, and replacing energy-intensive appliances and equipment with more efficient systems (such as Energy Star-rated equipment and equipment controllers).
	Adopt policies and incentive programs to electrify all appliances and equipment in existing buildings such as appliance rebates, existing building reach codes, or time of sale electrification ordinances.
	Facilitate deployment of renewable energy production and distribution and energy storage on privately owned land uses (e.g., permit streamlining, information sharing) .
	Deploy renewable energy production and energy storage directly in new public projects and on existing public facilities (e.g., solar photovoltaic systems on rooftops of municipal buildings and on canopies in public parking lots, battery storage systems in municipal buildings)

Table 2 Priority Strategies for Local Government Climate Action Plans

Priority Area	Priority Strategies
	.

Source: CARB 2022.

Based on Appendix D of the 2022 CARB Climate Change Scoping Plan, for residential and mixed-use development projects, CARB recommends first demonstrating that these land use development projects are aligned with State climate goals based on the attributes of land use development that reduce operational GHG emissions while simultaneously advancing fair housing. Attributes that accommodate growth in a manner consistent with the GHG and equity goals of SB 32 have all the following attributes:

- Transportation Electrification
  - Provide EV charging infrastructure that, at a minimum, meets the most ambitious voluntary standards in the California Green Building Standards Code at the time of project approval.

- VMT Reduction
  - Is located on infill sites that are surrounded by existing urban uses and reuses or redevelops previously undeveloped or underutilized land that is presently served by existing utilities and essential public services (e.g., transit, streets, water, sewer).
  - Does not result in the loss or conversion of the State's natural and working lands;
  - Consists of transit-supportive densities (minimum of 20 residential dwelling units/acre), or is in proximity to existing transit stops (within a half mile), or satisfies more detailed and stringent criteria specified in the region's Sustainable Communities Strategy (SCS);
  - Reduces parking requirements by:
    - Eliminating parking requirements or including maximum allowable parking ratios (i.e., the ratio of parking spaces to residential units or square feet); or
    - Providing residential parking supply at a ratio of <1 parking space per dwelling unit; or
    - For multifamily residential development, requiring parking costs to be unbundled from costs to rent or own a residential unit.
  - At least 20 percent of the units are affordable to lower-income residents;
  - Result in no net loss of existing affordable units.

- Building Decarbonization
  - Use all electric appliances without any natural gas connections and does not use propane or other fossil fuels for space heating, water heating, or indoor cooking (CARB 2022).

If the first approach to demonstrating consistency is not applicable (such as in the case of this school modernization project), the second approach to project-level alignment with state climate goals is to achieve net zero GHG emissions. The third approach to demonstrating project-level alignment with state climate goals is to align with GHG thresholds of significance, which many local air quality management (AQMDs) and air pollution control districts (APCDs) have developed or adopted (CARB 2022).

Senate Bill 375

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPO). The SCAG is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 is defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 $MMTCO_2e$ of reductions by 2020 and 15 $MMTCO_2e$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018. The updated targets became effective in October2018. All SCSs adopted after October 1, 2018, are subject to these new targets. CARB's updated SB 375 targets for the SCAG region were an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent) (CARB 2018).

The targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of "percent per capita" reductions in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies, such as statewide road user pricing. The proposed targets call for greater per-

capita GHG emission reductions from SB 375 than are currently in place, which for 2035 translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCSs to achieve the SB 375 targets. CARB foresees that the additional GHG emissions reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies (CARB 2018).

SCAG's Regional Transportation Plan / Sustainable Communities Strategy

SB 375 requires each MPO to prepare a sustainable communities strategy in its regional transportation plan (RTP/SCS). For the SCAG region, the 2024-2050 RTP/SCS, Connect SoCal, was adopted on April 4, 2024, and is an update to the 2020-2045 RTP/SCS. In general, the RTP/SCS outlines a development pattern for the region that, when integrated with the transportation network and other transportation measures and policies, would reduce VMT from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

Connect SoCal focuses on the continued efforts of the previous RTP/SCSs to integrate transportation and land use strategies in development of the SCAG region through the horizon year 2050 (SCAG 2024). Connect SoCal forecasts that the SCAG region will meet its GHG per capita reduction targets of 8 percent by 2020 and 19 percent by 2035. It also forecasts that implementation of the plan will reduce VMT per capita in year 2050 by 6.3 percent compared to baseline conditions for that year. Connect SoCal includes a "Core Vision" that centers on maintaining and better managing the transportation network for moving people and goods, while expanding mobility choices by locating housing, jobs, and transit closer together; and increasing investments in transit and complete streets (SCAG 2024).

Transportation Sector Specific Regulations

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles. (See also the discussion on the update to the Corporate Average Fuel Economy standards at the beginning of this Section 5.5.2 under "Federal.") In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less GHG emissions and 75 percent less smog-forming emissions.

Executive Order S-01-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in CO_2e gram per unit of fuel energy sold in California. The LCFS required a reduction of 2.5 percent in the carbon intensity of California's

transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and uses market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are ZE by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions to 80 percent below 1990 levels.

Executive Order N-79-20

On September 23, 2020, Governor Newsom signed Executive Order N-79-20, whose goal is that 100 percent of in-state sales of new passenger cars and trucks will be ZE by 2035. Additionally, the fleet goals for trucks are that 100 percent of drayage trucks are ZE by 2035, and 100 percent of medium- and heavy-duty vehicles in the state are ZE by 2045, where feasible. The Executive Order's goal for the State is to transition to 100 percent ZE off-road vehicles and equipment by 2035, where feasible.

Renewables Portfolio: Carbon Neutrality Regulations

Senate Bills 1078, 107, and X1-2 and Executive Order S-14-08

A major component of California's Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the state's renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Energy Efficiency Regulations

California Building Energy Code: Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2024 (California Code of Regulations [CCR] Title 24, Part 6). Title 24 Part 6 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods.

In 2024, the CEC adopted the 2025 Building Energy Efficiency Standards, which were subsequently approved by the California Building Standards Commission. The 2025 standards become effective and replace the existing 2022 standards on January 1, 2026. The 2025 standards would require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers.[4] The Building Energy and Efficiency Standards and CALGreen undergo a triennial update with a goal to achieve zero net energy for new buildings by 2030.

California Building Code: Green Building Standards (CALGreen)

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[5] The mandatory provisions of CALGreen became effective January 1, 2011, and were most recently updated in 2024 (2025

[4] California Energy Commission, 2021, Amendments to the Building Energy Efficiency Standards (2022 Energy Code) Draft Environmental Report. CEC-400-2021-077-D.

[5] The green building standards became mandatory in the 2010 edition of the code.

CALGreen update). The 2025 CALGreen update becomes effective on January 1, 2026, and provides updates to the residential and non-residential voluntary measures.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste Diversion Regulations

AB 939: Integrated Waste Management Act of 1989

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code §§ 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

AB 1327

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code §§ 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

AB 1826

In October of 2014, Governor Brown signed AB 1826 requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses and multifamily residential dwellings with five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed with food waste.

Water Efficiency Regulations

SBX7-7

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 required urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

AB 1881: Water Conservation in Landscaping Act

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or an equivalent. AB 1881 also requires the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Short-Lived Climate Pollutant Reduction Strategy

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during the incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Short-Lived Climate Pollutant Reduction Strategy, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use (CARB 2017). In-use on-road rules were expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020. South Coast AQMD is one of the air districts that requires air pollution control technologies for chain-driven broilers, which reduces particulate emissions from these charbroilers by over 80 percent (CARB 2017). Additionally, South Coast AQMD Rule 445 limits installation of new fireplaces in the South Coast Air Basin.

CALIFORNIA'S GREENHOUSE GAS SOURCES AND RELATIVE CONTRIBUTION

In 2024, the statewide GHG emissions inventory was updated for 2000 to 2022 emissions using the GWPs in IPCC's AR4 and reported that California produced 371.1 $MMTCO_2e$ GHG emissions in 2022 (2.4 percent lower than 2021 levels). The 2022 emissions data shows that California is continuing its established long-term trend of GHG emissions declines, despite the anomalous emissions trends from 2019 through 2021, due in large part to the impacts of the COVID-19 pandemic. In 2014, statewide GHG emissions dropped below the 2020 GHG Limit (AB 32 target for year 2020) and have remained below the Limit since that time. Additionally, the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross state product (GSP)) is declining (CARB 2024).

California's transportation sector was the single-largest generator of GHG emissions, producing 37.7 percent of the state's total emissions. Industrial sector emissions made up 19.6 percent, and electric power generation made up 16.1 percent of the state's emissions inventory. Other major sectors of GHG emissions include residential and commercial (10.6 percent), agriculture and forestry (8.0 percent), high GWP (5.7 percent), and recycling and waste (2.2 percent).

Emissions from transportation sector decreased compared to 2021, primarily due to a greater share of fuels used for on-road transportation being produced from non-fossil resources. Industrial sector decreases from 2021 to 2022, most notably in the oil and gas production sector. Electricity emissions also decreased compared to 2021 from the continued growth of in-state solar generation and increases to in-state hydropower and imported wind power. High-GWP gases continue to replace ozone-depleting substances (ODS) being phased out under the 1987 Montreal Protocol and emissions from this sector have been stable from 2020 to 2022 (CARB 2024).

Thresholds of Significance

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

1. The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

3. The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions.[6]

[6] The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

SOUTH COAST AQMD WORKING GROUP

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, South Coast AQMD convened a GHG CEQA Significance Threshold Working Group (Working Group). The South Coast AQMD Working Group (Meeting No. 15) identified a tiered approach for evaluating GHG emissions for development projects where South Coast AQMD is not the lead agency (South Coast AQMD 2010):

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

- **Tier 3.** If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.

  For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, South Coast AQMD requires an assessment of GHG emissions. The South Coast AQMD Working Group identified a screening-level threshold of 3,000 $MTCO_2e$ annually for all land use types or the following land-use-specific thresholds: 1,400 $MTCO_2e$ for commercial projects, 3,500 $MTCO_2e$ for residential projects, or 3,000 $MTCO_2e$ for mixed-use projects. These bright-line thresholds are based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions:

- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

  The South Coast AQMD Working Group has identified an efficiency target for projects that exceed the screening threshold of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan level projects (e.g., program-level projects such as general plans) for the year 2020.[7] The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.

The bright-line screening-level criterion of 3,000 $MTCO_2e$/yr is used as the significance threshold for this project. Therefore, if the project operation-phase emissions exceed the 3,000 $MTCO_2e$/yr threshold, GHG emissions would be considered potentially significant in the absence of mitigation measures.

[7] It should be noted that the Working Group also considered efficiency targets for 2035 for the first time in this Working Group meeting.

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Assumptions Worksheet

CalEEMod Inputs- Woodbridge HS Field Lighting Project, Construction

Name: Woodbridge HS Field Lighting Project, Construction
Project Number: ISD-40
Project Location: 2 Meadowbrook, Irvine, CA 92604
County: South Coast
Climate Zone: 8
Land Use Setting: Urban
Gas Utility Company: Southern California Gas
Electric Utility Company: Southern California Edison
Air Basin: South Coast Air Basin
Air District: South Coast AQMD
SRA: 19 - Saddleback Valley

Project Site Acreage	22.10
Disturbed Site Acreage	0.03

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet	Landscaped Area
Educational	High School	1.50	1000 SQFT	0.03	NA	NA
				0.03		

Notes:
[1] Acreage accounts for installation of 4 lighting poles and trenching area.

Soil Haul

Construction Activities	Volume (CY)[1]	Haul Truck Capacity (CY)[2]	Haul Distance (miles)[2]	Total Trip Ends	Duration (days)	Trip Ends per Day
Site Preparation Export	480	16	20	60	1	60

Notes:
[1] Based on District information.
[2] CalEEMod default used.

Construction Mitigation

SCAQMD Rule 403

Water Unpaved Roads	Frequency:	2	per day
	PM10:	55	% Reduction
	PM25:	55	% Reduction
Water Exposed Area	Frequency:	2	per day
	PM10:	61	% Reduction
	PM25:	61	% Reduction
Unpaved Roads	Vehicle Speed:	25	mph

SCAQMD Rule 1186

	Clean Paved Road	9	% PM Reduction

Southern California Edison Carbon Intensity Factors[1]

Forecasted Year	2026	
CO_2:	346.20	pounds per megawatt hour
CH_4:	0.033	pound per megawatt hour
N_2O:	0.004	pound per megawatt hour

Notes:

[1] CalEEMod default values.

Construction Activities and Schedule Assumptions

* based on schedule provided by District

		CalEEMod Default Construction Schedule		
Construction Activities	**Phase Type**	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Demolition	Demolition	3/20/2026	4/3/2026	11
Site Preparation	Site Preparation	4/4/2026	4/5/2026	1
Grading	Grading	4/6/2026	4/8/2026	3
Building Construction	Building Construction	4/9/2026	8/27/2026	101
Paving	Paving	8/28/2026	9/4/2026	6
Architectural Coating	Architectural Coating	9/5/2026	9/12/2026	5
			Total Days	**176**

Normalization Calculations				
CalEEMod Defaults Construction Duration			**Assumed Construction Duration**	
176	days of construction		3/20/2026	9/22/2026
0.48	years of construction		186	days
5.79	months of construction		6.12	months
		Norm Factor:	1.06	

Construction Schedule (CalEEMod)			
Construction Activities	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Site Preparation	3/20/2026	3/21/2026	1
Utility Trenching	3/22/2026	4/25/2026	25
Field Lighting Installation	4/26/2026	9/22/2026	107

CalEEMod Construction Off-Road Equipment Inputs

Source: CalEEMod defualts (except where noted).

Construction Equipment Details				
Provided Equipment	**CalEEMod Equipment**	**# of Equipment**	**hr/day**	**total trips per day**
Site Preparation				
NA	Graders	1	8	
NA	Tractors/Loaders/Backhoes	1	8	
Worker Trips				5
Vendor Trips				1
Hauling Trips				60
Water Trucks		Acres Disturbed:	1	6
		Onsite Travel (mi/day)	0.83	
Utility Trenching[1]				
NA	Tractors/Loaders/Backhoes	1	8	
NA	Forklifts	1	8	
Worker Trips				5
Vendor Trips				0
Hauling Trips				0
Water Trucks		Acres Disturbed:	0.5	4
		Onsite Travel (mi/day)	0.41	
Field Lighting Installation				
Auger	Bore/Drill Rigs	1	6	
Skid Steer	Skid Steer Loaders	1	6	
Cranes	Crane	1	4	
Backhoe	Tractors/Loaders/Backhoes	1	8	
Worker Trips				10
Vendor Trips				0
Hauling Trips				0
Water Trucks		Acres Disturbed:	0.5	4
		Onsite Travel (mi/day)	0.41	

Notes:

[1] Based on equipment provided from previous field lighting projects.

Water Truck Vendor Trip Calculation

Amount of Water (gal/acre/day)[1]	Water Truck Capacity (gallons)[2]
10,000	4,000

Notes:

[1] Based on data provided in Guidance for Application for Dust Control Permit

Maricopa County Air Quality Department. 2005, June. Guidance for Application of Dust Control Permit. https://www.epa.gov/sites/default/files/2019-04/documents/mr_guidanceforapplicationfordustcontrolpermit.pdf)

[2] Based on standard water truck capacity:
McLellan Industries. 2025, January (access). Water Trucks. https://www.mclellanindustries.com/trucks/water-trucks/

[3] Assumes that dozers, tractors/loaders/backhoes, and graders can disturb 0.50 acres per day and scrapers can disturb 1 acre per day.

CalEEMod Inputs- Woodbridge HS Field Lighting Project, Operation

Name:	Woodbridge HS Field Lighting Project, Operation
Project Number:	ISD-40
Project Location:	2 Meadowbrook, Irvine, CA 92604
County:	South Coast
Climate Zone:	8
Land Use Setting:	Urban
Gas Utility Company:	Southern California Gas
Electric Utility Company:	Southern California Edison
Air Basin:	South Coast Air Basin
Air District:	South Coast AQMD
SRA:	19 - Saddleback Valley

Project Site Acreage	22.10
Disturbed Site Acreage	0.03

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet	Landscaped Area
Educational	High School	1.50	1000 SQFT	0.03	NA	NA
				0.03		

Weekday Trips for AQ

Land Use Type	Average Daily Trips[1,2]	CalEEMod Max Daily Trip Rate
High School	540	**360.00**

Source: Garland & Associates, 2025. Woodbridge HS Field & Lighting Improvements Project.

Notes

[1] Used peak day traffic volumes (450 additional attendees) as conservative estimate for average day vehicle trips.

[2] No trips on weekend as the majority of events would occur during weekdays.

Annual Net Trips Calculation for GHG [1]

Event	Maximum Existing Spectators/Event	Maximum Proposed Specators/Event	Net increase in Spectators	Net Increase Events	Vehicle Trips per Attendee: 1.20 Net Increase in number of Trips per Year
Soccer					
Girls Fresh/Soph Soccer	125	170	450	0	540
Girls Junior Varsity Soccer	125	170	450	0	540
Girls Varsity Soccer	125	170	495	0	594
Boys Fresh/Soph Soccer	125	170	180	0	216
Boys Junior Varsity Soccer	125	170	315	0	378
Boys Varsity Soccer	125	170	360	0	432
Lacrosse					
Girls Junior Varsity Lacrosse	100	150	450	0	540
Girls Varsity Lacrosse	100	150	450	0	540
Boys Junior Varsity Lacrosse	100	150	300	0	360
Boys Varsity Lacrosse	100	150	350	0	420
Flag Football				0	0
Junior Varsity Flag Football	100	150	350	0	420
Varsity Flag Football	100	150	550	0	660
Tackle Football					
Freshman Football	125	225	400	0	480
Junior Varsity Football	125	225	700	0	840
Varsity Football	125	225	500	0	600
Track and Field	0	450	450	4	2,160
Band	210	210	0	0	0
Other Community Events	0	450	450	15	8,100
TOTAL		3,705		19	**17,820**

	CalEEMod Average Daily Trip Rate
Trip Rate for Annual GHG Emissions (Average Daily):	32.64

Source: Garland & Associates, 2025. Woodbridge HS Field & Lighting Improvements Project.

Notes

[1] Based on project description and preliminary District information, new events onsite would be track and field and other community events.

[2] Used maximum proposed spectators for track and field as estimate for proposed spectator amount at other community events.

Water Use (CalEEMod Defaults) [1]

	Indoor (gpy)
High School	49,807

Notes

[1] Assumes 100% aerobic treatment.

Solid Waste (CalEEMod Defaults)

Land Use	Total Solid Waste (tons/yr)
High School	1.95

Lighting Electricity (Use)

Type of games and practices	Total kW [1]	Games and Practices or Events/Season [2]	Hours/Event [3]	KWh (Annual)
Soccer				
Girls Fresh/Soph Soccer	57.52	10	0.8	431
Girls Junior Varsity Soccer	57.52	10	1.0	575
Girls Varsity Soccer	57.52	206	4.0	47,396
Boys Fresh/Soph Soccer	57.52	4	1.0	230
Boys Junior Varsity Soccer	57.52	7	2.5	1,007
Boys Varsity Soccer	57.52	203	4.0	46,706
Lacrosse				
Girls Junior Varsity Lacrosse	57.52	9	2.8	1,424
Girls Varsity Lacrosse	57.52	139	2.0	15,991
Boys Junior Varsity Lacrosse	57.52	6	2.5	863
Boys Varsity Lacrosse	57.52	137	2.0	15,760
Flag Football				
Junior Varsity Flag Football	57.52	7	3.0	1,208
Varsity Flag Football	57.52	53	1.5	4,573
Tackle Football				
Freshman Football	57.52	4	1.5	345
Junior Varsity Football	57.52	7	2.0	805
Varsity Football	57.52	200	4.5	51,768
Track and Field	57.52	64	1.5	5,522
Band	57.52	20	3.0	3,451
Other Community Events	57.52	15	2.3	2,005
			Total Annual kWh	**200,060**

Calculation of GHGs from Field Lighting

CO_2 [4]	CH_4 [4]	N_2O [4]	CO_2e	CO_2e
lbs/Mwh	lbs/MWh	lbs/MWh	lbs/MWh	MT/KWh
346.20	0.033	0.004	348.21	0.0002

CO_2e from Lighting (MT/Year)	**31.60**

Notes:

[1] Based on Musco Lighting Plan for the proposed lighting as provided by the District.

[2] Based on the practice schedule from District.

[3] Based on average hours of lighting per event assuming lighting in use at 4:30 pm.

[4] Based on SCE Carbon Intensity Factors for forecasted year 2026.

Southern California Edison Carbon Intensity Factors[1]

Forecasted Year	2026	
CO_2:	346.20	pounds per megawatt hour
CH_4:	0.033	pound per megawatt hour
N_2O:	0.004	pound per megawatt hour

Notes:

[1] CalEEMod default values.

Type of games and practices	Time of Year (List Months)	Desired Hours of Use	Lighting in use (hrs)[1]	Proposed Practices per Season	Proposed Games per Year	Total Light Use per Year
Sports						
Soccer						
Girls Fresh/Soph Soccer	November to February	3:00PM-5:15PM	0.75		10	8
Girls Junior Varsity Soccer	November to February	3:00PM-5:30PM	1		10	10
Girls Varsity Soccer	November to February	5:00PM-9:00PM	4	195	11	824
Boys Fresh/Soph Soccer	November to February	3:15PM-5:30PM	1		4	4
Boys Junior Varsity Soccer	November to February	3:15PM-7:00PM	2.5		7	18
Boys Varsity Soccer	November to February	5:00PM-9:00PM	4	195	8	812
Lacrosse						
Girls Junior Varsity Lacrosse	February to May	4:15PM-7:15PM	2.75		9	25
Girls Varsity Lacrosse	February to May	5:00PM-7:00PM	2	130	9	278
Boys Junior Varsity Lacrosse	February to May	4:45PM-7:15PM	2.5		6	15
Boys Varsity Lacrosse	February to May	7:00PM-9:00PM	2	130	7	274
Flag Football						
Junior Varsity Flag Football	August to November	4:45PM-7:45PM	3		7	21
Varsity Flag Football	August to November	4:30PM-6:00PM	1.5	42	11	80
Tackle Football						
Freshman Football	August to November	3:30PM-6:00PM	1.5		4	6
Junior Varsity Football	August to November	3:30PM-6:30PM	2		7	14
Varsity Football	August to November	3:00PM-9:00PM	4.5	195	5	900
Track and Field	February to May	3:00PM-6:00PM	1.5	60	4	96
Band	August to November	4:30PM -7:30PM	3	20	0	60
		Total Practies and Games per Season	967	119		3,443
					Hrs/Event	**3.2**

Community Events[2]	**Lighting in use (hrs)**	**Proposed Events per Year**	**Total Light Use per Year**
Other Community Events	2	15	35
		Hrs/Event	**2.3**
		TOTAL	3478

Notes:

[1] Assume lighting in use past 4:30pm and all proposed events would occur with use of lights.

[2] Practices for each type of sport estimated based on preliminary District information, proposed games per year based on Project Description Table 2-2.

[3] Assume 15 number of community events and average lighting use of dusk to 9:00 pm.

Changes to the CalEEMod Defaults - Fleet Mix 2026

Trips 540

Default	HHD	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHD	OBUS	SBUS	UBUS
FleetMix (Model Default Percentage	0.564967096	49.71027076	4.069213942	23.38387221	2.760687657	0.715995813	2.201723866	14.48949724	0.3682476	1.542854495	0.060298003	0.096663297	0.035708401
FleetMix (Converted)	0.005649671	0.497102708	0.040692139	0.233838722	0.027606877	0.007159958	0.022017239	0.144894972	0.003682476	0.015428545	0.00060298	0.000966633	0.000357084
Trips	3	268	22	126	15	4	12	78	2	8	0	1	0
Percent		79%			6%			14%					
without buses/MH	0.005650	0.497103	0.040692	0.233839	0.027607	0.007160	0.022017	0.144895	0.000000	0.015429	0	0.000000	0
Percent		79%			6%			14%					
Adjusted without buses/MH	0.006217	0.497103	0.040692	0.233839	0.030380	0.007879	0.024229	0.144895	0.000000	0.016978	0.000000	0.000000	0.000000
Percent adjusted		80%			6%			14%					
Assumed Mix		97.0%			1.00%			2.00%					
Adjusted with Assumed Mix Percentage	0.001012	0.605871	0.049596	0.285004	0.004943	0.001282	0.029530	0.020000	0.000000	0.002763	0.000000	0.000000	0.000000
Adjusted CalEEMod Input	0.101167	60.587070	4.959574	28.500354	0.494348	0.128211	2.953002	2.000000	0.000000	0.276274	0.000000	0.000000	0.000000
Percent Check:		97%			1%			2%					
Trips	1	327	27	154	3	1	16	11	0	1	0	0	0
		524			*32*			*11*					

Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles that the regional VMT. Assumes a mix of approximately 97% passenger vehicles, 2% medium duty trucks, and 1% heavy duty trucks and buses.

CalEEMod Construction and Operation Model

Woodbridge HS Field Lighting Project Custom Report

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1.1. Basic Project Information

Data Field	Value
Project Name	Woodbridge HS Field Lighting Project
Construction Start Date	3/20/2026
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	17.2
Location	2 Meadowbrook, Irvine, CA 92604, USA
County	Orange
City	Irvine
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5925
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
High School	1.50	1000sqft	0.03	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.53	0.44	4.46	6.96	0.01	0.15	0.32	0.46	0.13	0.06	0.19	—	1,516	1,516	0.06	0.03	0.78	1,528
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.95	0.52	9.09	8.09	0.04	0.24	1.74	1.98	0.22	0.39	0.62	—	5,258	5,258	0.36	0.69	0.24	5,473
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.17	0.14	1.46	2.27	< 0.005	0.05	0.11	0.16	0.04	0.02	0.06	—	501	501	0.02	0.01	0.13	505
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.03	0.27	0.41	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	—	82.9	82.9	< 0.005	< 0.005	0.02	83.7

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.53	0.44	4.46	6.96	0.01	0.15	0.32	0.46	0.13	0.06	0.19	—	1,516	1,516	0.06	0.03	0.78	1,528

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.95	0.52	9.09	8.09	0.04	0.24	1.74	1.98	0.22	0.39	0.62	—	5,258	5,258	0.36	0.69	0.24	5,473
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.17	0.14	1.46	2.27	< 0.005	0.05	0.11	0.16	0.04	0.02	0.06	—	501	501	0.02	0.01	0.13	505
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.03	0.03	0.27	0.41	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	—	82.9	82.9	< 0.005	< 0.005	0.02	83.7

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.60	1.50	0.57	9.37	0.02	0.01	1.87	1.88	0.01	0.47	0.48	1.16	1,791	1,793	0.22	0.07	6.10	1,824
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.59	1.50	0.63	9.07	0.02	0.01	1.87	1.88	0.01	0.47	0.48	1.16	1,710	1,711	0.22	0.07	0.16	1,738
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.13	1.06	0.45	6.57	0.01	0.01	1.32	1.33	0.01	0.33	0.34	1.16	1,237	1,239	0.19	0.05	1.88	1,260
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.21	0.19	0.08	1.20	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	0.19	205	205	0.03	0.01	0.31	209

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.60	1.50	0.57	9.37	0.02	0.01	1.87	1.88	0.01	0.47	0.48	—	1,791	1,791	0.11	0.07	6.10	1,820
Area	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
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Waste	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	1.60	1.50	0.57	9.37	0.02	0.01	1.87	1.88	0.01	0.47	0.48	1.16	1,791	1,793	0.22	0.07	6.10	1,824
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.59	1.50	0.63	9.07	0.02	0.01	1.87	1.88	0.01	0.47	0.48	—	1,710	1,710	0.12	0.07	0.16	1,734
Area	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Waste	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	1.59	1.50	0.63	9.07	0.02	0.01	1.87	1.88	0.01	0.47	0.48	1.16	1,710	1,711	0.22	0.07	0.16	1,738
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.13	1.06	0.45	6.57	0.01	0.01	1.32	1.33	0.01	0.33	0.34	—	1,237	1,237	0.08	0.05	1.88	1,256
Area	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
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Waste	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	1.13	1.06	0.45	6.57	0.01	0.01	1.32	1.33	0.01	0.33	0.34	1.16	1,237	1,239	0.19	0.05	1.88	1,260

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.21	0.19	0.08	1.20	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	205	205	0.01	0.01	0.31	208
Area	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
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.02	0.05	0.07	< 0.005	< 0.005	—	0.08
Waste	—	—	—	—	—	—	—	—	—	—	—	0.17	0.00	0.17	0.02	0.00	—	0.61
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	0.21	0.19	0.08	1.20	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	0.19	205	205	0.03	0.01	0.31	209

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.44	3.74	5.54	0.01	0.19	—	0.19	0.17	—	0.17	—	858	858	0.03	0.01	—	861
Dust From Material Movement	—	—	—	—	—	—	0.22	0.22	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	4.40	4.40	< 0.005	< 0.005	< 0.005	4.63

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.35	2.35	< 0.005	< 0.005	—	2.36
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.39
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.23	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	62.0	62.0	< 0.005	< 0.005	0.01	62.7
Vendor	0.02	< 0.005	0.23	0.11	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	220	220	0.01	0.03	0.01	229
Hauling	0.40	0.06	5.08	2.19	0.03	0.05	1.09	1.14	0.05	0.30	0.36	—	4,113	4,113	0.31	0.65	0.22	4,315
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.63
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.3	11.3	< 0.005	< 0.005	0.01	11.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.10
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.87	1.87	< 0.005	< 0.005	< 0.005	1.96

3.3. Field Lighting Installation (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	0.40	4.28	6.36	0.01	0.15	—	0.15	0.13	—	0.13	—	1,257	1,257	0.05	0.01	—	1,262
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.15	0.15	< 0.005	0.02	0.02	—	2.97	2.97	< 0.005	< 0.005	< 0.005	3.13
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.26	1.86	< 0.005	0.04	—	0.04	0.04	—	0.04	—	369	369	0.01	< 0.005	—	370
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	0.87	0.87	< 0.005	< 0.005	< 0.005	0.92
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.03	0.02	0.23	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	61.0	61.0	< 0.005	< 0.005	—	61.2
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.15
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.53	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	130	130	< 0.005	< 0.005	0.45	132
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	125	125	0.01	0.02	0.32	131
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.8	36.8	< 0.005	< 0.005	0.06	37.3
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.8	36.8	< 0.005	0.01	0.04	38.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.10	6.10	< 0.005	< 0.005	0.01	6.18
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.09	6.09	< 0.005	< 0.005	0.01	6.36
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Utility Trenching (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.20	0.17	1.71	2.94	< 0.005	0.07	—	0.07	0.06	—	0.06	—	443	443	0.02	< 0.005	—	444
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.15	0.15	< 0.005	0.02	0.02	—	2.97	2.97	< 0.005	< 0.005	< 0.005	3.13
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.20	0.17	1.71	2.94	< 0.005	0.07	—	0.07	0.06	—	0.06	—	443	443	0.02	< 0.005	—	444
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.15	0.15	< 0.005	0.02	0.02	—	2.99	2.99	< 0.005	< 0.005	< 0.005	3.16
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.01	0.01	0.12	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.3	30.3	< 0.005	< 0.005	—	30.4
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	< 0.005	< 0.005	0.02	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.02	5.02	< 0.005	< 0.005	—	5.04
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	65.1	65.1	< 0.005	< 0.005	0.23	66.1
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	125	125	0.01	0.02	0.32	131
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.23	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	62.0	62.0	< 0.005	< 0.005	0.01	62.7
Vendor	0.01	< 0.005	0.13	0.07	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	126	126	0.01	0.02	0.01	131
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.30	4.30	< 0.005	< 0.005	0.01	4.36
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.59	8.59	< 0.005	< 0.005	0.01	8.98
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.71	0.71	< 0.005	< 0.005	< 0.005	0.72
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.49
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	1.60	1.50	0.57	9.37	0.02	0.01	1.87	1.88	0.01	0.47	0.48	—	1,791	1,791	0.11	0.07	6.10	1,820
Total	1.60	1.50	0.57	9.37	0.02	0.01	1.87	1.88	0.01	0.47	0.48	—	1,791	1,791	0.11	0.07	6.10	1,820

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	1.59	1.50	0.63	9.07	0.02	0.01	1.87	1.88	0.01	0.47	0.48	—	1,710	1,710	0.12	0.07	0.16	1,734
Total	1.59	1.50	0.63	9.07	0.02	0.01	1.87	1.88	0.01	0.47	0.48	—	1,710	1,710	0.12	0.07	0.16	1,734
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.21	0.19	0.08	1.20	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	205	205	0.01	0.01	0.31	208
Total	0.21	0.19	0.08	1.20	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	205	205	0.01	0.01	0.31	208

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Total	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Total	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.02	0.05	0.07	< 0.005	< 0.005	—	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	0.02	0.05	0.07	< 0.005	< 0.005	—	0.08

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68

Total	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Total	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.17	0.00	0.17	0.02	0.00	—	0.61
Total	—	—	—	—	—	—	—	—	—	—	—	0.17	0.00	0.17	0.02	0.00	—	0.61

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	3/20/2026	3/21/2026	5.00	1.00	—
Field Lighting Installation	Building Construction	4/26/2026	9/22/2026	5.00	107	—

Utility Trenching	Trenching	3/22/2026	4/25/2026	5.00	25.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Field Lighting Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Field Lighting Installation	Bore/Drill Rigs	Diesel	Average	1.00	6.00	83.0	0.50
Field Lighting Installation	Skid Steer Loaders	Diesel	Average	1.00	6.00	71.0	0.37
Field Lighting Installation	Cranes	Diesel	Average	1.00	4.00	367	0.29
Utility Trenching	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Utility Trenching	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	7.00	10.2	HHDT,MHDT
Site Preparation	Hauling	60.0	20.0	HHDT
Site Preparation	Onsite truck	1.00	0.83	HHDT

Utility Trenching	—	—	—	—
Utility Trenching	Worker	5.00	18.5	LDA,LDT1,LDT2
Utility Trenching	Vendor	4.00	10.2	HHDT,MHDT
Utility Trenching	Hauling	0.00	20.0	HHDT
Utility Trenching	Onsite truck	1.00	0.41	HHDT
Field Lighting Installation	—	—	—	—
Field Lighting Installation	Worker	10.0	18.5	LDA,LDT1,LDT2
Field Lighting Installation	Vendor	4.00	10.2	HHDT,MHDT
Field Lighting Installation	Hauling	0.00	20.0	HHDT
Field Lighting Installation	Onsite truck	1.00	0.41	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)

Site Preparation	0.00	480	0.50	0.00	—

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
High School	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

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

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
High School	540	0.00	0.00	140,786	2,678	0.00	0.00	698,071

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	0.00	0.00	—

5.10.3. Landscape Equipment

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
High School	0.00	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
High School	49,807	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
High School	1.95	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
High School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
High School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
High School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Based on PD, see assumptions file.
Construction: Off-Road Equipment	Utility trenching phase based on equipment provided from previous field lighting project. District provided field lighting installation equipment.
Construction: Trips and VMT	See assumptions file for calculated onsite truck trip length and included water truck trips as vendor trips.
Land Use	Accounts for installation of four lighting poles and trenching area on high school campus
Operations: Fleet Mix	Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles that the regional VMT. Assumes a mix of approximately 97% passenger vehicles, 2% medium duty trucks, and 1% heavy duty trucks and buses.
Operations: Vehicle Data	Used peak day traffic volumes (450 additional attendees) as conservative estimate for average day vehicle trips.
Operations: Water and Waste Water	Assume 100 percent aerobic treatment

CalEEMod Annual Operation Model

Woodbridge HS Field Lighting Project Custom Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Woodbridge HS Field Lighting Project
Construction Start Date	3/20/2026
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	17.2
Location	2 Meadowbrook, Irvine, CA 92604, USA
County	Orange
City	Irvine
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5925
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
High School	1.50	1000sqft	0.03	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.14	0.14	0.05	0.85	< 0.005	< 0.005	0.17	0.17	< 0.005	0.04	0.04	1.16	163	164	0.12	0.01	0.55	169
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.14	0.14	0.06	0.82	< 0.005	< 0.005	0.17	0.17	< 0.005	0.04	0.04	1.16	155	157	0.12	0.01	0.01	161
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.10	0.04	0.60	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	1.16	112	114	0.11	< 0.005	0.17	118
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	0.02	0.01	0.11	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	0.19	18.6	18.8	0.02	< 0.005	0.03	19.5

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.14	0.14	0.05	0.85	< 0.005	< 0.005	0.17	0.17	< 0.005	0.04	0.04	—	162	162	0.01	0.01	0.55	165

Area	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
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Waste	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	0.14	0.14	0.05	0.85	< 0.005	< 0.005	0.17	0.17	< 0.005	0.04	0.04	1.16	163	164	0.12	0.01	0.55	169
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.14	0.14	0.06	0.82	< 0.005	< 0.005	0.17	0.17	< 0.005	0.04	0.04	—	155	155	0.01	0.01	0.01	157
Area	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Waste	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	0.14	0.14	0.06	0.82	< 0.005	< 0.005	0.17	0.17	< 0.005	0.04	0.04	1.16	155	157	0.12	0.01	0.01	161
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.10	0.10	0.04	0.60	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	—	112	112	0.01	< 0.005	0.17	114
Area	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
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Waste	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	0.10	0.10	0.04	0.60	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	1.16	112	114	0.11	< 0.005	0.17	118
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.01	0.11	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	18.6	18.6	< 0.005	< 0.005	0.03	18.9
Area	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
Energy	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

Water	—	—	—	—	—	—	—	—	—	—	—	0.02	0.05	0.07	< 0.005	< 0.005	—	0.08
Waste	—	—	—	—	—	—	—	—	—	—	—	0.17	0.00	0.17	0.02	0.00	—	0.61
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	0.02	0.02	0.01	0.11	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	0.19	18.6	18.8	0.02	< 0.005	0.03	19.5

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.14	0.14	0.05	0.85	< 0.005	< 0.005	0.17	0.17	< 0.005	0.04	0.04	—	162	162	0.01	0.01	0.55	165
Total	0.14	0.14	0.05	0.85	< 0.005	< 0.005	0.17	0.17	< 0.005	0.04	0.04	—	162	162	0.01	0.01	0.55	165
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.14	0.14	0.06	0.82	< 0.005	< 0.005	0.17	0.17	< 0.005	0.04	0.04	—	155	155	0.01	0.01	0.01	157
Total	0.14	0.14	0.06	0.82	< 0.005	< 0.005	0.17	0.17	< 0.005	0.04	0.04	—	155	155	0.01	0.01	0.01	157
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.02	0.02	0.01	0.11	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	18.6	18.6	< 0.005	< 0.005	0.03	18.9
Total	0.02	0.02	0.01	0.11	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	18.6	18.6	< 0.005	< 0.005	0.03	18.9

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consum Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Total	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Total	—	—	—	—	—	—	—	—	—	—	—	0.11	0.32	0.43	< 0.005	< 0.005	—	0.51
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.02	0.05	0.07	< 0.005	< 0.005	—	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	0.02	0.05	0.07	< 0.005	< 0.005	—	0.08

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Total	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Total	—	—	—	—	—	—	—	—	—	—	—	1.05	0.00	1.05	0.11	0.00	—	3.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.17	0.00	0.17	0.02	0.00	—	0.61
Total	—	—	—	—	—	—	—	—	—	—	—	0.17	0.00	0.17	0.02	0.00	—	0.61

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
High School	49.0	0.00	0.00	12,765	243	0.00	0.00	63,292

5.10. Operational Area Sources

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	0.00	0.00	—

5.10.3. Landscape Equipment

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
High School	0.00	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
High School	49,807	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
High School	1.95	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
High School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
High School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
High School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Based on PD, see assumptions file.
Construction: Off-Road Equipment	Utility trenching phase based on equipment provided from previous field lighting project. District provided field lighting installation equipment.
Construction: Trips and VMT	See assumptions file for calculated onsite truck trip length and included water truck trips as vendor trips.
Land Use	Accounts for installation of four lighting poles and trenching area on high school campus
Operations: Fleet Mix	Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles that the regional VMT. Assumes a mix of approximately 97% passenger vehicles, 2% medium duty trucks, and 1% heavy duty trucks and buses.
Operations: Vehicle Data	Calculated average trip rate based on net increase in spectators and events, see assumptions file
Operations: Water and Waste Water	Assume 100 percent aerobic treatment

Emissions Worksheet

Regional Construction Emissions Worksheet:

3.1. Site Preparation (2026) - Unmitigated	ROG	NOx	CO	SO$_2$	PM10 Total	PM2.5Total
Onsite	**Winter**					
Off-Road Equipment	0.44	3.74	5.54	0.01	0.19	0.17
Dust from Material Movement	0.00	0.00	0.00	0.00	0.22	0.02
Onsite truck	0.01	0.02	0.01	0.01	0.31	0.03
Total	**0.45**	**3.76**	**5.55**	**0.02**	**0.72**	**0.22**
Offsite						
Worker	0.02	0.02	0.23	0.00	0.07	0.02
Vendor	0.01	0.23	0.11	0.01	0.06	0.02
Hauling	0.06	5.08	2.19	0.03	1.14	0.36
Total	**0.09**	**5.33**	**2.53**	**0.04**	**1.27**	**0.40**
TOTAL	***0.53***	***9.09***	***8.08***	***0.05***	***1.99***	***0.62***

3.3. Field Lighting Installation (2026) - Unmitigated	ROG	NOx	CO	SO$_2$	PM10 Total	PM2.5Total
Onsite	**Summer**					
Off-Road Equipment	0.40	4.28	6.36	0.01	0.15	0.13
Onsite truck	0.01	0.01	0.01	0.01	0.15	0.02
Total	**0.41**	**4.29**	**6.37**	**0.02**	**0.30**	**0.15**
Offsite						
Worker	0.03	0.03	0.53	0.00	0.13	0.03
Vendor	0.01	0.13	0.06	0.01	0.04	0.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.04**	**0.16**	**0.59**	**0.01**	**0.17**	**0.04**
TOTAL	***0.44***	***4.45***	***6.96***	***0.02***	***0.47***	***0.19***

3.5. Utility Trenching (2026) - Unmitigated	ROG	NOx	CO	SO$_2$	PM10 Total	PM2.5Total
Onsite	**Summer**					
Off-Road Equipment	0.17	1.71	2.94	0.01	0.07	0.06
Onsite truck	0.01	0.01	0.01	0.01	0.15	0.02
Total	**0.18**	**1.72**	**2.95**	**0.01**	**0.22**	**0.08**
Offsite						
Worker	0.02	0.02	0.26	0.00	0.07	0.02
Vendor	0.01	0.13	0.06	0.01	0.04	0.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.15**	**0.32**	**0.01**	**0.11**	**0.03**
TOTAL	***0.20***	***1.87***	***3.27***	***0.02***	***0.33***	***0.11***

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Site Preparation	***1***	***9***	***8***	***0***	***2***	***1***
Field Lighting Installation	***0***	***4***	***7***	***0***	***0***	***0***
Utility Trenching	***0***	***2***	***3***	***0***	***0***	***0***
MAX DAILY	**1**	**9**	**8**	**0**	**2**	**1**
Regional Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

Construction LST Worksheet:

3.1. Site Preparation (2026) - Unmitigated	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	3.74	5.54	0.19	0.17
Dust from Material Movement	0.00	0.00	0.22	0.02
Onsite truck	0.02	0.01	0.31	0.03
Total	**3.76**	**5.55**	**0.72**	**0.22**

3.3. Field Lighting Installation (2026) - Unmitigated	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	4.28	6.36	0.15	0.13
Onsite truck	0.01	0.01	0.15	0.02
Total	**4.29**	**6.37**	**0.30**	**0.15**

3.5. Utility Trenching (2026) - Unmitigated	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	1.71	2.94	0.07	0.06
Onsite truck	0.01	0.01	0.15	0.02
Total	**1.72**	**2.95**	**0.22**	**0.08**

	NOx	**CO**	**PM10 Total**	**PM2.5 Total**
Site Preparation	***4***	***6***	***0.72***	***0.22***
≤ 1.00 Acre LST	***91***	***696***	***8.09***	***3.58***
Exceeds LST?	***no***	***no***	***no***	***no***
Field Lighting Installation	***4***	***6***	***0.30***	***0.15***
≤ 1.00 Acre LST	***91***	***696***	***8.09***	***3.58***
Exceeds LST?	***no***	***no***	***no***	***no***
Utility Trenching	***2***	***3***	***0.22***	***0.08***
≤ 1.00 Acre LST	***91***	***696***	***8.09***	***3.58***
Exceeds LST?	***no***	***no***	***no***	***no***

Regional Operation Emissions Worksheet

[1] CalEEMod, Version 2022.1.

Proposed Project

Summer

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	1.50	0.57	9.37	0.02	1.88	0.48
Area	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.50**	**0.57**	**9.37**	**0.02**	**1.88**	**0.48**

Winter

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	1.50	0.63	9.07	0.02	1.88	0.48
Area	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.50**	**0.63**	**9.07**	**0.02**	**1.88**	**0.48**

Max Daily

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	1.50	0.63	9.37	0.02	1.88	0.48
Area	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.50**	**0.63**	**9.37**	**0.02**	**1.88**	**0.48**
Regional Thresholds (lb/day)	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

GHG Emissions Inventory

Proposed Project Buildout

Construction[1]

	$MTCO_2e$
2026	84
Total Construction	**84**
30-Year Amortization[2]	**3**

[1] CalEEMod, Version 2022.1.

[2] Total construction emissions are amortized over 30 years per SCAQMD methodology; SCAQMD. 2009, November 19. Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group Meeting 14. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-14/ghg-meeting-14-main-presentation.pdf?sfvrsn=2.

Operation[1]

	$MTCO_2e$/Year[2]	
	Operations	**%**
Mobile	19	35%
Area	0	0%
Energy	0	0%
Water	0	0%
Solid Waste	1	1%
Refrigerants	0	0%
School Field Lightings[3]	32	59%
30-Year Construction Amortization	3	5%
	54	100%

South Coast AQMD Bright-Line Screening Threshold	**3,000**
Exceed Threshold?	**No**

[1] CalEEMod, Version 2022.1.

[2] MTCO2e=metric tons of carbon dioxide equivalent.

[3] Includes GHG calculations from proposed field lighting.

LST Worksheets

Construction Localized Significance Thresholds: Site Preparation

		NOx & CO		*PM10 & PM2.5*		
SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
19	0.03	25	82	40	130	0.03

Source Receptor	**Saddleback Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25						
NOx	**91**	Tractors	0.5	0.0625	8	1	0.5
CO	**696**	Graders	0.5	0.0625	8	1	0.5
PM10	**8.09**	Dozers	0.5	0.0625			0
PM2.5	**3.58**	Scrapers	1	0.125			0
						Acres	1.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	108	140	218
	1	91	93	108	140	218
		91	93	108	140	218
CO	1	696	833	1234	2376	7724
	1	696	833	1234	2376	7724
		696	833	1234	2376	7724
PM10	1	4	11	24	48	121
	1	4	11	24	48	121
		4	11	24	48	121
PM2.5	1	3	4	8	19	68
	1	3	4	8	19	68
		3	4	8	19	68

Saddleback Valley

0.03 Acres

	25	**50**	**100**	**200**	**500**
NOx	91	93	108	140	218
CO	696	833	1234	2376	7724
PM10	4	11	24	48	121
PM2.5	3	4	8	19	68

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
19	1	19	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Field Lighting Installation

		NOx & CO		*PM10 & PM2.5*		
SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
19	0.03	25	82	40	130	0.03

Source Receptor	**Saddleback Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25						
NOx	**91**	Tractors	0.5	0.0625	8	1	0.5
CO	**696**	Graders	0.5	0.0625			0
PM10	**8.09**	Dozers	0.5	0.0625			0
PM2.5	**3.58**	Scrapers	1	0.125			0
						Acres	0.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	108	140	218
	1	91	93	108	140	218
		91	93	108	140	218
CO	1	696	833	1234	2376	7724
	1	696	833	1234	2376	7724
		696	833	1234	2376	7724
PM10	1	4	11	24	48	121
	1	4	11	24	48	121
		4	11	24	48	121
PM2.5	1	3	4	8	19	68
	1	3	4	8	19	68
		3	4	8	19	68

Saddleback Valley

0.03 Acres

	25	**50**	**100**	**200**	**500**
NOx	91	93	108	140	218
CO	696	833	1234	2376	7724
PM10	4	11	24	48	121
PM2.5	3	4	8	19	68

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
19	1	19	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Utility Trenching

		NOx & CO		*PM10 & PM2.5*		
SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
19	0.03	25	82	40	130	0.03

Source Receptor	**Saddleback Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25						
NOx	**91**	Tractors	0.5	0.0625	8	1	0.5
CO	**696**	Graders	0.5	0.0625			0
PM10	**8.09**	Dozers	0.5	0.0625			0
PM2.5	**3.58**	Scrapers	1	0.125			0
						Acres	0.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	108	140	218
	1	91	93	108	140	218
		91	93	108	140	218
CO	1	696	833	1234	2376	7724
	1	696	833	1234	2376	7724
		696	833	1234	2376	7724
PM10	1	4	11	24	48	121
	1	4	11	24	48	121
		4	11	24	48	121
PM2.5	1	3	4	8	19	68
	1	3	4	8	19	68
		3	4	8	19	68

Saddleback Valley

0.03 Acres

	25	**50**	**100**	**200**	**500**
NOx	91	93	108	140	218
CO	696	833	1234	2376	7724
PM10	4	11	24	48	121
PM2.5	3	4	8	19	68

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
19	1	19	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

APPENDIX D
GEOTECHNICAL REPORT

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SOUTHWEST
Inspection & Testing, Inc.
Continuous Inspection & Materials Testing
441 Commercial Way, La Habra, CA 90631-6168
(562) 941-2990 • (714) 526-8441
FAX (562) 946-0026

GEOTECHNICAL INVESTIGATION REPORT
NEW LIGHT POLES AT THE FOOTBALL FIELD
WOODBRIDGE HIGH SCHOOL
2 MEADOWBROOK, IRVINE, CA 92604

Prepared for:

IRVINE UNIFIED SCHOOL DISTRICT

2015 Roosevelt
Irvine, CA 92620

Southwest #250190

September 7, 2025

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Inspection & Testing, Inc.
Continuous Inspection & Materials Testing
441 Commercial Way, La Habra, CA 90631-6168
(562) 941-2990 • (714) 526-8441
FAX (562) 946-0026

September 7, 2025
Southwest #250190

Jessica Mears
Construction Services Coordinator
Irvine Unified School District
2015 Roosevelt
Irvine, CA 92620

Subject: **Geotechnical Investigation Report**
New Light Poles at the Football Field
Woodbridge High School, 2 Meadowbrook, Irvine, CA 92604

Dear Ms. Mears:

Pursuant to proposal, dated April 4, 2025, which was authorized by Irvine Unified School District, Southwest Inspection & Testing, Inc. (Southwest) has prepared this geotechnical investigation report for four (4) new light poles at the football field and associates site work within the southwestern portion of the Woodbridge High School campus, located at 2 Meadowbrook in the City of Irvine, California. Purposes of this report were to investigate the subsurface geologic profiles at the project site; and to provide geotechnical design parameters and grading recommendations for design, construction of new light pole foundations, site work.

The subject high school campus is located to the north side of the 405 Freeway, along West Yale Loop, within the Woodbridge neighborhood in the central region of the City of Irvine, California. It is bounded by W. Yale Loop on the northwest side, Alton Parkway on the southwest side, San Diego Creek on the northeast side, and Meadowbrook on the southeast side. Surroundings of the school comprise of a developed residential neighborhood comprising of single-family homes, multi-family apartments, and commercial/retail buildings. Topography within the school campus and the surrounding areas is fairly flat. The football field, project area of the proposed light poles, is located within the northwestern portion of the school campus. Layout of the football field and the campus is presented in Figure 1, Project *Area within the School Campus*.

Based on the review of the construction documents and the specifications of the light poles,

prepared by Ruhnau Clarke Architects and Muscoe Sports Lighting (see References), we understand that four (4) new light poles, each 70 feet tall above the ground, will be installed along the perimeter of the existing football and track field. These poles will be founded on deep pier footings. Site work associated with installation of the poles will include chain link fence and gates, equipment pads (e.g., transformer, circuit breaker, lighting control cabinet, etc.), and flatwork (e.g., walkway, patio, etc.). Locations of the proposed light poles along the football field perimeter are shown in Figure 2, *Site Plan and Exploration Map*.

The subject school campus is located in the Tustin Plain geologic region which is part of the Los Angeles Basin Subdivision of the Transverse Ranges Geomorphic Province. The area lies at the southeast edge of the Los Angeles Basin, between the Santa Ana Mountains to the northeast and the San Joaquin Hills to the southwest. The project area is underlain by Holocene to late Pleistocene age young alluvial deposits that area derived from Santa Ana Mountains in form of alluvial fan deposits (Qyf) by Serrano Creek, Borrego Canyon Wash, Round Canyon Wash and Bee Canyon Wash.

Subsurface soils across the project area for light poles, as encountered within exploratory bore holes, comprise of sandy clay with fine sand up to depths 15 to 20 feet. Underlying soils down to depths about 48 feet are sandy clay to clayey sand with variable amount of fine sand and fines (silt, clay). Soils within depths from about 48 to 50 feet become silty fine sand with few clay. Fine contents of the soils within depths 5 to 45 feet vary from 41.5 to 75.1 percent. Subsurface geologic profiles within the project area are found to be fairly consistent.

Groundwater was encountered at a depth 35 feet during this field exploration. Historic shallow groundwater level for this project site is on the order of 20 feet as documented in the state's Seismic Hazard Zone Report for the Tustin quadrangle (CGS, 2001). Guidelines for drilling of pier footings below groundwater, if occurs during construction, are outlined in Appendix C.

Based on our geotechnical investigation findings, it is our opinion that the project site is suitable for installation of deep pier footings for the proposed new light poles and associated site work that will require excavation, grading within shallow depths. Recommendations for grading at shallow depths, drilling for pier footings; geotechnical design parameters for the light pole pier foundations, site work; and construction considerations for this project are outlined in this report.

Subsurface soils will provide adequate bearing, lateral resistance, friction, and support for the proposed light pole foundations and associated site work provided that the structural design and construction of this project are carried out in compliance with the recommendations in this report. There are no geotechnical, geological constraints at the subject site that would adversely impact design and construction of this project.

We appreciate this opportunity of service. If there are any questions regarding this report, please contact our office.

Respectfully submitted,
SOUTHWEST INSPECTION & TESTING, INC.

Zafar Ahmed, PE, GE
Geotechnical Engineer

Esteban Granados
Project Engineer

Distribution: Addressee (via e-mail: jessicamears@iusd.org)

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1.0 INTRODUCTION

1.1 Purpose and Scope

This report presents the findings, conclusions and recommendations from our geotechnical investigation for four (4) new light poles at the football field and associates site work within the northwestern portion of the Woodbridge High School campus, located at 2 Meadowbrook in the City of Irvine, California. Purposes of this report were to investigate the subsurface geologic profiles at the project site; and to provide geotechnical design parameters and grading recommendations for design, construction of new light pole foundations, site work. In preparation of this report, we conducted the following scope of work:

- Review of published reports and maps pertinent to seismic hazards, local and regional geology for areas surrounding the site.
- Perform a site reconnaissance to locate, mark out the exploratory boring locations; and scan the locations with a GPR (Ground Penetrating Radar) equipment.
- Conduct subsurface exploration consisting of four (4) exploratory bore holes, depths varying from 25 to 50 feet, one at each of the four (4) target locations of the proposed new light poles. Drilling of these holes was done utilizing a limited access truck mounted CME 75 drilling rig and hollow stem augers. During field exploration, subsurface geologic profiles were logged and representative soil samples (bulk, ring, and SPT) were collected from different depths.
- Conduct necessary laboratory tests of selected samples in order to characterize the subsurface soils and to obtain geotechnical design parameters.
- Conduct geotechnical evaluations and engineering analyses from the collected data and the laboratory test results. Recommendations for site grading; geotechnical design parameters for pier footings for the light poles, site work; and construction guidelines for the proposed developments are evaluated from the findings and engineering analyses.
- Preparation of this report summarizing our findings, conclusions, and recommendations.

1.2 Site and Project Descriptions

The subject high school campus is located to the north side of the 405 Freeway, along West Yale Loop, within the Woodbridge neighborhood in the central region of the City of Irvine, California. It is bounded by W. Yale Loop on the northwest side, Alton Parkway on the southwest side, San Diego Creek on the northeast side, and Meadowbrook on the southeast side. Surroundings of the school comprise of a developed residential neighborhood comprising of single-family homes, multi-family apartments, and commercial/retail buildings. Topography within the school campus and the surrounding areas is fairly flat. The football field, project area of the proposed light poles, is located within the northwestern portion of the school campus. Layout of the football field and the campus is presented in Figure 1, Project *Area within the School Campus*.

Based on the review of the construction documents and the specifications of the light poles, prepared by Ruhnau Clarke Architects and Muscoe Sports Lighting (see References), we understand that four (4) new light poles, each 70 feet tall above the ground, will be installed along the perimeter of the existing football and track field. These poles will be founded on deep pier footings. Site work associated with installation of the poles will include chain link fence and gates, equipment pads (e.g., transformer, circuit breaker, lighting control cabinet, etc.), and flatwork (e.g., walkway, patio, etc.). Locations of the proposed light poles along the football field perimeter are shown in Figure 2, *Site Plan and Exploration Map*.

1.3 Field Exploration

Prior to the field exploration, a site reconnaissance was performed by a staff from our office in order to assess accessibility of the drilling rig to the site, mark out the exploratory drilling locations, and scan the locations for buried utilities utilizing a GPR (Ground Penetrating Radar) equipment. This site visit was accompanied by the personnel from the District.

On May 13, 2025, we conducted field exploration at the target locations for new light poles along the perimeter of the football field utilizing a CME 75 drilling rig, which was mounted on a limited access truck. The rig was equipped with an automatic trip hammer and 7-inch diameter (outside) hollow-stem augers. Four (4) 8-inch diameter (outside) exploratory bore holes, B-1 to B-4, depths varying from 25 to 50 feet, one at each of the four (4) target locations for the light poles along the perimeter of the football field.

Exploration locations are shown on Figure 2, *Site Plan and Exploration Map*. Drilling rig and crews were provided by One Way Drilling, Inc., whom we retained for this geotechnical investigation.

During drilling for the exploratory bore holes, bulk bag, SPT (Standard Penetration Test) and ring samples were taken at selected depth intervals. Bulk bag samples were taken from the soil cuttings at shallow depths (upper 5 feet) that came out to surface as well as were stuck to the auger stems. Ring samples were obtained utilizing a modified California drive sampler, in accordance with ASTM Test Method D3550. This sampler had 2½ inches I.D. (inside diameter) and 3 inches O.D. (outside diameter). It contained 12 rings - each ring 2½ inches in outside diameter, 1 inch in height. Standard Penetration Tests (SPT) were performed using a 24-inch long, 1⅜-inch I.D., and 2-inch O.D. split spoon sampler in accordance with ASTM Test Method D1586. Both the ring and SPT samplers were driven 18 inches at selected depth intervals with an automatic trip hammer weighing 140 pounds and dropping 30 inches The number of blow counts to achieve the last 12 inches of penetration at each sampling depth are recorded in the "Blows/Ft" column in the field exploration logs (see Appendix A).

Logging and sampling of the above bore holes were conducted by technical staff from our firm. Each of the collected soil samples was inspected and described in general conformance with the Standard Practice for Visual-Manual Procedures as defined in the ASTM Standard D2488. Soil descriptions were entered on the field exploration logs (Appendix A). After logging and sampling, drilled holes were backfilled with excavated soils spoils. Collected soil samples were properly sealed and transported to the laboratory for further evaluations and geotechnical tests.

1.4 Laboratory Tests

In order to evaluate suitability of the subsurface soils and to obtain necessary geotechnical parameters for design, construction of the proposed light poles and site work, we conducted the following laboratory tests on selected soil samples (bulk, ring) at different depths:

- Field moisture content and dry density (ASTM D2216 and ASTM D7263);
- Percent finer than No. 200 Sieve (ASTM D1140);
- Expansion Index (ASTM D4829);

- Maximum dry density and optimum moisture (ASTM D1557);
- Direct Shear (ASTM D3080); and
- Sulfate and chloride contents (California Test Methods 417 and 422).

Brief descriptions of the laboratory test procedures and test results are presented in Appendix B of this report.

2.0 GEOLOGIC AND GEOTECHNICAL FINDINGS

2.1 Regional and Local Geology

The project site is situated within the coastal part of Peninsular Ranges geomorphic province of California. The Peninsular Ranges province extends 900 miles southward from the Los Angeles basin to the tip of Baja California and is characterized by elongated, northwest-trending, mountain ridges separated by straight-sided, sediment-floored valleys. However, the most dominant structural features of the province are the northwest-trending fault zones, most of which either die out, merge with, or are terminated by the steep reverse faults at the southern margin of the Transverse Ranges province. These fault zones separate large elongated blocks, each standing at different structural elevations.

Locally, the subject school campus is located in the Tustin Plain geologic region which is part of the Los Angeles Basin Subdivision of the Transverse Ranges Geomorphic Province. The area lies at the southeast edge of the Los Angeles Basin, between the Santa Ana Mountains to the northeast and the San Joaquin Hills to the southwest. The project area is underlain by Holocene to late Pleistocene age young alluvial deposits that area derived from Santa Ana Mountains in form of alluvial fan deposits (Qyf) by Serrano Creek, Borrego Canyon Wash, Round Canyon Wash and Bee Canyon Wash.

2.2 Subsurface Geologic Profile

Subsurface soils across the project area for light poles, as encountered within exploratory bore holes, comprise of reddish to dark brown, dark gray color sandy clay with fine sand up to depths 15 to 20 feet. Underlying soils down to depths about 48 feet are sandy clay to clayey sand with variable amount of fine sand and fines (silt, clay). These soils are primarily gray in color; whitish gray color soils were encountered at depths about 25 feet, red streaks (mottles) in soil color are encountered within depths from 45 to 48 feet. Soils within depths from about 48 to 50 feet become light reddish brown color silty fine sand with few clay. Fine contents of the soils within depths 5 to 45 feet vary from 41.5 to 75.1 percent.

Subsurface geologic profiles within the project area are found to be fairly consistent. Descriptions of subsurface soils are presented in the field exploration logs (Appendix A). Important geotechnical characteristics of the subsurface soils that are relevant for the proposed developments are discussed briefly in the following subsections.

2.2.1 Field Moisture and Density

Subsurface soils within the explored depths are found to be stiff to very clayey soils, medium dense clayey sand, moist to very moisture above groundwater. Field densities and moistures of the subsurface soils within upper 10 feet vary from 95 to 115.7 pcf; corresponding field moistures vary from 9.6 to 23.5 percent. When compared to the maximum densities of a representative bulk soil samples at shallow depths (see Appendix B), soils within upper 5 feet contain relative compactions varying from 81.6 to 88.7 percent.

2.2.2 Expansion Potential

Subsurface soils within depths 15 to 20 feet below grade are clayey soils – sandy clay with fine sand. Laboratory Expansion Index test (ASTM D4829) results of two representative bulk soil samples from shallow depth (upper 5 feet) indicate medium expansion potential with tested Expansion Index values 62 and 86.

2.2.3 Shear Strength Parameters

Shear strength properties of the subsurface soils are evaluated from laboratory direct shear tests on selected ring samples taken from depths within upper 10 feet. Laboratory test results of the shear strength parameters (cohesion 285 to 600 psf; friction angle 27° to 28°) are found to be within the typical range of values for the sandy clay with fine sand in a stiff sate that are tested. These shear parameters are considered for evaluations of lateral earth pressures, foundation design parameters - bearing, passive resistance, friction coefficient, skin friction along pier foundation surface - as documented in this report.

2.2.4 Excavatability

Based on our investigation findings, shallow excavations for site work for this project are expected to be readily excavatable by conventional earthmoving and trenching equipment that are in good working order.

Subsurface soils within explored depth up to 50 feet below grade are found to be medium dense, stiff to very stiff. Small diameter (8-inch) hollow stem augers with a truck mounted CME-75 drilling rig, which were used during field exploration, could drill through soils down to 50 feet without any refusal. Drilling for deep pier footings for the new light poles with large diameter, sold stem augers is not

likely to encounter difficulty if appropriate drilling equipment is used. Selection and use of appropriate excavation, drilling equipment are up to the contractor's methods and means.

2.2.5 Corrosion Potentials

In general, soil environments that are detrimental to concrete have high concentrations of soluble sulfates and chlorides. Section 1904A of the 2022 CBC refers to the ACI 318 code for durability requirements of concrete. Section 19.3.2 of ACI 318-19 provides guidelines for the concrete mix designs for various exposure levels from soluble sulfate and chloride ions. There are specific requirements on the mix design when the soluble sulfate content of the soil exceeds 0.1 percent by weight or 1,000 parts per million (ppm). As a general practice (e.g., Caltrans guidelines), a threshold limit of chloride ions in the soil environment that may be considered as an external source of chloride to buried concrete is 500 ppm.

One (1) representative bulk soil sample at shallow depth (within upper 5 feet) was tested for sulfate and chloride contents. The test results are summarized in Table 1 below and also, presented in Appendix B. These results indicate that the subsurface soils have low soluble sulfate and chloride contents (Exposure Classes S0 and C1 per Section 19.3.1 of ACI 318-19). These soils are not considered corrosive to buried concrete, which will be in direct contact with soils (e.g., foundations, equipment pads).

Table 1 – Sulfate, Chloride Contents of Onsite Soils

Sample Location	Soil Descriptions	Sulfate (% by wt.)	Chloride (ppm)
B-4 @ 0 – 5 ft.	Sandy Clay w/ fine sand	0.017	120

2.3 Groundwater

Groundwater was encountered at a depth 35 feet during this field exploration. Historic shallow groundwater level for this project site is on the order of 20 feet as documented in the state's Seismic Hazard Zone Report for the Tustin quadrangle (CGS, 2001). Guidelines for drilling of pier footings below groundwater, if occurs during construction, are outlined in Appendix C.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 General

Based on our geotechnical investigation findings, it is our opinion that the project site is suitable for the installation of deep pier footings for the proposed new light poles, and associated site work that will require excavation, grading within shallow depths. Presented hereafter are our recommendations for site grading, drilling; geotechnical design parameters for the deep pier foundations, site work; and construction considerations for this project.

3.2 Earthwork

Earthwork for this project will consist of site clearing, drilling for pier footings for light poles, and shallow excavation/grading for site work. Recommendations for site earthwork are provided in the following paragraphs.

3.2.1 Site Preparation

Prior to the grading, the site shall be cleared grass, topsoils, vegetations, debris, and any remnants of previous construction that interfere with the proposed construction. Demolished debris shall be hauled off the site. Any existing utility lines shall be either removed/rerouted or protected in place if they interfere with the proposed construction. The cavities resulting from removal of utility lines and any buried obstructions shall be properly backfilled and compacted as recommended in Section 3.2.3 of this report.

3.2.2 Excavation

Light Pole Footings – No overexcavation is needed beyond the design embedment depths for pier footings. Bottoms of the pier footing excavations shall be cleaned out of any loose materials, sloughs generated from drilling so that pier tip can be on competent native soils.

Short Post/Pier Footings - For short post/pier footings for chain link fence, gates, no overexcavation is needed beyond the design depths for post/pier footings. Bottoms of the excavations shall be cleaned out of any loose materials, sloughs generated from drilling.

Equipment Pads - For equipment pads (e.g., e.g., transformer, circuit breaker, lighting control cabinet, etc.), excavation shall extend minimum 12 inches below the final soil grade underneath the pads. whichever is deeper. Lateral limits of excavations shall extend minimum 18 inches beyond the outer edges of these pads, wherever not constrained by any existing flatwork.

Flatwork - For flatwork (e.g., walkway, patio, etc.), excavation shall extend minimum 12 inches below the existing grade or minimum 12 inches below the final soil grade (underneath base layer), whichever is deeper. Lateral limits of excavations shall extend minimum 18 inches beyond the outer edges of these improvements, wherever not constrained by any existing flatwork.

After shallow excavations for site work, equipment pads as recommended above, if localized pockets of loose, organic, yielding (pumping) or otherwise unsuitable soils are exposed, recommendations for remedial grading will be provided by the project Geotechnical Engineer depending on the exposed site conditions.

3.2.3 Fill Placement and Compaction

After excavations for site work as described above and prior to placement of fill soils, soils at the excavation bottoms shall be scarified, moisture-conditioned (adding water as needed) to within 2 percent of the optimum moisture, and recompacted in place to minimum 90 percent (ASTM D1557).

Fill soils up to the final soil grade shall be placed in thin lifts - loose lift thickness not exceeding 8 inches - moisture conditioned (adding water as needed) to within 2 percent of the optimum moisture and compacted to minimum 90 percent (ASTM D1557).

Base materials underneath the site work and wherever else used shall be placed at minimum 95 percent compaction (ASTM D1557) with placement moisture within 2 percent of the optimum moisture.

During grading, field density tests shall be taken for the graded fill soils, base materials at the following schedule:

- Minimum one (1) field test for each 500 square feet area for each one (1) foot lift of fill and at the final soil subgrade/base surface.

- Minimum one (1) field test for each 100 linear feet of trench backfill for each one (1) foot lift of fill and at the final grade.

Field density tests may be taken by utilizing a Nuclear Gauge (ASTM D6938) or a combination of both Nuclear Gauge and Sand Cone (ASTM D1556) methods.

3.2.4 Trench Backfill

Utility trenches shall be backfilled with compacted fill in accordance with Section 306-12 of the *Standard Specifications for Public Works Construction* (Greenbook), 2021 Edition. Utility trenches can be backfilled with the excavated onsite soils or import soils that meet the fill soils criteria as outlined Section 3.2.5. Prior to backfilling the trenches, pipes shall be bedded in and covered with import granular materials that has a minimum Sand Equivalent (SE) value of 40 (ASTM D2419). Bedding sands shall be placed by mechanical compaction; jetting shall not be allowed. Soil backfill over the pipe bedding zone shall be placed in thin lifts, moisture conditioned (adding water as needed) to within 2 percent of the optimum moisture, and mechanically compacted to minimum 90 percent (ASTM D1557).

Wherever mechanical compaction as recommended above is not practical due to narrow trenches (width 10 inches or less), alternative backfill method such as placement of pea gravel (size up to 1/2") or sand-cement slurry (minimum 2 sacks of cement for 1 cubic yard mix) may be considered for backfill of utility trenches.

3.2.5 Fill Materials

Excavated onsite soils that are free of organics, debris and oversize particles (larger than 3 inches in the maximum dimension) are suitable for reuse as fill. Import soils, if used, shall be free of organics, debris and oversize particles (larger than 3 inches in the maximum dimension). Additionally, import soils shall not have any corrosion impacts to buried concrete; and shall be non-expansive (Expansion Index less than 20 per ASTM D4829).

Base materials underneath exterior flatwork areas and wherever else use as fill materials may consist of crushed aggregate base or crushed miscellaneous base in conformance with Section 200-2.2 or 200-2.4, respectively, of the *Standard Specifications for Public Works Construction* (Greenbook), 2021 Edition.

Prior to any import, geotechnical consultant shall review the submittals of the import materials and conduct necessary tests in order to confirm the quality of the materials.

3.2.6 Temporary Excavation

Temporary excavations during grading, away from the influence zone of any existing footings (1:1 projection downward and outward from the footing bottoms), may be constructed according to the slope ratios presented in Table 2 below.

Table 2 – Slope Ratio for Temporary Excavation

Maximum Depth of Cut (feet)	Maximum Slope Ratio* (horizontal:vertical)
0 - 5	Vertical
5 - 10	1:1

*Slope ratio assumed to be uniform from top to toe of slope.

Excavated soil spoils, any construction debris, and construction materials shall not be stockpiled and any heavy construction equipment shall not be placed within a distance H from the top of unsupported excavation/trench edge, where H is the depth of the excavation/trench. Height of stockpiles of construction materials, debris shall not exceed 6 feet.

During grading, all applicable requirements in Article 6, Section 1541.1 of the State of California Construction Safety Order (CAL/OSHA, 2020 Edition) shall be met for protection of the construction workers working inside the excavations.

3.3 Seismic Design Parameters

Based on our findings from the field exploration, subsurface geologic profiles across the project area for the new light poles at the football field may be characterized within the category of Site Class D ("Stiff Soil") according to Chapter 20 of ASCE/SEI 7-16 as referred in Section 1613A.2.2 of the 2022 CBC. Based on the nature of occupancy and usage, proposed new classroom building falls into Risk Category II (per Table 1604A.5 of

the 2022 CBC). Seismic design parameters for the above soil profile, Risk Category, and the site location (Latitude: 33.67949°N; Longitude: 117.80819°W at the center of the football field) are determined from the general ground motion analysis in accordance with Section 1613A.2 of the 2022 CBC and Section 11.4.8 of the ASCE 7-16, which are derived from risk-targeted Maximum Considered Earthquake (MCE_R) based spectral response analysis. Pursuant to Supplement 3 of the ASCE 7-16, which is adopted in the CBC 2022, a site-specific ground motion hazard analysis is not required where the value of the parameter SM_1, determined by Eq. (11.4-2) of the ASCE 7-16, is increased by 50% for all applications of SM_1 and the resulting value of the parameter SD_1 determined by Eq. (11.4-4) of the ASCE 7-16 are used for all applications of SD_1. Seismic design parameters are presented in Table 3 below. Proposed light pole foundations and any associated structural improvements for this project shall be designed for the seismic parameters in Table 3.

Table 3 – Seismic Design Parameters

Categorization/Coefficient	Design Value
Site Class	D
Mapped MCE Spectral Acceleration for Short (0.2 Second) Period, S_S	1.255g
Mapped MCE Spectral Acceleration for a 1-Second Period, S_1	0.449g
Short Period (0.2 Second) Site Coefficient, F_a	1.00
Long Period (1 Second) Site Coefficient, F_v	1.85
Adjusted Spectral Response Acceleration at 0.2-Second Period, S_{MS}	1.255g
Adjusted Spectral Response Acceleration at 1-Second Period, S_{M1}	1.247g
Design (5% damped) Spectral Response Acceleration for Short (0.2 Second) Period, S_{DS}	0.837g
Design (5% damped) Spectral Response Acceleration for a 1-Second Period, S_{D1}	0.831g
Seismic Design Category	D

3.4 Pier Foundation – Light Poles

Proposed tall light poles around the perimeter of the football field, each pole about 70 feet above ground, shall be supported on CIDH (Cast-in-drilled-hole) pier footings. Construction guidelines and specifications for drilling the pier holes and placement of concrete, rebars are presented in Appendix C. Geotechnical design parameters for pier foundations are described in the following subsections.

Footing Dimension, Embedment - Pier footings shall have minimum diameter 30 inches and be embedded minimum 20 feet below the ground surface.

Axial Capacity - Axial capacity of pier foundations shall be derived either from skin friction along the pier surface or end bearing at the pier tip, not a combination of both. Allowable downward skin friction along the drilled pier surface may be considered 25H psf up to a maximum value of 500 psf, where H is the pier embedment below the grade beam. upper fill soils. In case of uplift, 16H psf up to a maximum value of 350 psf may be considered as allowable frictional resistance along the pier surface.

Allowable end bearing for pier footings with minimum 20 feet embedment below grade beam may be considered 4,000 psf, which may be increased by 250 psf for each additional foot of embedment, up to a maximum bearing value of 5,000 psf. One-third increase for end bearing is allowed for short-term loads (e.g., seismic, wind loads).

Lateral Capacity - Lateral loads will be resisted by soil's passive resistance and friction between the pier tip and the supporting subgrade. Frictional resistance coefficient of 0.35 may be used at the pier tip. Subgrade soil's passive resistance may be considered 400 psf per foot of pier embedment up to a maximum value of 3,000 psf. Upper 12 inches of the embedment below the top of the ground surface shall be ignored in calculations for passive resistance unless the final grade at the ground is paved with flatwork. The above friction coefficient and passive resistance values have already been reduced by a factor of safety of 1.5. One-third increase of soil's passive resistance is allowed for short-term loads (seismic, wind).

3.5 Lateral Earth Pressures

Any above-grade retaining wall for this project shall be designed for the lateral earth pressures presented in Table 4 below. These pressure values are expressed as equivalent fluid unit weight (in pcf). Backfill for the retaining walls may consist of onsite or import

low expansive soils (Expansion Index less than 50 per ASTM D4829). Backside of the retaining walls (within retained height) shall be waterproofed and appropriate drainage (such as weep holes or French drain) shall be installed behind the walls so that any hydrostatic pressure cannot develop.

Lateral pressure values (active and at-rest) in Table 4 do not contain any factor of safety. Structural design needs to take into consideration applicable Factors of Safety and/or load factors for these lateral pressures. The passive resistance values in Table 4 are allowable values, already reduced by a Factor of Safety 1.5.

Table 4 – Lateral Earth Pressures

Loading Condition	Equivalent Fluid Unit Weight for Level Backfill (psf/ft)
Active	40
At-Rest	60
Passive	200

If a wall can yield enough to mobilize full shear strength of backfill soils, then it can be designed for "active" pressure. If a wall is not allowed to yield under the applied load, the shear strength of the soil cannot be mobilized and the earth pressure will be higher. Such a wall shall be designed for "at rest" condition.

In addition to the above lateral pressures from retained earth, lateral pressures from other surcharge loads such as loads from any adjacent structures shall be added, if those fall within a 1:1 upward and outward projection from the bottom edges of the of retaining wall foundations (in the retained side).

3.6 Concrete Properties

Laboratory test results indicate that the soluble sulfate and chloride contents of subsurface soils at shallow depth (upper 5 feet) are low (Exposure Classes S0 and C1 per Section 19.3.1 of ACI 318-19). These soils are not considered corrosive to buried concrete, which will be in direct contact with soil (e.g., foundations, equipment pads). As a result, there is no restriction on the type of cement and minimum concrete strength from the durability standpoint. Type II/V cement (ASTM C150) is recommended for the concrete mix. Minimum 28-day compressive strength (ASTM C39) of structural concrete for pier

footings, equipment pads shall be 3,000 psi. Water-soluble chloride ion content in the concrete (per ASTM C1218) shall not exceed 0.3 percent of the cement content (by weight).

3.7 Surface Drainage

In order to prevent ponding and intrusion of surface runoff into foundation subgrade soils, positive drainage shall be provided around the pier footings for the light poles. For area drains collecting surface run-off within a flat area, finish grades surrounding the drains shall maintain the following minimum gradient - 2 percent for dirt, landscaped surfaces and 1 percent for paved surfaces (e.g., concrete, paver blocks).

3.8 Observation, Tests during Grading

During excavation and grading for this project, geotechnical observations and field compaction tests shall be performed at the following stages:

- Continuous observation during drilling for deep piers for the light poles;
- After removal of the onsite soils down to the recommended excavation depths for site work;
- During grading for soil subgrade and compaction of base layer for the site work, equipment pads;
- During backfill for utility trenches; and
- Whenever any unusual or unexpected geotechnical conditions are encountered.

3.9 Limitations

This report is not authorized for use by, and is not to be relied upon by any party except, Irvine Unified School District; their design professionals for this project; and their successors and assignees as the owner of this property. Use of or reliance on this report by any other party is at that party's risk. Unauthorized use of or reliance on this report constitutes an agreement to defend and indemnify Southwest Inspection & Testing, Inc. from and against any liability which may arise as a result of such use or reliance.

Geotechnical investigation and relevant engineering evaluations for this project were performed in substantial conformance with the prevailing Building Code (2022 CBC) and general practices of geotechnical engineering in southern California at the time of this report. No other warranty is expressed or implied.

4.0 REFERENCES

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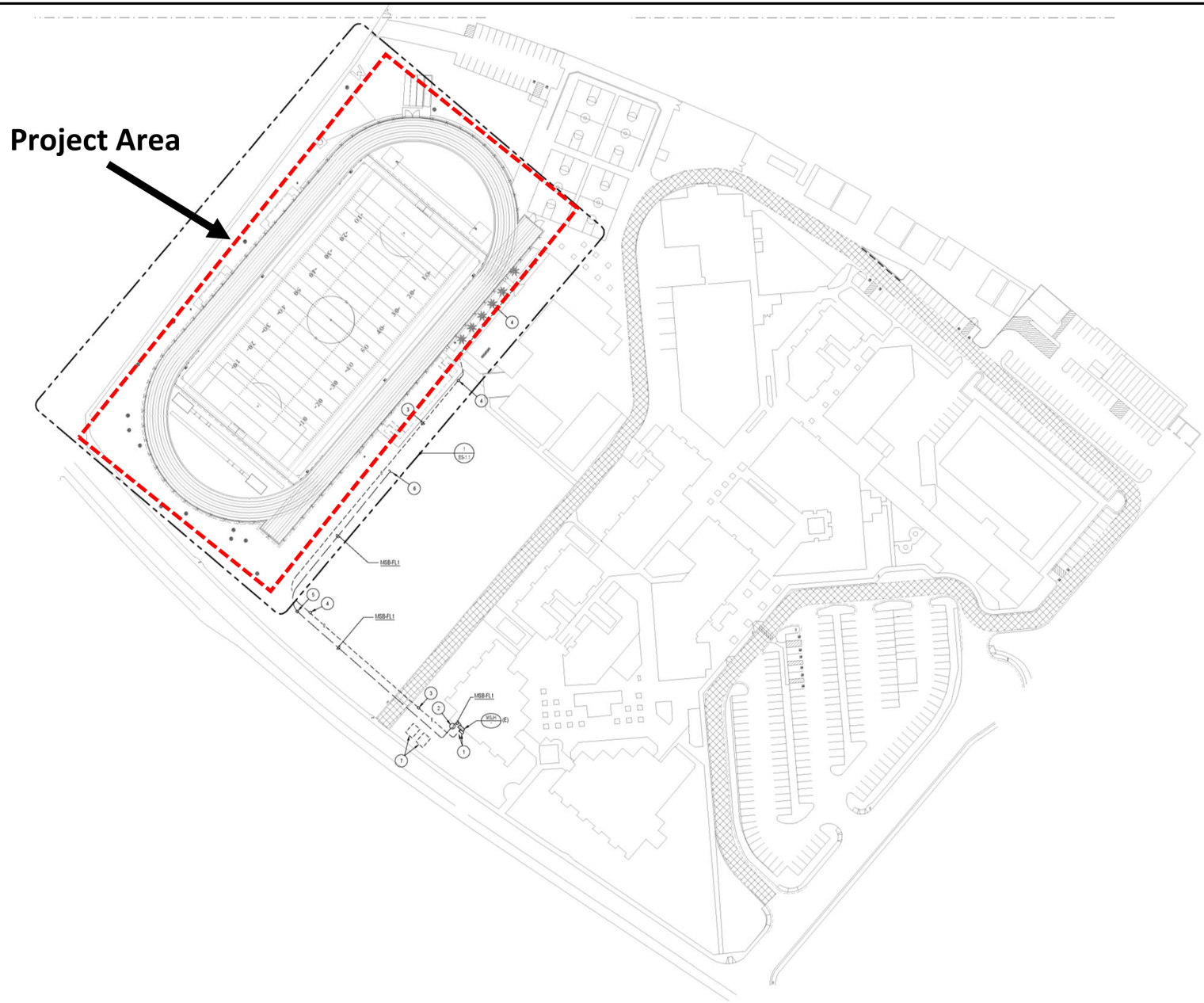

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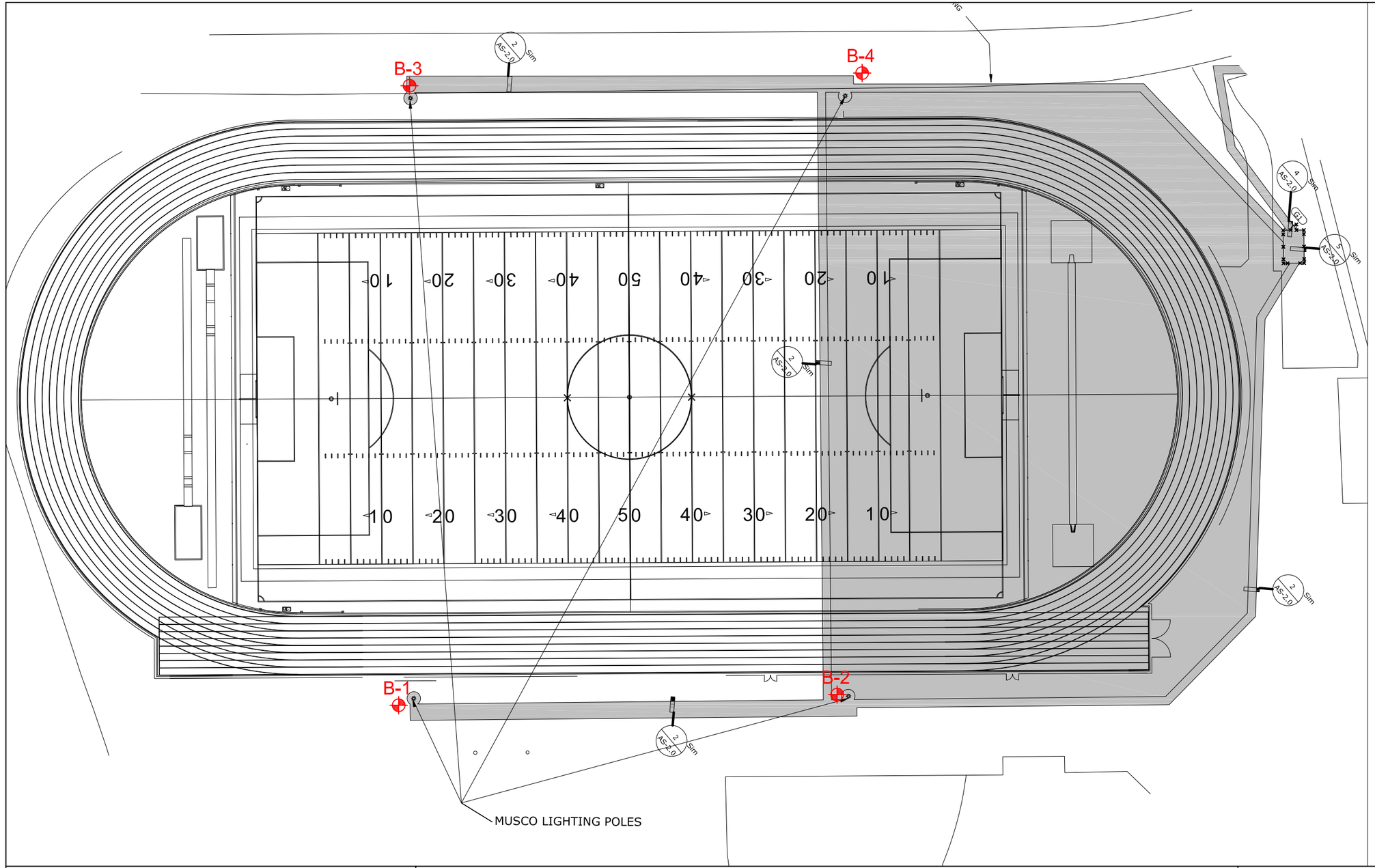
Figure 1 – Project Area within the School Campus

Light Poles at Football Field - Woodbridge High School
2 Meadowbrook, Irvine, CA 92604

Southwest
#250190



Legend

B-4 Exploratory Bore Holes

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Figure 2 - Site Plan and Exploration Map

Light Poles at Football Field at Woodbridge High School
2 Weadowbrook, Irvine, CA 92604

Southwest # 250190

APPENDIX A

Field Exploration Logs

SOUTHWEST
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441 Commercial Way, La Habra, CA 90631-6168
(562) 941-2990 • (714) 526-8441
FAX (562) 946-0026

DRILLING DATE: 5/13/2025 DRILLING METHOD: CME 75 Drilling Rig on a Limited Access Truck

LOGGED BY: TS ELEVATION: ~85 ft LOCATION: See Fig. 2, Site Plan & Exploration Map

LIGHT POLES AT FOOTBALL FIELD - WOODBRIDG HS
2 MEADOWBROOK, IRVINE, CA 92604

BORE HOLE NO. **B-1**

DEPTH (FT)	SAMPLE NUMBER	BLOWS/FT	RING SAMPLE	SPT SAMPLE	BULK SAMPLE	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SOIL DESCRIPTIONS	SOIL TESTS
								Surface covered w/ grass.	
2	R-1	26	◢		X	17.0	110.7	@ 2': Reddish brown sandy Clay (CL) w/ little fine sand, moist.	Expansion Index
	B-1				X				Proctor Density
5	R-2	42	◢		X	18.9	109.6	@ 5': Dark gray sandy Clay w/ fine sand (CL), moist, 75.1% fines.	Percent Fines
10	R-3	25	◢			14.3	115.7	@ 10': Dark gray sandy Clay w/ fine sand (CL), moist, 54.9% fines.	Percent Fines
15	S-1	16		☒				@ 15': Same as above.	
20	S-2	12		☒				@ 20': Gray sandy Clay w/ fine sand (CL), moist.	
25	S-3	27		☒				@ 25': Whitish to light gray sandy Clay (CL) w/ fine sand, moist.	
30	S-4	14		☒				@ 30': Gray clayey fine Sand (SC), moist, 41.5% fines.	Percent Fines
35	S-5	8		☒				@ 35': Gray sandy Clay w/ fine sand (CL), wet. ▽ - Groundwater at ~35 ft.	

SOUTHWEST #250190 **LOG OF BORE HOLE B-1**

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DRILLING DATE: 5/13/2025 DRILLING METHOD: CME 75 Drilling Rig on a Limited Access Truck

LOGGED BY: TS ELEVATION: ~85 ft LOCATION: See Fig. 2, Site Plan & Exploration Map

LIGHT POLES AT FOOTBALL FIELD - WOODBRIDG HS
2 MEADOWBROOK, IRVINE, CA 92604

BORE HOLE NO. **B-1**

DEPTH (FT)	SAMPLE NUMBER	BLOWS/FT	RING SAMPLE	SPT SAMPLE	BULK SAMPLE	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SOIL DESCRIPTIONS	SOIL TESTS
40	S-6	14		X				@ 40': Gray sandy Clay w/ fine sand (CL), wet, 61.1% fines.	Percent Fines
45	S-7	15		X				@ 45': Gray, mottled w/ lt. red, clayey fine Sand (SC), wet, 47.5% fines.	Percent Fines
								48'- 50': Lt. reddish brown silty fine sand w/ few clay (CL), wet.	
50	S-8	24/ (50/6")		X					
								- Depth of drilling 50 ft below the existing grade. - Groundwater was encountered at 35 ft. - After logging & sampling, drilled hole was backfilled w/ excavated soil spoils on 5/13/25.	

SOUTHWEST #250190 **LOG OF BORE HOLE B-1**

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FAX (562) 946-0026

DRILLING DATE: 5/13/2025 DRILLING METHOD: CME 75 Drilling Rig on a Limited Access Truck

LOGGED BY: TS ELEVATION: ~85 ft LOCATION: See Fig. 2, Site Plan & Exploration Map

LIGHT POLES AT FOOTBALL FIELD - WOODBRIDG HS
2 MEADOWBROOK, IRVINE, CA 92604

BORE HOLE NO. **B-2**

DEPTH (FT)	SAMPLE NUMBER	BLOWS/FT	RING SAMPLE	SPT SAMPLE	BULK SAMPLE	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SOIL DESCRIPTIONS	SOIL TESTS
								Surface covered w/ grass.	
2	R-1	29	◢		X	13.8	109.4	@ 2': Reddish brown sandy Clay w/ fine sand (CL), moist.	Expansion Index
	B-1				X				Proctor Density
5	R-2	25	◢		X	19.1	110.3	@ 5': Same as above.	Direct Shear
10	R-3	19	◢			20.0	94.5	@ 10': Dark gray sandy Clay w/ fine sand (CL), moist.	
15	S-1	14		X				@ 15': Same as above.	
20	S-2	20		X				@ 20': Gray sandy Clay w/ fine sand (CL), moist.	
25	S-3	18		X				@ 25': Whitish to light gray sandy Clay (CL), fine sand, moist.	

- Depth of drilling 25 ft below the existing grade.
- Groundwater, bedrock were not encountered.
- After logging & sampling, drilled hole was backfilled w/ excavated soil spoils on 5/13/25.

SOUTHWEST #250190 **LOG OF BORE HOLE B-2**

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DRILLING DATE: 5/13/2025 DRILLING METHOD: CME 75 Drilling Rig on a Limited Access Truck

LOGGED BY: TS ELEVATION: ~85 ft LOCATION: See Fig. 2, Site Plan & Exploration Map

LIGHT POLES AT FOOTBALL FIELD - WOODBRIDG HS
2 MEADOWBROOK, IRVINE, CA 92604

BORE HOLE NO. **B-3**

DEPTH (FT)	SAMPLE NUMBER	BLOWS/FT	RING SAMPLE	SPT SAMPLE	BULK SAMPLE	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SOIL DESCRIPTIONS	SOIL TESTS
								Surface covered w/ grass.	
2	R-1	13				19.3	104.5	@ 2': Dark brown sandy Clay (CL)	
	B-1								
5	R-2	29				18.2	104.7	5' - 20': Dark gray sandy Clay (CL) w/ fine sand, moist.	
10	R-3	15				23.5	95.0		
15	S-1	14							
20	S-2	13						@ 20': Gray sandy Clay to clayey Sand (SC/CL), fine sand, moist.	
25	S-3	14						@ 25': Whitish to light gray sandy Clay (CL), fine sand, moist.	

- Depth of drilling 25 ft below the existing grade.
- Groundwater, bedrock were not encountered.
- After logging & sampling, drilled hole was backfilled w/ excavated soil spoils on 5/13/25.

SOUTHWEST #250190 **LOG OF BORE HOLE B-3**

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(562) 941-2990 • (714) 526-8441
FAX (562) 946-0026

DRILLING DATE: 5/13/2025 DRILLING METHOD: CME 75 Drilling Rig on a Limited Access Truck

LOGGED BY: TS ELEVATION: ~86 ft LOCATION: See Fig. 2, Site Plan & Exploration Map

LIGHT POLES AT FOOTBALL FIELD - WOODBRIDG HS
2 MEADOWBROOK, IRVINE, CA 92604

BORE HOLE NO. **B-4**

DEPTH (FT)	SAMPLE NUMBER	BLOWS/FT	RING SAMPLE	SPT SAMPLE	BULK SAMPLE	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SOIL DESCRIPTIONS	SOIL TESTS
								Surface covered w/ dirt.	
2	R-1	22	✓		✓	9.6	109.4	@ 2': Reddish brown sandy Clay (CL) w/ fine sand, moist.	Sulfate, Chloride
	B-1				✓				
5	R-2	18	✓		✓	18.2	104.7	@ 5': Same as above.	
10	R-3	11	✓			22.5	97.5	@ 10': Dark gray sandy Clay (CL) w/ fine sand, moist.	Direct Shear
15	S-1	15		✓				@ 15': Same as above.	
20	S-2	26		✓				@ 20': Gray clayey fine Sand (SC), moist, 46.0% fines.	Percent Fines
25	S-3	12		✓				@ 25': Whitish to light gray sandy Clay (CL), fine sand, moist.	

- Depth of drilling 25 ft below the existing grade.
- Groundwater, bedrock were not encountered.
- After logging & sampling, drilled hole was backfilled w/ excavated soil spoils on 5/13/25.

SOUTHWEST #250190 **LOG OF BORE HOLE B-4**

APPENDIX B

Laboratory Test Procedures and Test Results

Laboratory Test Procedures and Test Results

Cal Land Engineering and Smith-Emery Laboratories were retained to perform Expansion Index, Proctor density, direct shear, and corrosion potential evaluation tests (sulfate, chloride contents). All the remaining tests were performed in our laboratory. Brief description of the laboratory test procedures and test results are presented hereafter.

Field Moisture and Density: Field moisture contents and dry densities of subsurface soils were determined from the collected ring samples within upper 10 feet in accordance with ASTM Test Methods D2216 and D7263, respectively. These test results are presented in this appendix and also, in the field exploration logs (Appendix A).

Percent Fines (< No. 200): Selected soil samples were wash sieved through a No. 200 U.S. Standard sieve, in accordance with ASTM Test Method D1140, in order to determine the percent fines (silts and clays). These data were used to define the classification for tested samples as well as to aid in engineering analysis. Test results are presented in this appendix and also, summarized in the following table:

Sample Location	Soil Descriptions	Percent Finer than No. 200 Sieve
B-1 @ 5 ft.	Sandy Clay w/ fine sand (CL)	75.1
B-1 @ 10 ft.	Sandy Clay w/ fine sand (CL)	54.9
B-1 @ 30 ft.	Clayey fine Sand (SC)	41.5
B-1 @ 40 ft.	Sandy Clay w/ fine sand (CL)	61.1
B-1 @ 45 ft.	Clayey fine Sand (SC)	47.5
B-2 @ 20 ft.	Clayey fine Sand (SC)	46.0

Expansion Index: Expansion Index (EI) tests were performed for two (2) representative bulk soil samples of the subsurface soils at shallow depth (upper 5 feet) across the project area, in accordance with the ASTM Test Method D4829. Test results are summarized in the following table and also, presented in this appendix:

Sample Locations	Soil Descriptions	Expansion Index	Expansion Potential
B-1 @ 0 – 5 ft.	Sandy Clay w/ fine sand	86	Medium
B-2 @ 0 – 5 ft.	Sandy Clay w/ fine sand	62	Medium

Maximum Density and Optimum Moisture: Maximum dry densities and optimum moisture contents of two (2) representative bulk soil samples, taken from shallow depths (upper 5 feet) across the project area, were determined in accordance with ASTM Test Method D1557. Test results are summarized in the following table and graphical plots of *Water Content* vs. *Dry Density* are attached in this appendix.

Sample Location	Soil Descriptions	Maximum Dry Density (pcf)	Optimum Moisture (%)
B-1 @ 0 – 5 ft.	Sandy Clay w/ fine sand	124.8	9.9
B-2 @ 0 – 5 ft.	Sandy Clay w/ fine sand	128.0	9.0

Direct Shear: Direct shear tests under consolidated drained condition were performed on selected ring samples of the subsurface soils, taken from depths within upper 10 feet across the project area, in accordance with the ASTM Standard D3080. The samples were soaked for a minimum of 24 hours under a surcharge equal to the applied normal force during testing. Samples and specimens were then transferred to the shear box, reloaded, and pore pressures set up in the sample (due to transfer) were allowed to dissipate for a period of approximately one-hour. Following pore pressure dissipation, samples were subjected to shearing forces. The samples were tested under various normal loads by a motor-driven, strain-controlled, direct-shear testing apparatus at a strain rate of 0.005 inch per minute. Shear deformation was recorded until about 0.3 inches of shear displacement was achieved. Ultimate strength was selected from the shear-stress deformation data and plotted to determine the shear strength parameters. Test results are summarized and presented graphically on the *Normal Pressure vs. Shear Stress* plots in this appendix.

Sulfate and Chloride Contents: Soluble sulfate and chloride contents of a representative bulk soil sample from shallow depths (upper 5 feet) are conducted in accordance with California Test Methods 417and 422. The test results are summarized in the following table and also, presented in this appendix.

Sample Location	Soil Descriptions	Sulfate (% by wt.)	Chloride (ppm)
B-4 @ 0 – 5 ft.	Sandy Clay w/ fine sand	0.017	120

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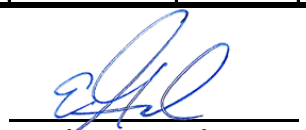
441 Commercial Way, La Habra, CA 90631-6168
(562) 941-2990 • (714) 526-8441
FAX (562) 946-0026

Project Name: Light Poles at Football Field - Woodbridge High School **Project Address:** 2 Meadowbrook, Irvine, CA
Date Sampled: 05.14.25 **Date Tested: 05.16.25** **Sampled By: TS & MA** **Lab Technician: CM**

Field Moisture & Density (ASTM D2216 & D7263)

Bore Hole No.	Sample Depth (ft)	Wet Weight Sample + Ring (gm)	Ring Weight (gm)	Sample weight (gm)	Wet Density (pcf)	Wet wt. Sample + Cup (gm)	Cup Weight (gm)	Wet Weight Sample (gm)	Dry Weight Sample + Cup (gm)	Dry Sample Weight (gm)	Moisture Content (gm)	Moisture Content (%)	Dry Density (pcf)
B-1	2	188.6	38.0	150.6	129.5	236.1	85.6	150.5	214.2	128.6	21.9	**17.0**	**110.7**
	5	189.9	38.3	151.6	130.4	231.6	80.1	151.5	207.5	127.4	24.1	**18.9**	**109.6**
	10	195.9	42.2	153.7	132.2	230.3	76.7	153.6	211.1	134.4	19.2	**14.3**	**115.7**
B-2	2	183.0	38.2	144.8	124.5	230.1	85.4	144.7	212.5	127.1	17.6	**13.8**	**109.4**
	5	191.3	38.6	152.7	131.3	232.4	80.0	152.4	208.0	128.0	24.4	**19.1**	**110.3**
	10	173.8	42.0	131.8	113.4	217.4	85.5	131.9	195.4	109.9	22.0	**20.0**	**94.5**
B-3	2	190.3	45.3	145.0	124.7	221.4	76.4	145.0	197.9	121.5	23.5	**19.3**	**104.5**
	5	186.5	42.6	143.9	123.8	226.9	83.1	143.8	204.8	121.7	22.1	**18.2**	**104.7**
	10	181.0	44.6	136.4	117.3	222.8	86.6	136.2	196.9	110.3	25.9	**23.5**	**95.0**
B-4	2	184.3	44.9	139.4	119.9	217.8	78.4	139.4	205.6	127.2	12.2	**9.6**	**109.4**
	5	191.9	42.7	149.2	128.3	226.9	77.9	149.0	203.8	125.9	23.1	**18.3**	**108.4**
	10	183.8	45.0	138.8	119.4	214.3	77.0	137.3	189.1	112.1	25.2	**22.5**	**97.5**

Submitted By:



Esteban Granados

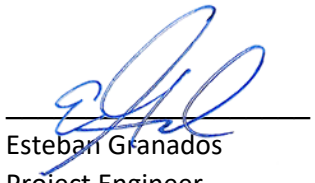
SOUTHWEST
Inspection & Testing, Inc.
Continuous Inspection & Materials Testing
441 Commercial Way, La Habra, CA 90631-6168
(562) 941-2990 • (714) 526-8441
FAX (562) 946-0026

Project Name: **Lightpoles at Football Field - Woodbridge High School**
SITI Job No. : **250190**
Date Sampled: **05.13.25**
Date Tested: **05.20.25**
Sampled By: **TS**
Tested By: **GA**

Percent Passing #200 Wash Sieve (ASTM D1140)

Boring No.	Depth (ft)	Soil Descriptions	Weight Before Wash Sieve (g)	Weight After Wash sieve (g)	% Passing No. 200 Sieve	Remarks
B-1	5	Sandy Clay (CL)	315.2	78.5	75.1	Ring
B-1	10	Sandy Clay (CL)	334.1	150.7	54.9	Ring
B-1	30	Clayey Sand (SC)	410.7	240.3	41.5	SPT
B-1	40	Sandy Clay (CL)	311.3	121.1	61.1	SPT
B-1	45	Clayey Sand (SC)	386.2	202.9	47.5	SPT
B-4	20	Clayey Sand (SC)	325.1	175.4	46.0	SPT

If there are any questions regarding this report, please contact our laboratory.
Sincerely,
SOUTHWEST INSPECTION AND TESTING, INC.



Esteban Granados
Project Engineer

SMITH-EMERY LABORATORIES

791/781 E. Washington Blvd., Los Angeles CA 90021
Tel.No.: (213) 745-5333; Fax No. (213) 741-8621

Expansion Index

UBC 18-2/ASTM D4829-11

Client:	Southwest Inspection & Testing, Inc.					Lab. Ref. No.:	328
Project:	Woodbridge High School					SEL File No.:	49924-1
Location:	2 Meadowbrook Irvine, CA					Date Sampled:	5/16/25
Material Description:	Reddish Brown sandy Clay w/ fine sand					Date Received:	8/5/25
Boring No.:	B-1	Sample No.	1	Depth (ft.)	0-5	Date Tested:	8/12/25
Equipment: Used:		Ring I.D.:	D	Oven:	SE SQ-1	Chamber No.:	2
Balance:	B946769478	5 #Rammer:	SE SH-1	Porestone (g):		Sampled by:	Client
Ring Ht.(in):	**1.0000**	Ave. Specimen Ht:	**1.0271**	1.0280	1.0245	1.0285	1.0275
Ring Dia.(in)	4.01	Initial Vol. ft^3	0.00751	Final Degree of Saturation:		Final Ht Specimen:	1.1156
Test Sample				Assumed sp. gr. of soil =	2.700	Final Vol. ft^3	0.00815

Sample Condition as received: WET [X] DRY [ ]

Assumed sp. gr. of soil =

Moisture content	Original/Initial	After Mold
wt.wet soil + tare (g)	293.4	
dry wt soil + tare wt. (g)	280.1	
tare wt. (g)	160.0	
Moisture content %	11.1	
Retained Sieve #4:	0	
Test Sample Wt.(g):	0.0	
Retained Sieve #4(%):	#DIV/0!	

Moisture and Density Data

	Initial	Final
Wt. of wet soil + Ring	760.9	813.7
Wt. of dry soil+ Ring	721.5	721.5
Wt. of Moisture	39.4	92.2
Wt. of Ring	366.3	366.3
Wt of dry soil	355.2	355.2
Moisture Content %	11.1	26.0
Wet Density (pcf)	115.8	120.9
Dry Density (pcf)	104.2	96.0
% Saturation	49	93

Date	Time	Time Lapsed	Load (kPa)/(psi)		Dial Reading	
Date Tested:	10:00		0	0.0000	0.0000	
8/12/25			6.9 kPa/ 1 psi	0.0000	0.0000	
	10:10	10 min		0.0041	0.0041	
		6sec	Saturated	0.0041		
		15sec		0.0041	0.0000	
		30sec		0.0041	0.0000	
	10:11	1min		0.0041	0.0000	
	10:12	2min		0.0004	0.0037	
	10:14	4min		-0.0060	0.0101	
	10:18	8min		-0.0170	0.0211	
	10:25	15min		-0.0294	0.0335	
	10:40	30min		-0.0367	0.0408	
	11:10	1hr		-0.0671	0.0712	
	12:10	2hrs		-0.0774	0.0815	
	13:10	3hrs		-0.0844	0.0885	REPORT
				EI $_{50}$	86	**86**

*Note: **EI $_{50}$** prepare the test specimen in accordance with 8.1-8.4 to achieve degree of saturation 50 ±2%. The deformation of the specimen is recorded for 24H or until the rate of deformation becomes less than 0.0002 in/h.whichever occur first. A minimum recording time of 3 h is required Report EI zero (0) when result is negative (-).*

% Saturation: (%mc*x* sp.gr*x* Dd)/(sp.gr*x* 62.4-Dd)

TABLE 18-1-B

Expansion Index	Potential Expansion Result	
0 - 20	.....	VERY LOW
21 - 50	.....	LOW
51 - 90	.....	**MEDIUM**
91 - 130	.....	HIGH
> 130	.....	VERY HIGH

PLATE No. B

Tested By: E. Saucedo

Checked By: E. Saucedo

Form: Expansion Index
ASTM D4829-11/UBC-18-2
Rev.4 Date:12-11-13

SMITH-EMERY LABORATORIES

791/781 E. Washington Blvd., Los Angeles CA 90021
Tel.No.: (213) 745-5333; Fax No. (213) 741-8621

Expansion Index

UBC 18-2/ASTM D4829-11

Client:	Southwest Inspection & Testing, Inc.	Lab. Ref. No.:	329
Project:	Woodbridge High School	SEL File No.:	49924-1
Location:	2 Meadowbrook Irvine, CA	Date Sampled:	5/16/25
Material Description:	Reddish Brown Sandy Clay w/ fine sand	Date Received:	8/5/25

Boring No.:	B-2	Sample N	1	Depth (ft.)	0-5	Date Tested:	8/12/25
Equipment: Used:		Ring I.D.:	B	Oven:	SE SQ-1	Chamber No.:	3
Balance:	B946769478	5 #Rammer:	SE SH-1	Porestone (g):		Sampled by:	Client

Ring Ht.(in): **1.0000**	Ave. Specimen Ht:	**1.0236**	1.0235	1.0205	1.0265	1.0240
Ring Dia.(in) 4.01	Initial Vol. ft^3	0.00748	Final Degree of Saturation:		Final Ht Specimen:	1.0868
Test Sample			Assumed sp. gr. of soil =	2.700	Final Vol. ft^3	0.00794

Sample Condition as received: WET [X] DRY [ ]

Assumed sp. gr. of soil =

Moisture content	Original/Initial	After Mold
wt.wet soil + tare (g)	296.8	
dry wt soil + tare wt. (g)	283.8	
tare wt. (g)	160.0	
Moisture content %	10.5	
Retained Sieve #4:	0	
Test Sample Wt.(g):	0.0	
Retained Sieve #4(%):	#DIV/0!	

Moisture and Density Data

	Initial	Final
Wt. of wet soil + Ring	771.4	815.6
Wt. of dry soil+ Ring	733.1	733.1
Wt. of Moisture	38.3	82.5
Wt. of Ring	367.3	367.3
Wt of dry soil	365.8	365.8
Moisture Content %	10.5	22.6
Wet Density (pcf)	119.0	124.3
Dry Density (pcf)	107.7	101.4
% Saturation	50	92

Date	Time	Time Lapsed	Load (kPa)/(psi)		Dial Reading	
Date Tested:	13:10		0	0.0000	0.0000	
8/12/25			6.9 kPa/ 1 psi	0.0000	0.0000	
	13:20	10 min		0.0023	0.0023	
		6sec	Saturated	0.0023		
		15sec		0.0030	-0.0007	
		30sec		0.0031	-0.0008	
	13:21	1min		0.0030	-0.0007	
	13:22	2min		-0.0010	0.0033	
	13:24	4min		-0.0021	0.0044	
	13:28	8min		-0.0082	0.0105	
	13:35	15min		-0.0154	0.0177	
	13:50	30min		-0.0262	0.0285	
	14:20	1hr		-0.0425	0.0448	
	15:20	2hrs		-0.0563	0.0586	
	16:20	3hrs		-0.0609	0.0632	REPORT
				EI $_{50}$	62	**62**

*Note: **EI $_{50}$** prepare the test specimen in accordance with 8.1-8.4 to achieve degree of saturation 50 ±2%. The deformation of the specimen is recorded for 24H or until the rate of deformation becomes less than 0.0002 in/h.whichever occur first. A minimum recording time of 3 h is required Report EI zero (0) when result is negative (-).*

% Saturation: (%mc*x* sp.gr*x* Dd)/(sp.gr*x* 62.4-Dd)

TABLE 18-1-B

Expansion Index	Potential Expansion Result	
0 - 20	.....	VERY LOW
21 - 50	.....	LOW
51 - 90	.....	**MEDIUM**
91 - 130	.....	HIGH
> 130	.....	VERY HIGH

PLATE No. B

Tested By: E. Saucedo

Checked By: E. Saucedo

Form: Expansion Index
ASTM D4829-11/UBC-18-2
Rev.4 Date:12-11-13

Smith-Emery Laboratories

791/781 East Washington Blvd., Los Angeles, CA 90021; Tel (213) 745-5333; Fax (213) 749-8621

LABORATORY COMPACTION CHARACTERISTICS
ASTM D1557-21

Client:	**Southwest Inspection & Testing, Inc.**	Lab. Ref No.:	328
Project:	Woodbridge High School	SEL File No.:	49924-1
Location:	2 Meadowbrook Irvine, CA	Date Sampled:	5/16/25
Soil Class:	Reddish brown Sandy Clay w/ fine sand	Date Received:	8/5/25
Source:		Date tested:	8/11/25
Remarks:	On site	Sampled by:	Client

:if >5 <25% ret'd on Method A&B, <30% Ret'd on Method C rock correction is reqr'd

SCALE: B90416085/B846769478 **Method:** *A (+) #4 ≤25%* [X] OD Gs.: *#DIV/0!* % Ret'd #4: *0.0*

Rammer: **Mechnical** 10 lbs [X] *B (+) 3/8" ≤25%* [ ] MC%: *#DIV/0!* % Pass #4: *100.0*

Drying: Oven [X] Hot plate: [ ] Microwave [ ] *C (+) 3/4" ≤30%* [ ] Assumed Gs.: *2.60* MC% Ret'd: *#DIV/0!*

Calibrated Mold Vol. cc: 940 Water density: 62.428 Soil Gs assumed: *2.62* Water Density: 62.23

Boring No. B-1 Sample No.: **1** Depth (ft): **0-5**

Test no.	1	2	3	4	5
wt. of mold + wet soil (g)	3901.0	4014.0	4054.0	4036.0	
wt. of mold (g)	1977.0	1977.0	1977.0	1977.0	
wt. of wet soil (g)	1924.0	2037.0	2077.0	2059.0	
wet density of soil (g/cc)	2.047	2.167	2.210	2.190	
wt. wet soil + tare (g)	618.2	664.0	664.6	687.5	
wt.dry soil + tare (g)	587.1	620.7	612.6	624.3	
Wt of tare (g)	133.6	135.0	135.3	133.2	
moisture content %	6.9	8.9	10.9	12.9	
Density of soil (pcf)	119.6	124.2	124.4	121.2	
corrected moisture content %					
Density of soil (pcf)corrected					
Dry Density @ ZAV	114	119	124	129	
100 % Saturation @ ZAV	16.4	14.1	12.0	10.1	

sieve size	ret'd (g)	% ret'd
3/4"		
3/8"		
#4	0.0	0.0
Total	**11917.1**	

pass #4 %Moist content 4.9
wet pass #4 (g) 12501.0
dry pass #4 (g) 11917.1

ASTM D127
wt OD (g)
wt SSD
wt in water (g)
OD Gs
moist % #DIV/0!

Max Dry Density (pcf) : **124.8** **OWC %** **9.9** % Saturation: **84.6**

Max Dry Density (pcf) corrected : **OWC % Corr** % Saturation:

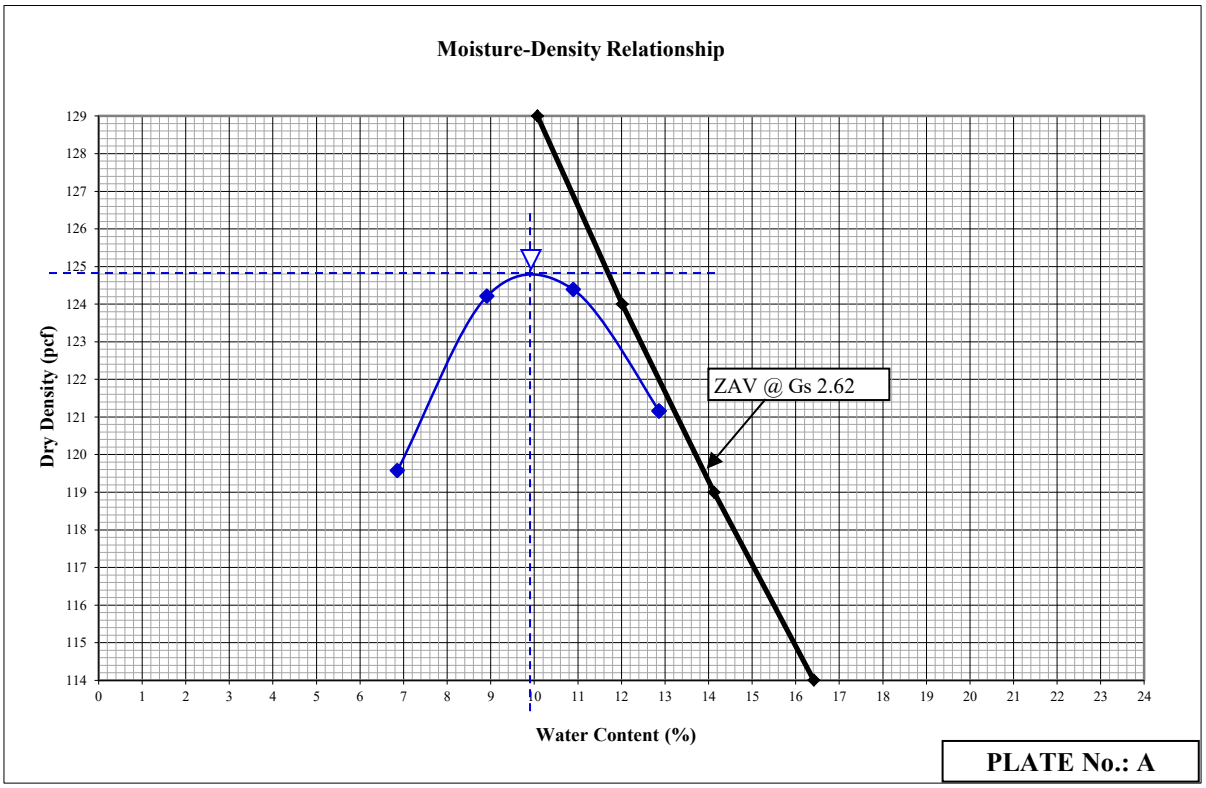


PLATE No.: A

Tested by: E. Saucedo Checked by: E. Saucedo

Smith-Emery Laboratories

791/781 East Washington Blvd., Los Angeles, CA 90021; Tel (213) 745-5333; Fax (213) 749-8621

LABORATORY COMPACTION CHARACTERISTICS
ASTM D1557-21

Client:	**Southwest Inspection & Testing, Inc.**	Lab. Ref No.:	329
Project:	Woodbridge High School	SEL File No.:	49924-1
Location:	2 Meadowbrook Irvine, CA	Date Sampled:	5/16/25
Soil Class:	Reddish brown sandy Clay w/ fine sand	Date Received:	8/5/25
Source:		Date tested:	8/11/25
Remarks:	On site	Sampled by:	Client

:if >5 <25% ret'd on Method A&B, <30% Ret'd on Method C rock correction is reqr'd

SCALE: B90416085/B846769478 **Method:** A (+) #4 ≤25% [X] OD Gs.: *#DIV/0!* % Ret'd #4: *0.0*

Rammer: **Mechnical** 10 lbs [X] B (+) 3/8" ≤25% [ ] MC%: *#DIV/0!* % Pass #4: *100.0*

Drying: Oven [X] Hot plate: [ ] Microwave [ ] C (+) 3/4" ≤30% [ ] Assumed Gs.: *2.60* MC% Ret'd: *#DIV/0!*

Calibrated Mold Vol. cc: 940 Water density: 62.428 Soil Gs assumed: *2.60* Water Density: 62.23

Boring No.: B-2 Sample No.: **1** Depth (ft): **0-5**

Test no.	1	2	3	4	5
wt. of mold + wet soil (g)	3930.0	4050.0	4087.0	4033.0	
wt. of mold (g)	1977.0	1977.0	1977.0	1977.0	
wt. of wet soil (g)	1953.0	2073.0	2110.0	2056.0	
wet density of soil (g/cc)	2.078	2.205	2.245	2.187	
wt. wet soil + tare (g)	741.7	660.6	611.7	697.9	
wt.dry soil + tare (g)	707.0	621.1	567.3	634.3	
Wt of tare (g)	127.2	127.7	127.0	126.7	
moisture content %	6.0	8.0	10.1	12.5	
Density of soil (pcf)	122.4	127.5	127.3	121.3	
corrected moisture content %					
Density of soil (pcf)corrected					
Dry Density @ ZAV	116	121	126	131	
100 % Saturation @ ZAV	15.2	13.0	10.9	9.0	

sieve size	ret'd (g)	% ret'd
3/4"		
3/8"		
#4	0.0	0.0
Total	**13274.0**	

pass #4 %Moist content	4.0
wet pass #4 (g)	13805.0
dry pass #4 (g)	13274.0
ASTM D127	
wt OD (g)	
wt SSD	
wt in water (g)	
OD Gs	
moist %	#DIV/0!

Max Dry Density (pcf) : **128.0** **OWC %** **9.0** % Saturation: **88.6**

Max Dry Density (pcf) corrected : **OWC % Corr** % Saturation:

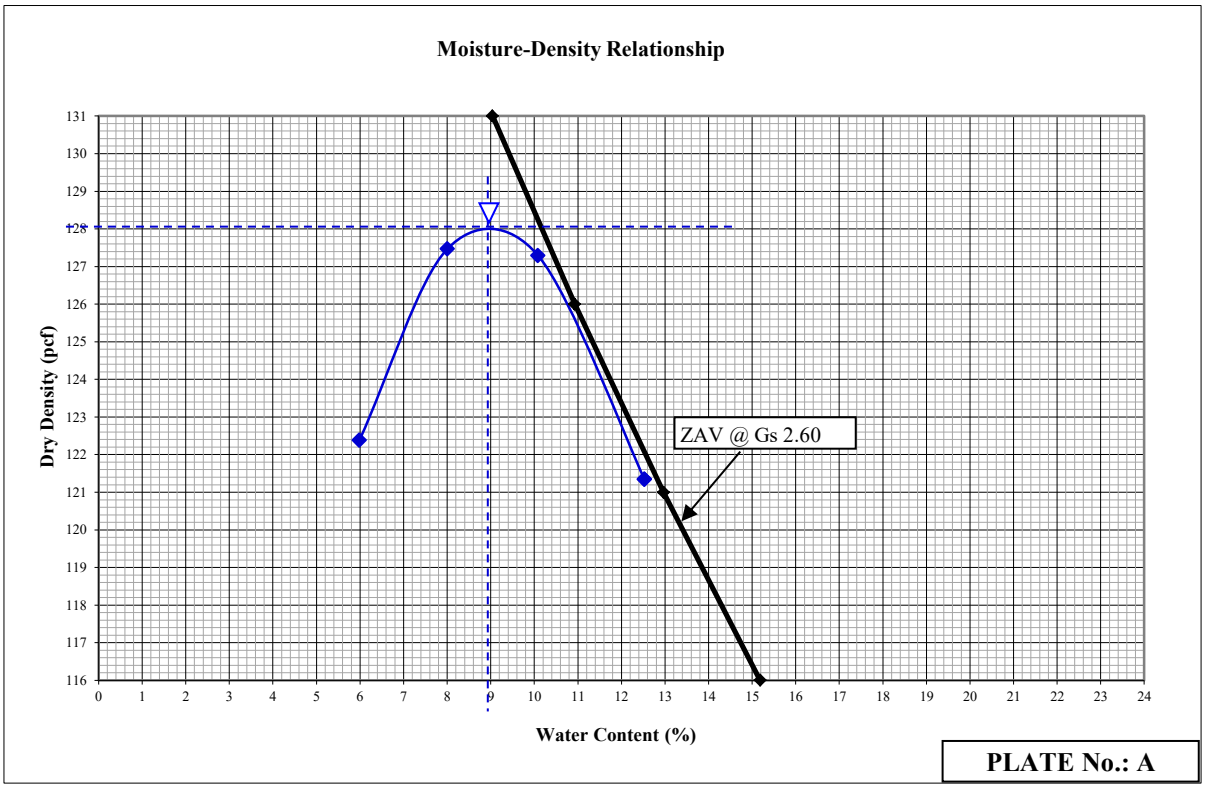
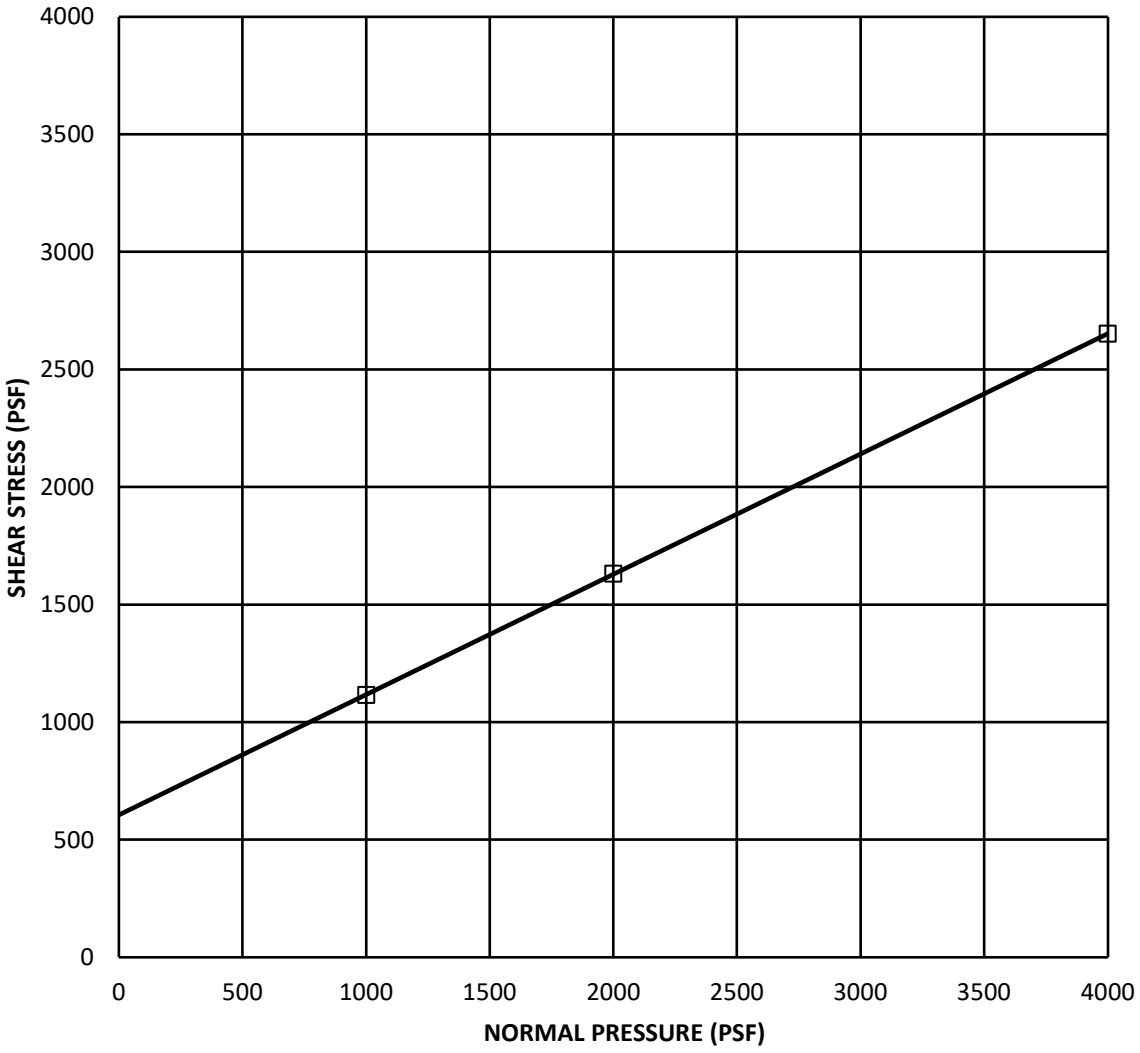


PLATE No.: A

Tested by: E. Saucedo Checked by: E. Saucedo



SYMBOL	BORING NO.	SAMPLE NO.	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE	COHESION (PSF)	FRICTION ANGLE (DEG)
□	B-2	N/A	5.0	RING	CL	600	27

The soil sample's dry density (ASTM D2937) is 108.6 pounds per cubic foot (pcf.)

CLE Project No.: 25-005-005a

Vertical Loads (PSF)	Moisture Content Before Test (%)	Moisture Content After Test (%)
1,000	17.1	20.2
2,000	17.1	19.8
4,000	17.1	19.4

CalLand Engineering and Associates, Inc.
Land Surveying, Geotechnical, Environmental & Civil Engineering

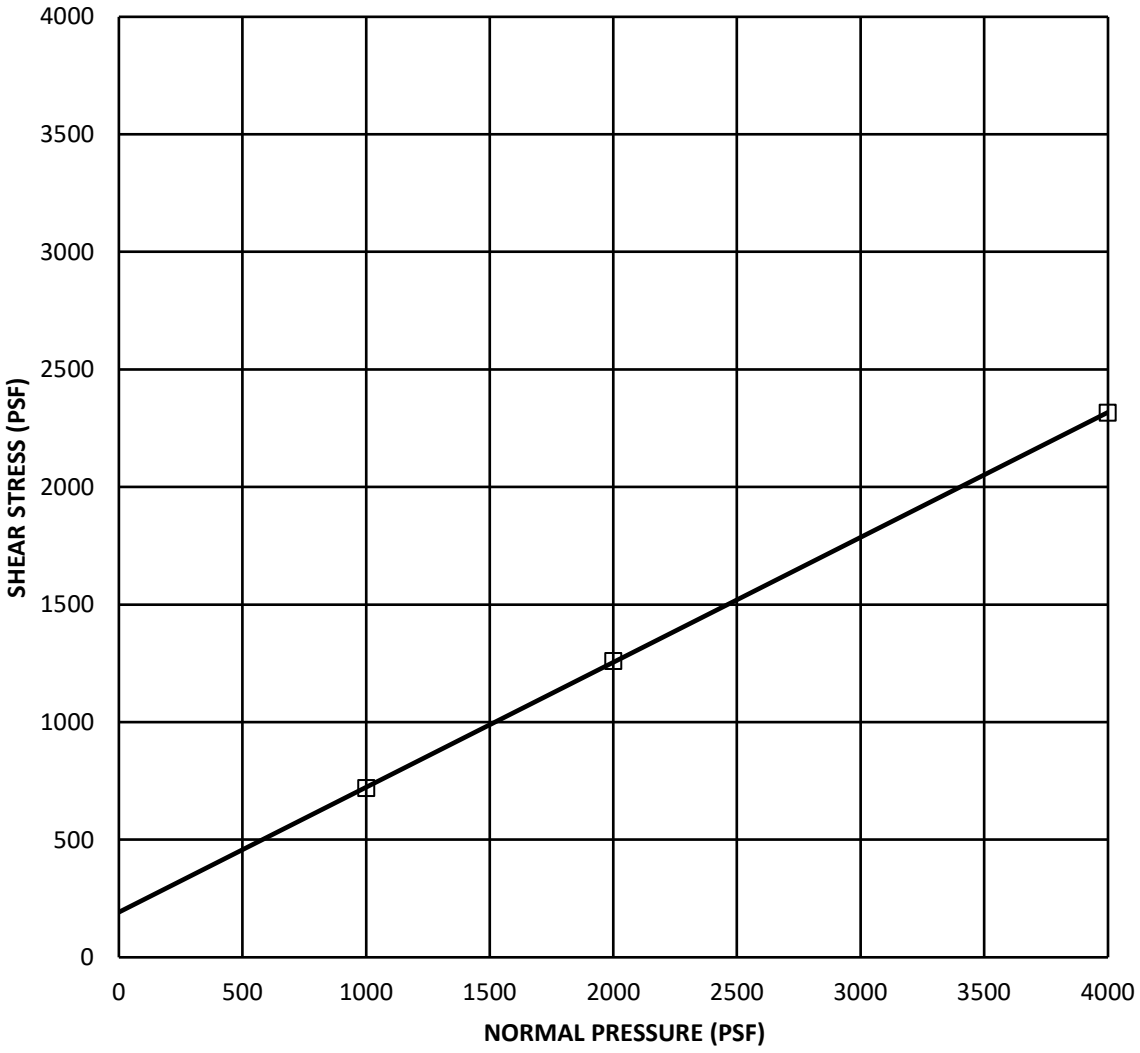
Project Name:
Woodbridge High School

DIRECT SHEAR

(ASTM D3080)

06/25

FIGURE 1



SYMBOL	BORING NO.	SAMPLE NO.	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE	COHESION (PSF)	FRICTION ANGLE (DEG)
□	B-4	N/A	10.0	RING	CL	285	28

The soil sample's dry density (ASTM D2937) is 102.1 pounds per cubic foot (pcf.)

CLE Project No.: 25-005-005a

Vertical Loads (PSF)	Moisture Content Before Test (%)	Moisture Content After Test (%)
1,000	15.3	22.1
2,000	15.3	21.6
4,000	15.3	21.2

CalLand Engineering and Associates, Inc.
Land Surveying, Geotechnical, Environmental & Civil Engineering

Project Name:
Woodbridge High School

DIRECT SHEAR

(ASTM D3080)

06/25

FIGURE 2

June 4, 2025

Southwest Inspection and Testing, Inc.
441 Commercial Way
La Habra, CA 90631

RE: LABORATORY TEST RESULTS/REPORT

Project Name: Light Poles at Stadium - Woodbridge High School
Project Address: N/A
CLE Job No.: 25-005-005a

Ladies and Gentlemen,

We have completed the testing program conducted on sample for above project. The tests were performed in accordance with testing procedures as follows:

TEST	METHOD
Direct Shear	ASTM D3080
Sulfate Content	CT-417
Chloride Content	CT-422

Please see a summary below and the attached figures for the laboratory test results.

Corrosion Potential

Boring No.	Depth [ft.]	Sample Type	Chloride (ppm)	Sulfate (% By Weight)
B-4	0-5	BULK	120	0.0170

We appreciate the opportunity to provide testing services to Southwest Inspection and Testing, Inc. Should you have any questions, please call the undersigned.

Sincerely yours,
Cal Land Engineering & Associates, Inc. (CLE)

Jack C. Lee, GE 2153
Principle Engineer

REGISTERED PROFESSIONAL ENGINEER
JACK C. S. LEE
2153
Exp. 3-31-27
GEOTECHNICAL
STATE OF CALIFORNIA

José María Fuentes
Project Engineer

ATTACHMENTS
Figure 1 – Direct Shear Test Results
Figure 2 – Direct Shear Test Results

Dist: (1) Addressee

APPENDIX C

Specifications Guidelines for Drilled Pier Installation

Specifications Guidelines for Drilled Pier Installation

1. Pursuant to Section 1705A.8 of the 2022 CBC, continuous observation by a representative of the Geotechnical Consultant shall be performed during drilling holes for the CIDH (Cast-In-Drilled-Hole) piers in order to confirm that the dimensions, embedment of the installed piers are compliant with the approved foundation plans, and that pier installation has been performed as specified. The contractor shall provide access and necessary facilities, including droplights, at contractor's expense, to accommodate observations inside the drilled hole.

2. Pier installation shall be performed such that compliance with all safety rules and requirements is achieved. Drilling equipment, casing, reinforcement, and other items required for installation shall be kept a safe distance from all overhead lines.

3. Piers shall be located as indicated on the drawings. Any pier installed, having a center more than three inches off plan centerlines will require structural analysis. The cost of such analysis and any work or materials resulting from correcting an error in location of piers shall be borne by the contractor.

4. Pier shafts shall be plumb to a tolerance of not more than 1 inch in 6 feet.

5. Bottoms of the pier footing excavations shall need to be cleaned out of any loose materials, sloughs generated from drilling so that pier tip can be on competent native soils.

6. At the completion of drilling, secure covers shall be placed over pier excavations. Concrete placement shall begin within 72 hours after completion of drilling. If concrete placement is scheduled later than 72 hours after drilling, contractor is advised to place metal casings inside the drilled holes in order to prevent any potential for caving.

7. If groundwater is not encountered inside the drilled hole, concrete shall not be allowed to fall freely more than 4 feet. Concrete pumps, tremies or other such devices that are used for concrete pour shall comply with this requirement. Concrete placement shall continue until concrete extends to the top of the pier shaft. The tremie or concrete pump pipe may be raised slowly as the pier shaft is filled with concrete, provided that the bottom of the pipe is never more than 4 feet above the level of the concrete.

8. In case groundwater is encountered inside the drilled hole, the tremie or concrete pump pipe shall extend at the bottom of the shaft at the beginning of concrete pour and then, progressively be lifted up as pour continues with the bottom of tremie or pump pipe being buried in concrete all the time. Concrete placement shall be continuous without interruption

and at such a rate that fresh concrete shall not be deposited on hardened concrete and shall not form seams or planes of weakness. Water above fresh concrete shall be pumped out simultaneously with concrete pour.

9. If caving is encountered during drilling, metal casings shall be placed in the drilled hole for support against caving. In case of casing, concrete placement and casing pull out shall be done simultaneously with the bottom of the casing not being pulled above the top of concrete at any time during the entire process.

10. Reinforcement (rebar cage, steel H-beam) shall be rigidly installed and secured to prevent movement or dislodgement during concrete placement.

11. In the event that pier installation procedures specified above are not adhered to, the contractor may be required to core the concrete pier to confirm that a continuous concrete pier has been installed. The cost of such coring shall be borne by the contractor.

12. Any piers deemed defective shall be replaced with substitute piers as directed by the Structural Engineer. The cost of installation of such substitute piers shall be borne by the contractor. Costs associated with analysis and design of substitute piers shall also be borne by the contractor.

APPENDIX E
NOISE AND VIBRATION ANALYSIS

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NOISE MONITORING DATA

Long-Term 24 Hour Continuous Noise Monitoring

Calculation Input Sheet

Project: **ISD-40.0**

Date: **February 20-21, 2025**

Site: **LT-1**

Hour	Leq	Lmax	L50	L90
15:00	68.0	94.5	60.7	53.1
16:00	65.0	81.6	61.4	53.6
17:00	66.4	81.2	63.5	55.9
18:00	65.4	82.5	62.5	55.6
19:00	64.5	88.8	60.6	54.2
20:00	63.1	75.7	59.9	53.6
21:00	64.2	92.1	56.8	50.3
22:00	60.0	76.3	53.5	47.5
23:00	59.4	77.0	50.8	44.8
0:00	57.2	73.0	46.6	42.8
1:00	56.1	78.0	44.2	42.3
2:00	52.2	71.5	45.3	42.7
3:00	51.3	74.8	44.7	43.9
4:00	54.7	75.3	44.6	43.1
5:00	59.1	77.7	49.3	43.5
6:00	62.1	76.5	57.1	49.9
7:00	65.5	81.2	61.6	55.4
8:00	66.2	79.1	63.7	56.3
9:00	64.6	77.4	61.6	55.7
10:00	64.6	83.6	60.8	53.4
11:00	63.7	83.0	59.3	51.4
12:00	63.6	83.5	59.1	52.5
13:00	64.1	80.5	60.3	53.0
14:00	65.5	90.4	60.8	54.0

Averages

	Leq	Lmax	L50	L90
Daytime (7 a.m. - 7 p.m.)	65.4	83.2	61.3	54.2
Evening (7 p.m. - 9 p.m.)	64.0	85.5	59.1	52.7
Nighttime (9 p.m. - 7 a.m.)	58.1	75.6	48.5	44.5

Percentage of Energy

Daytime	76%
Evening	14%
Nighttime	11%

Calculated CNEL, dBA

67.1

Project: ISD-40
User: AC
Location: LT-1

No.	Start Date	Start Time	End Time	Duration	L_{eq}	L_{max}	L_{min}	L_1	L_2	L_5	L_8	L_{10}	L_{25}	L_{50}	L_{90}	L_{95}	L_{99}
1	2/20/2025	3:00 PM	4:00 PM	1:00	68.0	94.5	40.6	75.6	72.9	70.3	69.4	69.0	65.9	60.7	53.1	51.1	41.6
2	2/20/2025	4:00 PM	5:00 PM	1:00	65.0	81.6	48.6	72.3	71.4	70.3	69.5	69.1	66.3	61.4	53.6	52.4	50.5
3	2/20/2025	5:00 PM	6:00 PM	1:00	66.4	81.2	51.0	73.9	72.6	71.3	70.7	70.3	68.1	63.5	55.9	54.6	52.6
4	2/20/2025	6:00 PM	7:00 PM	1:00	65.4	82.5	50.1	72.3	71.4	70.4	69.7	69.4	66.7	62.5	55.6	54.1	52.5
5	2/20/2025	7:00 PM	8:00 PM	1:00	64.5	88.8	49.2	71.5	71.0	69.7	68.7	68.1	64.7	60.6	54.2	53.1	51.2
6	2/20/2025	8:00 PM	9:00 PM	1:00	63.1	75.7	48.4	70.7	69.9	68.9	68.1	67.5	63.9	59.9	53.6	52.3	50.6
7	2/20/2025	9:00 PM	10:00 PM	1:00	64.2	92.1	47.0	71.3	70.0	68.2	67.2	66.6	62.7	56.8	50.3	49.3	48.0
8	2/20/2025	10:00 PM	11:00 PM	1:00	60.0	76.3	45.1	69.7	68.3	66.5	65.2	64.5	59.8	53.5	47.5	46.7	45.8
9	2/20/2025	11:00 PM	12:00 AM	1:00	59.4	77.0	42.6	69.7	68.4	66.4	64.9	63.9	57.8	50.8	44.8	43.9	43.0
10	2/21/2025	12:00 AM	1:00 AM	1:00	57.2	73.0	41.6	68.7	67.6	64.8	62.7	61.5	53.0	46.6	42.8	42.4	41.9
11	2/21/2025	1:00 AM	2:00 AM	1:00	56.1	78.0	41.6	68.8	66.9	62.9	59.5	57.5	48.9	44.2	42.3	42.0	41.8
12	2/21/2025	2:00 AM	3:00 AM	1:00	52.2	71.5	41.6	66.3	63.0	55.8	51.2	49.9	46.2	45.3	42.7	42.3	41.9
13	2/21/2025	3:00 AM	4:00 AM	1:00	51.3	74.8	42.8	64.4	61.5	53.7	49.9	48.6	45.4	44.7	43.9	43.6	43.1
14	2/21/2025	4:00 AM	5:00 AM	1:00	54.7	75.3	42.2	66.7	64.8	61.8	59.0	57.3	49.3	44.6	43.1	42.9	42.6
15	2/21/2025	5:00 AM	6:00 AM	1:00	59.1	77.7	42.4	70.3	68.9	66.0	64.3	63.2	55.9	49.3	43.5	43.2	42.8
16	2/21/2025	6:00 AM	7:00 AM	1:00	62.1	76.5	45.0	71.3	70.3	68.5	67.2	66.5	62.1	57.1	49.9	48.1	46.1
17	2/21/2025	7:00 AM	8:00 AM	1:00	65.5	81.2	48.7	73.3	72.6	71.2	70.2	69.6	66.2	61.6	55.4	54.1	51.6
18	2/21/2025	8:00 AM	9:00 AM	1:00	66.2	79.1	52.4	73.1	72.3	71.3	70.7	70.4	67.5	63.7	56.3	55.1	53.4
19	2/21/2025	9:00 AM	10:00 AM	1:00	64.6	77.4	51.2	72.1	71.2	70.1	69.2	68.7	65.6	61.6	55.7	54.7	53.5
20	2/21/2025	10:00 AM	11:00 AM	1:00	64.6	83.6	47.2	72.2	71.5	70.1	69.4	68.8	65.1	60.8	53.4	52.1	50.0
21	2/21/2025	11:00 AM	12:00 PM	1:00	63.7	83.0	45.5	72.3	70.7	69.5	68.6	68.0	63.9	59.3	51.4	49.8	47.4
22	2/21/2025	12:00 PM	1:00 PM	1:00	63.6	83.5	45.8	71.6	70.8	69.2	68.3	67.7	63.7	59.1	52.5	51.1	48.2
23	2/21/2025	1:00 PM	2:00 PM	1:00	64.1	80.5	46.7	72.7	71.4	69.8	68.5	67.9	64.3	60.3	53.0	51.2	48.7
24	2/21/2025	2:00 PM	3:00 PM	1:00	65.5	90.4	48.4	72.9	71.0	69.6	68.9	68.4	65.3	60.8	54.0	52.6	50.3

LONG-TERM MEASURMENT DATA SHEET

Date: Drop off 2/20 **Pick up** 2/21

Project Number/Name: ISD - 40

Monitoring Personnel: AC

Meter Settings:

☐ Larson Davis Lxt ☐ Larson Davis 820 Meter Kit #: 4

☒ A-Weighted ☒ Slow ☐ Fast ☒ Windscreen

Calibration

LD CAL 200 ☐ SN-14280 ☒ SN-14279 1 kHz Tone Reference Level: ☐ 94 dB ☐ 114 dB

Calibration Offset Prior: 92.9 Offset After: 93.9

Time of meter mounted: 3:21 pm ☒ Photos: Yes

Site Location/Address: South of Woodbridge HS Track/Field; at northern property line of 27 Thunder Trail

Primary Noise Source: Vehicle traffic on Alton Parkway, students & Residents walking & talking, Sports practice @ Woodbridge & Mark Daily Athletic field

Traffic counts in both directions (15 minute)

Roadway	# Lanes	Posted Speed	Autos	MD	HD

Additional Notes:

6' in Wooden fence @ northern property line of residences east of 27 Thunder Trail

Measurement Report

Report Summary

Meter's File Name	LxT_Data.055.s	Computer's File Name	LxT_0005424-20250220 172906-LxT_Data.055.ldbin
Meter	LxT1 0005424	Firmware	2.404
User	AC	Location	ST-1
Job Description	ISD.39		
Note			

Start Time	2025-02-20 17:29:06	Duration	0:15:00.0		
End Time	2025-02-20 17:44:06	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2025-02-20 16:24:33	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	63.8 dB		
LAE	93.3 dB	SEA	--- dB
EA	239.9 µPa²h		
EA8	7.7 mPa²h		
EA40	38.4 mPa²h		
LAS_{peak}	105.1 dB	2025-02-20 17:38:36	
LAS_{max}	77.6 dB	2025-02-20 17:38:37	
LAS_{min}	51.2 dB	2025-02-20 17:30:20	
LA_{eq}	63.8 dB		
LC_{eq}	74.4 dB	LC_{eq} - LA_{eq}	10.6 dB
LAI_{eq}	66.1 dB	LAI_{eq} - LA_{eq}	2.3 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpk > 135.0 dB	0	0:00:00.0
LASpk > 137.0 dB	0	0:00:00.0
LASpk > 140.0 dB	0	0:00:00.0

Community Noise

L_{DN}	L_{Day}	L_{Night}
--- dB	--- dB	0.0 dB

L_{DEN}	L_{Day}	L_{Eve}	L_{Night}
--- dB	--- dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	63.8 dB		--- dB		--- dB	
$L_{S(max)}$	77.6 dB	2025-02-20 17:38:37	--- dB	None	--- dB	None
$L_{S(min)}$	51.2 dB	2025-02-20 17:30:20	--- dB	None	--- dB	None
$L_{Peak(max)}$	105.1 dB	2025-02-20 17:38:36	--- dB	None	--- dB	None

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 2.0	71.7 dB
LAS 8.0	68.1 dB
LAS 25.0	64.3 dB
LAS 50.0	60.1 dB
LAS 90.0	55.2 dB
LAS 99.0	52.4 dB

Project Name: Woodbridge HS Field & Lighting Improvements project Date: 2/20/25

Project Number: 150-40 Monitoring Personnel: AC

Monitoring Site #: ST-1 Time Start: 5:29 End: 5:44

Site Location/Address: South of Mark Daily Athletic Field across Alton Parkway at Alton Parkway & W Yale loop intersection; at walkway between 110 & 107 Green Field

Primary Noise Source: Roadway noise along Alton & W Yale loop; Recreational soccer games at Mark Daily Field; Lacrosse practice on campus track & Field. 47.6m from Mark Daily marquee; 72m from Northwood HS marquee; 23m from campus southbound

Measurement Results	
Percentiles	dBA
Leq	63.8
Lmax	77.6
Lmin	51.2
L2	71.7
L8	68.1
L25	64.3
L50	60.1
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
5:34	loud exhaust Truck	76

Data File: 55 ☒ Photos: yes

Comments (sound walls, height, etc..) No walls

Max Wind Velocity (knots/hr)	Average Wind Velocity (knots/hr)	Temperature (F)	Relative Humidity (%)
	6 mph	65	55

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD

Measurement Report

Report Summary

Meter's File Name	LxT_Data.056.s	Computer's File Name	LxT_0005424-20250220 180728-LxT_Data.056.ldbin
Meter	LxT1 0005424	Firmware	2.404
User	AC	Location	ST-2
Job Description	ISD-40		
Note			

Start Time	2025-02-20 18:07:28	Duration	0:15:00.0		
End Time	2025-02-20 18:22:28	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2025-02-20 16:24:33	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	55.6 dB		
LAE	85.1 dB	SEA	--- dB
EA	36.3 µPa²h		
EA8	1.2 mPa²h		
EA40	5.8 mPa²h		
LAS_{peak}	92.4 dB	2025-02-20 18:13:02	
LAS_{max}	68.6 dB	2025-02-20 18:18:24	
LAS_{min}	45.0 dB	2025-02-20 18:22:14	
LA_{eq}	55.6 dB		
LC_{eq}	66.7 dB	LC_{eq} - LA_{eq}	11.1 dB
LAI_{eq}	57.7 dB	LAI_{eq} - LA_{eq}	2.1 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpk > 135.0 dB	0	0:00:00.0
LASpk > 137.0 dB	0	0:00:00.0
LASpk > 140.0 dB	0	0:00:00.0

Community Noise

L_{DN}	L_{Day}	L_{Night}
--- dB	--- dB	0.0 dB

L_{DEN}	L_{Day}	L_{Eve}	L_{Night}
--- dB	--- dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	55.7 dB		--- dB		--- dB	
$L_{S(max)}$	68.6 dB	2025-02-20 18:18:24	--- dB	None	--- dB	None
$L_{S(min)}$	45.0 dB	2025-02-20 18:22:14	--- dB	None	--- dB	None
$L_{Peak(max)}$	92.4 dB	2025-02-20 18:13:02	--- dB	None	--- dB	None

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 2.0	60.7 dB
LAS 8.0	58.7 dB
LAS 25.0	57.0 dB
LAS 50.0	54.4 dB
LAS 90.0	48.9 dB
LAS 99.0	45.6 dB

Project Name: Woodridge HS Field & Lighting Improvements project Date: 2/20/25

Project Number: 150-40 Monitoring Personnel: AC

Monitoring Site #: ST-2 Time Start: 6:08 End: 6:24

Site Location/Address: Between 31 & 33 Sweet Rain

Primary Noise Source: Roadway noise from Alton Parkway

Measurement Results	
Percentiles	dBA
Leq	55.7
Lmax	68.6
Lmin	45.0
L2	60.7
L8	58.7
L25	57.0
L50	54.4
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA

Data File: 56 ☒ Photos: yes

Comments (sound walls, height, etc..) 6' 4in wooden fence

Max Wind Velocity (knots/hr)	Average Wind Velocity (knots/hr)	Temperature (F)	Relative Humidity (%)
	5 mph	63	61

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD

ISD-40.0 - Construction Noise Modeling Attenuation Calculations

		Levels in dBA Leq		
Phase	**RCNM Reference Noise Level**	**Park Use**	**Residential West**	**Residential South**
Distance in feet	*50*	*225*	*350*	*155*
Site Prep	84	71	67	74
Utility Trenching	84	71	67	74
Distance in feet	*50*	*225*	*350*	*440*
Field Lighting	80	67	63	61

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)

ISD-40.0 - Vibration Damage Attenuation Calculations

Levels, PPV (in/sec)

Distance in feet	**Vibration Reference Level at *25 feet***	**Park Use** *225*	**Residential West** *350*	**Residential South** *155*
Hoe Ram	0.089	0.003	0.002	0.006
Large Bulldozer	0.089	0.003	0.002	0.006
Caisson Drilling	0.089	0.003	0.002	0.006
Loaded Trucks	0.076	0.003	0.001	0.005
Jackhammer	0.035	0.001	0.001	0.002
Small Bulldozer	0.003	0.000	0.000	0.000

ISD-40.0 - Vibration Annoyance Attenuation Calculations

Equipment	Vibration @	Park Use	Residential West	Residential South
Distance in feet	**25 ft**	*225*	*350*	*155*
Hoe Ram	87.0	58.4	52.6	63.2
Large Bulldozer	87.0	58.4	52.6	63.2
Caisson Drilling	87.0	58.4	52.6	63.2
Loaded Trucks	86.0	57.4	51.6	62.2
Jackhammer	79.0	50.4	44.6	55.2
Small Bulldozer	58.0	29.4	23.6	34.2

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/04/2025
Case Description: ISD-40.0 Site Preparation

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor @ 50 ft	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		50.0	0.0
Tractor	No	40	84.0		50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
	Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	83.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/04/2025
Case Description: ISD-40.0 Utility Trenching

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor @ 50 ft	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84.0		50.0	0.0
All Other Equipment > 5 HP	No	50	85.0		50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limit Exceedance (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	85.0	82.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	84.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/04/2025
Case Description: ISD-40.0 Field Lighting

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor @ 50 ft	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Auger Drill Rig	No	20		84.4	50.0	0.0
Crane	No	16		80.6	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Auger Drill Rig	84.4	77.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.4	79.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Traffic Noise Calculator: FHWA 77-108 — **Woodbridge HS (ISD-40.0) Existing 2025 Traffic Noise Traffic Conditions**

	Output						Inputs														Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																		
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From	Segment To	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	52.8	55.6	56.2	6	13	28	Meadowbrook	Alton Parkway	Greg Cops Place	2,000	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
2	52.8	55.6	56.2	6	13	28	Greg Cops Place	Meadowbrook	Lake Road	2,000	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
3	68.9	71.7	72.4	72	155	333	Alton Parkway	the West	West Yale Loop	23,000	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
4	68.9	71.7	72.4	72	155	333	Alton Parkway	West Yale Loop	Meadowbrook	23,000	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
5	68.9	71.7	72.4	72	155	333	Alton Parkway	Meadwobrook	Lake Road	23,000	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
6	69.4	72.1	72.8	77	166	358	Alton Parkway	Lake Road	the East	20,000	50	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
7	56.1	58.9	59.6	10	22	47	Lake Road	the North	Greg Cops Place	4,300	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
8	55.3	58.1	58.8	9	19	42	Lake Road	Greg Cops Place	Alton Parkway	3,600	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
9	49.3	52.1	52.8	4	8	16	Lake Road	Alton Parkway	the South	900	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
10	61.9	64.7	65.3	24	53	114	West Yale Loop	the North	Alton Parkway	6,000	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
11	61.9	64.7	65.3	24	53	114	West Yale Loop	Alton Parkway	the South	6,000	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44

Traffic Noise Calculator: FHWA 77-108	Woodbridge HS (ISD-40.0) Existing 2025 Plus Project Traffic Noise Traffic Conditions																						
	Output						Inputs															Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																			
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From	Segment To	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	53.2	56.0	56.7	6	14	30	Meadowbrook	Alton Parkway	Greg Cops Place	2,200	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
2	53.5	56.2	56.9	7	14	31	Greg Cops Place	Meadowbrook	Lake Road	2,340	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
3	68.9	71.7	72.4	72	155	334	Alton Parkway	the West	West Yale Loop	23,081	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
4	68.9	71.7	72.4	72	155	335	Alton Parkway	West Yale Loop	Meadowbrook	23,178	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
5	68.9	71.7	72.4	72	156	335	Alton Parkway	Meadwobrook	Lake Road	23,200	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
6	69.4	72.2	72.9	78	167	360	Alton Parkway	Lake Road	the East	20,189	50	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
7	56.3	59.0	59.7	10	22	48	Lake Road	the North	Greg Cops Place	4,462	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
8	55.5	58.3	59.0	9	20	43	Lake Road	Greg Cops Place	Alton Parkway	3,778	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
9	49.4	52.1	52.8	4	8	17	Lake Road	Alton Parkway	the South	911	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
	61.9	64.7	65.4	25	53	114	West Yale Loop	the North	Alton Parkway	6,054	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
	61.9	64.7	65.4	25	53	114	West Yale Loop	Alton Parkway	the South	6,043	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44

Traffic Noise Calculator: FHWA 77-108	Woodbridge HS (ISD-40.0) Future 2027 Traffic Noise Traffic Conditions																						
	Output						Inputs															Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour			Segment																
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	From	To	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	52.9	55.7	56.4	6	13	29	Meadowbrook	Alton Parkway	Greg Cops Place	2,080	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
2	52.9	55.7	56.4	6	13	29	Greg Cops Place	Meadowbrook	Lake Road	2,080	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
3	69.0	71.8	72.5	74	159	342	Alton Parkway	the West	West Yale Loop	23,900	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
4	69.0	71.8	72.5	74	159	342	Alton Parkway	West Yale Loop	Meadowbrook	23,900	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
5	69.0	71.8	72.5	74	159	342	Alton Parkway	Meadwobrook	Lake Road	23,900	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
6	69.5	72.3	73.0	79	171	368	Alton Parkway	Lake Road	the East	20,800	50	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
7	56.3	59.1	59.7	10	22	48	Lake Road	the North	Greg Cops Place	4,470	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
8	55.5	58.3	59.0	9	20	43	Lake Road	Greg Cops Place	Alton Parkway	3,740	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
9	49.5	52.3	53.0	4	8	17	Lake Road	Alton Parkway	the South	940	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
	62.0	64.8	65.5	25	54	117	West Yale Loop	the North	Alton Parkway	6,240	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
	62.0	64.8	65.5	25	54	117	West Yale Loop	Alton Parkway	the South	6,240	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44

Traffic Noise Calculator: FHWA 77-108 — **Woodbridge HS (ISD-40.0) Future 2027 Plus Project Traffic Noise Traffic Conditions**

	Output						Inputs														Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour			Segment															
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	From	To	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	53.3	56.1	56.8	7	14	31	Meadowbrook	Alton Parkway	Greg Cops Place	2,280	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
2	53.6	56.4	57.1	7	15	32	Greg Cops Place	Meadowbrook	Lake Road	2,420	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
3	69.1	71.9	72.5	74	159	343	Alton Parkway	the West	West Yale Loop	23,981	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
4	69.1	71.9	72.6	74	159	343	Alton Parkway	West Yale Loop	Meadowbrook	24,078	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
5	69.1	71.9	72.6	74	160	344	Alton Parkway	Meadwobrook	Lake Road	24,100	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
6	69.6	72.4	73.0	80	172	370	Alton Parkway	Lake Road	the East	20,989	50	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
7	56.4	59.2	59.9	11	23	49	Lake Road	the North	Greg Cops Place	4,632	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
8	55.7	58.5	59.2	9	20	44	Lake Road	Greg Cops Place	Alton Parkway	3,918	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
9	49.5	52.3	53.0	4	8	17	Lake Road	Alton Parkway	the South	951	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
	62.1	64.9	65.6	25	54	117	West Yale Loop	the North	Alton Parkway	6,294	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
	62.1	64.9	65.5	25	54	117	West Yale Loop	Alton Parkway	the South	6,283	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44

SoundPLAN Results

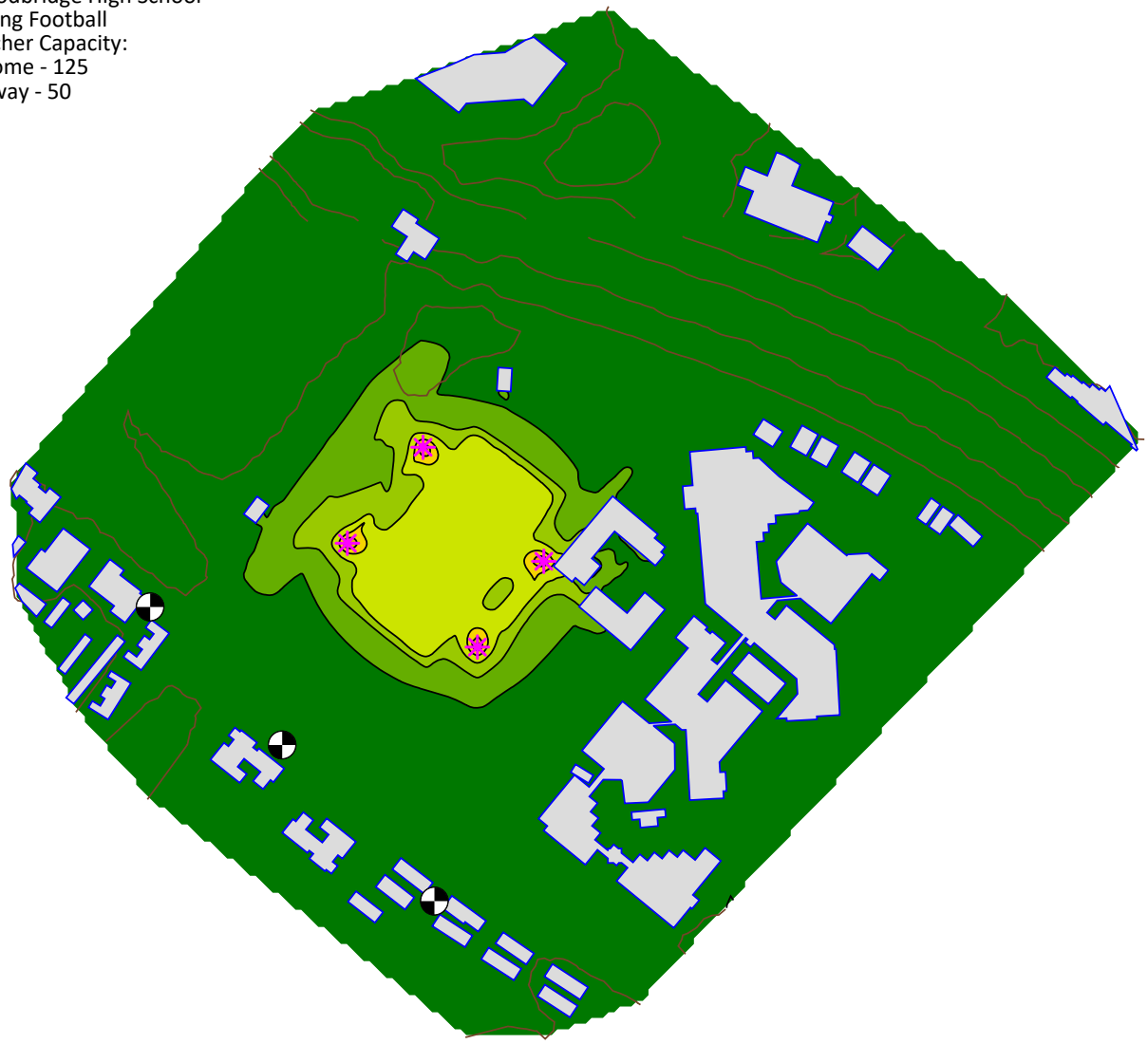
Noise level
Leq,d
in dB(A)

	<= 45
45 <	<= 50
50 <	<= 55
55 <	<= 60
60 <	<= 65
65 <	<= 70
70 <	<= 75
75 <	<= 80
80 <	<= 85
85 <	

Signs and symbols

- Point source
- Building
- Receiver

Wooodbridge High School
Existing Football
Bleacher Capacity:
Home - 125
Away - 50



Woodbridge HS Field and Lighting Improvements
Assessed receiver levels
Existing 125 Football

2

Receiver	Usage	Fl	Leq,d dB(A)	Leq,n dB(A)	
LT-1 62.8 dBA Leq	SCR	G	39.2	39.2	
ST-1 63.8 dBA Leq	SCR	G	38.2	38.2	
ST-2 55.78 dBA Leq	SCR	G	35.4	35.4	

Woodbridge HS Field and Lighting Improvements
Contribution level - Existing 125 Football

9

Source	Source group	Source ty	Ldn dB(A)	Leq,d dB(A)	Leq,n dB(A)	A dB	
Receiver LT-1 62.8 dBA Leq Fl G Leq,d 39.2 dB(A) Leq,n 39.2 dB(A)							
Away Bleachers 1	Away Bleachers	Area	20.6	14.2	14.2	0.0	
Away Bleachers 2	Away Bleachers	Area	18.6	12.2	12.2	0.0	
Home Bleachers	Home Bleachers	Area	27.0	20.5	20.5	0.0	
Field Players	Field Players	Area	38.5	32.0	32.0	0.0	
Ref Whistle	Ref Whistle	Area	37.4	31.0	31.0	0.0	
F2	Speakers	Point	36.4	30.0	30.0	0.0	
F3	Speakers	Point	39.2	32.8	32.8	0.0	
F4	Speakers	Point	37.0	30.6	30.6	0.0	
F1	Speakers	Point	37.5	31.1	31.1	0.0	
Receiver ST-1 63.8 dBA Leq Fl G Leq,d 38.2 dB(A) Leq,n 38.2 dB(A)							
Away Bleachers 1	Away Bleachers	Area	19.5	13.1	13.1	0.0	
Away Bleachers 2	Away Bleachers	Area	16.7	10.3	10.3	0.0	
Home Bleachers	Home Bleachers	Area	24.3	17.9	17.9	0.0	
Field Players	Field Players	Area	36.4	30.0	30.0	0.0	
Ref Whistle	Ref Whistle	Area	35.5	29.1	29.1	0.0	
F2	Speakers	Point	34.8	28.4	28.4	0.0	
F3	Speakers	Point	39.2	32.8	32.8	0.0	
F4	Speakers	Point	33.9	27.5	27.5	0.0	
F1	Speakers	Point	38.5	32.1	32.1	0.0	
Receiver ST-2 55.78 dBA Leq Fl G Leq,d 35.4 dB(A) Leq,n 35.4 dB(A)							
Away Bleachers 1	Away Bleachers	Area	12.3	5.9	5.9	0.0	
Away Bleachers 2	Away Bleachers	Area	14.3	7.9	7.9	0.0	
Home Bleachers	Home Bleachers	Area	22.4	16.0	16.0	0.0	
Field Players	Field Players	Area	34.9	28.4	28.4	0.0	
Ref Whistle	Ref Whistle	Area	34.0	27.6	27.6	0.0	
F2	Speakers	Point	34.3	27.9	27.9	0.0	
F3	Speakers	Point	33.1	26.7	26.7	0.0	
F4	Speakers	Point	35.2	28.8	28.8	0.0	
F1	Speakers	Point	31.4	25.0	25.0	0.0	

Woodbridge HS Field and Lighting Improvements
Octave spectra of the sources in dB(A) - Existing 125 Football

Name	Source type	l or A	L'w	Lw	KI	KT	Day histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz	
		m,m²	dB(A)	dB(A)	dB	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	
Away Bleachers 1	Area	353.11	68.5	94.0	0.0	0.0	Crowd during Game 10 min 60*10 sec	American Football, Spectators`s area		68.0	83.1	90.9	86.9	86.6	80.2	71.1		
Away Bleachers 2	Area	526.81	66.8	94.0	0.0	0.0	Crowd during Game 10 min 60*10 sec	American Football, Spectators`s area		68.0	83.1	90.9	86.9	86.6	80.2	71.1		
F1	Point		110.0	110.0	0.0	0.0	Speaker during Game 12 min 36*20 sec	Average Spectrum from 2022-10-07 Survey	81.7	96.3	99.1	104.7	105.4	102.2	97.0	90.7	69.3	
F2	Point		110.0	110.0	0.0	0.0	Speaker during Game 12 min 36*20 sec	Average Spectrum from 2022-10-07 Survey	81.7	96.3	99.1	104.7	105.4	102.2	97.0	90.7	69.3	
F3	Point		110.0	110.0	0.0	0.0	Speaker during Game 12 min 36*20 sec	Average Spectrum from 2022-10-07 Survey	81.7	96.3	99.1	104.7	105.4	102.2	97.0	90.7	69.3	
F4	Point		110.0	110.0	0.0	0.0	Speaker during Game 12 min 36*20 sec	Average Spectrum from 2022-10-07 Survey	81.7	96.3	99.1	104.7	105.4	102.2	97.0	90.7	69.3	
Field Players	Area	76309.89	52.2	101.0	0.0	0.0	Field Players	American Football, Players				101.0						
Home Bleachers	Area	3076.53	66.1	101.0	0.0	0.0	Crowd during Game 10 min 60*10 sec	American Football, Spectators`s area		75.0	90.1	97.9	93.9	93.6	87.2	78.1		
Ref Whistle	Area	44348.93	54.5	101.0	0.0	0.0	Ref Whistel Sporting Event	American Football, Referee`s whistle				101.0						

Noise level
Leq,d
in dB(A)

	<= 45
45 <	<= 50
50 <	<= 55
55 <	<= 60
60 <	<= 65
65 <	<= 70
70 <	<= 75
75 <	<= 80
80 <	<= 85
85 <	

Signs and symbols

- Point source
- Building
- Elevation line
- Receiver

Woodbridge High School
Project Football Event
Bleacher Capacity:
Home - 225
Away - 100

Woodbridge HS Field and Lighting Improvements
Assessed receiver levels
Project 225 Football

2

Receiver	Usage	Fl	Leq,d dB(A)	Leq,n dB(A)	
LT-1 62.8 dBA Leq	SCR	G	39.5	39.5	
ST-1 63.8 dBA Leq	SCR	G	38.5	38.5	
ST-2 55.78 dBA Leq	SCR	G	35.7	35.7	

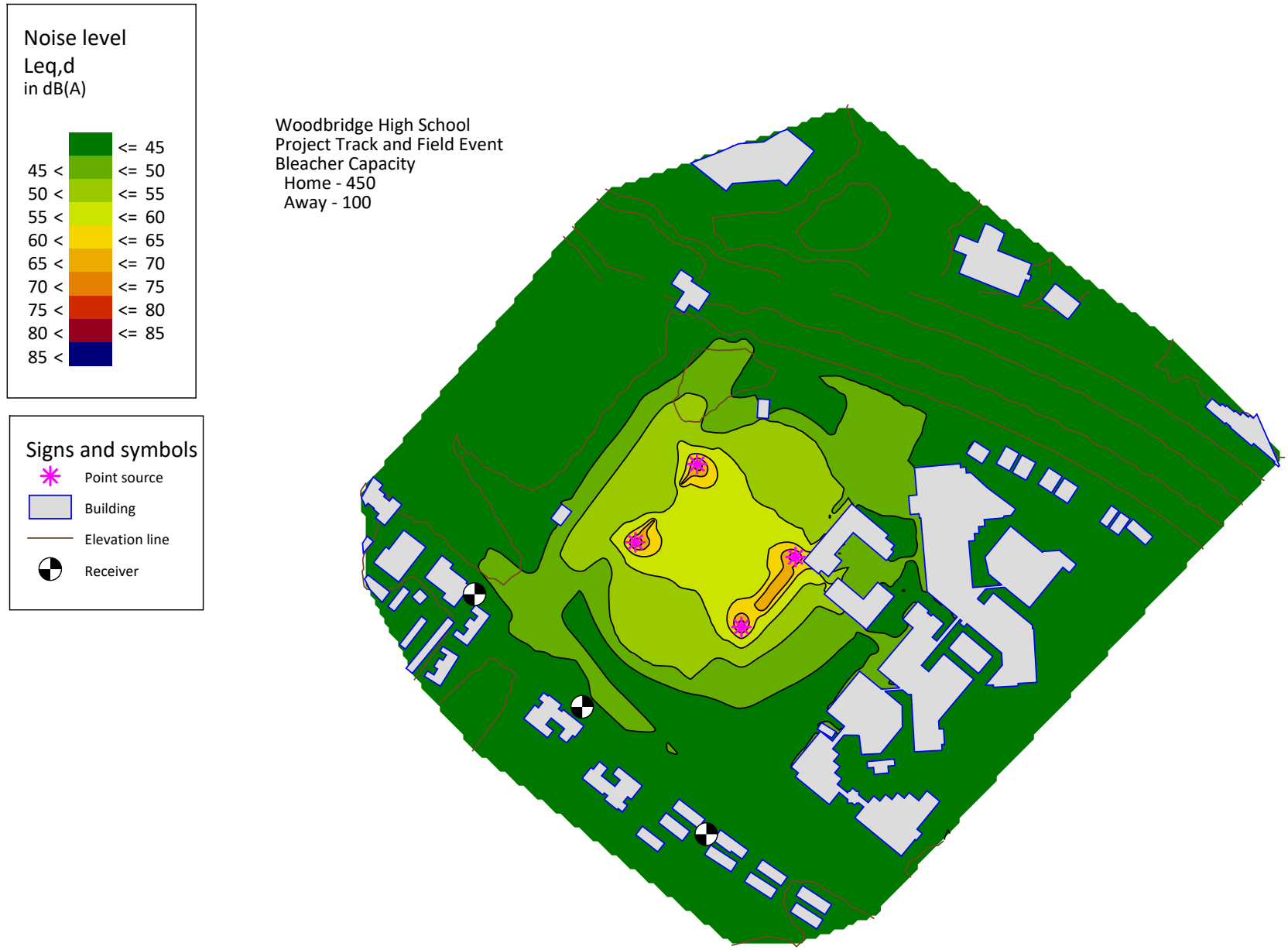
Woodbridge HS Field and Lighting Improvements
Contribution level - Project 225 Football

9

Source	Source group	Source ty	Ldn dB(A)	Leq,d dB(A)	Leq,n dB(A)	
Receiver LT-1 62.8 dBA Leq Fl G	dB(A)	Lr,lim dB(A)	Lr,lim dB(A)	Ldn 45.9 dB(A)	Leq,d 39.5 dB(A)	Leq,n 39.5
Field Players	Field Players	Area	38.5	32.0	32.0	
Away Bleachers 1	Away Bleachers	Area	27.4	21.0	21.0	
Away Bleachers 2	Away Bleachers	Area	24.3	17.8	17.8	
Home Bleachers	Home Bleachers	Area	33.4	26.9	26.9	
Ref Whistle	Ref Whistle	Area	37.4	31.0	31.0	
F2	Speakers	Point	36.4	30.0	30.0	
F3	Speakers	Point	39.2	32.8	32.8	
F4	Speakers	Point	37.0	30.6	30.6	
F1	Speakers	Point	37.5	31.1	31.1	
Receiver ST-1 63.8 dBA Leq Fl G	dB(A)	Lr,lim dB(A)	Lr,lim dB(A)	Ldn 44.9 dB(A)	Leq,d 38.5 dB(A)	Leq,n 38.5
Field Players	Field Players	Area	36.4	30.0	30.0	
Away Bleachers 1	Away Bleachers	Area	27.4	21.0	21.0	
Away Bleachers 2	Away Bleachers	Area	24.9	18.4	18.4	
Home Bleachers	Home Bleachers	Area	30.3	23.9	23.9	
Ref Whistle	Ref Whistle	Area	35.5	29.1	29.1	
F2	Speakers	Point	34.8	28.4	28.4	
F3	Speakers	Point	39.2	32.8	32.8	
F4	Speakers	Point	33.9	27.5	27.5	
F1	Speakers	Point	38.5	32.1	32.1	
Receiver ST-2 55.78 dBA Leq Fl G	dB(A)	Lr,lim dB(A)	Lr,lim dB(A)	Ldn 42.1 dB(A)	Leq,d 35.7 dB(A)	Leq,n 35.
Field Players	Field Players	Area	34.9	28.4	28.4	
Away Bleachers 1	Away Bleachers	Area	19.8	13.4	13.4	
Away Bleachers 2	Away Bleachers	Area	19.5	13.0	13.0	
Home Bleachers	Home Bleachers	Area	30.2	23.8	23.8	
Ref Whistle	Ref Whistle	Area	34.0	27.6	27.6	
F2	Speakers	Point	34.3	27.9	27.9	
F3	Speakers	Point	33.1	26.7	26.7	
F4	Speakers	Point	35.2	28.8	28.8	
F1	Speakers	Point	31.4	25.0	25.0	

Woodbridge HS Field and Lighting Improvements
Octave spectra of the sources in dB(A) - Project 225 Football

Name	Source type	l or A	L'w	Lw	KI	KT	Day histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz	
		m,m²	dB(A)	dB(A)	dB	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	
Away Bleachers 1	Area	370.96	71.3	97.0	0.0	0.0	Crowd during Game 10 min 60*10 sec	American Football, Spectators`s area		71.0	86.1	93.9	89.9	89.6	83.2	74.1		
Away Bleachers 2	Area	539.42	69.7	97.0	0.0	0.0	Crowd during Game 10 min 60*10 sec	American Football, Spectators`s area		71.0	86.1	93.9	89.9	89.6	83.2	74.1		
F1	Point		110.0	110.0	0.0	0.0	Speaker during Game 12 min 36*20 sec	Average Spectrum from 2022-10-07 Survey	81.7	96.3	99.1	104.7	105.4	102.2	97.0	90.7	69.3	
F2	Point		110.0	110.0	0.0	0.0	Speaker during Game 12 min 36*20 sec	Average Spectrum from 2022-10-07 Survey	81.7	96.3	99.1	104.7	105.4	102.2	97.0	90.7	69.3	
F3	Point		110.0	110.0	0.0	0.0	Speaker during Game 12 min 36*20 sec	Average Spectrum from 2022-10-07 Survey	81.7	96.3	99.1	104.7	105.4	102.2	97.0	90.7	69.3	
F4	Point		110.0	110.0	0.0	0.0	Speaker during Game 12 min 36*20 sec	Average Spectrum from 2022-10-07 Survey	81.7	96.3	99.1	104.7	105.4	102.2	97.0	90.7	69.3	
Field Players	Area	76309.89	52.2	101.0	0.0	0.0	Field Players	American Football, Players				101.0						
Home Bleachers	Area	3117.53	68.6	103.5	0.0	0.0	Crowd during Game 10 min 60*10 sec	American Football, Spectators`s area		77.5	92.6	100.4	96.4	96.1	89.7	80.6		
Ref Whistle	Area	44348.93	54.5	101.0	0.0	0.0	Ref Whistel Sporting Event	American Football, Referee`s whistle				101.0						


Noise level
Leq,d
in dB(A)
<= 45
45 < <= 50
50 < <= 55
55 < <= 60
60 < <= 65
65 < <= 70
70 < <= 75
75 < <= 80
80 < <= 85
85 <
Signs and symbols
Point source
Building
Elevation line
Receiver
Woodbridge High School
Project Track and Field Event
Bleacher Capacity
Home - 450
Away - 100

Woodbridge HS Field and Lighting Improvements
Assessed receiver levels
Track and Field 450

2

Receiver	Usage	Fl	Leq,d dB(A)	Leq,n dB(A)	
LT-1 62.8 dBA Leq - 8pm	SCR	G	42.4	42.4	
ST-1 63.8 dBA Leq	SCR	G	41.5	41.5	
ST-2 55.78 dBA Leq	SCR	G	38.4	38.4	

Woodbridge HS Field and Lighting Improvements
Contribution level - Track and Field 450

9

Source	Source group	Source ty	Ldn dB(A)	Leq,d dB(A)	Leq,n dB(A)	
Receiver LT-1 62.8 dBA Leq - 8pm	Fl G	dB(A)	Lr,lim dB(A)	Lr,lim dB(A)	Ldn 48.8 dB(A)	Leq,d 42.4 dB(A) Leq,
Away Bleachers 1	Away Bleachers	Area	29.1	22.7	22.7	
Away Bleachers 2	Away Bleachers	Area	26.0	19.6	19.6	
F2	Speakers	Point	40.4	34.0	34.0	
F3	Speakers	Point	43.2	36.7	36.7	
F4	Speakers	Point	41.0	34.6	34.6	
F1	Speakers	Point	41.5	35.1	35.1	
Home Bleachers	Home Bleachers	Area	38.1	31.7	31.7	
Track and Field	Track and Field	Area	39.7	33.3	33.3	
Receiver ST-1 63.8 dBA Leq	Fl G	dB(A)	Lr,lim dB(A)	Lr,lim dB(A)	Ldn 47.9 dB(A)	Leq,d 41.5 dB(A) Leq,n 41.5
Away Bleachers 1	Away Bleachers	Area	29.2	22.8	22.8	
Away Bleachers 2	Away Bleachers	Area	26.6	20.2	20.2	
F2	Speakers	Point	38.8	32.4	32.4	
F3	Speakers	Point	43.2	36.7	36.7	
F4	Speakers	Point	37.9	31.5	31.5	
F1	Speakers	Point	42.5	36.1	36.1	
Home Bleachers	Home Bleachers	Area	35.1	28.7	28.7	
Track and Field	Track and Field	Area	36.7	30.3	30.3	
Receiver ST-2 55.78 dBA Leq	Fl G	dB(A)	Lr,lim dB(A)	Lr,lim dB(A)	Ldn 44.8 dB(A)	Leq,d 38.4 dB(A) Leq,n 38.
Away Bleachers 1	Away Bleachers	Area	21.6	15.2	15.2	
Away Bleachers 2	Away Bleachers	Area	21.2	14.8	14.8	
F2	Speakers	Point	38.3	31.9	31.9	
F3	Speakers	Point	37.1	30.7	30.7	
F4	Speakers	Point	39.2	32.8	32.8	
F1	Speakers	Point	35.4	29.0	29.0	
Home Bleachers	Home Bleachers	Area	34.9	28.5	28.5	
Track and Field	Track and Field	Area	35.2	28.8	28.8	

Woodbridge HS Field and Lighting Improvements
Octave spectra of the sources in dB(A) - Track and Field 450

Name	Source type	l or A m,m²	L'w dB(A)	Lw dB(A)	KI dB	KT dB	Day histogram	Emission spectrum	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)	16kHz dB(A)	
Away Bleachers 1	Area	370.96	71.3	97.0	0.0	0.0	School Assembly	American Football, Spectators`s area		71.0	86.1	93.9	89.9	89.6	83.2	74.1		
Away Bleachers 2	Area	539.42	69.7	97.0	0.0	0.0	School Assembly	American Football, Spectators`s area		71.0	86.1	93.9	89.9	89.6	83.2	74.1		
F1	Point		110.0	110.0	0.0	0.0	Speaker Track and Field 30 min	Average Spectrum from 2022-10-07 Survey	81.7	96.3	99.1	104.7	105.4	102.2	97.0	90.7	69.3	
F2	Point		110.0	110.0	0.0	0.0	Speaker Track and Field 30 min	Average Spectrum from 2022-10-07 Survey	81.7	96.3	99.1	104.7	105.4	102.2	97.0	90.7	69.3	
F3	Point		110.0	110.0	0.0	0.0	Speaker Track and Field 30 min	Average Spectrum from 2022-10-07 Survey	81.7	96.3	99.1	104.7	105.4	102.2	97.0	90.7	69.3	
F4	Point		110.0	110.0	0.0	0.0	Speaker Track and Field 30 min	Average Spectrum from 2022-10-07 Survey	81.7	96.3	99.1	104.7	105.4	102.2	97.0	90.7	69.3	
Home Bleachers	Area	3117.53	71.6	106.5	0.0	0.0	School Assembly	American Football, Spectators`s area		80.5	95.6	103.4	99.4	99.1	92.7	83.6		
Track and Field	Area	151618.13	49.2	101.0	0.0	0.0	Field Players	Players (soccer)				101.0						

APPENDIX F
TRANSPORTATION IMPACT ASSESSMENT

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TRAFFIC/TRANSPORTATION IMPACT ANALYSIS

FOR THE PROPOSED

WOODBRIDGE HIGH SCHOOL FIELD IMPROVEMENTS PROJECT

Prepared for

IRVINE UNIFIED SCHOOL DISTRICT
&
PLACEWORKS

Prepared by

GARLAND ASSOCIATES
16787 Beach Boulevard, Suite 234
Huntington Beach, CA 92647
714-330-8984

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I.
INTRODUCTION AND STUDY METHODOLOGY

This report summarizes the results of a traffic/transportation impact analysis that was conducted for a field and lighting improvements project that is proposed at Woodbridge High School by Irvine Unified School District. The high school is located at 2 Meadowbrook in the City of Irvine and the campus is bounded by Meadowbrook and a Mormon church on the southeast, Alton Parkway on the southwest, West Yale Loop on the northwest, and San Diego Creek on the northeast. The improvements would be implemented at the existing athletics field, which is located on the west corner of the school campus next to the intersection of Alton Parkway and West Yale Loop.

The proposed project includes the installation of new field lights at the existing football field and a new public address (PA) system. These improvements would allow for events that currently occur off-campus to be held at the Woodbridge High School campus. The capacity of the existing bleachers would not be increased. A map showing the location of the school is provided on Figure 1 and the site plan for the proposed project is shown on Figure 2. The proposed project would not result in a change in the number of students attending the high school.

An analysis has been prepared to evaluate the traffic impacts of the proposed project. The methodology for the traffic study, in general, was to 1) establish the existing baseline traffic conditions on the streets that provide access to the school site, 2) project the future baseline traffic conditions for the first full year of operation for the proposed project (year 2027), 3) estimate the levels of traffic that would be generated by the athletic field on an average day and a peak day of activity, and 4) conduct a comparative analysis of traffic conditions with and without the project.

In addition to the traffic impact analysis, the study also addressed the transportation issue areas of the CEQA environmental checklist, which includes an evaluation of the project's impacts on 1) a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, 2) vehicle miles traveled (VMT), 3) increased hazards or incompatible uses, and 4) emergency access.

The traffic impact analysis addresses the impacts at four intersections in the vicinity of the school site. The study area intersections and the type of traffic control at each intersection are listed below in Table 1. All of the intersections are in the jurisdiction of the City of Irvine.

TABLE 1
STUDY AREA INTERSECTIONS

Intersection	Traffic Control
Alton Parkway/West Yale Loop	Traffic Signal
Alton Parkway/Meadowbrook	Stop Sign on Meadowbrook
Alton Parkway/Lake Road	Traffic Signal
Lake Road/Greg Cops Place	Traffic Signal

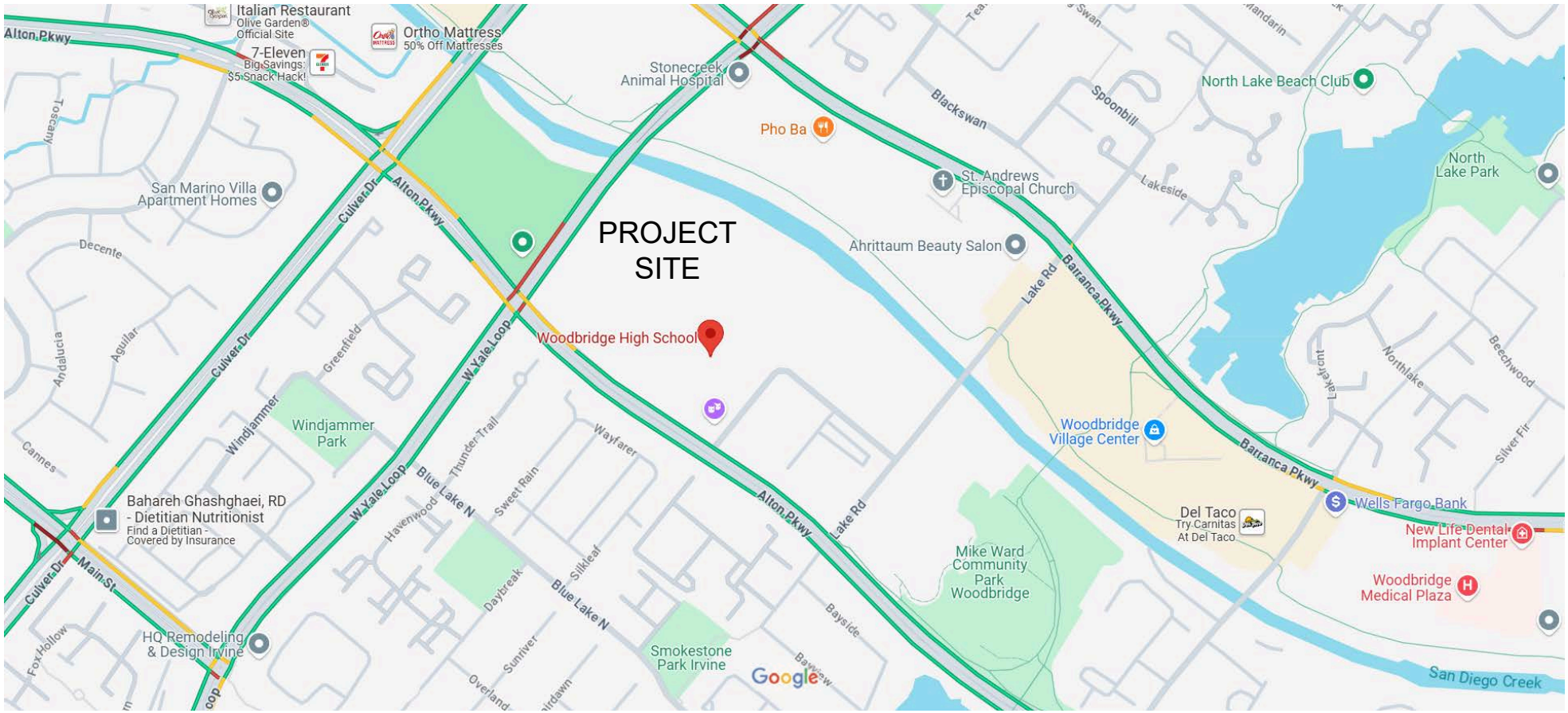
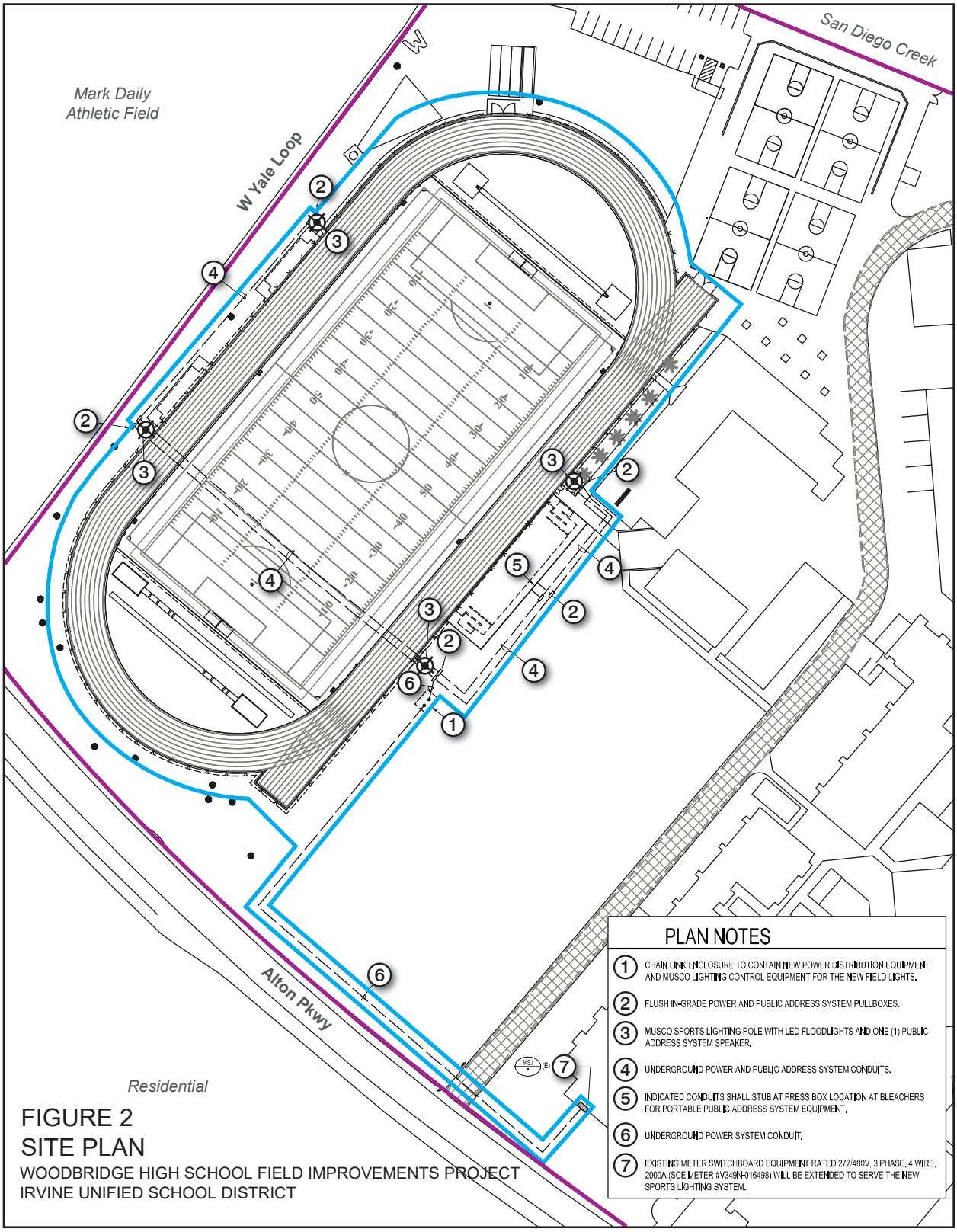


FIGURE 1
LOCATION MAP
WOODBRIDGE HIGH SCHOOL FIELD IMPROVEMENTS PROJECT
IRVINE UNIFIED SCHOOL DISTRICT

Figure 2-4 - Conceptual Site Plan



Source: Ruhnau Clarke Architects 2025.

The traffic impact analysis is based on an evaluation of the levels of service at the affected study area intersections. Level of service (LOS) is an industry standard by which the operating conditions of a roadway segment or an intersection are measured. LOS is defined on a scale of A through F with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS A is characterized as having free flowing traffic conditions with no restrictions on maneuvering or operation speeds, where traffic volumes are low and travel speeds are high. LOS F is characterized as having forced flow with many stoppages and low operating speeds. According to the City of Irvine "Traffic Study Guidelines" (March 21, 2023), LOS A through D represent acceptable conditions while LOS E and F represent congested, over-capacity conditions. The levels of service at the study area intersections were determined by using the Intersection Capacity Utilization (ICU) methodology, which is consistent with the City of Irvine guidelines.

The levels of service for the intersections in the vicinity of the proposed project were analyzed for the following scenarios: existing conditions (2025), existing conditions plus the proposed project, future baseline conditions without the proposed project for the target year of 2027, and future conditions with the proposed project. The year 2027 was used for the future target year as that is anticipated to be the first full year of operation for the proposed project.

II.
EXISTING AND FUTURE BASELINE TRAFFIC CONDITIONS

The street network in the vicinity of the school, the existing traffic volumes, and the levels of service at the affected study area intersections are described below.

Street Network

The streets that provide access to the proposed project area include Alton Parkway, Lake Road, Meadowbrook, Greg Cops Place, and West Yale Loop. The following paragraphs provide a brief description of the characteristics of these streets.

Alton Parkway

Alton Parkway is a four lane street that abuts the southwest side of the school campus. Bike lanes and sidewalks are provided on both sides of Alton Parkway and parking is prohibited on both sides of the street. The speed limit on Alton Parkway is 45 miles per hour (mph) northwest of Lake Road and 50 mph southeast of Lake Road, but with a reduced school speed limit of 25 mph when children are present.

Lake Road

Lake Road is a two lane street located one block southeast of the school campus. Bike lanes and sidewalks are provided and parking is prohibited on both sides of Lake Road northeast of Alton Parkway. Southwest of Alton Parkway, Lake Road has parking and sidewalks on both sides of the street and there are no bike lanes. The speed limit on Lake Road is 25 mph.

Meadowbrook

Meadowbrook is a two lane street that abuts the southeast side of the school campus. Sidewalks and parking are provided on both sides of the street and there are no bike lanes. The speed limit on Meadowbrook is 25 mph.

Greg Cops Place

Greg Cops Place is a two lane street that extends from Meadowbrook to Lake Road. Parking is prohibited on both sides of the street and there are no bike lanes. A sidewalk is provided on the northeast side of the street and on the southwest side of the street for the half block nearest Meadowbrook. The speed limit on Greg Cops Place is 25 mph.

West Yale Loop

West Yale Loop is a four lane street that abuts the northwest side of the school campus adjacent to the athletics field. Bike lanes and sidewalks are provided on both sides of West Yale Loop and parking is prohibited on both sides of the street. The speed limit on West Yale Loop is 40 mph, but with a reduced school speed limit of 25 mph when children are present.

Existing Traffic Volumes

Manual traffic counts were taken at the four study area intersections during the Thursday afternoon peak period on April 17, 2025. The peak hour for this analysis refers to the one-hour time period at the beginning of a peak level event at the field (i.e., a track and field event). This time period was selected because track and field events take place between 3:00 and 6:00 p.m. on Thursdays and would generate the highest number of attendees as compared to all other activities at the facility. The existing peak hour traffic volumes and turning movements are shown in the Appendix.

Existing Intersection Levels of Service

To quantify the existing baseline traffic conditions, the four study area intersections were analyzed to determine their operating conditions during the Thursday afternoon peak hour. Based on the hourly traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the ICU values and corresponding levels of service have been determined for each intersection, as summarized in Table 2.

TABLE 2
EXISTING AND FUTURE INTERSECTION LEVELS OF SERVICE

Intersection	***ICU Value & Level of Service Thursday Afternoon Peak Hour***	
	Existing Conditions	***2027 Without Project***
SIGNALIZED INTERSECTIONS		
Alton Parkway/West Yale Loop	0.471 – A	0.488 – A
Alton Parkway/Lake Road	0.404 – A	0.416 – A
Lake Road/Greg Cops Place	0.250 – A	0.258 - A
UNSIGNALIZED INTERSECTION		
Alton Parkway/Meadowbrook	0.329 – A	0.341 – A

The levels of service shown in Table 2 are based on the ICU values that were calculated for each intersection based on the existing and projected traffic counts. The relationship between the ICU values and levels of service is shown in Table 3.

TABLE 3
RELATIONSHIP BETWEEN ICU VALUES & LEVELS OF SERVICE

Level of Service	***ICU Value***
A	0.0 to 0.60
B	> 0.60 to 0.70
C	> 0.70 to 0.80
D	> 0.80 to 0.90
E	> 0.90 to 1.00
F	> 1.00

As shown in Table 2, all four of the study area intersections currently operate at acceptable levels of service (LOS A through D) during the afternoon peak hour as all four of the intersections operate at LOS A.

Future Baseline Traffic Conditions

As the proposed project is expected to be fully completed in the fall of 2026, the first full year of operation for the facility would be the year 2027. The existing (2025) traffic volumes were expanded by a growth factor of 4.04 percent to account for general regional growth and the cumulative impacts of traffic associated with other development projects in the area. This growth factor represents a two percent annual growth rate for two years, compounded annually. The projected traffic volumes for the year 2027 without the proposed project are shown in the Appendix.

Based on the projected peak hour traffic volumes, the turning movement counts, and the existing lane configuration, the future baseline levels of service were calculated for each study area intersection, as summarized in Table 2.

For the target year of 2027, all four of the study area intersections are projected to operate at acceptable levels of service (LOS A through D) as all of the intersections would operate at LOS A during the Thursday afternoon peak hour.

III.
TRAFFIC IMPACT ANALYSIS

This section summarizes the analysis of the proposed project's impacts on study area traffic/transportation conditions. First is a discussion of the significance standards followed by a discussion of project generated traffic and the impacts of the proposed project on traffic volumes and intersection levels of service. This is followed by an analysis of the impacts associated with non-motorized transportation (pedestrians and bicycles) and the findings relative to the CEQA transportation issues.

Standards of Significance

According to the City of Irvine standards, an intersection would be significantly impacted if a project would result in a change in the level of service from an acceptable LOS A, B, C, or D, to an unacceptable LOS E or F. If a signalized intersection is operating at LOS E or F without project traffic, the intersection would be significantly impacted if the project would increase the ICU value by 0.02 or more.

With regard to the CEQA thresholds of significance, Appendix G of the CEQA Guidelines state that a project would normally have a significant effect on the environment if the project could:

T-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities,

T-2 Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT),

T-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), or

T-4 Result in inadequate emergency access.

Project Generated Traffic

The volumes of traffic that would be generated by the proposed project were determined in order to estimate the impacts of the project on the study area streets and intersections. The trip generation rates and the anticipated volumes of traffic that would be generated by the athletics field on an average day and a peak day of activity are shown in Table 4.

The trip generation rates shown in Tables 4 reflect the assumption that the activities at the field would generate a demand of one vehicle for every two attendees (for vehicles that remain parked at the site) and that an additional ten percent of the vehicles arriving at the facility would drop passengers off then leave. The City of Irvine Zoning Ordinance, Division 4 – Parking, indicates that the parking requirement for places of assembly is one space per three seats. A rate of one vehicle per two attendees was used for the analysis to ensure that the generated traffic volumes were conservatively high.

TABLE 4
PROJECT GENERATED TRAFFIC

Facility	***Pre-Event Peak Hour***			***Daily Traffic***
	Inbound	***Outbound***	***Total***	
TRIP GENERATION RATES				
Athletic Field (vehicle trips per attendee)	0.55	0.05	0.60	1.20
GENERATED TRAFFIC VOLUMES				
Average Day (100 additional attendees)	55	5	60	120
Peak Day (450 additional attendees)	248	22	270	540

Table 4 indicates that the facility would generate an estimated 60 vehicle trips during the peak hour (55 inbound and 5 outbound) and 120 daily trips on an average day with 100 additional attendees. The peak hour for this analysis represents the one-hour time period at the beginning of an event when patrons are traveling to the athletics field. Approximately the same level of traffic would be generated at the end of an event when patrons are exiting (with the inbound and outbound traffic volumes reversed). Table 4 indicates that the facility would generate an estimated 270 vehicle trips during the peak hour (248 inbound and 22 outbound) and 540 daily trips on a peak day with 450 additional attendees. A peak day is representative of a track and field event, which would typically occur four times each year on Thursdays between 3:00 and 6:00 p.m.

The numbers of additional attendees assumed for the athletics field activities are based on information provided by staff at Irvine Unified School District regarding the existing and anticipated number of attendees. The data indicates that tackle football would have an increase of 100 attendees, 50 for flag football, no increase for band, 45 for soccer, 50 for lacrosse, and 450 for track and field, which currently does not occur at Woodbridge High School.

The traffic impact analysis for the intersections is based on a peak day event with 450 additional attendees. To quantify the increase in traffic at each intersection resulting from a peak day event, the project generated traffic shown in Table 4 was geographically distributed onto the street network using the following directional percentages. This distribution assumption is based on the layout of the existing street network and the school attendance boundaries. The volumes of site generated traffic that would be added to each study area intersection on a peak day at the facility are shown in the Appendix.

Alton Parkway northwest of West Yale Loop – 15%
Alton Parkway southeast of Lake Road – 35%
Lake Road northeast of Greg Cops Place – 30%
Lake Road southwest of Alton Parkway – 2%
West Yale Loop northeast of Alton Parkway – 10%
West Yale Loop southwest of Alton Parkway – 8%

The volumes of traffic for the existing conditions scenario plus the project generated traffic and the total volumes of traffic projected for the year 2027 scenario with the proposed project are shown in the Appendix. These projected traffic volumes are for the Thursday afternoon pre-event peak hour.

Intersection Impact Analysis

The impact analysis for the four study area intersections was conducted by comparing the ICU values and levels of service (LOS) for the "without project" and "with project" scenarios. For the existing conditions scenario, the analysis compares the existing conditions to the conditions with the proposed project.

For the year 2027 scenario, the analysis compares the year 2027 baseline conditions without the proposed project to the year 2027 scenario with the proposed project. The year 2027 was used as the target year for future conditions as that is anticipated to be the first full year that the proposed project would be operational. The peak hour for the analysis represents the time period during which a track and field event at the facility would generate the heaviest volumes of traffic (typically between 3:00 and 4:00 p.m. on a Thursday). This does not coincide with the peak period for the ambient traffic volumes, which generally occurs between 4:00 and 6:00 p.m.

The comparative levels of service at the study area intersections for the existing conditions scenario are summarized in Table 5 for the Thursday afternoon peak hour. The table shows the before and after ICU values and the levels of service that would occur at each study area intersection. Also shown are the increases in the ICU values that would occur as a result of the proposed project. The last column in Table 5 indicates if the intersections would be significantly impacted by the project generated traffic.

The intersection of Alton Parkway and West Yale Loop, for example, operates with an ICU value of 0.471 and LOS A for existing conditions and would operate with an ICU value of 0.483 and LOS A for the existing plus project scenario, which represents an increase in the ICU value of 0.012. This impact would be less than significant according to the criteria outlined above because the intersection would continue to operate at an acceptable LOS A. Table 5 indicates that none of the study area intersections would be significantly impacted by the traffic that would be generated by the proposed project for a peak day event for the existing conditions baseline scenario.

TABLE 5
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
EXISTING CONDITIONS AS BASELINE

Intersection	***ICU Value & Level of Service***		***Increase In ICU Value***	***Significant Impact***
	Existing Conditions	***Existing plus Project***		
SIGNALIZED INTERSECTIONS				
Alton Parkway/West Yale Loop	0.471 – A	0.483 – A	0.012	No
Alton Parkway/Lake Road	0.404 – A	0.479 – A	0.075	No
Lake Road/Greg Cops Place	0.250 – A	0.345 – A	0.095	No
UNSIGNALIZED INTERSECTION				
Alton Parkway/Meadowbrook	0.329 – A	0.363– A	0.034	No

The comparative levels of service for the year 2027 analysis scenario are shown in Table 6. Table 6 indicates that none of the study area intersections would be significantly impacted by the traffic that would be generated by the proposed project for a peak day event for the year 2027 baseline scenario.

TABLE 6
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
YEAR 2027 AS BASELINE

Intersection	***ICU Value & Level of Service***		***Increase In ICU Value***	***Significant Impact***
	2027 Without Project	***2027 With Project***		
SIGNALIZED INTERSECTIONS				
Alton Parkway/West Yale Loop	0.488 – A	0.500 – A	0.012	No
Alton Parkway/Lake Road	0.416 – A	0.492 – A	0.076	No
Lake Road/Greg Cops Place	0.258 - A	0.353 - A	0.095	No
UNSIGNALIZED INTERSECTION				
Alton Parkway/Meadowbrook	0.341 – A	0.375 – A	0.034	No

Tables 5 and 6 indicate that the proposed project would not have a significant impact at any of the study area intersections during the Thursday afternoon peak hour based on the significance criteria presented previously because the intersections would continue to operate at LOS A during a peak day event. As there would be no significant impacts, no capacity-related mitigation measures would be required. As the analysis indicates that a peak day event with 450 attendees would not result in a significant traffic impact, it is concluded that an average day event with 100 additional attendees would likewise not result in a significant traffic impact.

Non-Motorized Transportation and Transit

The proposed project would generate a demand for non-motorized travel as some event attendees would travel to and from the school as pedestrians or on bicycles. The study area streets have sidewalks on both sides of the street (except for part of Greg Cops Place, which has a sidewalk only on the northeast side of the street). The three signalized intersections in the study area are equipped with painted crosswalks and pedestrian crossing signals. Painted crosswalks are also located on Meadowbrook at its intersection with Alton Parkway and at the intersection of Meadowbrook and Greg Cops Place. Alton Parkway, Lake Road, and West Yale Loop have bike lanes on both sides of the street and bike racks are provided at the school.

With regard to public transit, Orange County Transportation Authority (OCTA) operates Route 86 along Alton Parkway adjacent to the school campus. It has bus stops on Alton Parkway at West Yale Loop, Meadowbrook, and Lake Road. In addition, Irvine Connect operates a bus route that runs along West Yale Loop, Alton Parkway, and Lake Road. It has bus stops adjacent to the school site along all three of these streets. The proposed project would not adversely affect the performance of these transit or non-motorized transportation facilities.

The proposed project would be consistent with policies supporting alternative transportation because sidewalks, crosswalks, bike lanes, bike racks, and public transit would be available for use by attendees. Also, busing would typically be provided from the opposing schools during athletics events.

Findings Relative to CEQA Transportation Issues

The proposed project involves the installation of new field lights and a new public address (PA) system at the existing football field at Woodbridge High School. For the transportation analysis, Appendix G of the CEQA Guidelines states that a proposed project could have a significant effect on the environment if the project would:

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

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT),

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

d) Result in inadequate emergency access.

The findings regarding each of these issues are presented in the following sections.

Issue: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

CEQA Finding: No Impact

The Circulation Element of the City of Irvine General Plan includes specific goals, objectives, and policies that serve as a comprehensive framework for managing transportation infrastructure and promoting efficient mobility within the City of Irvine. The document addresses various aspects of circulation, including roadways, public transit, active transportation modes, and land use planning, with the overarching aim of enhancing accessibility, safety, and sustainability for residents, businesses, and visitors.

The goals in the Circulation Element that are relevant to the proposed project at the high school are as follows. Goal 1: To facilitate the planning, provision, and maintenance of a well-integrated roadway network that effectively meets the anticipated demands of both local communities and the broader regional transportation system. Goal 2: To design a circulation system that adheres to the highest standards of transportation engineering safety while considering the surrounding land uses and their sensitivities. Goal 3: To establish a pedestrian circulation system that supports and promotes walking as a viable mode of transportation within the community. Goal 4: To develop and maintain a comprehensive bicycle network that encourages increased bicycle usage for both commuting and recreational purposes. Goal 5: Foster a culture of active transportation by

prioritizing walking, cycling, and other non-motorized modes of travel to improve public health, reduce greenhouse gas emissions, and enhance the quality of life for residents and visitors in Irvine.

The proposed improvements at the high school's athletics field are consistent with the goals, objectives, and policies presented in the Circulation Element and the project would not adversely affect the performance of any roadway, transit, or non-motorized (pedestrian and bicycle) transportation facilities. Based on the traffic analysis, the discussion of non-motorized transportation and transit, and a review of the Circulation Element of the City of Irvine General Plan, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Issue: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT).

CEQA Finding: Less Than Significant Impact

Vehicle delays and levels of service (LOS) have historically been used as the basis for determining the significance of traffic impacts as standard practice in California Environmental Quality Act (CEQA) documents. On September 27, 2013, SB 743 was signed into law, starting a process that fundamentally changed transportation impact analyses as part of CEQA compliance. SB 743 eliminated auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts under CEQA. As part of the current CEQA Guidelines, the criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)). Pursuant to SB 743, the California Natural Resources Agency adopted revisions to the CEQA Guidelines on December 28, 2018, to implement SB 743. CEQA Guidelines Section 15064.3 describes how transportation impacts are to be analyzed after SB 743. Under the Guidelines, metrics related to "vehicle miles traveled" (VMT) were required beginning July 1, 2020, to evaluate the significance of transportation impacts under CEQA for development projects, land use plans, and transportation infrastructure projects. State courts ruled that under the Public Resources Code Section 21099, subdivision (b)(2), "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment" under CEQA, except for roadway capacity projects.

The City of Irvine's "Traffic Study Guidelines" include screening criteria that can be used to identify when a proposed project is anticipated to result in a less than significant VMT impact. The document states that a locally serving public school (kindergarten through 12th grade) can be screened from requiring a VMT impact analysis and that no further VMT analysis is required.

In addition, since the project will provide the opportunity for additional athletics events to be held at the Woodbridge High School campus instead of facilities at other schools in the District, it would result in a reduction in vehicle miles traveled because the facility would be closer to most of the homes in the attendance area as compared to the schools where the activities currently take place. Based on these guidelines, this athletics facility project would not conflict or be inconsistent

with CEQA Guidelines Section 15064.3, subdivision (b), and would have a less than significant VMT impact.

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

CEQA Finding: Less Than Significant Impact

The proposed project would not include any on- or off-site access or circulation features that would create or increase any design hazards or incompatible uses. Access to the school site would continue to be provided by two existing driveways on Meadowbrook and one existing driveway on West Yale Loop. There would be no modifications to these driveways or to the study area street network and all improvements within the school site would be consistent with the criteria of the California Division of the State Architect.

The increased levels of traffic, the increased number of pedestrians, and the increased number of vehicular turning movements that would occur at the driveways and at the nearby intersections would result in an increased number of traffic conflicts and a corresponding increase in the probability of an accident occurring. These impacts would not be significant, however, because the streets, intersections, and driveways are designed to accommodate the anticipated levels of vehicular and pedestrian activity. These streets and intersections have historically been accommodating school-related traffic on a daily basis for the existing school. The proposed project's athletics field improvements would be compatible with the design and operation of a high school, and the proposed project would not result in any modifications to the existing access or circulation features at the school.

As the existing street network could readily accommodate the anticipated increase in vehicular, pedestrian, and bicycle activity, the proposed project would not substantially increase hazards due to a geometric design feature or incompatible uses.

Issue: Result in inadequate emergency access.

CEQA Finding: No Impact

Emergency access to the school site is provided by two existing driveways on the northwest side of Meadowbrook that provide access to the school's parking lots plus an additional gated driveway on the southeast side of West Yale Loop. The existing access and circulation features at the school, including the driveways, parking lots, on-site roadways, and fire lanes, would accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. The proposed project would be designed to accommodate emergency access to the athletics complex. The existing access/circulation features at the school were subject to the District's design requirements and were approved by the Fire Department and the California Division of the State Architect. Emergency vehicles could continue to readily access the athletics field and all other areas of the school via on-site travel corridors. The proposed project would not, therefore, result in inadequate emergency access.

IV.
SUMMARY OF IMPACTS AND CONCLUSIONS

The key findings of the traffic impact analysis are presented below.

- The proposed improvements at the school's athletics field would generate an estimated 60 vehicle trips during the peak hour on an average day (55 inbound and 5 outbound) and 120 trips per day. On a peak day of activity, which would be a track and field event that is expected to occur on four days per year, the facility would generate an estimated 270 vehicle trips during the peak hour (248 inbound and 22 outbound) and 540 trips per day. The peak hour for a peak track and field event represents the one-hour time period at the beginning of an event when attendees are traveling to the field, which would typically occur on a Thursday afternoon between 3:00 and 4:00 p.m. Approximately the same level of traffic would be generated at the end of an event when patrons are exiting (with the inbound and outbound traffic volumes reversed).

- An analysis of four intersections in the vicinity of the school indicates that the traffic generated by the facility during a peak day event would not result in a significant impact at any of the intersections according to the City of Irvine's significance criteria. Similarly, an average day of activity at the facility would not result in a significant traffic impact.

- CEQA threshold of significance T-1 asks if the proposed project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The analysis indicates that there would be **no impact** because:

  - The proposed project would not adversely affect the performance or safety of any transit or non-motorized transportation facilities (pedestrians and bicycles) and would not conflict with any adopted plans, policies, or programs relative to these alternative transportation modes,

  - The level of service thresholds would not be exceeded by traffic generated by events at the facility, and

  - The Circulation Element of the City of Irvine General Plan includes specific goals, objectives, and policies that serve as a comprehensive framework for managing transportation infrastructure and promoting efficient mobility within the City of Irvine. The document addresses various aspects of circulation, including roadways, public transit, active transportation modes, and land use planning, with the overarching aim of enhancing accessibility, safety, and sustainability for residents, businesses, and visitors. The proposed project is consistent with the goals, objectives, and policies presented in the Circulation Element and would not conflict with a program, plan, ordinance, or policy of the General Plan, including transit, roadway, bicycle, and pedestrian facilities.

- CEQA threshold of significance T-2 asks if the proposed project would conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT). The City of Irvine "Traffic Study Guidelines" includes screening criteria that can be used to identify when a proposed project is anticipated to result in a less

than significant VMT impact. The document states that a locally serving public school (kindergarten through 12th grade) can be screened from requiring a VMT impact analysis and that no further VMT analysis is required. The proposed project would, therefore, have a **less than significant impact** relative to VMT. Furthermore, the proposed project would result in a reduction in total vehicle miles traveled because the proposed facility would be closer to most of the homes in the attendance area as compared to the schools where some of the activities currently take place.

- CEQA threshold of significance T-3 asks if the proposed project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). The analysis indicates that the existing streets, intersections, and driveways are designed to accommodate the anticipated levels of vehicular and pedestrian activity and have historically been accommodating school-related traffic. The proposed project would be compatible with the design and operation of a high school and the proposed project would not result in any modifications to the existing access or circulation features at the school. The proposed project would not, therefore, substantially increase hazards due to a geometric design feature or incompatible uses and would have a **less than significant impact**.
- CEQA threshold of significance T-4 asks if the proposed project would result in inadequate emergency access. The existing access and circulation features at the school, including the driveways, on-site roadways, parking lots, and fire lanes, would accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles, and the proposed athletics complex would be designed to accommodate emergency access to the field. The proposed project would not result in inadequate emergency access and there would be **no impact**.

APPENDIX

INTERSECTION TURNING MOVEMENT COUNTS

Intersection: Alton Parkway/West Yale Loop
Jurisdiction: City of Irvine
Day/Date: Thursday , April 17, 2025

Scenario	Northbound			Southbound			Eastbound			Westbound			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Existing	120	110	90	70	200	170	50	610	50	80	620	60	2230
2027 No Project	125	114	94	73	208	177	52	635	52	83	645	62	2320
Project Traffic	0	0	20	25	0	0	0	37	0	2	3	2	89
Existing + Project	120	110	110	95	200	170	50	647	50	82	623	62	2319
2017 with Project	125	114	114	98	208	177	52	672	52	85	648	64	2409

INTERSECTION TURNING MOVEMENT COUNTS

Intersection: Alton Parkway/Meadowbrook
Jurisdiction: City of Irvine
Day/Date: Thursday , April 17, 2025

Scenario	Northbound			Southbound			Eastbound			Westbound			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Existing	0	0	0	0	0	90	0	760	0	0	660	110	1620
2027 No Project	0	0	0	0	0	94	0	791	0	0	687	114	1686
Project Traffic	0	0	0	0	0	7	0	82	0	0	0	102	191
Existing + Project	0	0	0	0	0	97	0	842	0	0	660	212	1811
2017 with Project	0	0	0	0	0	101	0	873	0	0	687	216	1877

INTERSECTION TURNING MOVEMENT COUNTS

Intersection: Alton Parkway/Lake Road
Jurisdiction: City of Irvine
Day/Date: Thursday , April 17, 2025

Scenario	Northbound			Southbound			Eastbound			Westbound			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Existing	20	20	10	30	10	110	110	630	20	10	640	80	1690
2027 No Project	21	21	11	31	11	114	114	655	21	11	666	83	1759
Project Traffic	3	2	0	8	1	0	82	0	0	0	62	25	183
Existing + Project	23	22	10	38	11	110	192	630	20	10	702	105	1873
2017 with Project	24	23	11	39	12	114	196	655	21	11	728	108	1942

INTERSECTION TURNING MOVEMENT COUNTS

Intersection: Lake Road/Greg Cops Place
Jurisdiction: City of Irvine
Day/Date: Thursday , April 17, 2025

Scenario	Northbound			Southbound			Eastbound			Westbound			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Existing	60	140	10	10	130	100	30	0	10	10	0	20	520
2027 No Project	62	146	11	11	135	104	31	0	11	11	0	21	543
Project Traffic	72	0	0	0	0	74	6	0	9	0	0	0	161
Existing + Project	132	140	10	10	130	174	36	0	19	10	0	20	681
2017 with Project	134	146	11	11	135	178	37	0	20	11	0	21	704

APPENDIX G
TRIBAL CONSULTATION LETTERS

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STATE OF CALIFORNIA Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

May 30, 2025

Kelvin Okino
Irvine Unified School District
2015 Roosevelt
Irvine CA 92620

Re: 2025051366 Woodbridge High School Field Lightning Improvement Project, Orange County

Dear Mr. Okino:

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

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

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 (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

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

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

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

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

GABRIELEÑO BAND OF MISSION INDIANS - KIZH NATION
Historically known as The San Gabriel Band of Mission Indians recognized by the State of California as the aboriginal tribe of the Los Angeles basin

Monday, June 2, 2025

Kelvin Okino
Executive Director, Facilities and Construction
Irvine Unified School District
2015 Roosevelt, Irvine, California 92620

Subject: Formal Request for Government-to-Government Consultation -***Woodbridge High School Field Lighting Improvement Project***

Dear Kelvin Okino

On behalf of the Gabrieleno Band of Mission Indians Kizh Nation, I am formally requesting government-to-government consultation with the Irvine Unified School District pursuant to Assembly Bill 52 (AB 52) and the California Environmental Quality Act (CEQA) regarding the proposed ***Woodbridge High School Field Lighting Improvement Project***. Our tribe has ancestral and cultural ties to this area, and we are concerned that the project may impact Tribal Cultural Resources (TCRs) within our traditional territory.

Under AB 52, lead agencies are required to engage in meaningful government-to-government consultation with our tribe who is ancestrally traditionally and culturally affiliated with the project area when the project undergoes CEQA review, in accordance with the law.

We request that formal consultation be initiated within the required timeframe, and we are prepared to meet at your earliest convenience. Please confirm receipt of this request and provide available dates for an initial consultation meeting.

For scheduling or further discussion, please contact me at gabrielenoindians@gmail.com or (844) 390 - 0787. We appreciate your commitment to ensuring compliance with AB 52 and protecting the cultural heritage of our tribal community.

Best regards,

Hereditary Chief Andrew Salas
Gabrieleño Band of Mission Indians–Kizh Nation

PO Box 393 Covina, CA 91723 www.gabrielenoindians.org
admin@gabrielenoindians.org