

Harrison Elementary School Soundwall

Recirculated Initial Study / Mitigated Negative Declaration

Prepared For:

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1.0 INTRODUCTION

1.1 Recirculated Initial Study/Mitigated Negative Declaration

An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared for the Harrison Elementary School Soundwall. The document was circulated for a 30-day public review consistent with CEQA regulations and guidelines from March 2, 2020 through April 1, 2020. Copies of the document were distributed to the State Clearinghouse. Regional agencies, local agencies, and interested organizations and individuals were notified that the IS/MND was available for review through the distribution of a Notice of Intent (NOI) to Adopt a Mitigated Negative Declaration. Letters of comment on the IS/MND were received from one state agency (California Department of Transportation) and one local agency (Los Angeles County Unified School District Office of Environmental Health and Safety).

After circulating the document, Los Angeles County Public Works (LACPW) determined that the proposed design of a solid masonry wall 16 feet in height would create a blind corner at the point it aligns in front of the pedestrian bridge (Figure 1). The placement of a masonry soundwall at this location obstructs the view significantly for pedestrians both walking on the ramp and those approaching the ramp from the east end of the street. By obstructing views into the pedestrian bridge, the soundwall could create a place for individuals to hide or seek shelter. This could cause a public safety hazard for students or pedestrians.

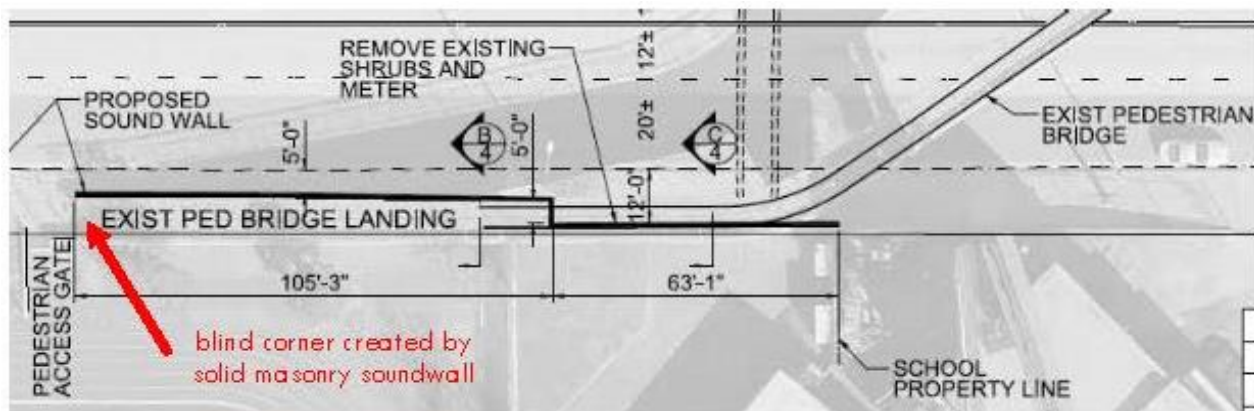


Figure 1. Location of Blind Spot Created by Proposed Masonry Soundwall

Another issue that prompted redesign occurred during the exploratory coring. During the coring, it was discovered that the top of the pedestrian bridge pile cap (Photo 1) was at the top of the sidewalk. This did not leave adequate room to construct the proposed masonry soundwall footing as originally proposed.



Photo 1: Location of Pedestrian Bridge Pile Cap

For these reasons, the soundwall was redesigned to eliminate masonry for the entire length and incorporate alternative noise barriers. The design changed from a 550-foot long, 16-foot high solid masonry wall to a 630-foot long soundwall comprised of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound “blankets” or matts). The redesigned soundwall ranges in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches (for the rigid soundwalls) above local ground. The exception is that the easternmost rigid soundwall would vary in height because it would be constructed underneath the overhead pedestrian bridge.

LACPW will need to obtain a temporary permit from the LAUSD to enter school property in order to install the acoustic barrier. The barrier will be attached to the chain-link fence.

In addition, a revised noise study was prepared to determine the level of noise protection provided by the redesigned soundwall (i.e. masonry block wall/acoustic barrier combination) compared to the all masonry block wall, as originally proposed.

LACPW determined that the changes associated with the redesigned soundwall were extensive enough to warrant recirculation of the IS/MND in accordance with State CEQA Guidelines.

1.1.1 Substantial Revisions

LACPW reviewed the comment letters on the IS/MND and determined that a Recirculated IS/MND was required to address the redesign of the soundwall, establish potential noise impacts/reductions, and potential safety impacts. The additional text that has been added to this Recirculated IS/MND is considered substantial because the revisions include new mitigation (MM 13.7-2) that was not previously identified.

1.1.2 Unsubstantial Revisions

In addition to the substantial revisions that were made to the IS/MND, additional revisions were made that are not considered substantial, per the CEQA Guidelines. For example, one of the oak trees along Marengo Street that would have required removal to accommodate construction of the soundwall will no longer need to be removed.

1.1.3 Summary of Revisions

The following revisions were made to the IS/MND.

The Project Overview has been changed to reflect the redesigned soundwall.

The description of the design of the soundwall has been changed throughout the IS/MND.

Project Background has been changed to identify additional noise modeling that was conducted on the redesigned soundwall. Site Plans and Elevations (**Figure 5A** and **5B**; **Figure 6A** and **6B**) have been replaced to show the redesign.

A new mitigation measure has been added in the Transportation Section identifying methods to reduce potential safety hazards to pedestrians during construction.

1.2 Project Overview

The proposed Project is construction of a soundwall to reduce traffic noise exposure from Interstate 10 (I-10) at Harrison Elementary School. The I-10 has six main travel lanes in each direction in the vicinity of the School. The School campus is divided into an upper and lower portion with upper portions setback further from the I-10. The portions of the campus closest to the I-10 (i.e., the pre-K classrooms, pre-K playground, and lower playground) are of primary concern for reduction of traffic noise. The upper portions of the campus (where most of the classrooms, as well as the administrative offices are located) are not as impacted by high traffic noise levels as is the lower campus.

The soundwall would be constructed at the School's north property line adjacent to the sidewalk on the south side of Marengo Street. Accounting for the gaps in the barriers, the proposed soundwall would be approximately 630 feet in length and consist of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound "blankets" or matts). The soundwall would range in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches (for the rigid soundwalls) above local ground. The only exception is at the easternmost rigid soundwall. This portion would vary in height, because it would be constructed underneath the overhead pedestrian bridge (Dudek 2020, p 1).

1.3 California Environmental Quality Act

The California Environmental Quality Act (CEQA) applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. The proposed soundwall constitutes a "project" as defined by CEQA (California Public Resources Code, Section 21065). The LACPW is proposing to construct the Harrison Elementary School Soundwall (i.e. the proposed Project) and will therefore act as the CEQA lead agency.

In accordance with the CEQA Guidelines, LACPW has prepared an Initial Study (IS) to evaluate potential environmental impacts of the Project and to determine whether an Environmental Impact Report or a Negative Declaration or Mitigated Negative Declaration (MND) should be prepared for the proposed soundwall. An MND is prepared for a project when an Initial Study has identified potentially significant effects on the environment, but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed Negative Declaration and IS are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur; and (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment.

The IS determined that implementation of the proposed Project could result in potentially significant impacts on the environment. However, as shown in the environmental analysis contained in this IS/MND, all of the Project's potentially significant impacts could be reduced to less than significant levels with implementation of mitigation measures. As a result, the analysis in the IS concludes that an MND is the appropriate level of CEQA analysis for the proposed Project.

This document consists of both the IS for the Harrison Elementary School Soundwall and the MND. This IS/MND is composed of four sections. Section 1 provides an introduction to the proposed Project; information about the contents of the IS/MND; details about the lead agency; the project location; and the environmental setting. Section 2 provides a description of the proposed Project and its construction. Section 3 consists of the CEQA IS checklist which includes a discussion of existing conditions, analysis of the potential environmental impacts, and the applicability of mitigation measures to reduce potentially significant impacts to a less than significant level. Section 4 provides a list of the lead agency staff and consultants responsible for preparation of the IS/MND. This document also includes the following appendices: the Revised Soundwall Design Memo (Appendix A); calculations for air quality and greenhouse gas (GHG) emissions (Appendix B); and Paleontological Records Search (Appendix C). Section 5 is a compilation of sources referenced in the IS/MND. The focus of this analysis is the potential for environmental impacts to occur in association with construction of the proposed soundwall. Once constructed, the soundwall would not create any environmental impacts. On the contrary, the Project would provide an environmental benefit by reducing exposure of students at Harrison Elementary School to elevated noise levels resulting from proximity to I-10.

1.4 Project Location

The proposed Project site is within the unincorporated East Los Angeles area of Los Angeles County between the campus of the Harrison Elementary School and I-10. The School is a public Kindergarten (K) thru 6th grade school in the Los Angeles Unified School District (LAUSD) located at 3529 City Terrace Drive in the community of City Terrace (**Figure 2**). The campus is located approximately 100 feet south of I-10 within Township 01S, Range 13W. The Project is proposed along the School's north property line adjacent to the sidewalk on the south side of Marengo Street.

1.5 Environmental Setting

The Project is proposed in an urban setting within an established neighborhood. The area is characterized by Harrison Elementary School, commercial/residential uses and low and medium density residential uses. Marengo Street is in between Harrison Elementary School and I-10 but is not a major source of noise. The I-10 has six main travel lanes in each direction approximately 100 feet north of Harrison Elementary School (**Figure 3**).

Portions of the campus nearest to I-10 include the pre-K classrooms, pre-K playground and lower playground. These areas are of primary concern for reduction of traffic noise as they are the most exposed to noise from the I-10 (**Figure 4**).

Photos 2 thru 4 depict the existing conditions and context of the proposed soundwall.

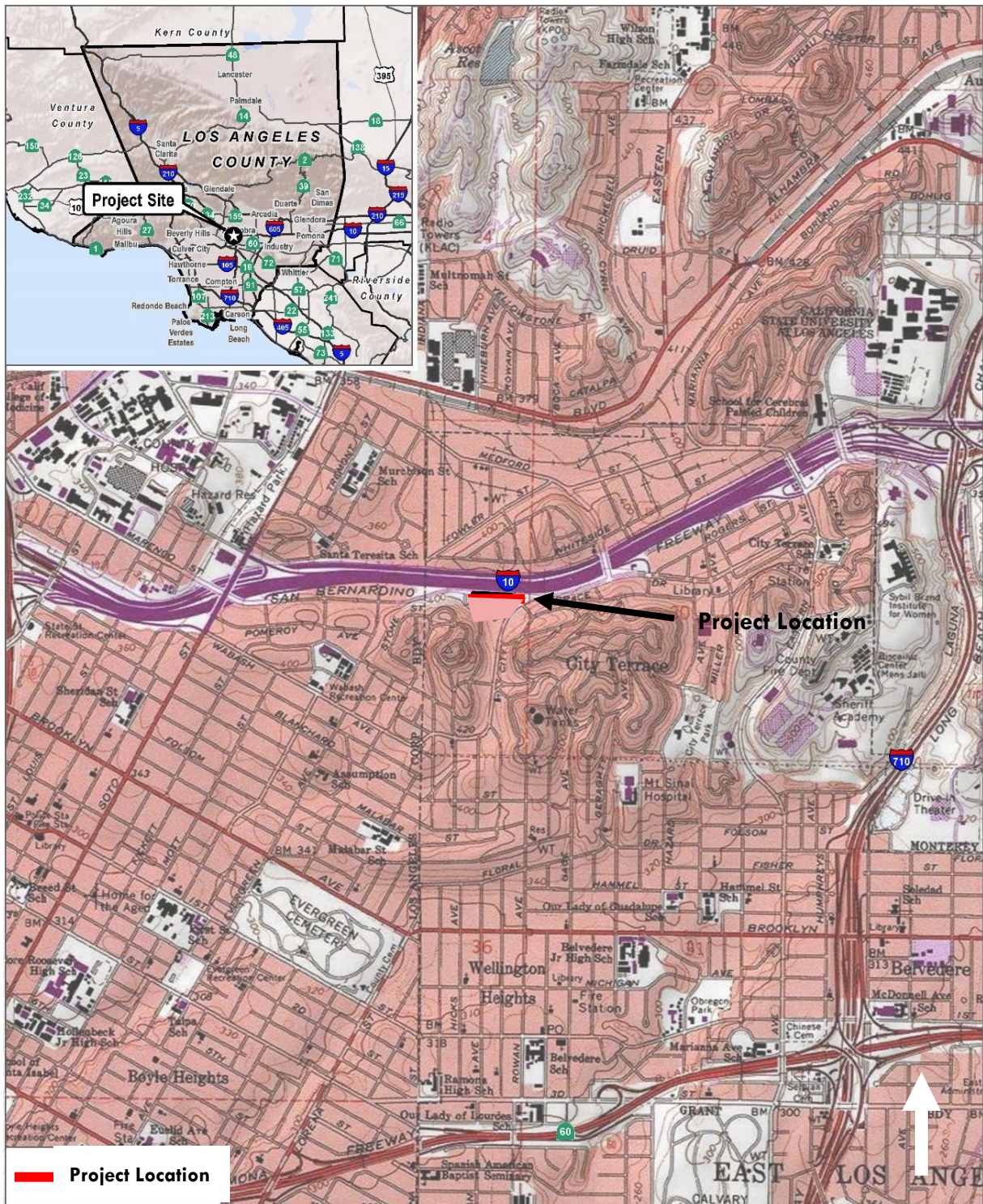


Figure 2 – Project Alignment Location Map

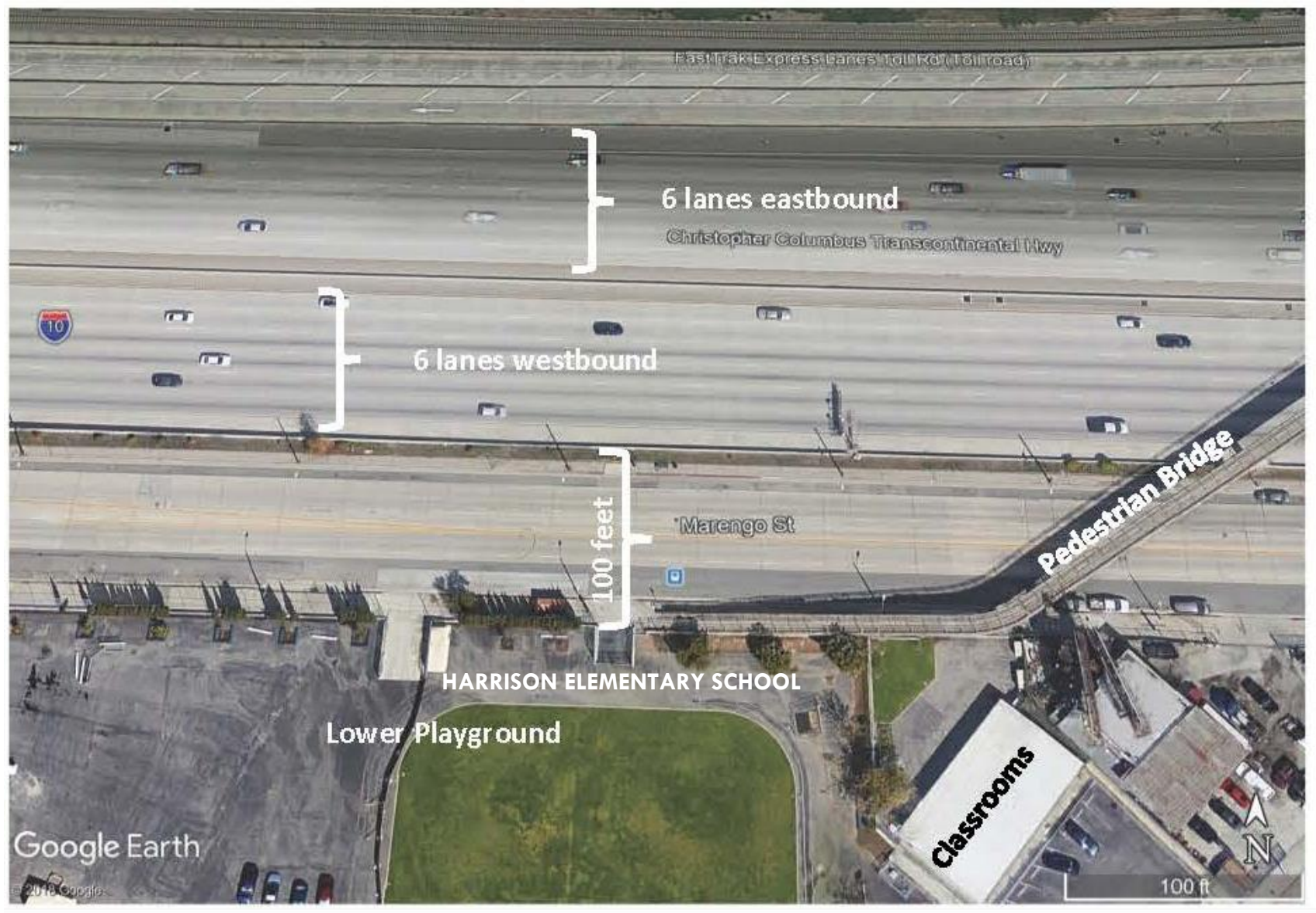


Figure 3 - Location of Facilities Relative to I-10

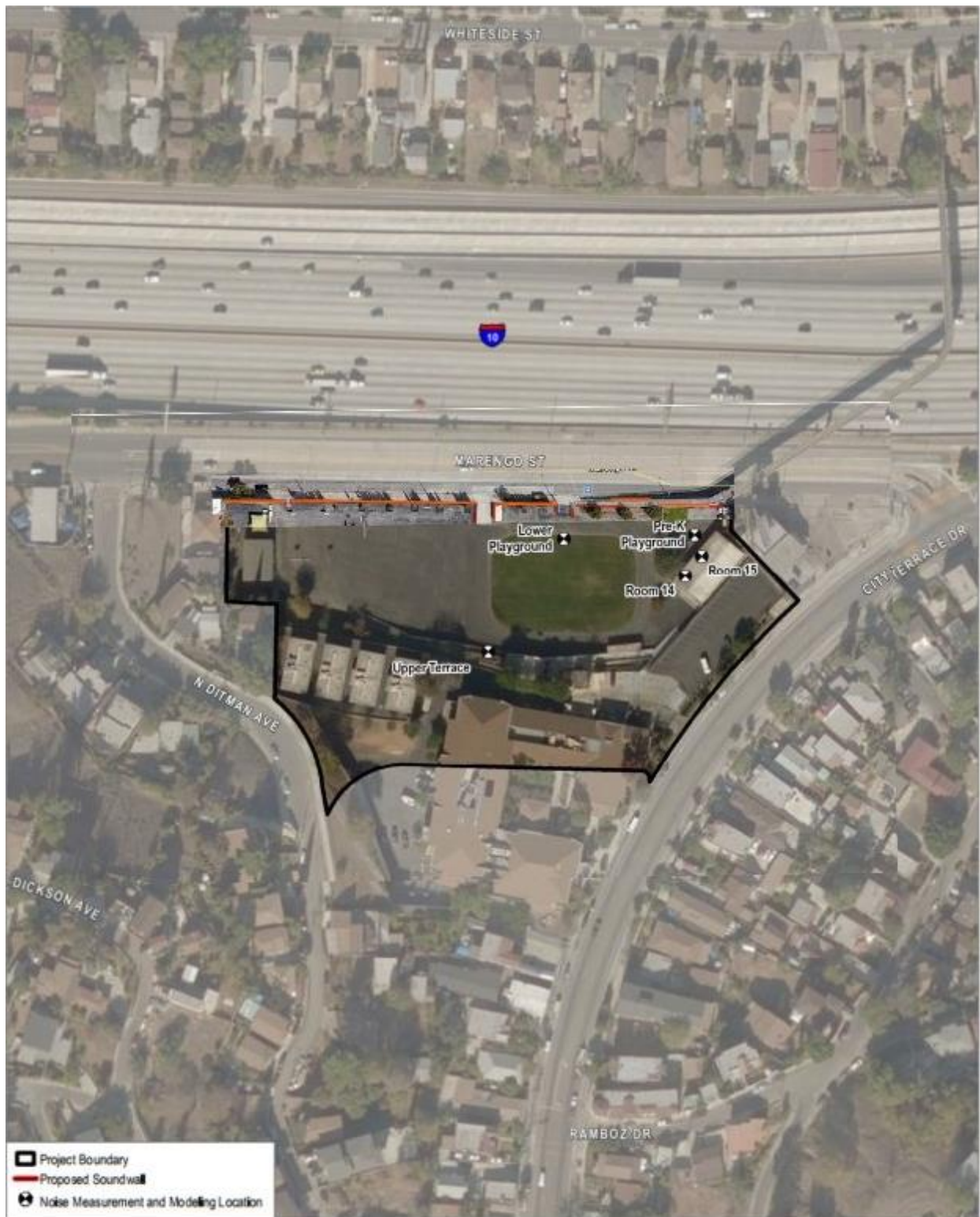


Figure 4 - Noise Measurement Locations for Proposed Soundwall

Source: Dudek 2020.



Photo 2 - Pedestrian Bridge along south side of Marengo Street near the eastern boundary of Harrison Street Elementary School. Soffit with landscaping below this portion of bridge.



Photo 3 – Sidewalk features include the pedestrian bridge, bus stop, light poles, fire hydrant and garbage can along south side of Marengo Street adjacent to north boundary of Harrison Elementary School.



Photo 4 – Soundwall context along the south side of Marengo Street adjacent to Harrison Elementary School. Residences located on hillside above School in Community of City Terrace.

2.0 PROJECT BACKGROUND

2.1 Background/Purpose and Need

The proposed Project is needed to reduce noise exposure on the playground and in classrooms located on the Harrison Elementary School campus. I-10 is a major noise source in the area with six main travel lanes in each direction north of the School (**Figure 2**). Portions of the campus closest to the I-10 (i.e. the pre-K classrooms [Room 14 and 15]; the Pre-K playground; and lower playground) are exposed to the highest levels of traffic noise as the north property line of the school is approximately 100 feet south of I-10 (**Figure 2** and **Figure 3**). The upper portion of the campus (where most of the classrooms, as well as administrative offices are located) are not as impacted by high traffic noise levels as the lower campus.

A noise study (dated September 17, 2018) was prepared that examined noise measurements at five (5) locations: two classrooms locations (Room 14 and Room 15); the Pre-K playground; the lower playground; and the upper terrace (**Figure 4**). Short-term noise measurements were conducted on Tuesday, June 5, 2018 in the mid-morning during regular school hours. The noise measurements were accompanied by manual traffic counts to document the existing on-site noise levels and to validate the traffic noise model.

Noise measurement data collected in A-weighted decibels (dBA) (i.e. an expression of relative loudness) included the hourly Leq (equivalent continuous sound level), Lmax (highest measured sound level), Lmin (lowest measured sound level), as well as the statistical noise metrics L90, L50, and L10 (threshold exceedance level 90 percent of the time; 50 percent of the time; and 10 percent of the time, respectively). Please note that noise terminology and noise fundamentals are provided in Attachment B of Appendix A.

Noise sources were noted during the period when the measurements were taken. Vehicle traffic on I-10 was the dominant source of noise. Traffic flow on the I-10 was steady and freely flowing. Marengo Street lies between the I-10 and the project site, but traffic volumes on Marengo Street are very low compared to I-10 traffic volumes, and therefore the noise contribution from this street is negligible (Dudek 2020, p. 3).

A small video camera was used to record the traffic flow on both sides of the freeway concurrently with the noise measurements for subsequent playback and vehicle-counts. The noise measurements were conducted in the absence of extraneous noise sources; the students were out of the area and did not influence the noise measurements; and no other significant noise sources other than freeway noise were noted.

Two consecutive noise measurements were conducted in Room 14: one with both the front and rear doors open; and one with both doors closed. Based upon information provided by Principal Madrigal, a typical condition when class is in session is to have both doors open in order to maintain adequate ventilation and cooling. Therefore, the subsequent measurement (in Room 15) was conducted only in the doors-open condition (Dudek 2020, p. 3).

Table 2.0-1 summarizes the noise measurements at the various locations including the time of day and the duration of the measurement. The noise measurement data confirms that on-campus noise levels in the vicinity of the I-10 are high consistent with noise from a very large, busy freeway.

**TABLE 2.0-1
NOISE MEASUREMENT RESULTS SUMMARY (dBA)**

Receiver Location	Measurement Time	Duration (minutes)	Dominant Noise Source	Leq	Lmax	Lmin	L90	L50	L10
Room 14 (Doors Closed)	9:50 a.m.	10	I-10 Freeway	46.2	61.0	42.0	42.6	43.6	46.3
Room 14 (Doors Open)	10:04 a.m.	10	I-10 Freeway	53.4	62.0	50.2	51.4	53.0	54.8
Room 15 (Doors Open)	10:16 a.m.	10	I-10 Freeway	55.8	62.1	50.5	56.2	55.4	57.8
Pre-K Playground	10:29 a.m.	10	I-10 Freeway	69.0	74.6	65.1	67.2	68.7	70.4
Lower Playground	10:43 a.m.	10	I-10 Freeway	67.8	75.9	63.7	65.5	67.5	69.7
Upper Terrace	10:57 a.m.	10	I-10 Freeway	65.8	69.3	61.8	64.2	65.6	67.1

Source: Dudek 2020, p. 3.

As shown in **Table 2.0-1**, the highest noise levels were measured at the playground areas and upper terrace. The existing/future traffic noise levels with and without a soundwall was estimated using the Federal Highway Administration's (FHWA) Traffic Noise Model (TNM) 2.5, the most recent available site plan and traffic volume data. The TNM model (in conjunction with CadnaA® [Computer Aided Noise Abatement]) was used to provide noise results for the proposed soundwall.

The LAUSD uses the following noise thresholds:

- Maximum exterior noise level: 67 dBA Leq or 70 dBA L10.
- Maximum interior classroom noise level: 45 dBA Leq or 55 dBA L10.

(Reference: LAUSD. 2014. School Upgrade Program EIR.) (Dudek 2020, p. 2).

As shown in Table 2.0-1, the measured noise levels exceed the LAUSD noise standard for exterior noise (67 dBA Leq) at the Pre-K playground, the lower playground, and the upper terrace areas. Additionally, the LAUSD noise standard for interior noise (45 dBA Leq) in both of the measured pre-K classrooms (Rooms 14 and 15). (Note: The field noise data sheets are included as Attachment C of Appendix A) (Dudek 2020, p. 3).

The findings of the noise study were compiled in the "Harrison Elementary School Sound Wall Project Noise Report" prepared by Dudek dated September 17, 2018. Subsequently, LACPW prepared a Project Feasibility Study in January 2019. The Feasibility Study identified three soundwall design scenarios. Scenario 2, which consisted of a 16-foot high masonry block extending approximately 550-feet along the north property line of the School, was selected for construction. The alignment was proposed to start at the School's west property line and extend along the north

edge of Abutment 1 of the pedestrian bridge ending at the School's east property line. To accommodate the existing pedestrian bridge, a portion of the soundwall was to be constructed underneath the pedestrian bridge soffit. The original design included gaps to accommodate the two existing vehicle gates and two pedestrian access gates (one is adjacent to the eastern-most vehicle gate) to preserve pedestrian and vehicular access to the lower schoolyard from Marengo Street.

Existing measured noise levels (shown in **Table 2.0-1**) were compared with a model of Scenario 2 to determine the degree that noise exposure would be lowered. As shown in **Table 2.0-2**, Scenario 2 resulted in noise reduction of 7 to 12 dB at the noise measurement locations.

TABLE 2.0-2
WORST-CASE TRAFFIC NOISE MODELING RESULTS SUMMARY SCENARIO 2 (DBA LEQ)

Receiver Location	Existing Traffic Noise Level Without Soundwall	Traffic Noise Level With 16-foot Soundwall Scenario 2	Noise Reduction	LAUSD Noise Standard	LAUSD Noise Standard Achieved with Soundwall
Room 14* (Doors Open)	59	54	-5	45 (Interior)	No
Room 15 (Doors Open)	61	57	-4	45 (Interior)	No
Pre-K Playground	76	72	-4	67 (Exterior)	No
Lower Playground	75	69	-6	67 (Exterior)	No
Upper Terrace	73	64	-9	67 (Exterior)	Yes

Source: Dudek 2018.

*The interior noise levels reflect the noise offsets (16 dB for Room 14, 14 dB for Room 15) during the noise calibration phase.

As shown, traffic noise levels were lowered at each of the five noise measurements locations with the addition of Scenario 2. Specifically, Scenario 2 was estimated to reduce noise levels by approximately 4 to 9 decibels (dB) compared to existing conditions.

The LACPW prepared an Initial Study/Mitigated Negative Declaration for Scenario 2 which was circulated for public review from March 2, 2020 through April 1, 2020. Subsequently, the County redesigned the soundwall to address safety concerns and construction limitations discovered during exploratory coring. This IS/MND analyzes the redesigned soundwall (hereinafter "the proposed Project"). Noise was modeled for the redesigned soundwall which revealed lower noise exposure as discussed in the following section.

2.2 Noise Modeling

On-site noise and traffic noise were analyzed using the TNM computer model along with topographical data and site plan information. TNM was used to build the noise model for the proposed Project and the associated measured and modeled noise sensitive receiver points. The traffic noise emission levels used as a basis for the calculations within CadnaA® were provided by the Federal Highway Administration (FHWA) traffic noise prediction model (TNM version 2.5)

(FHWA 2004). (Noise modeling inputs and outputs are provided in Attachment D of Appendix A) (Dudek 2020, p. 3).

In conformance with California Department of Transportation (Caltrans) guidance for assessment of traffic noise, the loudest traffic noise hour is generally characterized by high-volume but free-flowing traffic at the highway design speed (i.e., LOS C/D or better). Based upon current Caltrans protocol, it was assumed that each of the 12 general purpose (GP) lanes of the I-10 in the Project vicinity has an LOS C/D capacity of 1,950 vehicles per hour per lane with all vehicles traveling at an average speed of 65 miles per hour. The average vehicle mix (i.e., percentages of autos, medium and heavy trucks) was derived from the Caltrans traffic data web site). This vehicle mix corresponds to 97% autos, 1% medium trucks and 2% heavy trucks (Dudek 2020, p. 4).

To validate the accuracy of the TNM model, the measured traffic noise levels were compared to modeled noise levels at each of the measurement locations. For each receiver, traffic volumes counted during the short-term measurement periods were normalized to one-hour volumes. These normalized volumes were input into the noise model to simulate the noise source strength during the actual measurement period. Modeled and measured sound levels were then compared to determine the accuracy of the model. The resultant modeled noise levels were within 1 to 2 decibels of the measured noise levels at the exterior locations, which indicates that the noise model reflects real-world conditions within acceptable tolerances. The difference between the measured interior noise levels within Rooms 14 and 15 and the corresponding modeled noise levels (16 dB for Room 14 with doors open, 22 dB with doors closed; 14 dB for Room 15 with doors open) is in line with typical exterior/interior noise reduction for building structures of this type (Dudek 2020, p. 4).

2.3 Results and Recommendations

As shown in **Table 2.0-3**, traffic noise levels were lowered at each of the five noise measurements locations with the addition of the redesigned soundwall (i.e. the proposed Project). Specifically, the proposed Project is estimated to reduce noise levels by approximately 6 to 12 decibels (dB) compared to existing conditions.

TABLE 2.0-3
WORST-CASE TRAFFIC NOISE MODELING RESULTS SUMMARY PROPOSED PROJECT (dBA LEQ)

Receiver Location	Existing Traffic Noise Level without Soundwall	Traffic Noise Level with Redesigned Soundwall (proposed Project)	Noise Reduction	LAUSD Noise Standard	LAUSD Noise Standard Achieved with Soundwall
Room 14* (Doors Open)	60	50	-10	45 (Interior)	No
Room 15 (Doors Open)	62	50	-12	45 (Interior)	No
Pre-K Playground	77	66	-11	67 (Interior)	Yes
Lower Playground	75	63	-12	67 (Interior)	Yes
Upper Terrace	71	65	-6	67 (Interior)	Yes

Source: Dudek 2020, p. 5.

*See Attachment D of Appendix A.

As shown in **Table 2.0-3**, the proposed Project would provide noise reduction levels of approximately 6 to 12 decibels. Although the proposed Project would not reduce noise levels to below LAUSD noise standards in the Pre-K classrooms, the noise reduction would be clearly audible and would likely be a benefit to students and staff. Furthermore, the traffic noise levels at the Pre-K playground and at the central part of campus (i.e., the lower playground and the upper terrace) would be reduced to below the LAUSD exterior noise standard (Dudek 2020, p. 5).

2.3.1 Proposed Design without Mountable Noise Panels

Table 2.0-4 summarizes the results of the noise modeling for the proposed Project without the mountable noise panels compared with the results for the “complete” soundwall design (from Table 2.0-2).

TABLE 2.0-4
PROPOSED SOUNDWALL DESIGN COMPARED TO DESIGN WITH MOUNTABLE NOISE PANELS (dBA Leq)

Noise Reduction	Proposed Soundwall Design (from Table 2.0-2)	Soundwall Design without Mountable Noise Panels	Relative Increase in Noise Levels without Mountable Noise Panels	LAUSD Noise Standard
Room 14* (Doors Open)	50	53	3	45 (Interior)
Room 15* (Doors Open)	50	53	3	45 (Interior)
Pre-K Playground	66	69	3	67 (Interior)
Lower Playground	63	70	7	67 (Interior)
Upper Terrace	65	67	2	67 (Interior)

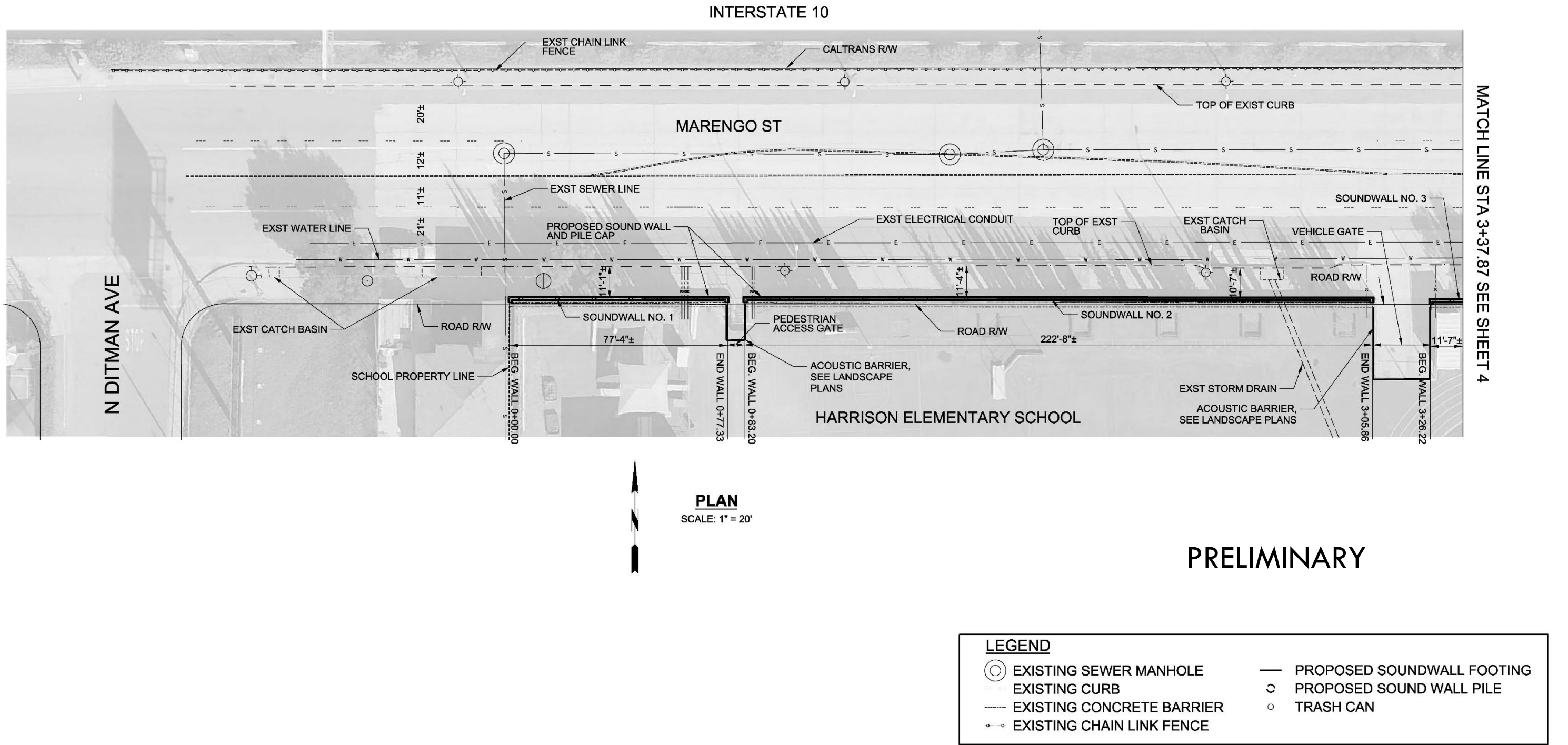
Source: Dudek 2020, p. 5.

*The interior noise levels reflect the noise offsets (16 dB for Room 14, 14 dB for Room 15) during the noise calibration phase. See Attachment D of Appendix A.

As shown in **Table 2.0-4**, without the mountable noise barrier panels, the resulting noise levels would be approximately 2 to 7 dBA louder than with the proposed barrier design. At the Pre-K playground and at the lower playground, the noise levels would exceed the LAUSD noise standard of 67 dBA Leq exterior. At the upper terrace, the noise levels would equal but not exceed the 67 dBA Leq noise standard. Based on the results, mountable noise barrier panels should be installed in conjunction with the more permanent, rigid soundwalls (Dudek 2020, p. 5).

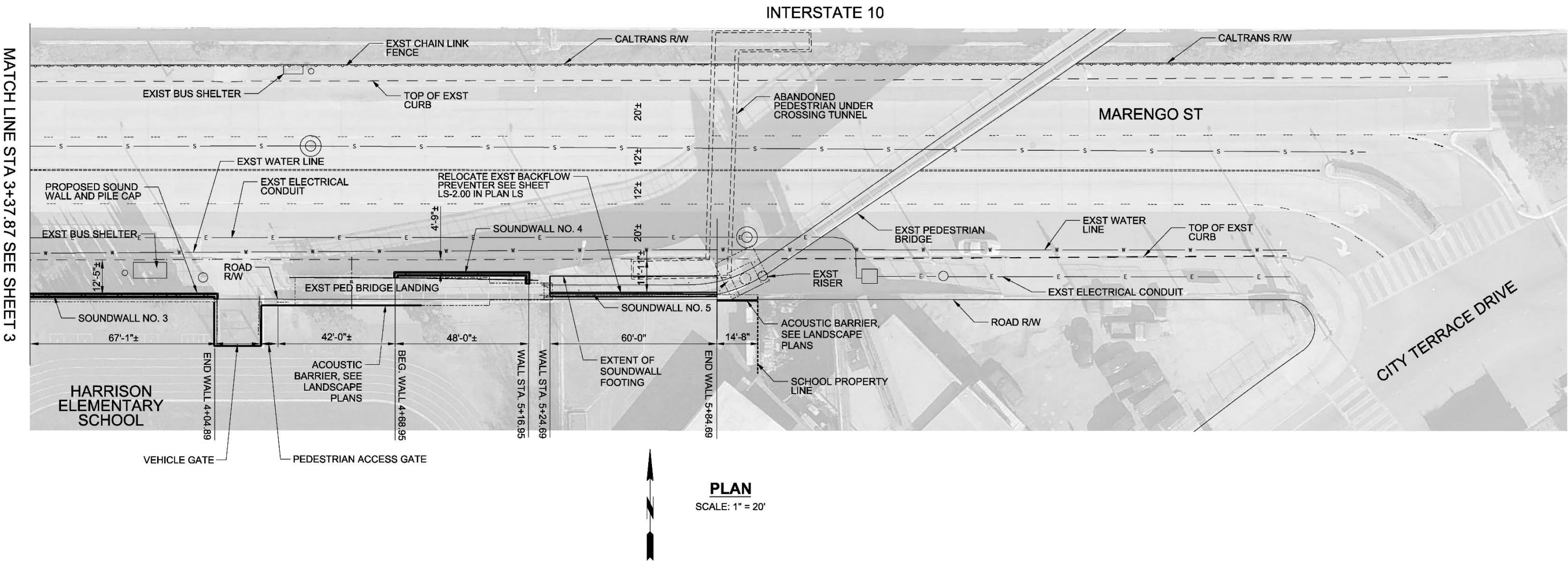
2.4 Project Design

The proposed Project as currently envisioned would be constructed at the north property boundary the Harrison Elementary School. The proposed soundwall design would be approximately 630 feet in length, including gaps in the barriers (**Figure 5A** and **Figure 5B**). The soundwall would consist of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound “blankets” or matts). The soundwall would range in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches (for the rigid soundwalls) above local ground. The exception is that the easternmost rigid soundwall would vary in height because it would be constructed underneath the overhead pedestrian bridge. The Project will be constructed entirely within County road right-of-way.



Source: LACPW 2020.

Figure 5A - Proposed Soundwall Alignment – Sections 1 and 2



PRELIMINARY

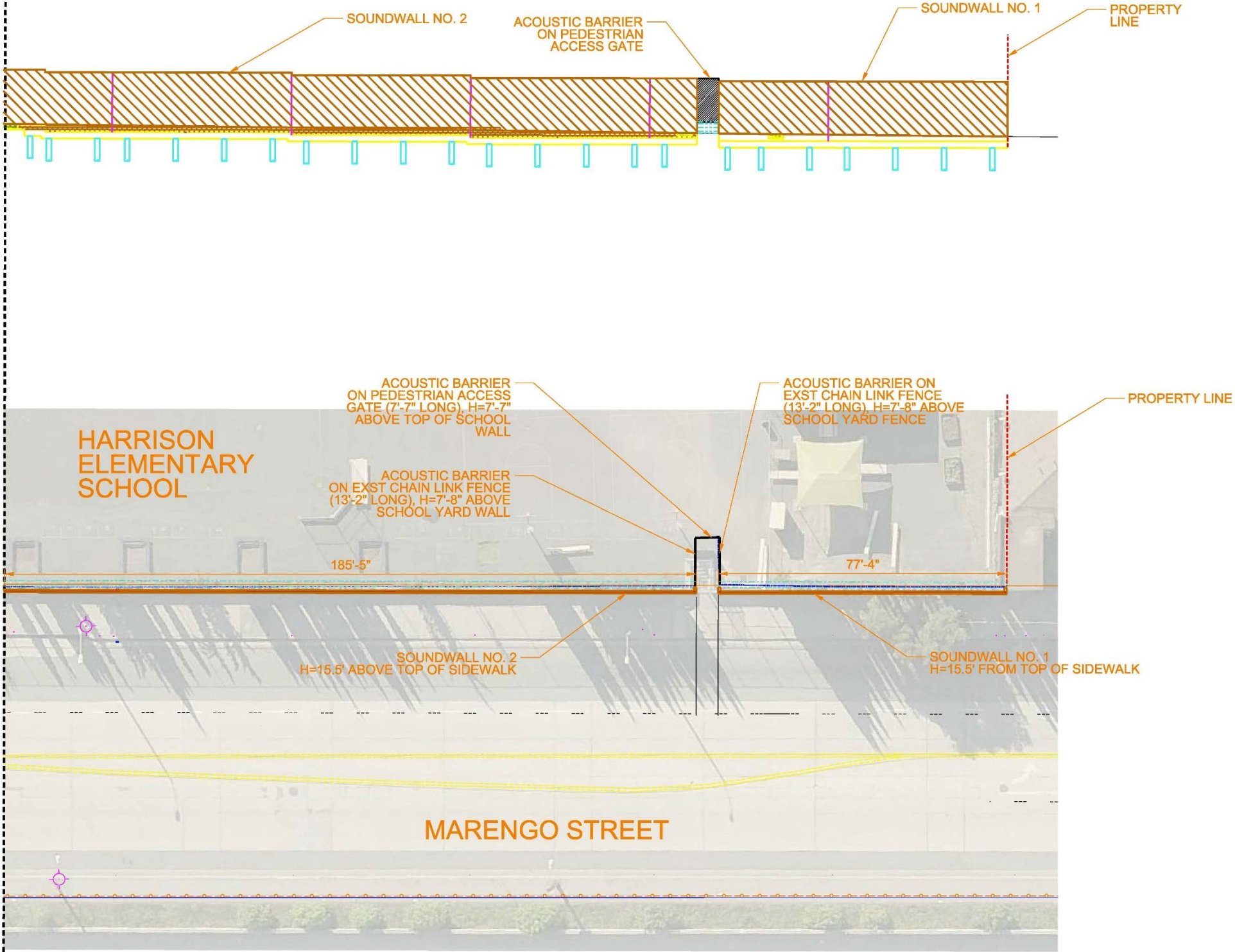
LEGEND	
⊙	EXISTING SEWER MANHOLE
- -	EXISTING CURB
—	EXISTING CONCRETE BARRIER
⊕	EXISTING CHAIN LINK FENCE
—	PROPOSED SOUNDWALL FOOTING
○	PROPOSED SOUND WALL PILE
○	TRASH CAN

Source: LACPW 2020.

Figure 5B - Proposed Soundwall Alignment – Sections 3, 4 and 5

A-A

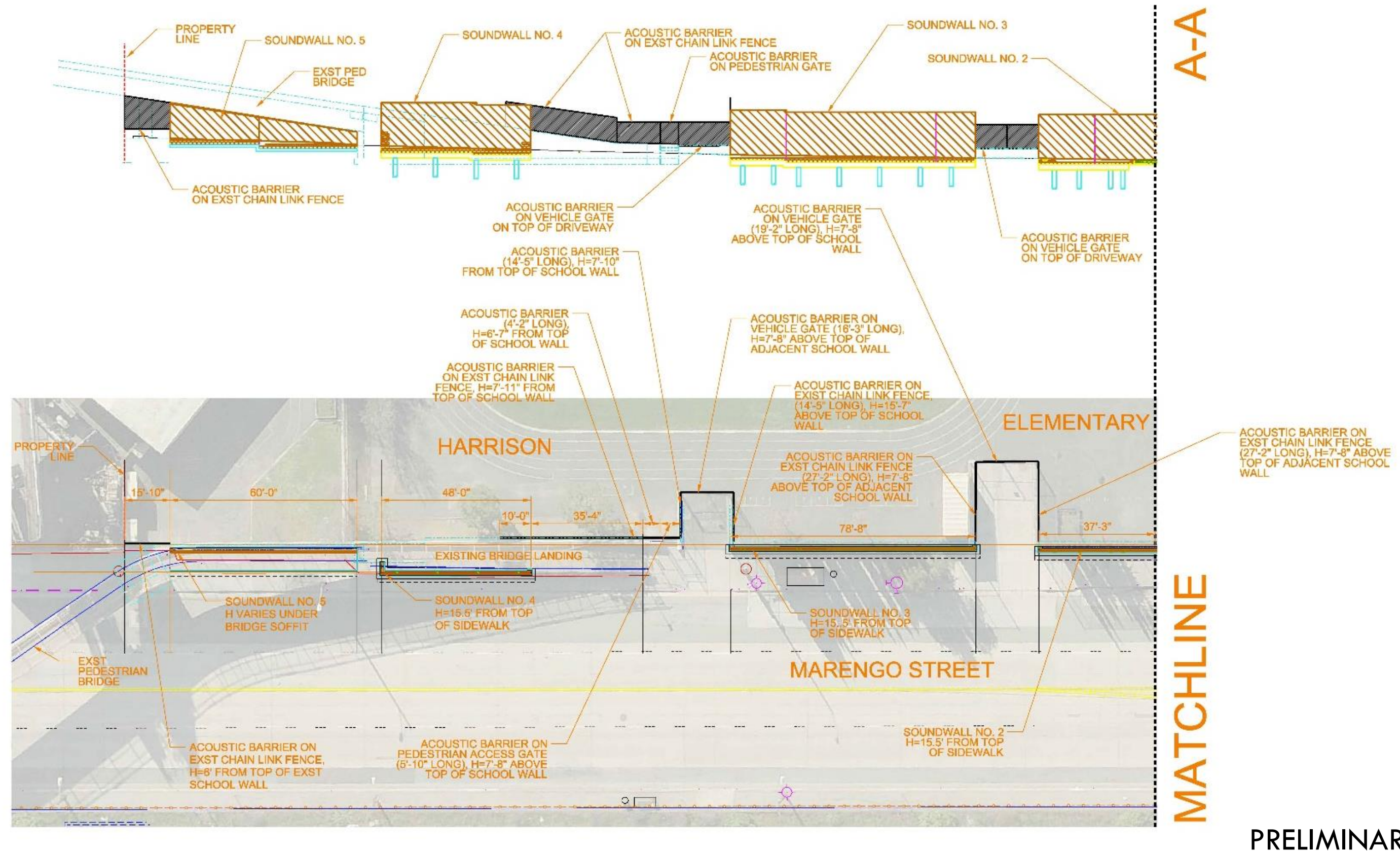
MATCHLINE



PRELIMINARY

Source: LACPW 2020.

Figure 6A - Proposed Soundwall Elevations – Sections 1 and 2



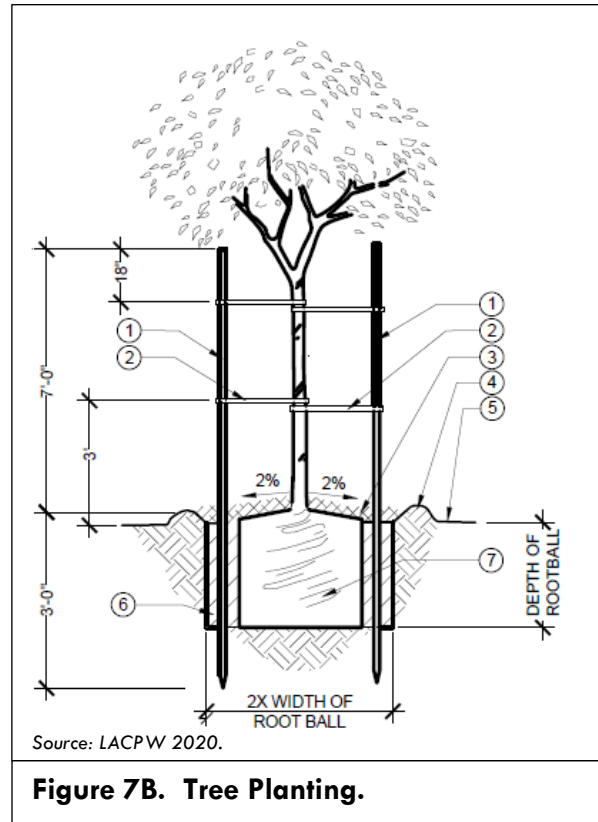
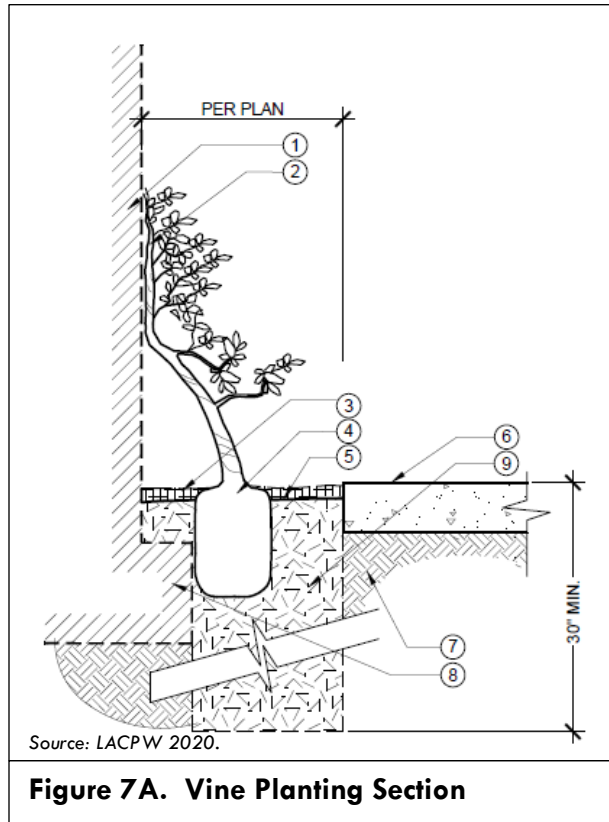
PRELIMINARY

Source: LACPW 2020.

Figure 6B - Proposed Soundwall Elevations – Sections 3, 4 and 5

Landscaping

The proposed soundwall would include landscaping. Vine pockets (**Figure 7A**) and tree wells (**Figure 7B**) will be placed along the north side of the soundwall along the sidewalk. Vine species under consideration include creeping fig or Boston ivy. Evergreen (e.g. *Podocarpus*) trees will provide shade and soften the aesthetics of the soundwall (i.e. masonry blocks).



2.5 Construction

The proposed Project would be constructed of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound “blankets” or matts) (**Figure 8A** and **Figure 8B**). To avoid any adverse impacts to the existing pedestrian bridge and retaining walls along the School’s north property line, as well as the existing underground facilities (sewer, storm drain, water service line), masonry segments of the soundwall will be placed on cast-in-drilled hole (CIDH) pile foundations supported by continuous concrete pile footings (**Figure 9**). A backhoe/excavator would be used to dig the foundation. Material obtained from the open trench excavations may be used as trench backfill. Imported backfill may be used as well.

The noise barrier material will be attached on the street side of the chain-link fencing along all segments of the soundwall (**Figure 10A**, **10B**, **10C** and **10 D**). The exception will be on the segment that attaches to the pedestrian bridge. For this arched segment, the noise barrier material will be attached to the chain-link fence on the school side to reduce the risk of tampering and damage (**Figure 10A**).



Figure 8A. Acoustifence.



Figure 8B. Exterior Absorber Blanket.

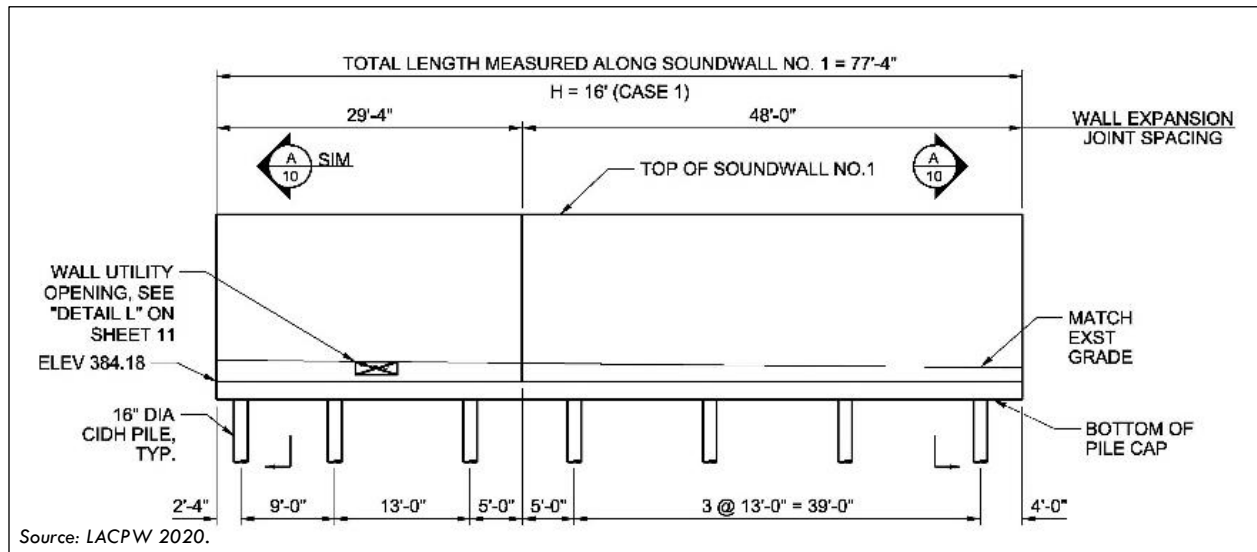


Figure 9. Cross-Section of Soundwall Section 1 showing CIDH Piles.

Equipment

Construction of the proposed Project will require a drill rig and backhoe excavator. Materials will be delivered to the site on heavy duty trucks. All staging is anticipated to occur within the right-of-way along Marengo Street.

Utilities

A preliminary utility search indicated that a sewer line is located at the west end of the proposed soundwall alignment, immediately adjacent to the School property line (**Figure 5A**). This sewer line would not be affected by the soundwall.

Records also indicate a storm drain diagonally crosses the proposed alignment just west of the western-most vehicle gate (**Figure 5A**). The storm drain would remain in place and the soundwall would be constructed over the alignment.

An abandoned pedestrian tunnel under Marengo Street crosses the proposed alignment of the soundwall near the pedestrian bridge (**Figure 5B**). The tunnel will remain in place.

A water service line also extends along the curb on the south edge of Marengo Street. Construction of the soundwall is not expected to impact this water service line.

The backflow preventer in the shrub space underneath the pedestrian bridge will be relocated to accommodate construction of the soundwall.

All light and utility poles within the sidewalk along Marengo Street would remain intact as would the fire hydrant, bus stop and stationary garbage can (Refer to **Photo 3**).

Schedule

Construction of the Project is expected to take 13 weeks and would occur between the hours of 9 a.m. and 3:00 p.m. to avoid conflicts with school drop-off times and peak traffic periods.

2.6 Permits and Approvals Required for the Project

The Project will need to obtain the following:

- A Permit to Enter for the Harrison Elementary School property from the LAUSD to install the acoustic barrier.
- Certification of the Final Initial Study and Mitigated Negative Declaration will be needed from the County of Los Angeles Board of Supervisors.

2.7 Documents and Terms

Los Angeles County General Plan – The proposed Project is in the Community of City Terrace in unincorporated Los Angeles County and is therefore subject to the Los Angeles County General Plan. The General Plan provides the policy framework and establishes the long-range vision for how and where the unincorporated areas, including the Project area, will grow. The General Plan establishes goals, policies, and programs to foster healthy, livable, and sustainable communities. The General Plan is the overall planning document cited in this IS/MND.

Los Angeles County General Plan Environmental Impact Report (EIR) (State Clearinghouse # 2011081042) – The Los Angeles County General Plan EIR was prepared pursuant to the requirements of CEQA as set forth in the Public Resources Code Section 21000 et seq., and the State CEQA Guidelines, 14 California Code of Regulations Section 15000 et seq. (CEQA Guidelines). The EIR addresses the environmental effects associated with the implementation of the proposed Los Angeles County General Plan Update. The General Plan EIR is cited in this IS/MND for relevant background and setting information.

Metro Planning Area – The Project is located in the Metro Planning Area which is one of 11 planning areas in Los Angeles County.

East Los Angeles Community Plan – One of four community plans within the Metro Planning Area of the Los Angeles County General Plan. The Project is located within the Metro Planning Area.

Community of City Terrace – A community within the East Los Angeles Community Plan. The Project is within the community of City Terrace.

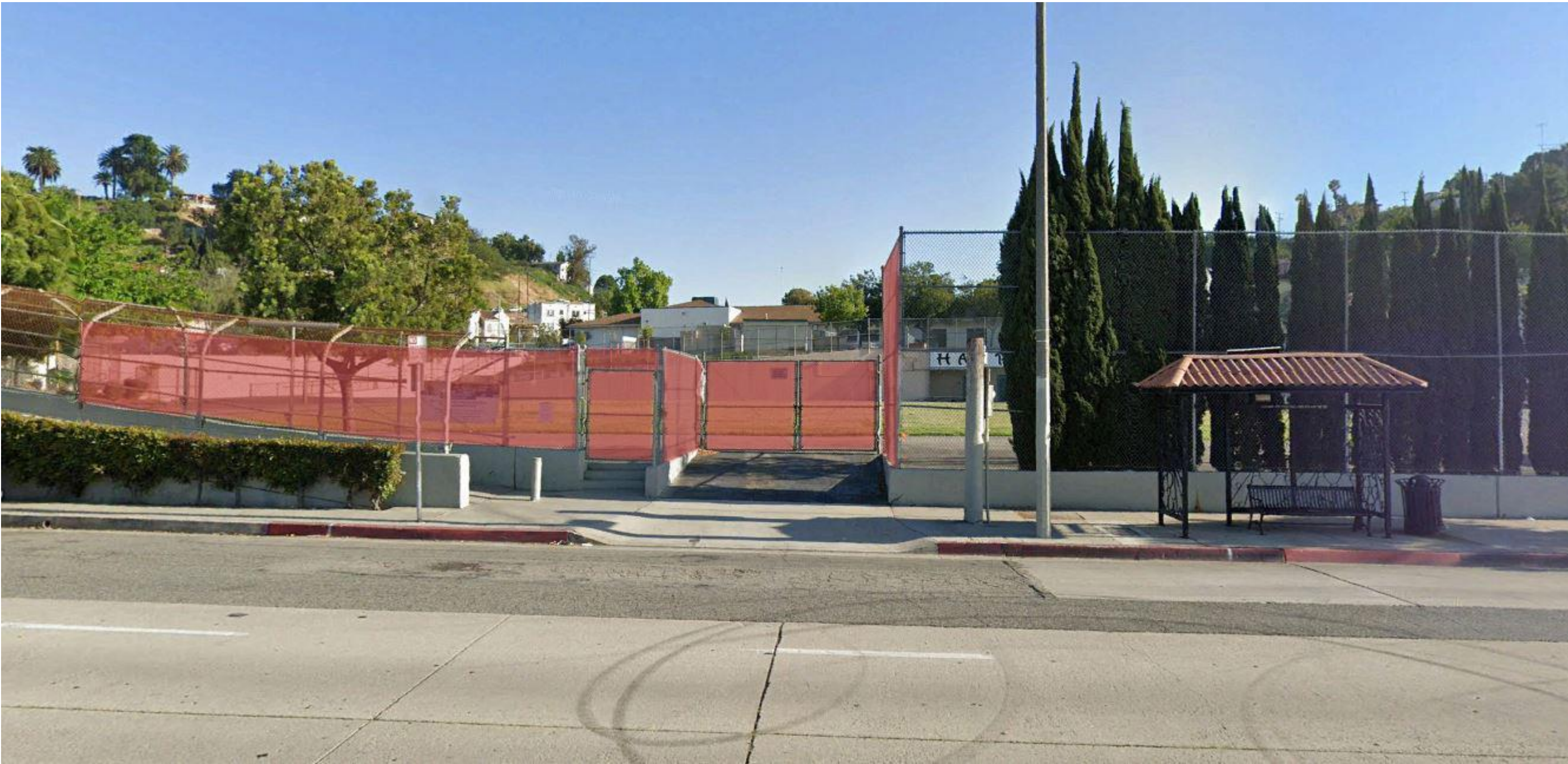


Figure 10A - Visual Simulation – Acoustic Barrier on Existing Chain Link Fence on Easternmost Gate & Pedestrian Bridge



Figure 10B - Visual Simulation Acoustic Barrier on Existing Chain Link Fence Between Soundwall Section 3 & 4

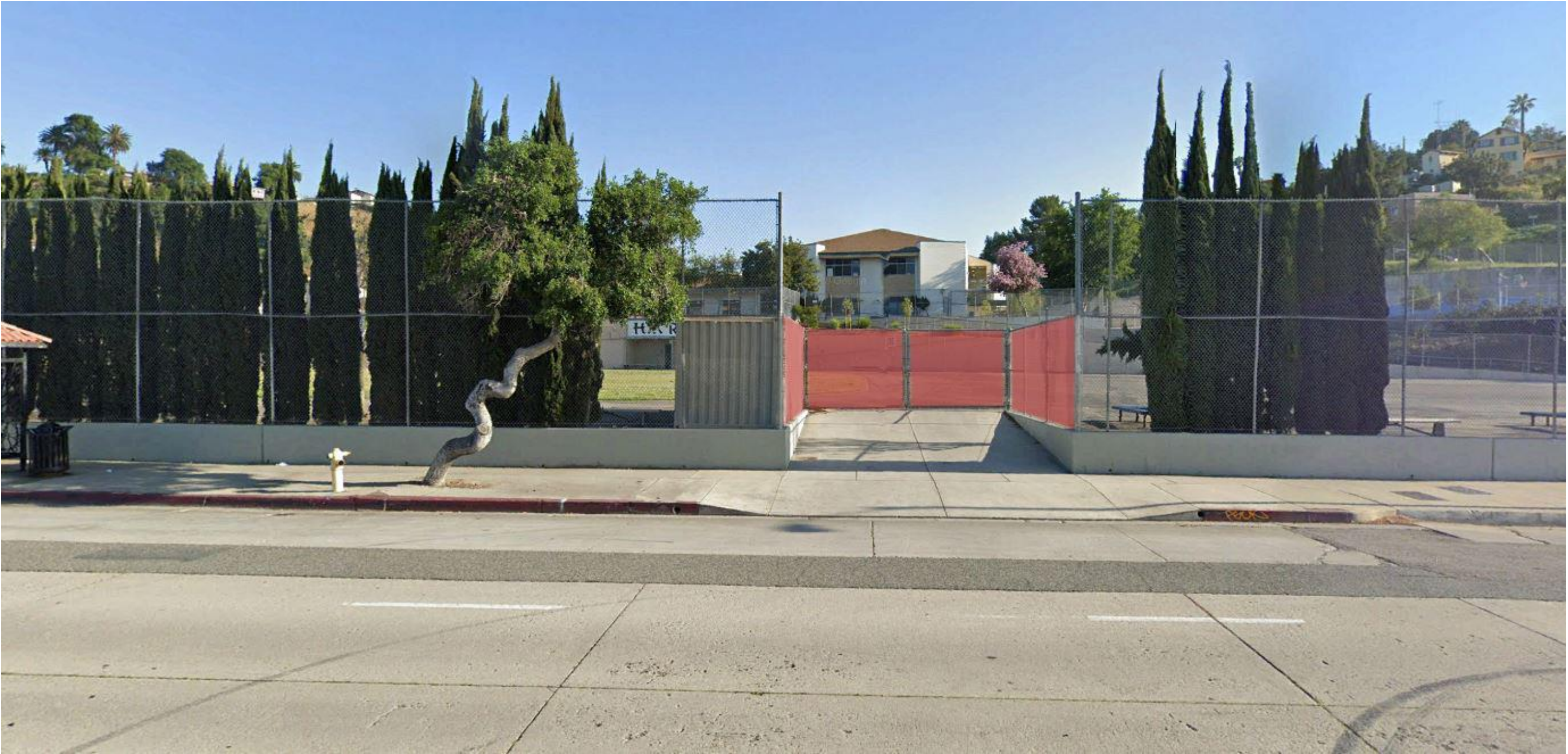
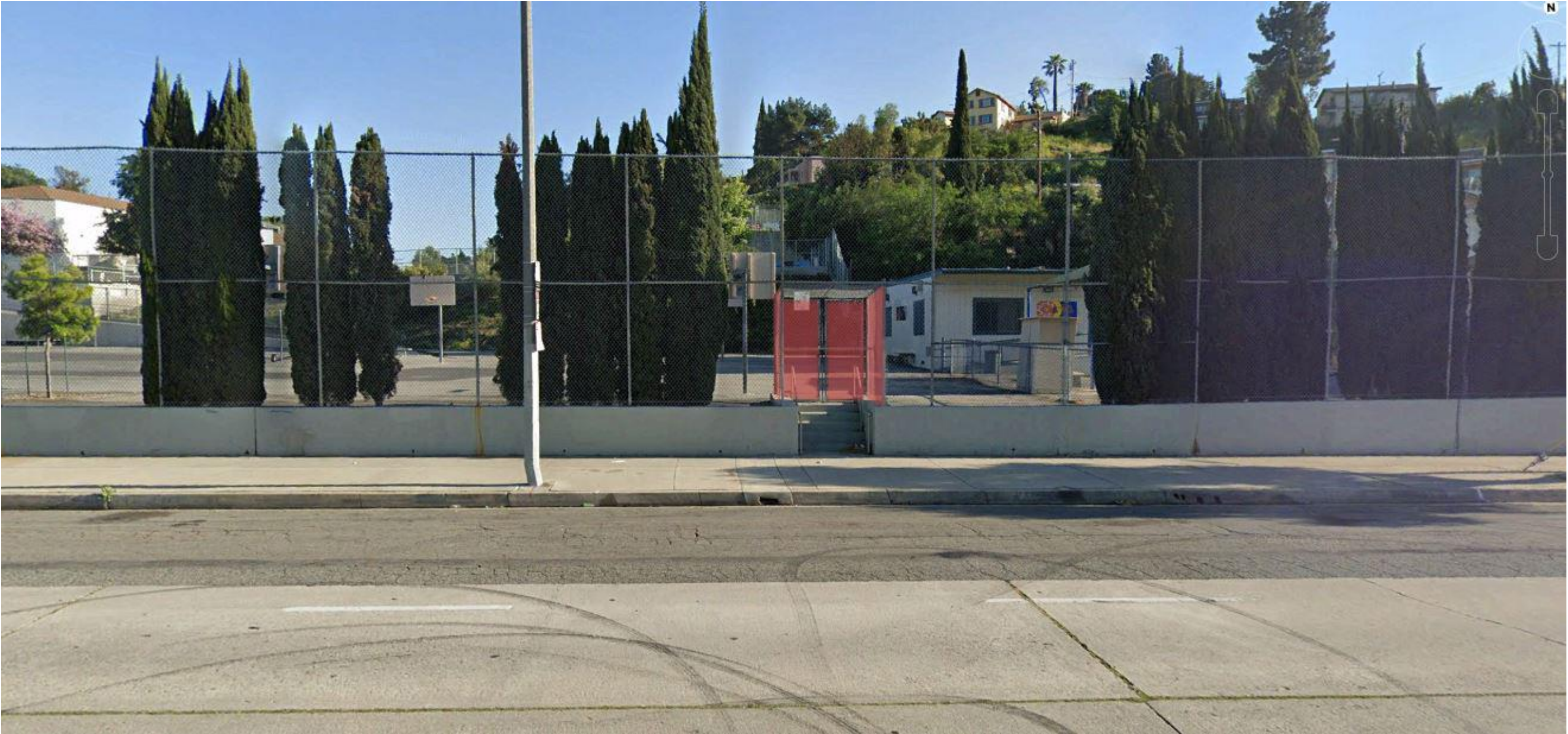


Figure 10C - Visual Simulation of Acoustic Barrier at Vehicle Gate Between Soundwall Section 3 & 2



Source: LACPW 2020

Figure 10D - Visual Simulation of Acoustic Barrier on Pedestrian Gate Between Soundwall Section 2

3.0 INITIAL STUDY CHECKLIST

The following discussion of potential environmental effects was completed in accordance with Section 15063(d)(3) of the CEQA Guidelines (2019) to determine if the proposed Harrison Elementary School Soundwall would result in any significant impacts to the environment.

1. Project Title:

Harrison Elementary School Soundwall

2. Lead Agency Name and Address:

County of Los Angeles Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91803

3. Contact Person and Phone Number:

Albert Anidi
Supervising Civil Engineering Assistant
Transportation Planning and Programs Division
County of Los Angeles Department of Public Works
Phone: (626) 458-5199
e-mail: AANIDI@dpw.lacounty.gov

4. Project Location: The proposed Project site is within the unincorporated East Los Angeles area of Los Angeles County between the campus of the Harrison Elementary School and Interstate 10 (I-10). The School is located at 3529 City Terrace Drive in the community of City Terrace (**Figure 1**). Harrison Elementary School, a public K thru 6th grade school in the LAUSD, is located approximately 100 feet south of I-10 on a single parcel (Assessor's Parcel Number 5229-019-908) within Township 01S, Range 13W.

5. Project Sponsor's Name and Address:

County of Los Angeles Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91803

6. Los Angeles County Supervisory District

District 1

7. General Plan designation: P (Public Use and Semi Public)

Purpose: Public and semi-public facilities and community-serving uses, including public buildings and campuses, schools, hospitals, cemeteries, and fairgrounds; airports and other major transportation facilities.

Other major public facilities, including planned facilities that may be public-serving but may not be publicly accessible, such as landfills, solid and liquid waste disposal sites, multiple use storm water treatment facilities, and major utilities.

8. **Zoning:** IT (Institutional) Special Purpose Zone
9. **Description of Project:** The Project is construction of a soundwall to reduce traffic noise exposure at Harrison Elementary School. The soundwall is proposed to begin at the School's west property line and end at the School's east property. Accounting for the gaps, the proposed soundwall would be approximately 630 feet in length and would consist of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound "blankets" or matts) (**Figure 5A** and **Figure 5B**). The soundwall would range in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches (for the rigid soundwalls) above local ground (**Figure 6A** and **Figure 6B**)

The soundwall will be built along the School's north property line.

10. **Surrounding Land Uses and Setting:** The Project site is located at the north property line of the Harrison Elementary School. The School is surrounded by Marengo Street and I-10 on the north; residential uses on the west and south; and commercial/residential uses on the east. City Terrace Drive borders the School directly to the east. North Ditman Drive is to the west of the residential uses immediately adjacent to the School's west property line.

11. **Other Public Agencies Whose Approval is Required:**

Los Angeles Unified School District (Permit to Enter)

12. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1?**

Yes. Assembly Bill 52 (Gatto 2014) created a new class of impacts considered in the CEQA Appendix G initial Study Checklist specific to Tribal Cultural Resources. AB 52 mandates notice and meaningful consultation with Native American tribes who request to consult with a lead agency regarding any proposed project subject to CEQA in the geographic area within which the tribe is traditionally and culturally affiliated. If a tribe chooses to consult on a project, the law allows the tribe 30 days to respond to the notice.

If so, has consultation begun? Yes. On September 4, 2019, the County sent a letter to the Gabrieleño Band of Mission Indians – Kizh Nation inviting the Tribe to consult on the Project. The letter included a project description and map of the project area. The Tribe responded and requested to engage in consultation with the County. The Tribe requested consultation and a conference call with the County was conducted on December 4, 2019. During the call, Chairman Andrew Salas and Tribal Biologist Matthew Teutimez described the proximity of the Project to Tribal Trade and stream courses. Based on these factors Chairman Salas and Mr. Teutimez discussed their concerns regarding potential for subsurface artifacts to be discovered during construction. The County shared copies of the Geotechnical Reports prepared for the Project for the County to review. The Tribe provided an e-mail on January 10, 2020 explaining the potential for the Project to impact Tribal Cultural Resource based on the proposed soundwall being located within a sacred village (Apachianga), adjacent to water courses and major traditional trade routes, and high potential to impact Tribal Cultural Resources still present within the soil layers from the thousands of years of prehistoric activities

that occurred within and around these landscapes. Therefore, to avoid impacting or destroying Tribal Cultural Resources that may be inadvertently unearthed during the Project's ground disturbing activities, the Tribe provided mitigation language approved by its Tribal Government for use in this IS/MND. The mitigation is included in Section 3.18.

On September 26, 2019, the County sent a similar letter to the San Gabriel Band of Mission Indians inviting the Tribe to consult on the Project. The Tribe did not request consultation with the County.

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code, Section 21083.3.2). Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code, Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code, Section 21082.3 (c) contains provisions specific to confidentiality.

13. Reviewing Agencies

California Department of Transportation

Los Angeles Unified School District

14. Project Approvals

Los Angeles County Board of Supervisors

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture/Forestry Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input checked="" type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas | <input type="checkbox"/> Hazards and Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input checked="" type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input checked="" type="checkbox"/> Transportation | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION

On the basis of the initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Albert E. Anidi

Signature

9/8/2020

Date

Albert E. Anidi

Print Name

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an Environmental Impact Report (EIR) is required.
4. “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from “Earlier Analyses,” as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where they are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are “Less than Significant with Mitigation Measures Incorporated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

3.1 Aesthetics

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

Existing Conditions

The proposed Project is located in an urban setting between the Harrison Elementary School and I-10 in the community of City Terrace. The area is built-out with the School, commercial/residential uses and residential uses. A sidewalk with a bus stop and overhead streetlights extend along Marengo Street, a four-lane, two-way street immediately north of the School. The dominant visual features in the area include billboards, a concrete pedestrian bridge with metal canopy extending over I-10, and homes and telephone poles located on the hillside and hilltop south of the School.

Several freeways in Los Angeles County are considered in the California Scenic Highway Mapping System to be “Officially Designated Scenic Highways” or “Eligible State Scenic Highways”. However, as depicted on Figure 5.1-1, “Scenic Highways” of the Los Angeles County General Plan Update EIR, I-10 is not in either category (PlaceWorks 2014a).

Homes in the City Terrace community are not within a Hillside Management Area. The elevated pedestrian bridge transitions to ground level on the east end of the School’s north property line. Trees (underneath the bridge along Marengo Street) and Italian cypress (along the north boundary of the playground) provide screening of the School.

The San Gabriel Mountains to the north are a scenic resource visible from the School and homes on the hillside.

Impact Analysis

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

No Impact. I-10 is approximately 100 feet north of the north property line of the Harrison Elementary School. According to Figure 5.1-1, Scenic Highways of the Los Angeles County General Plan Update EIR, I-10 is not identified as an adopted or eligible scenic highway (PlaceWorks 2014a). Therefore, the proposed Project would have no impact with regard to having a substantial adverse effect on a scenic vista or scenic highway.

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

No Impact. The Project site is within an urban setting. Several trees and ornamental shrubs are currently planted along the south side of Marengo Street. These landscape features would remain in place but would no longer be visible from Marengo Street or I-10 once the soundwall is constructed. The Project site is currently paved and does not have any natural features. The surrounding community of City Terrace is built-out and does not possess any scenic resources. As previously noted under item “a”, there are no scenic highways in the vicinity of the proposed Project. Therefore, no impact would occur with regard to damaging scenic resources within a state scenic highway.

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

Less than Significant Impact. The Project is proposed approximately 100 feet south of I-10. The Project would place a 630-foot long soundwall consisting of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound “blankets” or matts) between Harrison Elementary School and I-10 to reduce noise exposure on campus. The soundwall would range in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches (for the rigid soundwalls) above local ground. Due to its location in an urban setting along an interstate, the proposed soundwall would be highly visible to motorists driving along both I-10 and Marengo Street as well as students and teachers on the grounds of Harrison Elementary School. Residents on the hillside and hilltop south of the School would also see the soundwall. However, existing views from these vantage points would not be obstructed as the soundwall would be lower than the elevation of the homes on the hillside and hilltop to the south. Furthermore, the proposed Project is necessary to lower the impact of the existing noise at Harrison Elementary School. Therefore, the proposed Project would not conflict with applicable zoning and other regulations governing scenic quality and impacts to public views are considered less than significant.

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

No Impact. The Project area currently is illuminated at night by existing overhead streetlights along both sides of Marengo Street. Some short-term light and glare may be generated by headlights and windshields of construction vehicles and equipment. However, there will be no

night-time construction and the Project does not include any new lighting nor would the materials used to construct the soundwall (e.g. masonry block, mountable sound “blankets” or mats) create glare. Therefore, no impact would occur with regard to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

3.2 Agriculture and Forestry Resources

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

Existing Conditions

The proposed Project is in the unincorporated East Los Angeles area of the County of Los Angeles in the community of City Terrace. Specifically, the site is within the Metro Planning area. This portion of Los Angeles County is completely urbanized. Furthermore, the “State Important Farmland Map” (Figure 5.2-1) of the of the Los Angeles County General Plan Update does not identify any farmland within the Metro Planning Area (PlaceWorks 2014a). In addition, there are no forest or timberland production areas in the vicinity of the site.

According to the County of Los Angeles General Plan EIR, “Because there are no substantial areas of privately-owned forest in Los Angeles County, there is no land used for commercial logging (timberland) (PlaceWorks 2014a, p. 5.2-21).

Impact Analysis

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

The Project site is in the Metro Planning Area which does not contain any farmland. Accordingly, the Project site is not included in the Los Angeles County Important Farmland 2016 Map prepared by the California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program (FMMP) (DOC 2017). Therefore, the Project would have no impact with respect to converting Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use.

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

No Impact. The Project site is designated “Public” and “Semi-Public” on the East Los Angeles Community Plan (Los Angeles County, 2014) and Zoned IT (Institutional). The Project site is in an urban area and is not under a Williamson Act Contract. According to the Los Angeles County General Plan Update EIR, “The only Williamson Act contracts in effect in Los Angeles County are for land on Santa Catalina Island” (PlaceWorks 2014a, p. 5.21-31). Therefore, the proposed Project would have no impact with regard to conflicting with existing zoning for agricultural use or a Williamson Act contract.

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

No Impact. The Project site is designated “Public” and “Semi-Public” on the East Los Angeles Community Plan (Los Angeles County, 2014) and Zoned IT (Institutional). The Project site is in an urbanized area and it is not under a Williamson Act Contract. According to the Los Angeles County General Plan Update EIR “The only Williamson Act contracts in effect in Los Angeles County are for land on Santa Catalina Island” (PlaceWorks 2014a, p. 5.21-31). Therefore, the proposed Project would have no impact with respect to conflicting with existing zoning for agricultural use, or a Williamson Act contract.

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

No Impact. Forest land within Los Angeles County is located in the Angeles National Forest and the Los Padres National Forest. The closest forest to the Project site is the Angeles National Forest approximately 12 miles to the north. The Project site is in an urban setting far removed from forested areas of the County. Timberland is defined as “land...which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees” (California Public Resources Code Section 4526). The Los Angeles County Zoning Code does not contain zones specifically for forest use or production of forest resources” (PlaceWorks 2014a, p. 5.2-31). Therefore, the proposed Project would have no impact on forest land or timberland.

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

No Impact. The Angeles National Forest is approximately 12 miles to the north of the Project. There are no existing forest lands either on-site or in the immediate vicinity of the Project site. Therefore, the proposed Project would have no impact on the loss of forest land or conversion of forest land to non-forest use.

The proposed Project is construction of a soundwall between the Harrison Elementary School and I-10. No Farmland is located within the Metro Planning Area. Further, there are no Agricultural Resource Areas proximate to the Project site. The Angeles National Forest is approximately 12 miles to the north of the Project. Therefore, the Project would have no impact on the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

3.3 Air Resources

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

Existing Conditions

Los Angeles County spans two air districts (the South Coast Air Quality Management District [SCAQMD] and the Antelope Valley Air Quality Management District [AVAQMD]) and two basins (the South Coast Air Basin [SCAB] and the Mojave Desert Air Basin [MDAB]). The proposed Project is located in the SCAB which includes the urbanized portions of Los Angeles, Riverside and San Bernardino Counties and all of Orange County. The SCAB is bordered on the north and east by mountain ranges with elevations 10,000 feet above mean sea level.

The SCAQMD regulates air quality in the SCAB. The climate of the SCAB is arid, with scant rainfall and plentiful sunshine during the summer months. Winds are light and vertical mixing is poor in comparison with other large urban areas in the United States (U.S.) Poor dispersion in combination with sunshine provides conditions conducive to the creation of photochemical smog. The SCAB has the worst air quality in the U.S. based on weather conditions, topography, and emissions from the highly urbanized, densely populated Los Angeles Metropolitan Area.

Health-based ambient air quality standards (AAQS) have been established by both the State of California (California Air Resources Board [CARB]) and the federal government (United States Environmental Protection Agency [EPA]) for the seven criteria air pollutants: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter with a diameter of 10 microns or less (PM₁₀), particulate matter less than 2.5 microns in diameter (PM_{2.5}), and lead (Pb). The attainment status for criteria pollutants in the SCAB are based on CARB and USEPA designations. **Table 3.3-1** summarizes the National Ambient Air Quality Standards (NAAQS) (Federal) and the California Ambient Air Quality Standards (CAAQS) and the attainment status for each pollutant in the SCAB.

**TABLE 3.3-1
FEDERAL AND STATE AIR QUALITY STANDARDS AND SCAB ATTAINMENT STATUS**

Air Pollutant	NAAQS		CAAQS	
	Averaging ¹ Time	SCAB ² Designation	Averaging ¹ Time	SCAB ² Designation
Ozone (O ₃)	1-hour 0.12 ppm	Non-Attainment (extreme)	1-hour 0.09 ppm	Non-Attainment
	8-hour 0.070 ppm	Pending-Expect Non-Attainment (extreme)	8-hour 0.070 ppm	Non-Attainment
Fine Particulate Matter (PM _{2.5})	24-hour (35 µg/m ³)	Non-Attainment (serious)	Annual (12.0 µg/m ³)	Attainment
	Annual (12.0 µg/m ³)	Non-Attainment (moderate)		
Respirable Particulate Matter (PM ₁₀)	24-hour (150 µg/m ³)	Attainment (Maintenance)	24-hour (50.0 µg/m ³)	Non-Attainment
			Annual (20.0 µg/m ³)	Non-Attainment
Lead (Pb)	3-Months Rolling (0.15 µg/m ³)	Non-Attainment (Partial)	30-day average (1.5 µg/m ³)	Attainment
Carbon Monoxide (CO)	1-hour (35 ppm)	Attainment (Maintenance)	1-hour (20 ppm)	Attainment
	8-hour (9 ppm)	Attainment (Maintenance)	8-hour (9 ppm)	Attainment
Nitrogen Dioxide (NO ₂)	1-hour (100 ppb)	Unclassified/ Attainment	1-hour (0.18 ppm)	Attainment
	Annual (0.053 ppm)	Attainment (Maintenance)	Annual (0.030 ppm)	Attainment
Sulfur Dioxide (SO ₂)	1-Hour (75 ppb)	Designations Pending (expected Unclassifiable/ Attainment)	1-Hour (0.25 ppm)	Attainment
	24-hour (0.14 ppm)	Unclassified/ Attainment	24-hour (0.04 ppm)	Attainment

Source: ¹CARB 2016. ²SCAQMD 2017.

Impact Analysis

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

No Impact. In March 2017, the SCAQMD adopted the 2016 SCAQMD Air Quality Management Plan (AQMP). The 2016 AQMP is the fourth such plan developed by the SCAQMD in collaboration with the CARB and the Southern California Association of Governments (SCAG) to address air quality standards (both NAAQS and CAAQS) and deadlines for attaining the standards. The most current standards are shown in **Table 3.3-1**.

The criteria for determining if a project is consistent with the AQMP is identified in Chapter 12, Sections 12.2 and 12.3 of the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993). The two criteria applicable to the Project area as follows:

- 1) Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.
- 2) Whether the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

The first criterion is addressed through estimating project-generated criteria air pollutants. Due to the nature of the Project (i.e. a soundwall), emissions from construction activities could not be easily estimated using existing models including the California Emissions Estimator Model (CalEEMod) and URBEMIS because these models are designed for “typical” land development projects (e.g. residential, commercial, etc.). Therefore, the calculations prepared for the Project attempt to provide detailed analysis of impacts related to construction of the soundwall including traffic control; the CIDH Piles; structural excavation of pile cap (one week); the pile cap (two weeks); L footing (one week); the masonry block wall (five weeks); and removing of K Rails (one week). The calculations were prepared using formulas, emission factors, and methodologies as listed in the CalEEMod Guidelines (version 2016.3.2) and established mobile factors from the latest EMFAC2017 Web Database. The calculations are included in Appendix B of this document. The greatest emissions would occur during excavation and drilling of the CIDH piles.

Table 3.3-2 summarizes SCAQMD mass daily significance thresholds for criteria pollutants.

TABLE 3.3-2
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Mass Daily Thresholds			
Pollutant	Construction ¹	Project Emissions ²	Exceed Threshold?
NO _x	100 lbs/day	18.63 lbs/day	No
VOC ³	75 lbs/day	1.60 lbs/day	No
PM10	150 lbs/day	0.68 lbs/day	No
PM 2.5	55 lbs/day	0.67 lbs/day	No
CO	550 lbs/day	9.97 lbs/day	No

Source: South Coast AQMD CEQA Handbook (SCAQMD 1993).

¹ Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).

² Emissions output is included in Appendix B of this document. EGI 2019a.

³ The term “ROG” is used CARB for this air quality analysis and is defined the same as the federal term Volatile organic compounds (VOC). In this document the two terms are considered synonymous.

Total Project construction emissions are compared with the thresholds. As shown, none of the emissions generated during the construction period would exceed the thresholds established by the SCAQMD. Once construction is complete, the Project would not generate operational criteria air pollutant emissions.

The soundwall would range in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches (for the rigid soundwalls) above local ground. As such, it is consistent with the existing elementary school land use and would not generate an increase in population. Thus, the Project would be consistent with the underlying regional plans used to develop the AQMP and would not conflict with or obstruct implementation the AQMP. Therefore, the Project would have no impact in regard to conflicting with or obstructing implementation of an applicable air quality plan.

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

No Impact. Table 3.3-1 summarizes existing federal and state ambient air quality standards and the SCAB's attainment status. Project construction emissions were calculated based on information provided by LACPW staff including the number of workers, deliveries, equipment, hours of work, etc. Construction of the soundwall would temporarily generate pollutant emissions which would be added to the local airshed. Emissions would be generated by both on-site sources (e.g. heavy equipment and soil excavation) and off-site sources (e.g., worker trips and material delivery trucks) over an assumed 13-week (3 month) construction period. As shown in Table 3.3-2, none of the construction emissions would exceed SCQAMD Mass Daily Thresholds for criteria pollutants. On the contrary, Project-generated emissions would be well below all thresholds and would cease following completion of the soundwall. Therefore, the proposed Project would have no impact regarding a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. The SCQAMD identifies the following land uses as sensitive receptors: residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). The closest sensitive receptors to the proposed Project are a single-family residence located adjacent to the School's west property line and the School itself. This residence would be exposed to construction emissions when work is conducted on the western-most portion of the soundwall. The pre-K classroom and school playground could potentially be subject to emissions over the entire duration of construction with the greatest amount occurring in the first two to three weeks in association with excavation and installation of the piles. The playground is immediately adjacent to the proposed soundwall and the pre-Kindergarten classroom is set-back approximately 30 feet from the soundwall. Emissions would reduce once the piles are installed and placement of the masonry blocks begins.

Because the soundwall is a linear feature, work at any one location along the 630-foot length would not occur for more than a few days and would not last for the entire 13 weeks at a single

location. If necessary, outdoor playground activities could be modified during construction to avoid exposure (e.g. move students to a different location or inside). Based on the temporary nature of exposure, impacts to sensitive receptors are considered less than significant.

The SCAQMD Governing Board adopted a methodology for calculating localized air quality impacts through localized significance thresholds¹ (LSTs), which is consistent with SCAQMD's Environmental Justice Enhancement Initiative I-4. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable state or national ambient air quality standard². The LSTs are developed based on the ambient concentrations of that pollutant for each source receptor area and are applicable to NO_x, CO, PM₁₀, and PM_{2.5}.

The Project is in the community of City Terrace in East Los Angeles which is in Source Receptor Area 11 (San Gabriel). The SCAQMD Governing Board adopted a methodology for calculating localized air quality impacts that assumes construction will disturb less than one acre per day and that the nearest sensitive receptors are 25 meters (82 feet) to the south. In actuality, the Project would disturb far less than one acre (733.33 square feet) and be much closer than 82 feet (approximately 10 feet from the single-family residence). Using the 2006-2008 (which are the most current) look-up tables provided in the LST Guidelines, **Table 3.3-3** shows the appropriate LST's for construction and operational activity. LSTs only apply to emissions from on-site sources. Because the soundwall would only produce construction emissions, an LST analysis of long-term operational emissions is not required.

TABLE 3.3-3
SCAQMD LOCALIZED PROJECT IMPACTS – CONSTRUCTION

	Pollutant (lbs/day)			
	NO ₂	CO	PM ₁₀	PM _{2.5}
Total Project Maximum Pounds Per Day	18.63	9.97	0.68	0.67
SCAQMD LST Criteria(lbs/day)	83	673	5	4
Threshold Exceeded?	No	No	No	No

Source: EGI 2019b.

Notes: NO₂ = nitrogen dioxide; CO = carbon monoxide; PM₁₀ = particulate matter; PM_{2.5} = fine particulate matter; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold.

Localized significance thresholds are shown for a one-acre project site corresponding to a distance to a sensitive receptor of 25 meters (approximately 82 feet).

Impacts to sensitive receptors, particularly from dust, would vary depending on the level and type of activity, the silt content of the soil, and prevailing weather. The LST methodology mentioned above represents the maximum emissions from a project that will not cause or contribute to an exceedance with the most stringent applicable State or national ambient air quality standard. As shown in **Table 3.3-3**, proposed construction activities would not generate emissions in excess of site-specific LSTs. Therefore, localized project construction impacts would be less than significant.

¹ Final Localized Significance Threshold Methodology. SCAQMD. Revised July 2008.

² Air Quality Significance Thresholds. South Coast Air Quality Management District. Revised October 21, 2009.

Toxic Air Contaminants

Toxic air contaminants (TACs) are defined as substances that may pose a present or potential hazard to human health, cause or contribute to serious illness, or that may cause or contribute to an increase in death. As previously noted, the nearest sensitive receptor to the proposed Project is a residence adjacent to the School's west property line and playground. A Health Risk Assessment (HRA) is used to determine the exposure of sensitive receptors to toxic emissions. HRA's should be based on a 30-year exposure timeframe for a maximally exposed individual resident. The proposed construction activities would take place over 13 weeks and accordingly would constitute a very small percentage (0.83%) of the total 30-year exposure period.

Due to the linear nature of the 630-foot soundwall, Project construction would not remain in a single location for more than a few days. Particulate emissions generated during construction would be minimal and disperse quickly resulting in very brief exposure. For these reasons, the Project would not result in substantial TAC exposure to the resident located adjacent to the School's west property line and impacts would be less than significant.

Health Impacts of Criteria Air Pollutants

As shown in **Table 3.3-2**, the proposed Project would generate criteria air pollutant emissions during construction. However, construction emissions would not exceed the SCAQMD mass-emission thresholds for any criteria pollutant.

The SCAB is designated as nonattainment for O₃ for the NAAQS and CAAQS. Thus, existing O₃ levels in the SCAB are at unhealthy levels during certain periods. The health effects linked to O₃ are generally associated with reduced lung function. Because the proposed Project would not involve construction activities that would result in O₃ precursor emissions (VOC/ROG or NO_x) in excess of the SCAQMD thresholds, the Project is not anticipated to substantially contribute to regional O₃ concentrations and the associated health impacts.

In addition to O₃, NO_x emissions contribute to potential exceedances of the NAAQS and CAAQS for NO_x. Exposure to NO_x can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Project construction would not exceed the SCAQMD NO_x threshold, and existing ambient NO₂ concentrations are below the NAAQS and CAAQS. Thus, construction of the proposed Project is not expected to exceed NO_x standards or contribute to associated health effects.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. The proposed Project would be temporary, disperse quickly and not be a source of long-term mobile-source CO emissions. Thus, the proposed Project's CO emissions would not contribute to the health effects.

The SCAB is designated as nonattainment for PM₁₀ under the CAAQS and nonattainment for PM_{2.5} under the NAAQS and CAAQS. Particulate matter contains microscopic solids or liquid droplets that are small enough to penetrate deep into the lungs potentially causing serious

health problems. Particulate matter exposure has been linked to a variety of problems ranging from aggravated asthma and decreased lung function to nonfatal heart attacks, irregular heartbeat, and premature death in people with heart or lung disease (EPA 2016). As with O_3 and NO_x , the proposed project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the SCAQMD's thresholds. Additionally, the proposed Project would be required to comply with SCAQMD Rule 403, which limits the amount of fugitive dust generated during construction. Accordingly, the proposed Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, the proposed Project would not substantially contribute to regional concentrations of non-attainment pollutants and no impact would occur in association with exposing sensitive receptors to substantial pollutant concentrations.

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

Less Than Significant Impact. Potential odor impacts depend on multiple factors including the type of odor generated; the intensity of the source; the sensitivity of the receptor; and the direction and speed of the wind. Odors present a public nuisance often resulting in citizen complaints.

During construction, exhaust from equipment may produce odors typical resulting from dust and heavy equipment. Odors produced during construction generally consist of unburned hydrocarbons from tailpipes of construction equipment. Construction emission odors typically disperse rapidly and do not affect substantial numbers of people due to the localized area affected.

The Project area to the west and south of Harrison Elementary School is developed with residential uses while the area to the east and south of the School is dominated by commercial/residential uses. Only the resident on the west side of the School and the School playground would be close enough to construction activities to be affected by any construction-generated odor emissions. Likewise, temporary odor exposure for a single resident would present a nuisance that would occur for a limited duration. Therefore, impacts associated with odors during construction are considered less than significant.

3.4 Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special- status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

Existing Conditions

The proposed Project is within the urban community of City Terrace. The area is on the south side of I-10 and is developed with residential and commercial-residential development surrounding the Harrison Elementary School. The Project area is along the School's north property line adjacent to Marengo Street (a 4-lane paved roadway). Vegetation in the area is limited to ornamental plantings and landscaping including two trees planted within the sidewalk along Marengo Street. The proposed soundwall alignment and construction staging areas would occur within the existing public right-of-way, within existing paved roads and adjacent parking lanes. Some encroachment along existing sidewalks in the area would also occur.

Impact Analysis

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

Less than Significant Impact. Developed land dominated by residential and commercial development (including paved roadways and I-10) as well as Harrison Elementary School is

prevalent in the Project area. The presence of development including sidewalks and pavement dramatically limits opportunities for native vegetation and establishment of wildlife habitat.

The proposed soundwall alignment has limited habitat for nesting birds and raptors protected under the Migratory Bird Treaty Act (16 USC 703–712) and California Fish and Game Code Sections 3503.5, 3503, and 3513. Construction activities for the proposed soundwall would occur along the north property line of Harrison Elementary School within the sidewalk adjacent to Marengo Street, approximately 100 feet south of I-10. Some ornamental landscaping is present along the School's north property line. In addition, two mature oak trees are located along the sidewalk and may need to be trimmed prior to construction. The limited vegetation is not considered habitat nor are any candidate, sensitive, or special status species known to be present based on the location of the Project in an urban setting (refer to **Photo 1, 2 and 3**, in Section 1.0). However, if vegetation needs to be trimmed or removed during nesting bird season (February 1 – August 31), a nesting bird pre-construction survey will be conducted in compliance with the Migratory Bird Treaty Act. Therefore, impacts to habitat or candidate, sensitive, or special status species would be less than significant.

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

No Impact. The proposed Project is in an urban setting dominated by the Harrison Elementary School and surrounded by residential and residential-commercial development. No riparian habitat or other sensitive vegetation communities are present within the alignment of the proposed soundwall. Therefore, the proposed Project would have no impact on any riparian habitat or other sensitive natural community.

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

No Impact. The proposed Project is in an urban setting dominated by the Harrison Elementary School and surrounded by residential and residential-commercial development. No jurisdictional wetlands or non-wetland waters occur within the proposed soundwall alignment. No direct and/or indirect impacts to jurisdictional waters or wetlands would occur in association with construction of the proposed Project.

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

No Impact. The proposed Project site is in an urban setting in the community of City Terrace south of I-10. According to the Los Angeles County General Plan Update EIR, "Wildlife corridors are areas of habitat, usually linear in nature, that connect two or more habitat patches that would otherwise be fragmented or isolated from one another (e.g., by rugged terrain, changes in vegetation, or human disturbance). Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife" (PlaceWorks 2014a), page 5.4-88).

The Project would construct a soundwall along the north property line of Harrison Elementary School. The Project is not located within any designated wildlife corridors or habitat linkages identified on Figure 5.4-4, Regional Wildlife Linkages, of the Los Angeles County General Plan Update EIR (PlaceWorks 2014a) or Figure 9.2, Regional Habitat Linkages, included in the Los Angeles County General Plan, Chapter 9: Conservation and Natural Resources Element (Los Angeles County 2015). Therefore, the Project would have no impact on interfering with the movement of any native resident or migratory fish or wildlife species; interfering with established native resident or migratory wildlife corridors; or impeding the use of native wildlife nursery sites.

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

No Impact. The County of Los Angeles Oak Tree Ordinance was established to recognize oak trees as significant historical, aesthetic, and ecological resources and provide for their preservation and propagation. Two oak trees are located within the sidewalk adjacent to the south side of Marengo Street in front of the school. Neither tree would require removal to accommodate the proposed Project. Therefore, the proposed Project would have no impact regarding local policies or ordinances protecting biological resources.

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

No Impact. According to the Los Angeles County General Plan Update EIR, "There are three habitat conservation plan areas within Los Angeles County: the Draft Desert Renewable, Energy Conservation Plan Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP), the Palos Verdes Peninsula NCCP/HCP, and the West Mojave Plan HCP" (PlaceWorks 2014a, p. 5.10-4). The proposed Project is not located within, and would have no impact on, an area affected by or subject to an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

Cultural resources include places, objects, and settlements that reflect group or individual religious, archaeological, architectural, or paleontological activities. Such resources provide information on scientific progress, environmental adaptations, group ideology, or other human advancements (PlaceWorks 2014a, p. 5.5-2). While the County has many historical landmarks and points of historical interest in its jurisdiction, no National Record of Historic Places, Properties, California Historical Landmarks, or California Points of Historical Interest in the Unincorporated Areas are located in the community of City Terrace (PlaceWorks 2014a, p. 5.5-11 and 5.5-12).

Impact Analysis

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

No Impact. The alignment of the proposed soundwall is in an urban setting that has been previously disturbed and covered with concrete and pavement. All construction activities associated with building the proposed soundwall would be limited to the public right-of-way along the north property line of Harrison Elementary School and the sidewalk adjacent to the south side of Marengo Street. No historical resources are located within the alignment nor is Harrison Elementary School considered historic. Therefore, no direct impacts to known historical resources would occur as a result of construction of the proposed Project.

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

Less Than Significant with Mitigation Incorporated. Construction of the proposed soundwall will require excavation for the footings and drilling for pile foundations. All excavation activities associated with the proposed Project would be limited to previously disturbed portions of the public right-of-way along Marengo Street. However, it is possible that previously undiscovered intact archaeological deposits are present at subsurface levels and could be unearthed during drilling activities which would be several feet below the ground surface. Mitigation Measure MM 3.5-1 is provided to address unanticipated discovery of archaeological resources during construction. Impacts related to archaeological resources would be less than significant with mitigation incorporated.

Mitigation Measures

MM 3.5-1 Unanticipated Discovery of Archaeological Resources

If archaeological resources (sites, features, or artifacts) are unearthed during drilling activities, all construction work shall immediately stop until a qualified archaeologist (meeting the Secretary of the Interior's Professional Qualification Standards) can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under the California Environmental Quality Act (CEQA) (14 CCR 15064.5(f); California PRC Section 21082), the archaeologist may record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery, may be warranted.

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

Less Than Significant. No cemeteries are known to have historically occupied the Project area and the overall area has been highly disturbed and developed. However, because the Project involves excavation and drilling piles to a depth of 12 feet, the possibility of encountering unknown human remains within the Project area exists. In the event that human remains are unearthed during construction activities, construction activity shall be halted, and the area shall be protected until consultation and treatment can occur in accordance with Section 7050.5 of the California Health and Safety Code. The County Coroner shall be notified immediately of the discovery. No further excavation or disturbance shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, the Coroner shall notify the Native American Heritage Commission in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the Native American Heritage Commission must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant shall complete their inspection within 48 hours of being granted access to the site. The most likely descendant would then determine, in consultation with LACPW and LAUSD, the disposition of the human remains. Therefore, impacts to human remains, if discovered, would be less than significant.

3.6 Energy

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

Electricity

Southern California Edison (SCE) provides electricity to Los Angeles County. Total electricity demands in SCE's service area were 82,069 gigawatt-hours (GWH) per year in 2012 and are forecast to increase to 96,516 GWH in 2024 (CEC 2013); one GWH is equivalent to one million kilowatt-hours (PlaceWorks 2014a, p. 5.17-61). At a rate of 1,204 GWH, it is estimated that SCE's service area demands in 2018 were 89,293 GWH.

Natural Gas

The Southern California Gas Company (SCGC) supplies natural gas to most of Los Angeles County except for a few cities, including the City of Vernon and City of Long Beach, which supply natural

gas to their own residents and other customers. Total natural gas supplies available to SCGC are forecasted to remain constant at 3,875 million cubic feet per day (MMCF/Day) from 2015 through 2030 (PlaceWorks 2014a, p. 5.17-61).

Petroleum

The largest share of energy consumption in California is devoted to transportation. Statistics from the Energy Information Association reveal that California used approximately 672 million barrels of petroleum in 2016 which equates to an annual consumption of 28 billion gallons (EIA 2018). Petroleum refineries are available in Los Angeles County making this fuel readily available for both consumers and industry.

Impact Analysis

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

Less Than Significant Impact. Electricity usage during construction would likely be limited to electrically powered hand tools. As construction is anticipated to take three months, the electricity used for construction activities would be temporary and minimal. Electrical service is currently available in the Project area with no shortages. The construction of the proposed Project would occur for a limited duration (3 months/13 weeks) and would not result in wasteful, inefficient, or unnecessary consumption of electricity. Therefore, impacts to electrical power are considered less than significant.

Natural gas is not anticipated to be a major source of energy during Project construction. Natural gas service is currently available in the Project area with no shortages. Any minor amounts of natural gas that may be used during construction would be temporary and negligible. Therefore, construction of the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of natural gas. No impact to natural gas would occur.

The main source of energy used during Project construction includes petroleum-based fuels. Both diesel and gasoline would be used to fuel heavy equipment, material delivery trucks and construction worker vehicles throughout the 3-month/13-week construction period. Once the soundwall is complete, petroleum use for construction would cease. Diesel and petroleum are currently available in the Project area with no shortages and construction of the Project would not use these resources in a wasteful manner. Therefore, impacts to petroleum as an energy source are considered less than significant.

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

Less Than Significant Impact. The proposed Project would follow applicable energy standards and regulations during construction. In addition, the proposed Project would be constructed in accordance with all existing, applicable regulations in place at the time of construction. Therefore, construction of the Project would not conflict or obstruct a state or local plan for renewable energy and energy efficiency. No impact would occur.

3.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

Los Angeles County is one of the most seismically active urban settings in North America. The proposed Project is within the Metro Planning Area. The Hollywood Fault aligns through the Planning Area, but it is not considered an active fault (PlaceWorks 2014a, p. 5.6-10). According to the Los Angeles County General Plan Update EIR “An earthquake of moderate to high magnitude generated within the Project Area could cause significant ground shaking within any of the 11 Planning Areas.” (PlaceWorks 2014a, p. 5.6-13). As shown on Figure 5.6-1, “Map of Prominent Soil Types in Los Angeles County” of the Los Angeles County General Plan Update EIR, soils

underlying the proposed soundwall alignment are Ramona Clay Loam (PlaceWorks 2014a, p. 5.6-7). The Geotechnical Report prepared for the Project by LACPW Geotechnical and Engineering Division (GEMD) evaluated three exploratory borings drilled using an 8-inch diameter hollow stem auger to a maximum depth of 21.5 feet below grade (Kelly 2019a and b, p. 1). The soils encountered in the borings are classified as clay in medium stiff to hard condition.

Impact Analysis

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

Less than Significant Impact. As shown in Figure 5.6-2, “Map of Seismic Hazards Los Angeles County” of the Los Angeles County General Plan Update EIR (PlaceWorks 2014a, p. 5.6-11), no Alquist-Priolo Earthquake Fault Zones are known to extend through the proposed soundwall alignment. The closest mapped Alquist-Priolo fault is approximately 5 miles to the north of the proposed Project. Therefore, potential for rupture of an Alquist-Priolo earthquake fault is considered a less than significant impact.

a ii) Strong seismic ground shaking?

Less than Significant Impact. As previously noted, all of Los Angeles County is subject to strong seismic ground shaking of moderate to high magnitude. The degree of shaking at a given location is dependent upon multiple factors including duration, distance from the source of rupture and site-specific geologic conditions (PlaceWorks 2014a, p. 5.6-13). If the ground-shaking is intense and sustained, significant damage and/or catastrophic failure of buildings or other man-made structures may occur (PlaceWorks 2014a, p. 5.6-14). The proposed soundwall is designed with respect to the local seismic codes and therefore is expected to withstand strong seismic ground shaking. Therefore, impacts associated with strong seismic ground shaking are considered less than significant.

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

Less than Significant Impact. Liquefaction occurs when granular soil below the water table is subjected to vibratory motions such as produced by an earthquake. With strong ground-shaking, an increase in pore water pressure develops as the soil tends to reduce in volume. If the increase in pore water pressure is sufficient to reduce the vertical effective stress (suspending the soil particles in water), the soil strength decreases, and the soil behaves as a liquid (similar to quicksand). Liquefaction can produce excessive settlement, ground rupture, lateral spreading, or failure of shallow bearing foundations.

Four conditions are generally required for liquefaction to occur:

- 1) The soil must be saturated (relatively shallow groundwater)
- 2) The soil must be loosely packed (low to medium relative density);
- 3) The soil must be relatively cohesionless (not clayey); and
- 4) Groundshaking of sufficient intensity must occur to function as a trigger mechanism.

Soil boring advanced to a depth of 21.5 feet below ground surface (bgs) did not encounter groundwater. However, the sampler became saturated at 20 feet bgs while drilling indicating

the possibility of a perched water table. The historical high groundwater level is at a depth of 150 feet (Kelley 2019, p. 1).

The soils encountered in the borings are classified as clay in a medium stiff to hard condition (Site Class D – “Stiff Soil”) (Kelly 2019, p. 3). Based on the conditions at the site, potential impacts for seismic-related ground failure including liquefaction are considered less than significant.

aiv) Landslides?

Less than Significant with Mitigation Incorporated. The propensity for earthquake-induced landslides is greatest in hilly areas with steep slopes and bedrock or soils that are prone to mass movement. Very few areas of Los Angeles County have been mapped by the State as zones of seismically induced landslide hazards under the Seismic Hazard Zonation Program (PlaceWorks 2019, p. 5.6-19). As shown on Figure 5.6-2, “Map of Seismic Hazards Los Angeles County” of the Los Angeles County General Plan Update Draft EIR, the Project site is below (north of) an area identified as “Seismically Induced Landslide Zone.” The Geotechnical Report (Kelley 2019a and 2019b) determined that the proposed Project is feasible from a geotechnical standpoint provided the recommendations of the Report are incorporated into the design and construction of the soundwall. While the proposed soundwall would not increase exposure of people or structures to landslides, given the Project’s location, landslide impacts are considered potentially significant but could be reduced to less than significant with mitigation incorporated.

Mitigation Measure

MM 3.7-1 Geotechnical Report Recommendations

Implement the recommendations of the Geotechnical Report as part of Project design.

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

Less than Significant Impact. The Project would be constructed in an urban area that is currently paved. Soils would be exposed during construction of the foundation and pile drilling. As the area of disturbance is linear and less than one acre, a National Pollutant Discharge Elimination System (NPDES) permit would not be necessary. Construction activities would be in a defined, linear area along the north property line of Harrison Elementary School within public right-of-way. Erosion control Best Management Practices (BMPs) would be utilized as required by the Los Angeles County Department of Public Works construction site BMP’s Manual. Therefore, the impacts associated with potential for substantial erosion and loss of topsoil are considered less than significant.

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

Less than Significant with Mitigation Incorporated. As previously noted, a site-specific Geotechnical Report (Kelley 2019a and 2019b) was prepared for the proposed Project. The Report found that the proposed soundwall is feasible from a geotechnical standpoint provided the recommendations are incorporated into the design and construction. As there is currently

development in the Project area, the proposed soundwall is not anticipated to cause the underlying geologic unit or soil to become unstable, result in landslide, lateral spreading or subsidence. Potential for liquefaction and collapse of the proposed soundwall is considered potentially significant but could be reduced to less than significant with mitigation incorporated.

Mitigation Measure

Implement Mitigation Measure MM 3.7-1.

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

Less than Significant Impact. The Geotechnical Report (Kelly 2019a and 2019b) included the results of soil sample borings taken at three locations along the proposed alignment. The findings of the tests revealed that the soil borings can be classified as clay in a medium stiff to hard condition and thus are not expansive. Construction of the proposed masonry soundwall will not create a substantial direct or indirect risk to life and property as a result of expansive soils. Therefore, this impact is considered less than significant.

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

No Impact. The proposed Project does not require septic tanks or an alternative wastewater disposal system. Portable toilet facilities will be brought to the site. No impact would occur with regard to locating waste water disposal systems on soils incapable of supporting such systems.

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

Less than Significant with Mitigation Incorporated. Paleontological resources are the fossil remains of animals and plants from the past. Paleontological resources (fossils) are the remains of prehistoric life, excluding any human remains that are characterized by geologic age (i.e. typically 10,000 years older or older). Paleontological resources also include the areas where fossils were collected, the sedimentary rock formations in which they were found, and the impressions and casts created by organisms.

According to the Los Angeles County General Plan EIR, “Over 1,000 fossil localities have been recorded, and in excess of a million specimens have been collected in Los Angeles County” (PlaceWorks 2014a, p. 5.5-16). While significant general fossil localities (e.g. Palos Verdes Peninsula, La Brea Tar Pits, Mint Canyon, Santa Monica Mountains, Puente Hills) are not in the vicinity of the Project, fossils continue to be discovered in Los Angeles County (PlaceWorks 2014a, p. 5.5-16).

A Paleontological Records Search was conducted by staff at the Los Angeles County Museum of Natural History (LACMNH) in January 2020. No vertebrate fossil localities were identified within the boundaries of the proposed Project area. However, localities were located nearby which are from the same sedimentary deposits that are likely to occur at depth in the proposed Project area.

The entire proposed Project area has surface deposits composed of younger Quaternary Alluvium, derived as alluvial fan deposits from the surrounding more elevated terrain. The upper most layers of these deposits typically do not contain significant vertebrate fossils. However, they may be underlain at a relatively shallow depth with older sedimentary deposits that do contain significant vertebrate fossils. The closest vertebrate fossil locality from older Quaternary deposits beneath the younger Quaternary Alluvium is west-northwest of the proposed Project area near the intersection of Mission Road and Daly Street around the Golden State Freeway (I-5). This locality produced fossil specimens of pond turtle, *Clemmys mamorata*, ground sloth, *Paramylodon harlani*, mastodon, *Mammuth americanum*, mammoth, *Mammuthus imperator*, horse, *Equus*, and camel, *Camelops*, at a depth of 20-35 feet below the surface. Near the intersection of Workman Street and Alhambra Avenue, excavations for a storm drain recovered fossil specimens of turkey (*Meleagris californicus*), sabre-toothed cat, *Smilodon fatalis*, horse, *Equus*, and deer, *Odocoileus*, at unstated depth (McLeod, Ph.d. 2020).

Exposures of the marine late Miocene Puente Formation (that may also be referred to as the Modelo Formation or even an unnamed shale in this area) are present in the surrounding elevated terrain. These deposits may occur at relatively shallow depth in the proposed Project area. The closest vertebrate fossil locality from the Puente Formation is LACM 7007, northeast of the proposed Project area west of Alhambra Avenue west of the intersection of Chester Street and Vaquero Avenue. This locality produced a specimen of undetermined fossil fish, *Osteichthyes*. A little farther east and just south, near the intersection of Valley Boulevard and Highbury Avenue, the Puente Formation locality LACM 1027 produced fossil fish specimens of the extinct herring *Xyne grex*. The next closest vertebrate fossil locality from the Puente Formation is LACM 5961, almost due west of the proposed Project area in downtown Los Angeles at the intersection of 1st Street and Hill Street. Locality LACM 5961 yielded a deep-sea fish specimen of bristlemouth, *Cyclothone* (McLeod, Ph.d. 2020).

Shallow excavations in the younger Quaternary Alluvium exposed throughout the proposed Project area are unlikely to uncover any significant vertebrate fossils. Deeper excavations that extend down into the older sedimentary deposits, however, may well encounter significant vertebrate fossil remains. The Project involves drilling of piles for the foundation. Although the entire area has been previously disturbed, potential exists for previously unknown paleontological resources to be discovered during construction. This is considered a potentially significant impact but could be reduced to less than significant with mitigation incorporated. Any substantial excavations in the proposed Project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development (McLeod, Ph.d. 2020).

Mitigation Measures

MM 3.7-2a Paleontological Monitoring for Drilling Activities

A Qualified Paleontological monitor shall be hired to oversee pile drilling activities. The monitor will prepare daily monitoring forms. Sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. The Paleontological monitor will seek authorization from LACPW to increase or decrease the monitoring efforts should the monitoring results indicate a

change is warranted. If the Paleontological monitor determines based on the samples taken and processed that no paleontological resources have been seen in the monitoring, the paleontological monitoring may cease. In the event that discoveries are made, mitigation measure MM 3.7-2b will be implemented. At the end of the monitoring, the Paleontological monitor will identify significant fossils, if any, recovered, and prepare a summary report.

MM 3.7-2b Management of Paleontological Resources

In the event that paleontological resources are encountered during drilling activities, work must cease within 50 feet of the discovery and a paleontologist shall assess the scientific significance of the find. LACPW and the paleontologist shall prepare a paleontological treatment and monitoring plan to include the methods that will be used to protect paleontological resources that may exist within the project sites, as well as procedures for fossil preparation, identification, reporting, and curation.

3.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

According to the Los Angeles County General Plan Update EIR, “Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as greenhouse gases (GHGs), to the atmosphere. The primary source of these GHGs is the use of fossil fuels. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO₂), methane (CH₄), and ozone (O₃)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries” (PlaceWorks 2014a, p. 5.7-1). Because no single project is large enough to result in a measurable increase in global concentrations of GHG emissions, climate change impacts of a project are considered on a cumulative basis.

Impact Analysis

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

Less than Significant Impact. The proposed Project is the construction of a soundwall approximately 630 feet in length and consist of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and- panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound “blankets” or matts). The soundwall would

range in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches (for the rigid soundwalls) above local ground. The Project is within the SCAB and is subject to regulations set forth by the SCAQMD.

Until statewide significance thresholds or guidelines are established, the SCAQMD has formulated various approaches for assessing GHGs. The SCAQMD currently uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

- Tier 1. Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.
- Tier 2. Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.
- Tier 3. Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 metric tons of carbon dioxide equivalents (MT CO₂e) per-year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO₂e per year), commercial projects (1,400 MT CO₂e per year), and mixed-use projects (3,000 MT CO₂e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO₂e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.
- Tier 4. Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of Assembly Bill (AB) 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO₂e per-service population for project-level analyses and 6.6 MT CO₂e per-service population for plan-level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.
- Tier 5. Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

To determine the Project's potential to generate GHG emissions that would have a significant impact on the environment, the Project's GHG emissions were compared to the non-industrial land project quantitative threshold of 3,000 MT CO₂e per year. Tier 3, Option 1 was selected for this analysis because the proposed Project does not include operational emissions and does not conform to the standard land use types (e.g. residential, commercial). This impact analysis, therefore, compares amortized construction emissions to the proposed SCAQMD threshold of 3,000 MT CO₂e per year.

The GHGs associated with construction of the proposed Project were calculated and summarized in the **Table 3.8-1** (full calculations are provided in Appendix B of this document). As shown, all emissions were well below the 3,000 MT CO₂e screening threshold.

**TABLE 3.8-1
PROJECT CONSTRUCTION GHG EMISSIONS**

	N ₂ O	CO ₂	CH ₄	CO ₂ e
	<i>Total tonnes</i>			
Total Project Maximum Pounds Per Day	0.0003	62.30	0.0148	1.126
SCAQMD Screening Threshold 3,000 MT CO ₂ e	3,000	3,000	3,000	3,0000
Threshold Exceeded?	No	No	No	No

SCAQMD 2009.

Similar to Project-generated construction emissions, GHG emissions generated during construction would be short-term, lasting only the duration of the construction period (i.e. 13 weeks), and would not represent a long-term source of GHG emissions.

While the Project would generate small amounts of GHG emissions during construction, impacts are considered less than significant as they are below the SCAQMD threshold.

b) Conflict with an applicable plan or policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact. The Air Quality Element of the Los Angeles County General Plan includes a Goal and associated policies that address Climate Change and GHG. The Project consistency with these policies is provided in **Table 3.8-2** below:

**TABLE 3.8-2
PROJECT CONSISTENCY WITH AIR QUALITY ELEMENT POLICIES ADDRESSING
CLIMATE CHANGE AND GHGs**

Goal: AQ 3: Implementation of plans and programs to address the impacts to climate change.	
Policy AQ 3.1: Facilitate the implementation and maintenance of the Community Climate Action Plan to ensure that the County reaches its climate change and greenhouse gas emission reduction goals.	Not applicable. Construction GHGs are well below the thresholds (see Table 3.8-2). The Community Climate Action Plan 2020 was adopted in August 2015. It contains emissions reduction actions in specific strategy areas including Green Building and Energy; Land Use and Transportation; Water Conservation and Wastewater; Waste Reduction, Reuse and Recycling; and Land Conservation and Tree Planting.
Policy AQ 3.2: Reduce energy consumption in County operations by 20 percent by 2015.	Not applicable. The proposed soundwall would not require any energy during operations. Once constructed, the Project would have no impact on County energy consumption.
Policy AQ 3.3: Reduce water consumption in County operations.	Consistent. The proposed soundwall would not require any water use during operations and thus would not increase demand for water consumption by the County.
Policy AQ 3.4: Participate in local, regional and state programs to reduce greenhouse gas emissions.	Consistent. The proposed Project would not contribute to long-term GHG emission generation. As such, the proposed Project would not interfere with efforts to reduce GHG emissions.
Policy AQ 3.5: Encourage energy conservation in new development and municipal operations.	Not applicable. The proposed Project would not require energy during long-term operation.

TABLE 3.8-2
PROJECT CONSISTENCY WITH AIR QUALITY ELEMENT POLICIES ADDRESSING
CLIMATE CHANGE AND GHGS

Goal: AQ 3: Implementation of plans and programs to address the impacts to climate change.	
Policy AQ 3.6: Support rooftop solar facilities on new and existing buildings.	Not applicable. The proposed Project does not have a roof to accommodate solar panels.
Policy AQ 3.7: Support and expand urban forest programs within the unincorporated areas.	Does not apply. However, the Project does include landscaping which includes planting trees.
Policy AQ 3.8: Develop, implement, and maintain countywide climate change adaptation strategies to ensure that the community and public services are resilient to climate change impacts.	Does not apply. The Project would generate short-term GHGs which are below the SCAQMD Screening Threshold.

Source: Los Angeles County 2015, p. 289-290.

In August 2015, Los Angeles County adopted the Final Unincorporated Los Angeles County Community Climate Action Plan (CCAP). The CCAP was adopted to mitigate and avoid GHG emissions associated with community activities in unincorporated Los Angeles County and is considered a component of the General Plan Air Quality Element. The CCAP addresses emissions from building energy, land use and transportation, water consumption, and waste generation. As previously noted, the proposed Project would only generate short-term construction GHGs, all of which are below the SCAQMD's Screening Threshold. Nevertheless, Land Use and Transportation (LUT) Action LUT-9, Idling Reduction Goal (Encourage idling limits of 3 minutes for heavy-duty construction equipment, as feasible within manufacturer's specifications) identified in the CCAP (which is a component of the Air Quality Element of the General Plan) should be implemented during Project construction. Action LUT-9 would result in a 2020 Emission Reduction of 360 MT CO₂ (County of Los Angeles 2015, p. 4-11).

As shown in **Table 3.8-2**, the proposed Project would not conflict with any of the GHG reduction measures or goals set forth in the Air Quality Element of the General Plan. Thus, the proposed project is consistent with the CCAP and would result in less than significant impacts related to conflicts with GHG emission reduction plans.

3.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Existing Conditions

Hazardous materials generally refer to hazardous substances that exhibit corrosive, poisonous, flammable, and/or reactive properties and have the potential to harm human health and/or the environment (PlaceWorks 2014a, p. 5.8-2). Hazardous materials are regulated by several federal and State agencies including the United States Department of Toxic Substances Control (DTSC), the United States Environmental Protection Agency, the California Department of Toxic Substances and the California Governor's Office of Emergency Services.

Two databases documenting hazardous material release sites (Envirostor and GeoTracker) are maintained by the DTSC and State Water Resources Control Board (SWRCB). These databases were searched to determine if any hazardous material sites are in the vicinity of the proposed Project. None were identified adjacent to, or in the immediate proximity of the proposed soundwall.

According to the Los Angeles County General Plan, "The Office of Emergency Management [OEM] is responsible for organizing and directing the preparedness efforts of the Emergency Management Organization of Los Angeles County. OEM is the day-to-day Los Angeles County Operational Area coordinator for the County. The emergency response plan for the unincorporated areas is the Operational Area Emergency Response Plan (OAERP), which is prepared by OEM." (County of Los Angeles 2015, p. 210). As shown in Figure 12.6, Disaster Routes Map, of the Los Angeles County General Plan, I-10 is designated as a Freeway Disaster Route. No Highway Disaster Routes are located adjacent to the Project area.

Impact Analysis

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

No Impact. The Project is the construction of a 630-foot long soundwall consisting of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound “blankets” or matts) between I-10 and Harrison Elementary School. The soundwall would range in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches (for the rigid soundwalls) above local ground. The Project would not use or store any appreciable quantities of hazardous chemicals during construction. Diesel fuel, oil and hydraulic fluid would be present in association with heavy equipment used and staged on-site. However, the limited quantities and duration of construction would have no impact with regard to the creation of a hazard to the public through the routine transport, use, or disposal of hazardous materials.

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

No Impact. The Project is proposed adjacent to Marengo Street and the north property line of Harrison Elementary School. The Project is surrounded by residential and residential/commercial uses with no known hazardous material sites. Potential for release of hazardous materials into the environment is low in relation to construction (e.g. accidental spill of diesel, oil or hydraulic fluid). No hazardous materials would be involved once construction of the soundwall is complete. Therefore, the Project would result in no impact in regard to creating a significant hazard to the public through release of hazardous materials into the environment.

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

Less than Significant Impact. The Project is proposed less than one-quarter mile north of classrooms on the Harrison Elementary School campus. Some emissions would be generated during construction, but only for a limited duration and would dissipate quickly. No other acutely hazardous materials, substance or waste would be handled in association with construction of the soundwall. Implementation of BMPs (as required in the Los Angeles County Construction Site BMPs Manual) and compliance with Federal, State, and local requirements (regarding handling, storage, and disposal of hazardous materials) would ensure impacts are less than significant. The BMPs detail actions to contain and/or remediate a spill or release should one occur during construction. Therefore, impacts associated with emitting hazardous emissions within one-quarter mile of a school are considered less than significant.

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

No Impact. A search of DTSC's EnviroStor website (EnviroStor 2019) and SWRCB's GeoTracker website (GeoTracker 2019) did not identify Harrison Elementary School as a hazardous materials site. While EnviroStor did not identify any hazardous material sites within a one-half mile radius of Harrison Elementary School, GeoTracker identified six closed sites and three clean-up sites (Chevron Chemical Additives Facility at 3344 East Medford Street, City Terrace, CA [Open-Site Assessment]; BLT Transfer Station at 1512 North Bonnie Beach Place, South Gate, CA [Open-Inactive]; and Intertez Incorporated, 3929 Medford Street, City Terrace, CA [Open-Inactive]) (GeoTracker 2019). None of the closed and clean-up sites would present the potential for exposure of hazardous materials during construction. Therefore, the proposed soundwall would not create a significant hazard as a result of being located on a site which is included on a list of hazardous materials sites compiled pursuant to Section 65962.5. No impact is identified for this issue area.

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

No Impact. Although there are multiple airports in Los Angeles County, the Project is not located within two miles of a public airport or a private airstrip. The Los Angeles International Airport is approximately 13 miles to the southwest of the Project site. The Bob Hope Airport is approximately 13 miles to the northwest and El Monte Airport is approximately 9 miles to the northeast. The Project site is not within an airport land use plan or within two miles of a public airport or public use airport and would not result in a safety hazard or excessive airport noise for people residing or working in the area of the proposed soundwall. Thus, no impact is identified for these issue areas.

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

No Impact. The Project is 100 feet south of I-10. According to Figure 12.6, Disaster Routes Map, of the Los Angeles County General Plan, I-10 is designated as a Freeway Disaster Route (Los Angeles County 2015). Construction of the proposed soundwall will not interfere with access to I-10 as a Freeway Disaster Route. No highway disaster routes are located adjacent to the Project area. Temporary closure of one lane along Marengo Street to accommodate construction would not physically interfere with an adopted emergency response plan or emergency evacuation plan. No impact would occur.

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

No Impact. According to Figure 5.14-2, Fire Hazard Severity Zones Policy Map of the County of Los Angeles General Plan EIR (PlaceWorks 2014a, p. 5.14-5), the nearest Very High Fire Hazard is approximately 0.7 miles to the north and slightly to the east of the proposed Project. The Project site itself is within an Unincorporated Area which is not designated as having a fire hazard. The proposed Project is a soundwall. No habitable structures are included as part of the Project. Therefore, the potential to expose people or structures to significant risk of loss, injury or death involving wildland fires is considered to have no impact.

3.10 Hydrology and Water Quality

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

Existing Conditions

The Project is located within the Los Angeles River Watershed. The primary stream in the watershed is the Los Angeles River which extends approximately 48 miles from the southwest San Fernando Valley to the Pacific Ocean in the City of Long Beach (PlaceWorks 2014a, p. 5.9-8). Seven dams and several retention basins serve to provide flood protection and water conservation. The Project site is within the Coastal Plain of Los Angeles Groundwater Basin.

Construction stormwater discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permitting program. The NPDES establishes a framework for regulating municipal, industrial, and construction stormwater discharges into surface water bodies, including stormwater channels. The federally-mandated NPDES program is implemented by the Los Angeles Regional

Board. The County's Stormwater Ordinance that requires that the discharge, deposit, or disposal of any stormwater and/or runoff to storm drains must be covered by an NPDES Stormwater Permit. The Los Angeles Regional Board adopted a new Municipal Separate Storm Sewer (MS4) Permit as part of its NPDES Program in 2012. To maintain a level of acceptable runoff conditions through the implementation of Best Management Practices (BMPs), the MS4 Permit imposes a number of basic programs in order that mitigate stormwater quality problems (PlaceWorks 2014a, p. 4-20)

Impact Analysis

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

Less than Significant Impact. The proposed Project is construction of a 630-foot long soundwall between I-10 and the Harrison Elementary School. The soundwall would be comprised of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound "blankets" or matts). The redesigned soundwall ranges in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches (for the rigid soundwalls) above local ground. The soundwall aligns through an area that is developed with pervious surfaces (concrete sidewalks, asphalt roadways [Marengo Street]) and has an existing storm drainage system. A buried storm drain currently extends through the proposed soundwall alignment. There are no plans to move or realign the storm drain as it would not be impacted by the Project.

Water quality impacts could occur if petroleum products were spilled or leaked during construction of the Project. Dewatering is not anticipated given that no groundwater was encountered during the soil borings. Based on the size of the Project, and urban setting with no adjacent surface waterbodies or areas that support groundwater recharge, violation of water quality standards or waste discharge requirements during construction would be limited. Discharge from the site would flow to existing storm drains rather than infiltrating into the groundwater as there are no adjacent surface waterbodies or areas that support groundwater recharge.

Soils exposed during trenching and foundation construction could be transported off-site during a storm event. However, LACPW shall implement BMPs identified in the Los Angeles County Department of Public Works Construction Site Best Management Practices Manual (August 2010). Once construction is complete, the Project would not degrade surface or ground water quality beyond what is currently occurring. Therefore, a less than significant impact would occur to degrading surface or groundwater quality.

LACPW requires its workers and construction contractors to adhere to standard site management practices and applicable water quality regulation, which collectively would avoid or substantially minimize potential threats to water quality. Standard site management practices including perimeter controls and storm drain inlet protection would be implemented during construction. In addition, construction activities would be carried out in accordance with the statewide Construction General Permit (Order No. 2009-0009-DWQ/CAS000002, as amended). Standard BMPs which may be implemented include, but are not limited to:

- Surround storm drain inlets in the construction area with gravel bags or other method of filtration.
- Contain, transport and dispose of all potentially hazardous wastes in accordance with applicable regulations.
- Regularly sweep and clean construction work areas.

Based on the type and magnitude of activities anticipated during Project construction, the proposed Project would not otherwise substantially degrade surface or ground water quality. Impacts regarding violation of a water quality standard, waste discharge requirement or otherwise degrading surface or groundwater quality would be less than significant.

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

No Impact. Groundwater basins are recharged naturally through stormwater and rainfall, and artificially recharged in recharging basins with imported water, stormwater, and recycled water (PlaceWorks 2014a, p. 5.17-23). The proposed Project would be constructed within existing paved right-of-way and would serve to reduce noise exposure at the Harrison Elementary School. The Project would not result in increased groundwater usage during construction nor would it prevent water from infiltrating into the ground and replenishing groundwater supplies. During construction, pavement within the alignment would be removed to accommodate building the foundation of the soundwall. Once completed, the soundwall would result in the same amount of impervious surface as is currently in place along the north property line of Harrison Elementary School and the Project would not interfere with groundwater recharge beyond the existing conditions currently at the site. Therefore, the Project would have no impact with regard to depleting groundwater supplies or interfering substantially with groundwater recharge so as to impede sustainable groundwater management.

ci) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river through the addition of impervious surfaces in a manner which would:

Result in a substantial erosion or siltation on- or off-site.

No Impact. No streams or rivers are in the vicinity of the proposed Project. The soundwall would be constructed along the north property line of Harrison Elementary School and would not result in alteration of the topography or a change in the existing drainage patterns. During construction, concrete and sidewalk along the north property line of the School would be temporarily removed to allow for installation of the soundwall foundation. Once construction is completed, no change in impervious surface area would occur. BMPs would be incorporated during construction to avoid transport or discharge of soils to storm drains. No impact would occur with regard to altering the course of a stream or river through the addition of impervious surfaces in a manner which would result in substantial erosion or siltation on or off site. Refer to item "a)" above for a discussion of construction-related impacts as related to erosion and siltation.

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

Less than Significant Impact. The existing drainage characteristics of the Project site will remain substantially the same following implementation of the proposed Project. The addition of a 630-foot long soundwall consisting of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound “blankets” or mats) would not increase the impervious surfaces along the proposed alignment as this area is currently paved. As a result, the Project would have a less than significant impact in regard to increasing the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

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

No Impact. Site conditions following completion of construction of the soundwall would be similar to existing conditions as the area of impervious surfaces would be largely unchanged. However, pockets for landscaping (vines and trees totaling approximately 500 square feet) adjacent to the soundwall would provide pervious areas to absorb runoff. Therefore, the proposed Project will not substantially alter the existing drainage pattern of the site, substantially increase the rate of runoff, or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. No impact would occur.

civ) Impede or redirect flows?

No Impact. According to Figure 5.9-3, Flood Hazard Zones Policy Map, of the Los Angeles County General Plan EIR, there are no 100-year flood zones mapped in unincorporated areas of the Metro Planning Area (PlaceWorks 2014a, p. 5.9-18). Following construction, drainage conditions along the soundwall alignment would be unchanged from existing conditions. Therefore, the proposed Project would not result in any impact regarding impeding or redirecting flood flows.

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

No Impact. Construction of the proposed soundwall presents a minimal risk for release of pollutants. Hazardous materials would be limited to gasoline, diesel, hydraulic fluid, etc., associated with heavy equipment operation and staging. Large quantities would not be present, and precautions would be taken to avoid release of these materials. Furthermore, the site is not located in a flood hazard area including the 100-year floodplain. Thus, no impact is identified in regard to releasing pollutants due to inundation.

A tsunami is a sea wave caused by a sudden displacement of the ocean floor as a result of an off-shore earthquake. The Project site is approximately 20 miles inland and northeast of the Pacific Ocean. The Metro Planning Area is not identified as a mapped tsunami inundation area by the California Geological Survey (PlaceWorks 2014a, p. 5.9-23). Thus, no impact is identified regarding the release of pollutants due to inundation by a tsunami.

A seiche is a surface wave created when an inland water body is disrupted by an earthquake. The Sepulveda Dam is within the Metro Planning Area and serves the Los Angeles River

Watershed (PlaceWorks 2014a, p. 5.9-22). The dam is approximately 18 miles to the northwest and does not present a threat of inundation at the Project site. No lakes or other water bodies are in the immediate vicinity of the Project which could present a threat of seiche. Thus, no impact is identified regarding releases of pollutants due to inundation by a seiche.

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

No Impact. As discussed under item a), above, during Project construction, BMPs would be implemented to prevent transport of pollutants off-site. The proposed Project would not obstruct existing water quality control plans or sustainable groundwater management plans. In addition, the Project is in an urban setting largely covered with impervious surfaces. As such, it is not considered a suitable site for groundwater recharge. Therefore, no impacts would occur related to conflicts with a water quality control plan or sustainable groundwater management plan.

3.11 Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporate	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Existing Conditions

Los Angeles County has 11 Planning areas. The proposed Project is located within the Metro Planning Area within the community of City Terrace, an unincorporated portion of Los Angeles County. The community is in East Los Angeles, northeast of Downtown Los Angeles. City Terrace is bordered on the north and west by the city limits of Los Angeles, Floral Drive on the south, and the city limits of Monterey Park on the east. I-10 currently divides the northern portion of the community from the southern portion as it aligns northeast/southwest through City Terrace. The majority of the community, including the proposed Project, is located south of I-10.

Impact Analysis

a) Would the project physically divide an established community?

No Impact. I-10 currently divides the community of City Terrace with a 12-lane freeway. The proposed soundwall is located within existing County right-of-way on the north property line of Harrison Elementary School. Once constructed, the soundwall will provide a physical and visual barrier between the School and I-10 intended to reduce noise exposure. Existing access points along Marengo Street into the School would be retained. For these reasons, the proposed Project would not physically divide an established community. No impact would occur.

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

No Impact. The proposed Project is located within the Metro Planning Area within the community of City Terrace, an unincorporated portion of the County of Los Angeles. Harrison Elementary School has a Land Use Designation of P (Public and Semi-Public) (LA County General Plan Land Use Element, p. 9). Areas to the north are within County and State right-of-way while the area to the west and south of Harrison Elementary School are designated LMD (Low/Medium Density Residential). The area to the east and south of the School is designated CR (Commercial Residential). The addition of the proposed soundwall along the north property line of Harrison Elementary School would not conflict with a land use plan. Instead, the soundwall would assist with reducing noise exposure from I-10 at the School. Therefore, the proposed Project would not cause a significant environmental impact due to a conflict with a land use plan, policy or regulation.

3.12 Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Existing Conditions

Mineral resources are located at various places in Los Angeles County. Mineral resources include existing surface mining activities, known deposits of commercially viable minerals and aggregate resources. Clusters or belts of mineral deposits are designated as Mineral Resource Zones (MRZs) and further classified numerically from 1 to 4. MRZ-2 represents an area where adequate information indicates that significant mineral deposits are present or a likelihood of their presence and development should be controlled (PlaceWorks 2014a, p. 5.11-2). Four major MRZ-2s are identified in, or partially within, the unincorporated areas of Los Angeles County. They include the Little Rock Creek Fan, Soledad Production Area, Sun Valley Production Area, and Irwindale Production Area (PlaceWorks 2014a, p. 4-21). None of these MRZs are within the Project area.

Impact Analysis

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

No Impact. The proposed Project is in a developed area in the community of City Terrace. Figure 5.11-4, "Mineral Resource Zone 2 Areas, Metro Planning Area" of the Los Angeles County General Plan EIR shows mineral resources in unincorporated areas within the Metro

Planning Area (PlaceWorks 2014a, p. 5.11-11). One location is approximately 5 miles southwest of the Project area. Due to the urban nature of the Project area and its surroundings, as well as the absence of known mineral resources as evidenced in Figure 5.11-4, construction of the proposed Project would not result in the loss of availability of a known mineral resource of value to the region and residents of the state. No impacts to state or regionally important mineral resources would occur.

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

No Impact. As noted in item 3.12(b), above, the Project is in a completely urbanized area and does not support any mineral extraction activities. Due to the developed, urbanized nature of the Project area and its surroundings, as well as the absence of significant mineral resources based on review of Figure 5.11-4, "Mineral Resource Zone 2 Areas, Metro Planning Area" of the Los Angeles County General Plan Update EIR (PlaceWorks 2014a, p. 5.11-11), Project implementation would not result in loss of availability of a known mineral resource recovery site. No impacts to locally important mineral resources would occur.

3.13 Noise

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Existing Conditions

The Project is proposed in an urban setting dominated by traffic noise from I-10. Other noise sources include Metrolink which parallels I-10 adjacent to Marengo Street; overhead aircraft noise; and traffic on surrounding roadways including Marengo Street and City Terrace Drive.

The County of Los Angeles has a Noise Ordinance (Title 12, Los Angeles County Code 2001). However, noise levels at Harrison Elementary School are subject to LAUSD Noise Thresholds (PlaceWorks 2014b):

- Maximum exterior noise level: 67 dBA Leq or 70 dBA L10.
- Maximum interior classroom noise level: 45 dBA Leq or 55 dBA L10.

Short-term noise measurements were conducted at five on-site locations accompanied by manual traffic counts in order to document the existing on-site noise levels and to validate the traffic noise model. Using the Federal Highway Administration's (FHWA) TNM 2.5 traffic noise prediction model, the most recent available site plan and traffic volume data, the existing/future traffic noise levels with and without noise mitigation was estimated. The TNM model (in conjunction with CadnaA® [Computer Aided Noise Abatement]) was used to provide noise results for the planned noise barrier (Dudek 2018, p. 2).

Noise measurements were conducted on Tuesday, June 5, 2018 in the mid-morning during regular school hours. Noise measurements were conducted at Room 141, Room 15, the Pre-K playground, the lower playground, and the upper terrace (Refer to **Figure 2**). Noise sources were noted during the noise measurements. Vehicle traffic on the nearby I-10 freeway was the dominant noise source with steady, free-flowing traffic.

The noise measurements were conducted in the absence of extraneous noise sources: i.e. the students were out of the area and did not influence the noise measurements and no other significant noise sources other than freeway noise were noted. (Marengo Street lies between the I-10 and the Project site, but traffic volumes on Marengo Street are very low compared to I-10 traffic volumes and therefore the noise contribution from this street is negligible.

Noise data collected during the noise measurements included the hourly Leq, Lmax, Lmin, as well as the statistical noise metrics L90, L50, and L10. Noise terminology is included in Attachment B of Appendix A of this document. **Table 3.13-1** summarizes the measured noise levels. The noise measurement data confirms that on-campus noise levels in the vicinity of I-10 are high and consistent with noise from a very large, busy freeway.

TABLE 3.13-1
NOISE MEASUREMENT RESULTS SUMMARY (dBA)

Receiver Location	Measurement Time	Duration (minutes)	Dominant Noise Source	Leq	Lmax	Lmin	L90	L50	L10
Room 14 (doors closed)	9:50 a.m.	10	I-10 Freeway	46.2	61.0	42	42.6	43.6	46.3
Room 14 (doors open)	10:04 a.m.	10	I-10 Freeway	53.4	62.0	50.2	51.4	53.0	54.8
Room 15 (doors open)	10:16 a.m.	10	I-10 Freeway	55.8	62.1	50.5	53.2	55.4	57.8
Pre-K Playground	10:29 a.m.	10	I-10 Freeway	69	74.6	65.1	67.2	68.7	70.4
Lower Playground	10:43 a.m.	10	I-10 Freeway	67.8	75.9	63.7	65.5	67.5	69.7
Upper Terrace	10:57 a.m.	10	I-10 Freeway	65.8	69.3	61.8	64.2	65.6	67.1

Source: Dudek 2020, p. 3.

As shown in **Table 3.13-1**, the measured noise levels exceed the LAUSD noise standard for exterior noise (67 dBA Leq) at the Pre-K playground, the lower playground, and the upper terrace areas. Additionally, the measured noise level in both pre-K classrooms (Rooms 14 and 15) exceeded the LAUSD interior noise (45 dBA Leq).

Impact Analysis

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

Less Than Significant with Mitigation Incorporated. Construction of the proposed soundwall would result in short-term, temporary noise for approximately 3 months/13 weeks. Construction activities would create temporary localized increases in noise levels from operation of on-site equipment, as well as from off-site delivery trucks hauling materials.

The major construction activities for the proposed Project would consist of open-trench installation of the foundation including drilling piles. Construction noise impacts are a function of several factors including noise generated by construction equipment; location of the equipment relative to sensitivity of nearby land uses; and the time of day in which the construction activity takes place. In addition to the School playground and classrooms, the nearest sensitive receptor to the Project is a residence immediately adjacent to the School's west property line. Because of the linear nature of the Project, the amount of time that construction work would occur immediately adjacent to any one noise-sensitive receiver would generally be relatively short (approximately 2 to 3 hours a day).

Short-term construction noise generated by equipment would occur with varying intensities and durations. **Table 3.13-2** lists the typical maximum noise levels at 50 feet for various pieces of construction equipment anticipated to be used during construction.

**TABLE 3.13-2
CONSTRUCTION EQUIPMENT NOISE LEVELS**

Equipment Type	Maximum Noise Level dB(A) at 50 feet
Drill Rig	84
Crane	85
Skip Loader	80
Backhoe	80
Concrete Pump	82
Dump Truck	84
Air Compressor	80
Forklift	85
Concrete Mixer	80
Truck	84

Source: DOT 2006a.

Because the equipment would operate in alternating cycles of full power and low power, noise levels would be lower than maximum levels. The average sound level of the entirety of construction activity is determined by the amount of time the equipment operates and the intensity of construction. As such, the average noise level during construction is generally lower because maximum noise generation (i.e. greater than 85 dBA) when multiple pieces of equipment are operating) occurs up to 50% of the time. Noise levels from construction operations decrease at a rate of approximately 6 dBA per doubling of distance from the source.

The Los Angeles County Code of Ordinances, Title 12 Environmental Protection, Chapter 1208, Noise Control Subsection, Part 5 Exemptions, Subsection 12.08.570 (Activities exempt from chapter restrictions), item D Exemption from Exterior Noise Standards, identifies “Construction” as regulated by the prohibitions of Part 4, Specific Noise Restrictions.

Active construction of the proposed soundwall would occur between 9:00 a.m. and 3:00 p.m. Monday thru Friday. No night work is anticipated. The proposed construction hours are within the parameters allowed per Los Angeles County Code of Ordinances, Title 12 Environmental Protection, Chapter 1208, Noise Control, Part 4 Specific Noise Restrictions, Subsection 12.08.440 (i.e. daily, except Sundays and legal holidays from 7:00 a.m. to 8:00 pm).

The County of Los Angeles Noise Ordinance, and County standards prohibit the operation of equipment used in construction, drilling, repair, alteration, or demolition work in cases where the equipment results in elevated noise levels across a residential property line. The proposed Project would qualify as an exempt activity under the Noise Ordinance item H in Section 12.08.570 for Public Health and Safety Activities. Exposure to construction noise would be substantially reduced if the soundwall is built during the summer months when school is not in session. **Table 13.1-3** summarizes the maximum noise levels set by the County not to exceed the maximum noise levels from mobile equipment.

TABLE 3.13-3
COUNTY OF LOS ANGELES MOBILE CONSTRUCTION EQUIPMENT NOISE LIMITS

Hours of Construction	Single-Family Residential	Multi-Family Residential	Semi-Residential/Commercial
Daily, except Sundays and legal holidays, 7 a.m. to 8 p.m.	75 dBA	80 dBA	85 dBA
Daily, 8 p.m. to 7 a.m. and all-day Sunday and legal holidays	60 dBA	64 dBA	70 dBA

Source: Los Angeles County 2016, Section 12.08.440. For nonscheduled, intermittent, short-term operations for less than 30 days.

Table 4.13-4 summarizes maximum noise levels from stationary equipment (repetitively scheduled and relatively long-term operations of ten days or more).

TABLE 3.13-4
COUNTY OF LOS ANGELES STATIONARY CONSTRUCTION EQUIPMENT NOISE LIMITS

Hours of Construction	Single-Family Residential	Multi-Family Residential	Semi-Residential/Commercial
Daily, except Sundays and legal holidays, 7 a.m. to 8 p.m.	60 dBA	65 dBA	70 dBA
Daily, 8 p.m. to 7 a.m. and all-day Sunday and legal holidays	50 dBA	55 dBA	60 dBA

Source: Los Angeles County 2016, Section 12.08.440.

For repetitively scheduled and relatively long-term operations of 10 days or more.

The construction noise threshold for stationary equipment at single-family residential uses is 60 dBA per Subsection 12.08.440. Construction noise levels would be substantially higher than existing ambient daytime noise levels, particularly within 20 feet of the proposed construction activities.

As shown, noise construction standards of 75 dBA (for mobile equipment) and 60 dBA (for stationary equipment) would be exceeded at the residence adjacent to the School's west property. Without mitigation, short-term construction noise impacts on the residence would be considered potentially significant. Mitigation Measure MM 3.13-1 has been set forth to reduce construction noise associated with the proposed Project and to ensure that nearby receptors are informed of construction activities. Upon implementation of Mitigation Measure MM 3.13-1, impacts would be less than significant with mitigation incorporated.

Mitigation Measures

MM 3.13-1 Construction Noise Reduction

A construction noise control plan shall be prepared and may include but is not limited to the following:

- Construction activities shall be limited to the hours of 9:00 a.m. to 3:00 p.m. on weekdays when school is in session, otherwise hours would be limited from 7:00 a.m. to 8:00 p.m. No construction shall occur during nighttime hours of 8:00 p.m. to 7:00 a.m. on weekdays and during all hours on weekends and holidays. In the event that construction is required to extend beyond these times, extended hours permits shall be required.
- Locate fixed and/or stationary equipment, stockpiling, staging areas, and other noise producing operations as far as possible from noise-sensitive land uses.
- All noise-producing equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers (where appropriate) and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications.
- All mobile or fixed noise-producing equipment regulated for noise output by a local, state, or federal agency shall be in compliance with regulations.

- Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be used for safety warning purposes only.

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

No Impact. Construction of the proposed soundwall would not generate groundborne vibration or noise levels that would be considered excessive. Piles would be cast in hole and no pile driving would be required. In addition, no blasting or other excavation methods would be used that would result in groundborne vibration. Therefore, no impact would occur regarding the generation of excessive groundborne vibration or groundborne noise levels.

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

No Impact. The Project area is not located within the vicinity of a private airstrip (AirNav 2019) or within an airport land use plan. No public airports are located within two miles of the proposed soundwall. A review of the County of Los Angeles Open Data Airport Influence Area website revealed the El Monte Airport as the closest airport to the Project area. The El Monte Airport is approximately 9 miles to the northeast. The proposed Project area is located outside of the planning boundary of this airport (data.lacounty.gov 2019). As such, the Project area is not located within a 2-mile radius of any public airport and no airport land use plans apply to the site. Therefore, the Project would not expose people residing or working in the Project area to excessive noise related to public airports. No impact would occur.

3.14 Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Existing Conditions

The population of Los Angeles County as of January 1, 2019 was 10,253,716 (DOF 2019a). Overall, county-wide housing units totaled 183,450 (DOF 2019b) with a vacancy rate of 6.1% as

of January 1, 2019. The proposed Project is located in the community of City Terrace which is completely developed and built-out with low, medium, low medium residential (17 dwelling units per acre) uses as well as community commercial and commercial/residential uses (30 dwelling units per acre). The population within City Terrace is approximately 12,132 (Citydata 2019).

Impact Analysis

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

No Impact. The proposed Project would construct a soundwall between the Harrison Elementary School and I-10. The Project does not include construction of new residential or commercial uses and would not result in a direct population increase from construction of new homes or businesses. Labor would be needed during construction of the Project. But given the extent 630-foot long soundwall consisting of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound “blankets” or matts) and duration of construction (3 months/13 weeks) the need for these workers would be met from the existing labor pool in the Los Angeles Metropolitan Area. Once completed, the soundwall will require only periodic maintenance, repair, and inspection, and would therefore not require permanent employees. As such, no impact would occur regarding directly or indirectly inducing unplanned population growth.

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

No Impact. The proposed Project is the construction of a soundwall between the Harrison Elementary School and I-10. The Project would not displace people or involve removal of any existing housing. As such, no impact would occur regarding displacing substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

3.15 Public Services

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Existing Conditions

Fire Protection

Fire protection services in the unincorporated areas of Los Angeles County are provided by the Los Angeles County Fire Department (LACoFD). The LACoFD provides fire suppression services, fire prevention services, emergency medical services, hazardous materials services and urban search and rescue services (PlaceWorks 2014a, p. 5.14-1). LACoFD Station Number 1 is located at 1108 Sheriff Road, East Los Angeles, approximately 1 mile to the southeast of the Project site.

Police Protection

Police protection services in the unincorporated areas of Los Angeles County are provided by the Los Angeles County Sheriff's Department (LASD). The Sheriff station closest to the Project area is the East Los Angeles Station at 5019 East 3rd Street approximately 2.5 miles to the southeast.

Schools

The Project is located within the boundaries of the LAUSD. The proposed Project is located along the north property line of Harrison Elementary School.

Parks

The Los Angeles County Department of Parks and Recreation is responsible for operating parks throughout unincorporated portions of the County. One 15-acre community park (City Terrace Park) is located at 1126 North Hazard Avenue approximately three-quarters of a mile to the southeast of the Project site.

Other Public Facilities

Other public services include libraries. The closest library to the Project area is the City Terrace Library located at 4025 East City Terrace Drive, Los Angeles approximately three-quarters of a mile east of the Project area.

Impact Analysis

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

Fire Protection

No Impact. New fire facilities or expansion of firefighting staff and equipment typically occur when there is an increase in population or new development is added to a given service area. As described under Section 3.14, the proposed Project would not cause an increase in population in the Project area nor does it increase the level of development in the community of City Terrace. All construction activities would comply with applicable LACPW and LACoFD emergency access standards to maintain emergency vehicle access throughout construction. Once construction is completed, the soundwall would not alter existing access points currently in place along Marengo Street. As such, the proposed Project would have no impact on service ratios, response times, or other performance objectives to the extent that new or expanded fire protection facilities, equipment, or staff would be required.

Police (Sheriff) Protection

No Impact. New sheriff facilities or expansion of staff and equipment typically occur when there is an increase in population or additional development is added to a given service area. As described under Section 3.14, the proposed Project would not cause an increase in population in the Project area. The proposed Project is construction of 630-foot long soundwall consisting of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound “blankets” or mats). The soundwall would range in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches (for the rigid soundwalls) above local ground. During construction, emergency access may be temporarily altered along Marengo Street. However, all construction activities would be carried out in accordance with all applicable LACPW and LAUSD emergency access standards, and emergency access would be maintained throughout construction. Once construction is completed, the soundwall would not alter existing access points currently in place along Marengo Street. As such, the proposed Project would have no impact on service ratios, response times, or other performance objectives to the extent that new or expanded police (sheriff) protection facilities, equipment, or staff would be required.

Schools

No Impact. The need for new or altered school facilities is typically associated with an increase in residential development and the associated population. As described under Section 3.14, the proposed Project would not cause an increase in population in the Project area. However, construction of the proposed soundwall could have the potential to temporarily interfere with current access points off Marengo Street. Access along Marengo Street may be interrupted for a short duration when school is in session (Section 3.17, Transportation for a discussion of access and impacts on roads and pedestrian facilities). However, access along the east side of the School off City Terrace Drive would be maintained throughout construction. As no increase in demand for school facilities would be necessitated by the Project, no impact would occur with regard to altering the ability of existing schools to accommodate students to the extent that new or expanded school facilities, materials, or staff would be required.

Parks

No Impact. The need for new or altered parks is typically associated with an increase in residential development and the associated population. As described under Section 3.14, the proposed soundwall would not increase population in the Project area. No parks are located within the immediate vicinity of the Project. As such, construction of the proposed soundwall would not disrupt access to nearby parks. Therefore, the proposed Project would not result in the need for new or physically altered parks. No impact to parks would occur.

Other Public Facilities

No Impact. For other public services such as libraries to be impacted, a Project must generate demand for the service through an increase in population. As described under Section 3.14, the proposed soundwall would not result in an increase in population in the Project area. Thus, there would be no need for other public services. No impact would occur.

3.16 Recreation

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Existing Conditions

Recreation facilities in the community of City Terrace are limited. One 15-acre community park (City Terrace Park) is located at 1126 North Hazard Avenue approximately three-quarters of a mile to the southeast of the Project site. As a regional park, City Terrace Park has a variety of offerings including, but not limited to baseball fields, basketball courts, play areas, a swimming pool and splash pads, picnic shelters, barbeques and a community center. In addition to County parks, school facilities often serve a dual purpose in providing recreational opportunities for surrounding residents. Harrison Elementary School has basketball courts, tether ball courts, and a grass track and field area.

Impact Analysis

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

No Impact. The proposed Project is construction of a soundwall between Harrison Elementary School and I-10. The Project would not increase the use of existing neighborhood or regional parks. Therefore, physical deterioration of facilities would not occur or be accelerated as a result of the proposed Project. As discussed in Section 3.14, the proposed Project would not generate an increase in population resulting in greater demand for park facilities. For these reasons, no impact would occur.

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

No Impact. The proposed Project does not include recreational facilities. As discussed in Section 3.14, the proposed Project would not generate an increase in population resulting in greater demand for recreational facilities. For these reasons, no impact would occur.

3.17 Transportation

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The proposed Project is located immediately south of Marengo Street between City Terrace Drive on the east and North Dittman Avenue on the west. I-10, a twelve-lane interstate freeway, is located approximately 100 feet north of the north property line of Harrison Elementary School. According to the Los Angeles County General Plan Update EIR, "The County does not specify an acceptable LOS for the purpose of long-range planning. However, in conformance with the Los Angeles County Congestion Management Program (CMP), the maximum acceptable level of service on arterial roads (i.e., major, secondary, and limited secondary highways) is LOS E, except where base year LOS is worse than LOS E" (PlaceWorks 2014a, p. 5.16-14). Senate Bill 743 would eliminate LOS and replace it with Vehicle Miles Traveled (VMT). The statewide implementation date for VMT was July 1, 2020. LACPW is currently working on VMT guidelines. Given the low and temporary volume of increased traffic associated with Project construction, the VMT for the Project would be low and would not be adversely affected.

Los Angeles County also has various public transportation options including rail systems (Metro Rail; Metrolink, Amtrak) and various bus service options. The Marengo/Dittman (Line 70) bus stop located along Marengo Street in front of the School will be temporarily relocated along Marengo Street during construction. Following completion of the Project, the current bus stop and bus route will be unchanged. An elevated pedestrian bridge currently spans I-10 with a landing along Marengo Street. Access to the bridge will be maintained throughout the duration of construction and remain unchanged following completion of the soundwall.

Impact Analysis

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

Less than Significant with Mitigation Incorporated. Construction is anticipated to occur Monday thru Friday from 9:00 a.m. to 3:00 p.m. for approximately 3 months/13 weeks. Based on the size of the Project (approximately 630 feet in length), and limited construction period (3

months/13 weeks) both construction worker trips and material deliveries are not anticipated to add substantial numbers of trips to area roadways. As previously noted, the Project would add 10 trips per day during construction which is not considered substantial.

During construction, the eastbound lane of Marengo Street will need to be temporarily closed to accommodate the drill rig and other equipment needed to drill piles. Parking along the south side of Marengo Street in front of the School, use of the sidewalk along Marengo Street, and bicycle access along this segment would also be temporarily disrupted as the soundwall is under construction. Likewise, the bus stop located along Marengo Street will also be temporarily relocated (to the east or west of its current site along Marengo Street) for the period of construction. This may result in a potentially significant safety hazard to construction workers and/or the public, specifically pedestrians traversing the area. Therefore, mitigation would be required. To minimize these potential safety hazards, mitigation measures would be implemented requiring a Traffic Control Plan (MM 3.17-1), pedestrian safety measures (MM 3.17-2), and notification of LAUSD regarding construction (MM 3.17-3), would be implemented.

Transport of large equipment on public roadways is regulated by the Los Angeles County Code; transport of heavy equipment and/or materials on State transportation facilities is under the purview of Caltrans. A special permit in accordance with the provisions of the Vehicle Code is needed for public roads and a Caltrans Transportation Permit is needed for State transportation facilities. The proposed Project would be required to obtain these permits to transport the backhoe, front-end loader, and drill rig to the Project site. Due to the limited increase in traffic associated with the Project (i.e. 10 trips), traffic impacts on State facilities are not considered substantial. However, deliveries of materials should occur during off-peak traffic periods to minimize traffic volumes on State facilities.

Mitigation Measure

MM 3.17-1 Traffic Control Plan

LACPW shall implement a Traffic Control Plan to address the temporary closure of the east-bound lane Marengo Street to ensure traffic safety and maintain emergency access to Harrison Elementary School during construction. The Traffic Control Plan should also limit project construction traffic to off-peak periods to minimize congestion on State facilities and local roadway. Any delays on State facilities should be detailed and reviewed by Caltrans. Truck and construction vehicle traffic shall not cause delays for transportation of students to school. All applicable rules and regulations of the California Vehicle Code shall be implemented during construction.

MM 3.17-2 Pedestrian Safety Measures

LACPW shall implement safety measures to separate and protect pedestrians from construction areas adjacent to the sidewalk on the south side of Marengo Street. Methods of ensuring pedestrian safety include, but are not limited to, installing barricades to separate pedestrian from construction areas; detouring pedestrian traffic to the sidewalk on the north side of Marengo Street; and having a crossing guard present.

MM 3.17-3 Advance Notification

LACPW shall notify LAUSD school administrators and LAUSD's Transportation Branch regarding expected start and end dates for construction of various portions of the Project that may affect existing school bus routes and traffic within nearby school areas. LACPW shall coordinate with the project contractor to ensure bus routes and traffic are not delayed throughout the duration of construction.

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

Less than Significant Impact. The soundwall is proposed to be 630 feet in length and range in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches (for the rigid soundwalls) above local ground. Construction of the soundwall is anticipated to take 3 months/13 weeks and would result in a temporary increase in local traffic as a result of construction-related workforce trips and material deliveries, as well as construction activities occurring within the public right-of-way.

According to the Los Angeles County General Plan Update EIR, the Metro Planning Area has a daily Vehicle Miles Traveled (VMT) of 3,884,605 (PlaceWorks 2014, p. 5.16-6). As noted above, LACPW is currently working on VMT guidelines in advance of the July 1, 2020 implementation date.

Traffic generated during construction would occur for a limited period and would not involve a substantial number of truck or employee vehicle trips (10 additional trips per day) or adversely impact VMT. Once the Project is completed, construction-related traffic would cease and VMT levels would return to pre-project conditions. Therefore, the proposed Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). This impact is considered less than significant.

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

No Impact. The proposed Project is a soundwall along the north boundary of Harrison Elementary School. Heavy equipment would be needed at the site during construction. Transport of large equipment on public roadways is regulated by the Los Angeles County Code, a special permit in accordance with the provisions of the Vehicle Code. The proposed Project would be required to obtain a permit to transport the backhoe, front-end loader, and drill rig to the Project site. There are no sharp curves or dangerous intersections within the proposed soundwall alignment. Therefore, no impact would occur as a result of a hazard due to a geometric design feature or incompatible use.

d) Would the project result in inadequate emergency access?

Less Than Significant with Mitigation Incorporated. Vehicles and equipment would be staged along Marengo Street during construction. The proposed Project would obstruct the segment of Marengo Street along the north property line of Harrison Elementary School during construction. However, implementation of a Traffic Control Plan, as required by Mitigation Measure MM 3.17-1, and associated traffic control plans and adherence to the provisions of

The Green Book (i.e. “A Policy on Geometric Design of Highways and Streets and Work Area Traffic Control [WATCH] Handbook) would ensure that any temporary impacts to emergency vehicle flow and/or ingress/egress to properties along the soundwall alignment are coordinated in advance by notifying emergency service providers and law enforcement to ensure that provision of sufficient emergency service, thru-traffic, access, and evacuation can occur during construction if necessary. Implementation of a Traffic Control Plan and adherence to The Green Book and WATCH Handbook would reduce impacts to emergency access to less than significant levels. Once construction is complete, the proposed soundwall would not include any impediments to emergency access. No new impacts to emergency access would occur during operation. As such, impacts would be limited to the construction period and would be less than significant with mitigation incorporated.

Mitigation Measure

Implement Mitigation Measure MM 3.17-1.

3.18 Tribal Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The Gabrieleño Band of Mission Indians – Kizh Nation and San Gabriel Band of Mission Indians are on file with the Native American Heritage Commission (NAHC) as being traditionally or culturally affiliated with the geographic area of the Project.

California Assembly Bill 52 (AB 52), which took effect July 1, 2015, establishes a consultation process between California Native American Tribes and lead agencies in order to address tribal concerns regarding project impacts and mitigation to “tribal cultural resources” (TCR). Public

Resources Code (PRC) section 21074(a) defines TCRs as a site, feature, place, cultural landscape, sacred place, and object with cultural value to a California Native American tribe that is either:

1. Listed or eligible for listing in the California Register of Historic Resources or a local register of historical resources, or
2. Determined by a lead agency to be a TCR.

PRC also states that a project that has the potential to cause a substantial adverse change to a TCR is a project that may have an adverse effect on the environment.

The discussion below is based on the outcome of the AB 52 process with Tribes on the NAHC list that requested notification to consult.

Impact Assessment

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

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

Less than Significant with Mitigation Incorporated. As part of fulfilling the requirements of AB 52, LACPW sent letters to the Gabrieleño Band of Mission Indians – Kizh Nation and the San Gabriel Band of Mission Indians that have requested notification of projects within the County, pursuant to Public Records Code Section 2180.31. This occurred in association with the original design of the soundwall (i.e. Scenario 2) in September 2019. The Tribes were requested to respond within 30 days of receipt of the letter if they wished to engage in government to government consultation. The letters included a project description, map depicting the project location, and contact information for LACPW. The San Gabriel Band of Mission Indians did not respond, and consultation was not initiated. The Gabrieleño Band of Mission Indians – Kizh Nation requested consultation and a call and e-mails were exchanged between the Tribe and the LACPW as shown in **Table 3.18-1**.

**TABLE 3.18-1
TRIBAL CONSULTATION SUMMARY**

Date	Action
September 9, 2019	County sends letter to the Gabrieleño Band of Mission Indians – Kizh Nation inviting the Tribe to consult on the Project.
September 23, 2019	The Tribe responded with an e-mail with an undated letter attached requesting to engage in consultation with the County.
December 4, 2019	The County and its consultant had a conference call with Chairman Andrew Salas and Tribal Biologist Matthew Teutimez.
December 5, 2019	The County shared copies of the Geotechnical Reports prepared for the Project for the County to review.
January 10, 2020	Tribe provides an e-mail to the County explaining the potential for the Project to impact Tribal Cultural Resource based on the

**TABLE 3.18-1
TRIBAL CONSULTATION SUMMARY**

Date	Action
	proposed soundwall being located within a sacred village (Apachianga), adjacent to water courses and major traditional trade routes, and high potential to impact Tribal Cultural Resources still present within the soil layers from the thousands of years of prehistoric activities that occurred within and around these landscapes. the Tribe provided mitigation language approved by its Tribal Government for use in this IS/MND.
February 12, 2020	The County sends a letter documenting that it will include the mitigation language requested by the Tribe and that the consultation process will be closed, pending no other comments or concerns.

During the call, Chairman Andrew Salas and Tribal Biologist Matthew Teutimez described the proximity of the Project to Tribal Trade routes, stream courses and a railroad. For these reasons as well of the depth of ground disturbing activities associated with drilling for the piles, the Gabrieleño Band of Mission Indians – Kizh Nation expressed concern for impacts to TCRs and provided additional details (in an e-mail dated January 10, 2020).

The Tribe considers the proposed Project to have a potentially significant impact to TCRs. The Tribe provided Mitigation Measures MM 3.18-1 thru MM 3.18-8 to address potential impacts to TCRs if discovered during construction. Implementation of these mitigation measures would reduce impacts to TCRs to less than significant.

Mitigation Measures

MM 3.18-1 Retain a Native American Monitor/Consultant. LACPW shall retain and compensate for the services of a Tribal monitor/consultant who is both approved by the Gabrieleño Band of Mission Indians-Kizh Nation Tribal Government and is listed under the NAHC's Tribal Contact list for the area of the project location. This list is provided by the NAHC. The Tribal monitor/consultant will only be present on-site during the construction phases that involve ground disturbing activities. Ground disturbing activities are defined by the Gabrieleño Band of Mission Indians-Kizh Nation as activities that may include, but are not limited to, pavement removal, pot-holing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching, within the project area. The Tribal Monitor/consultant will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the project site grading and excavation activities are completed, or when the Tribal Representatives and monitor/consultant have indicated that the site has a low potential for impacting Tribal Cultural Resources.

MM 3.18-2 Unanticipated Discovery of Tribal Cultural and Archaeological Resources. Upon discovery of any tribal cultural or archaeological resources, cease construction activities in the immediate vicinity of the find until the find can be

assessed. All tribal cultural and archaeological resources unearthed by project construction activities shall be evaluated by the qualified archaeologist and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians-Kizh Nation. If the resources are Native American in origin, the Gabrieleño Band of Mission Indians-Kizh Nation shall coordinate with the landowner regarding treatment and curation of these resources. Typically, the Tribe will request preservation in place or recovery for educational purposes. Work may continue on other parts of the project while evaluation and, if necessary, additional protective mitigation takes place (CEQA Guidelines Section 15064.5[f]). If a resource is determined by the qualified archaeologist to constitute a “historical resource” or “unique archaeological resource”, time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources.

MM 3.18-3 Public Resources Code Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. All Tribal Cultural Resources shall be returned to the Tribe. Any historic archaeological material that is not Native American in origin shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, they shall be offered to the Tribe or a local school or historical society in the area for educational purposes.

MM 3.18-4 Unanticipated Discovery of Human Remains and Associated Funerary Objects: Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in PRC 5097.98, are also to be treated according to this statute. Health and Safety Code 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and excavation halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC) and PRC 5097.98 shall be followed.

MM 3.18-5 Resource Assessment & Continuation of Work Protocol: Upon discovery of human remains, the tribal and/or archaeological monitor/consultant will immediately divert work at minimum of 150 feet and place an exclusion zone around the discovery location. The monitor/consultant(s) will then notify the Tribe,

the qualified lead archaeologist, and the LACPW construction manager who will call the coroner. Work will continue to be diverted while the coroner determines whether the remains are human and subsequently Native American. The discovery is to be kept confidential and secure to prevent any further disturbance. If the finds are determined to be Native American, the coroner will notify the NAHC as mandated by state law who will then appoint a Most Likely Descendent (MLD).

MM 3.18-6 Kizh-Gabrieleño Procedures for burials and funerary remains. If the Gabrieleño Band of Mission Indians – Kizh Nation is designated MLD, the Koo-nas-gna Burial Policy shall be implemented. To the Tribe, the term “human remains” encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects.

MM 3.18-7 Treatment Measures. Prior to the continuation of ground disturbing activities, the landowner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. The Tribe will work closely with the qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be taken which includes at a minimum detailed descriptive notes and sketches. Additional types of documentation shall be approved by the Tribe for data recovery purposes. Cremations will either be removed in bulk or by means as necessary to ensure complete recovery of all material. If the discovery of human remains includes four or more burials, the location is considered a cemetery and a separate treatment plan shall be created. Once complete, a final report of all activities is to be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.

Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and

objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.

MM 3.18-8 Professional Standards. Archaeological and Native American monitoring and excavation during construction projects will be consistent with current professional standards. All feasible care to avoid any unnecessary disturbance, physical modification, or separation of human remains and associated funerary objects shall be taken. Principal personnel must meet the Secretary of Interior standards for archaeology and have a minimum of 10 years of experience as a principal investigator working with Native American archaeological sites in southern California. The Qualified Archaeologist shall ensure that all other personnel are appropriately trained and qualified.

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

Less than Significant with Mitigation Incorporated. Refer to discussion under ai), above.

Mitigation Measures

Implement Mitigation Measures MM 3.18-1 thru MM 3.18-8.

3.19 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

Water

The Project area is currently served with water infrastructure. A water service line is located along the curb on the south edge of Marengo Street (refer to **Figure 5A** and **Figure 5B**). A water meter is also located on the south side of Marengo Street adjacent to the pedestrian bridge.

Wastewater Treatment

The Project area is currently served with wastewater infrastructure. A sewer line extends east-west within the right-of-way of Marengo Street (westbound lane) (refer to **Figure 5A** and **Figure 5B**). The alignment turns south at the manhole and extends south across the two eastbound lanes then along the School's west property line.

Stormwater Drainage

The Project area is currently served with stormwater infrastructure. An existing storm drain is present on the south side of Marengo Street.

Electric Power

Southern California Edison (SCE) provides electricity to Los Angeles County. The Project area is currently served with electric infrastructure. Overhead poles are located along both sides of Marengo Street (PlaceWorks 2014a, p. 5.17-61).

Natural Gas

The Southern California Gas Company (SCGC) supplies natural gas to most of Los Angeles County. No gas lines are located within the Project area (PlaceWorks 2014a, p. 5.17-61).

Telecommunications Facilities

Los Angeles County is served by several cable operators. These include: Time Warner Cable, Charter Communication, Cox Communications, AT&T U-verse, and Verizon (PlaceWorks 2014a, p. 5.17-62). No cable infrastructure extends through the Project alignment.

Solid Waste

California has adopted AB 341, a mandatory commercial recycling bill. In addition, the County has adopted the Construction and Demolition Debris Recycling and Reuse Ordinance on January 4, 2005. The Ordinance added Chapter 20.87 to the Los Angeles County Code, requiring projects in the unincorporated areas to recycle or reuse 50 percent of the debris generated. The Ordinance is intended to increase the diversion of construction and demolition debris from disposal facilities and will assist the County in meeting the State of California's 50 percent waste reduction mandate (PlaceWorks 2014a, p. 5.17-51).

Impact Analysis

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

Less than Significant Impact. The proposed Project would place a 630-foot long soundwall between Harrison Elementary School and I-10. The Project would not require the construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. The only piece of existing infrastructure that would require relocation to accommodate the soundwall is the existing backflow preventer adjacent to the pedestrian bridge. The existing water line in Marengo Street is not expected to be impacted. Likewise, the existing sewer line adjacent to the School's west property line and the storm drain near the School's east property line would not require relocation. Instead, pile foundations will be used to bridge over these existing underground facilities. Thus, impacts to construction or relocation of infrastructure are considered less than significant.

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

Less than Significant Impact. Water would be needed during construction to control dust and to mix concrete. Once construction is complete, water would be used for approximately 500 square feet of landscaping (vines and trees) proposed along Marengo Street on the north side of the soundwall. The amount of water needed for construction and landscape irrigation (estimated at approximately 10,872 gallons per year) is not considered significant. The existing backflow preventer adjacent to the pedestrian bridge would be relocated and upsized to accommodate the Project. Therefore, impacts related to water supply would be less than significant.

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

No Impact. The proposed Project is a soundwall and would not generate wastewater. Portable toilets would be provided for construction crews to fulfill short-term sanitary waste needs. As such, the Project would not result in a long-term demand for wastewater treatment services and no impacts to wastewater treatment capacity would occur.

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

Less than Significant Impact. Construction of the proposed soundwall would require removal of existing concrete and soils along the alignment to accommodate construction of the foundation and pile drilling. Additional waste would be generated in association with material deliveries (cardboard, pallets, plastic) as well as some minor trash generated by construction workers (food wrappers, cans, bottles, etc.).

Given the brief period of construction (3 months/13 weeks) and size of the Project (i.e. 630 linear feet) construction waste generation would be minimal and would not exceed a State or local standard. The proposed Project would be required to comply with the Construction and Demolition Debris Recycling and Reuse Ordinance which requires projects in the unincorporated areas to recycle or reuse 50 percent of the debris generated (PlaceWorks 2014a, p. 5.17-51). Once construction is complete, the Project would not require solid waste disposal. Therefore, impacts related to solid waste are considered less than significant.

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

Less than Significant Impact. As described under item “d” above, the proposed Project would be required to comply with the Construction and Demolition Debris Recycling and Reuse Ordinance requirements for construction and demolition waste. Although waste generated during Project construction would enter the County’s waste stream, the quantity generated represents a nominal percentage of the waste created within the County as a whole. Once construction is complete, the proposed Project would not generate solid waste. Therefore, impacts related to compliance with solid waste regulations would be less than significant.

3.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The Project is located the highly urbanized area of East Los Angeles within Los Angeles County in the community of City Terrace. While the terrain above the Project area is hilly, it has been developed with residential uses. Figure 5.8-1, “Fire Hazard Severity Zones” of the Los Angeles County General Plan Update EIR, designates East Los Angeles as an Unincorporated Area, rather than a Fire Hazard Area” (PlaceWorks 2014a, p. 5.8-13).

Regarding emergency response, the Los Angeles County General Plan Update EIR states: “The Los County Office of Emergency Management (OEM) maintains the Los Angeles County Operational Area Emergency Response Plan and the County of Los Angeles All-Hazard Mitigation Plan. OEM leads and coordinates disaster plans and disaster preparedness exercises for all cities and 288 special districts in Los Angeles County” (PlaceWorks 2014a, p. 5.8-10).

Impact Analysis

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

No Impact. The proposed Project is a soundwall along the north property line of the Harrison Elementary School. Existing access points to the Harrison Elementary School along Marengo Street would be maintained. The Project would have no impact on an emergency response plan or emergency evacuation plan.

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

No Impact As described in Section 3.9, item “g”, the proposed Project is within an urban environment characterized by residential development and commercial/residential development. The campus of Harrison Elementary School is located on a hillside with some classrooms elevated above street-level and homes located south of the campus along the hillside. Due to the developed nature of the Project area, the potential for wildland fires is low. The Project, as a soundwall, would not have occupants. Therefore, construction of the proposed soundwall will have no impact regarding exacerbating wildfire risk and exposing occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

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

No Impact. The proposed Project would construct a 630-foot long soundwall consisting of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound “blankets” or matts). The soundwall would range in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches (for the rigid soundwalls) above local ground along the north property line of the Harrison Elementary School. As previously explained, the Project is located within a highly urbanized environment. Construction work would be limited to the existing right-of-way which is surrounded by urban development. Vegetation along the soundwall alignment is minimal and is limited to trees and shrubs along the sidewalk adjacent to Marengo Street and along the north property line of the School. Given the low density of vegetation and prevalence of concrete and asphalt, construction activities associated with the proposed Project would be unlikely to exacerbate wildfire risks. Due to the nature of the Project (a masonry soundwall) and its location (a highly urbanized area in East Los Angeles), the proposed Project would not require new roads, fuel breaks, emergency water sources, power lines, or other utilities for construction. Therefore, there will be no impacts on exacerbating fire risk.

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

No Impact. The Project is not an occupiable structure and would not increase population such that the number of occupiable structures in the Project area would increase. While workers would be present in the Project area during construction, they would not be exposed to undue risks associated with flooding or landslides, relative to other areas in the region. For these reasons, impacts involving exposure of people or structures to significant risks from flooding or landslides resulting from runoff, post-fire slope instability, and/or drainage changes would have no impact in association with the proposed Project.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

Less Than Significant. The proposed Project is located within an urban setting and contains no sensitive habitat areas. The proposed soundwall would not degrade the quality of the environment as it would be built within an existing right-of-way along the north property line of Harrison Elementary School. Construction of the Project would not reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal.

The Project would involve excavation and drilling activities which could potentially unearth unknown cultural resources buried at depths not previously disturbed. Specifically, drilling for pile installation could damage subsurface archaeological, historical, or Native American resources that were previously unknown. Mitigation Measure MM 3.5-1 (Unanticipated Discovery of Archaeological Resources) addresses the unanticipated discovery of archaeological resources. In addition, Mitigation Measures MM 3.18-1 thru MM 3.18-8 would reduce impacts to TCRs if discovered. Implementation of these mitigation measures, if necessary, would reduce impacts to examples of the major periods of California history or prehistory to less than significant.

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

Less Than Significant. As discussed in the respective issue areas 3.1 thru 3.20, above, the proposed Project would not result in any significant, unmitigable effects to environmental resources. Implementation of Project-specific mitigation measures (MM 3.5-1, MM 3.7-1, MM 3.7-2a, MM 4.3-2b, MM 3.17-1, MM 3.17-2, MM 3.17-3 and MM 3.18-1 thru MM 3.18-8) and compliance with applicable codes, ordinances, laws, and other required regulations

would reduce the magnitude of any impacts resulting from construction of the proposed soundwall to a less than significant level. For the reasons further set forth below, impacts would not be cumulatively considerable.

Projects with the potential to contribute to cumulative impacts would be in proximity to the proposed Project and be under construction concurrently with the soundwall. Given the built-out nature of the surrounding community and the short duration of construction (3 months/13 weeks) the potential for construction of other similar cumulative projects is low. If other similar projects are occurring concurrently, the impacts would be temporary in nature and generally limited to the area in which construction activities are occurring. Given that other linear projects coordinated by LACPW could be initiated at different times or at a substantial distance from one another, cumulative effects could be avoided.

Impacts to cultural resources, paleontological resources and TCRs would occur on a project-by-project basis and would likewise be mitigated on a project-by-project basis. Implementation of Mitigation Measure MM 3.5-1 would address unanticipated discovery of archaeological resources; MM 3.7-2a and MM 3.7-2b addresses paleontological resources, and MM 3.18-1 thru MM 3.18-8 address TCRs. With implementation of the mitigation measures identified, cumulative impacts to cultural resources, paleontological resources and TCRs would be reduced to less than significant levels.

Geotechnical impacts are project-specific. The recommendations of the Geotechnical Report prepared for the proposed Project would address geology and soils impacts specific to construction of the soundwall. No cumulative impacts would occur regarding geology and soils.

Noise impacts would be dependent on the timing and location of other construction projects occurring in the vicinity and concurrently with the proposed soundwall. Assuming LACPW would phase other projects to avoid, to the extent feasible, concurrent construction of linear projects in any one location, noise impacts of the proposed Project and related projects would not result in noise impacts that are cumulatively considerable. As explained in Section 3.13 of this IS/MND, noise from Project construction would be greatest at the properties immediately adjacent to the alignment. As such, cumulative projects with the potential to combine with the noise effects of the proposed Project would generally be limited to those located along the alignment of the soundwall. However, the possibility of construction of the proposed soundwall coinciding with other similar projects is unlikely. In the event that construction of other projects coincides with the proposed Project, the overlap would be brief since construction of the soundwall would not generally remain in a single location for more than a few days. Furthermore, implementation of Mitigation Measure MM 3.13-1 would reduce construction noise to the extent practicable. Additionally, if other projects are under construction in the Project area at the same time, these projects would be subject to environmental review pursuant to state law. If potentially significant noise impacts are identified, appropriate mitigation would be applied to the related projects. The short project construction period (3 months/13 weeks) and linear nature of the soundwall (630 feet), in combination with implementation of project-specific mitigation and regulatory and/or project-specific requirements that would be applied to related projects, would ensure that cumulatively significant noise impacts would be reduced to less than significant with mitigation incorporated.

Construction activities would generate worker and material delivery traffic. The outside lane of Marengo Street would be temporarily closed to accommodate equipment during construction. Traffic impacts resulting from Project construction would be temporary and less than significant with the implementation of Mitigation Measures MM 3.17-1, MM 3.17-2 and MM 3.17-3.

In summary, the proposed Project's cumulative impacts would be less than significant with implementation of the mitigation measures identified in this IS/MND.

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

Less Than Significant. Implementation of the proposed Project would not result in any impacts that are significant and unavoidable or cumulatively considerable. Implementation of the mitigation measures identified in this IS/MND would reduce all potentially significant impacts to less-than-significant levels. Once construction is complete, the proposed soundwall would reduce noise exposure from I-10 at the Harrison Elementary School. Therefore, the proposed Project would have a beneficial effect for the students at the School and would not result in impacts that would cause substantial adverse effects on human beings, either directly or indirectly.

4.0 LIST OF PREPARERS

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APPENDIX A

REVISED SOUNDWALL DESIGN MEMO

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July 21, 2020

10001.21

Albert E. Anidi
Los Angeles County Department of Public Works
Programs Development Division, Supervising Civil Engineering Assistant
900 Fremont Avenue
Alhambra, California 91803
626.458.5199

Subject: *Harrison Street Elementary School – Revised Sound Wall Design
(Agreement No. PW15005) - Final*

Dear Mr. Anidi:

Dudek is pleased to submit this noise report to the Los Angeles County Department of Public Works (Department of Public Works), summarizing the noise analysis methodology and results for the subject project.

Project Understanding

Harrison Street Elementary School is located at 3529 City Terrace Drive in the unincorporated County of Los Angeles community of City Terrace (Figure 1). The elementary school (project site), a public school in the Los Angeles Unified School District, is located approximately 100 feet south of the Interstate 10 (I-10) freeway, which is a major noise source in the project area. We understand that the proposed project would consist of the construction of a combination of noise barriers (i.e., soundwalls) to reduce traffic noise at the elementary school. Prior versions of the proposed soundwall design have been analyzed by Dudek; the current design (as shown schematically in Figure 2; detailed design drawings provided in Attachment A) represents a final or near-final barrier configuration. The Department of Public Works has retained Dudek to assist in estimating the noise barrier performance for the proposed final design). The soundwall barriers as currently envisioned would be constructed at the school's northern property boundary.

Accounting for the gaps in the barriers, the proposed barrier design would be approximately 630 feet in length, and would consist of a combination of rigid soundwalls (i.e., masonry, or other solid barrier system such as post-and-panel) and somewhat less permanent and massive noise barriers (i.e., flexible, mountable sound “blankets” or matts). The soundwall barriers would arrange in height from approximately 6 foot 7 inches to 7 foot 11 inches (for the mountable noise barriers) to approximately 15 foot 5 inches¹ (for the rigid soundwalls) above local ground.

The I-10 has six main travel lanes in each direction in the vicinity of the project site. Based upon an initial site visit and a subsequent field meeting with the Harrison Street Elementary School Principal (Mr. Carlos Madrigal), the portions of the school campus nearest the I-10 (i.e., the pre-K classrooms, pre-K playground, and lower playground) are of primary concern for reduction of traffic noise. The upper portion of the campus (where most of the

¹ Except that the easternmost rigid soundwall would vary in height, because it would be constructed underneath the overhead pedestrian bridge as shown in Figure 1.

classrooms, as well as the administrative offices are located) are not as impacted by high traffic noise levels as is the lower campus.

Regulatory Background

Los Angeles Unified School District (LAUSD) Noise Thresholds

The LAUSD uses the following noise thresholds which would be applicable to the subject project:

- Maximum exterior noise level: 67 dBA L_{eq} or 70 dBA L_{10} .
- Maximum interior classroom noise level: 45 dBA L_{eq} or 55 dBA L_{10} .

(Reference: LAUSD. 2014. School Upgrade Program EIR.)

Please note that noise terminology and noise fundamentals are provided in Attachment B.

Noise Analysis Methodology

Short-term noise measurements were conducted at five locations on-site, accompanied by manual traffic counts, in order to document the existing on-site noise levels, and to validate the traffic noise model. Using the Federal Highway Administration's (FHWA) TNM 2.5 traffic noise prediction model (FHWA 2004), the most recent available site plan and traffic volume data, the existing / future traffic noise levels with and without noise mitigation was estimated. The TNM model was used to provide noise results for the planned noise barrier. Additionally, a version of the noise model was run in which the mountable noise panels are not applied to the school fencing, as currently proposed, in which case the gaps between the soundwalls would be increased. Further detail of the analysis is provided below.

Noise Measurements

Noise measurements were conducted on Tuesday, June 5, 2018 in the mid-morning during regular school hours. Noise measurements were conducted at five on-site locations (Room 14², Room 15, the Pre-K playground, the lower playground, and the upper terrace), as shown in Figure 2. The noise instrumentation used for the noise measurements consisted of a Rion NL-62 digital integrating sound level meter, which is classified by the American National Standards Institute (ANSI) as a Type 1 (precision) device. The calibration of the sound level meter was verified in the field using an ANSI-certified field noise calibrator, and the noise measurements were conducted using ANSI recommendations and practices consistent with the state of the practice. Specifically, the noise measurement devices were set to the A-weighting network, and Slow response mode.

² In room 14, two consecutive noise measurements were conducted; one with both the front and rear doors open, and one with both doors closed. Based upon information provided by Principal Madrigal, a typical condition when class is in session is to have both doors open, in order to maintain adequate ventilation and cooling. Therefore, the subsequent measurement (in Room 15) was conducted only in the doors-open condition.

During the noise measurements, the noise sources were noted. Vehicle traffic on the nearby I-10 freeway was the dominant source of noise. Traffic flow on the I-10 was steady and freely flowing. Concurrently with the noise measurements, a small video camera was used to record the traffic flow on both sides of the freeway, for subsequent playback and vehicle-counts. The noise measurements were conducted in the absence of extraneous noise sources; the students were out of the area and did not influence the noise measurements, and no other significant noise sources other than freeway noise were noted³.

Noise measurement data collected during the noise measurements included the hourly L_{eq} , L_{max} , L_{min} , as well as the statistical noise metrics L_{90} , L_{50} , and L_{10} . The measured noise levels are summarized in Table 1. The noise measurement data confirms that on-campus noise levels in the vicinity of the I-10 are high, and consistent with noise from a very large, busy freeway.

As shown in Table 1, the measured noise levels exceed the LAUSD noise standard for exterior noise (67 dBA L_{eq}) at the Pre-K playground, the lower playground, and the upper terrace areas. Additionally, the LAUSD noise standard for interior noise (45 dBA L_{eq}) in both of the measured pre-K classrooms (Rooms 14 and 15). The field noise data sheets are included as Attachment C.

Table 1. Noise Measurement Results Summary (dBA)

Receiver Location	Measurement Time	Duration (minutes)	Dominant Noise Source	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}
Room 14 (doors closed)	9:50 a.m.	10	I-10 Freeway	46.2	61	42	42.6	43.6	46.3
Room 14 (doors open)	10:04 a.m.	10	I-10 Freeway	53.4	62	50.2	51.4	53	54.8
Room 15 (doors open)	10:16 a.m.	10	I-10 Freeway	55.8	62.1	50.5	53.2	55.4	57.8
Pre-K Playground	10:29 a.m.	10	I-10 Freeway	69	74.6	65.1	67.2	68.7	70.4
Lower Playground	10:43 a.m.	10	I-10 Freeway	67.8	75.9	63.7	65.5	67.5	69.7
Upper Terrace	10:57 a.m.	10	I-10 Freeway	65.8	69.3	61.8	64.2	65.6	67.1

Noise Modeling

On-site noise and traffic noise were analyzed using the TNM computer model along with topographical data and site plan information. TNM was used to build the noise model for the project and the associated measured and modeled noise-sensitive receiver points. The traffic noise emission levels used as a basis for the calculations within CadnaA® were provided by the Federal Highway Administration (FHWA) traffic noise prediction model (TNM version 2.5) (FHWA 2004). Noise modeling inputs and outputs are provided in Attachment D.

³ Marengo Street lies between the I-10 and the project site, but traffic volumes on Marengo Street are very low compared to I-10 traffic volumes, and therefore the noise contribution from this street is negligible.

In conformance with California Department of Transportation guidance for assessment of traffic noise, the loudest traffic noise hour is generally characterized by high-volume but free-flowing traffic at the highway design speed (i.e., LOS C/D or better) (Caltrans. 2013. Technical Noise Supplement). Based upon current Caltrans protocol, it was assumed that each of the 12 general purpose (GP) lanes of the I-10 in the project vicinity has an LOS C/D capacity of 1,950 vehicles per hour per lane (vphpl) with all vehicles traveling at an average speed of 65 miles per hour. The average vehicle mix (i.e., percentages of autos, medium and heavy trucks) was derived from the Caltrans traffic data web site (<http://www.dot.ca.gov/hq/tsip/gis/datalibrary/Metadata/TruckAADT.html>) for I-10, Year 2016 (the most recent data available). This vehicle mix corresponds to 97 % autos, 1% medium trucks and 2% heavy trucks.

To validate the accuracy of the TNM model, the measured traffic noise levels were compared to modeled noise levels at each of the measurement locations. For each receiver, traffic volumes counted during the short-term measurement periods were normalized to one-hour volumes. These normalized volumes were input into the noise model to simulate the noise source strength during the actual measurement period. Modeled and measured sound levels were then compared to determine the accuracy of the model. The resultant modeled noise levels were within 1 to 2 decibels of the measured noise levels at the exterior locations, which indicates that the noise model reflects real-world conditions within acceptable tolerances. The difference between the measured interior noise levels within Rooms 14 and 15 and the corresponding modeled noise levels (16 dB for Room 14 with doors open, 22 dB with doors closed; 14 dB for Room 15 with doors open) is in line with typical exterior/interior noise reduction for building structures of this type.

Results and Recommendations

The results of the noise modeling for the worst-case I-10 traffic noise levels with and without the proposed soundwall design are summarized in Table 2. As shown in Table 2, existing and future⁴ exterior noise levels without a soundwall during the loudest hours are estimated to range from 71 dBA L_{eq} at the upper terrace to approximately 77 dBA L_{eq} at the Pre-K playground. Interior noise levels are estimated to range from approximately 60 dBA to 62 dBA L_{eq} with doors open. These noise levels are well above the LAUSD noise standards of 45 dBA L_{eq} interior, 67 dBA L_{eq} exterior.

As shown in Table 2, the proposed soundwall design would provide noise reduction levels of approximately 6 to 12 decibels; although the proposed soundwall design would not reduce noise levels to below LAUSD noise standards in the Pre-K classrooms, the noise reduction would be clearly audible and would likely be a benefit to students and staff. Furthermore, the traffic noise levels at the Pre-K playground and at the central part of campus (i.e., the lower playground and the upper terrace) would be reduced to below the LAUSD exterior noise standard.

⁴ Because the noise analysis is based upon traffic volumes per hour per lane, and because the I-10 freeway is unlikely to be widened in the near future because of right-of-way constraints in the project area, the existing and future worst-case noise estimates would be the same.

Table 2. Worst-Case Traffic Noise Modeling Results Summary: Proposed Soundwall Design (dBA L_{eq})

Noise Reduction	Without Soundwall	Proposed Soundwall Design)	Noise Reduction	LAUSD Noise Standard
Room 14 ⁵ (Doors Open)	60	50	-10	45 (Interior)
Room 15 ⁵ (Doors Open)	62	50	-12	45 (Interior)
Pre-K Playground	77	66	-11	67 (Exterior)
Lower Playground	75	63	-12	67 (Exterior)
Upper Terrace	71	65	-6	67 (Exterior)

Source: Appendix D

Proposed Design without Mountable Noise Panels

The results of the noise modeling for the proposed design without the mountable noise panels are compared with the results for the “complete” soundwall design (from Table 2) are provided in Table 3. As shown in Table 3, without the mountable noise barrier panels, the resulting noise levels would be approximately 2 to 7 dBA louder than with the proposed barrier design. At the Pre-K playground and at the lower playground, the noise levels would exceed the LAUSD noise standard of 67 dBA L_{eq} exterior. At the upper terrace, the noise levels would equal but not exceed the 67 dBA L_{eq} noise standard. Thus, our recommendation would be to install the mountable noise barrier panels in conjunction with the more permanent, rigid soundwalls.

Table 3. Proposed Soundwall Design Compared to Design without Mountable Noise Panels (dBA L_{eq})

Noise Reduction	Proposed Soundwall Design (from Table 2)	Soundwall Design without Mountable Noise Panels	Relative Increase in Noise Levels without Mountable Noise Panels	LAUSD Noise Standard
Room 14 ⁵ (Doors Open)	50	53	3	45 (Interior)
Room 15 ⁵ (Doors Open)	50	53	3	45 (Interior)
Pre-K Playground	66	69	3	67 (Exterior)
Lower Playground	63	70	7	67 (Exterior)
Upper Terrace	65	67	2	67 (Exterior)

Source: Appendix D

⁵ The interior noise levels reflect the noise offsets (16 dB for Room 14, 14 dB for Room 15) during the noise calibration phase.

Mr. Albert E. Anidi

Subject: *Harrison Street Elementary School – Revised Sound Wall Design (Agreement No. PW15005) - Final*

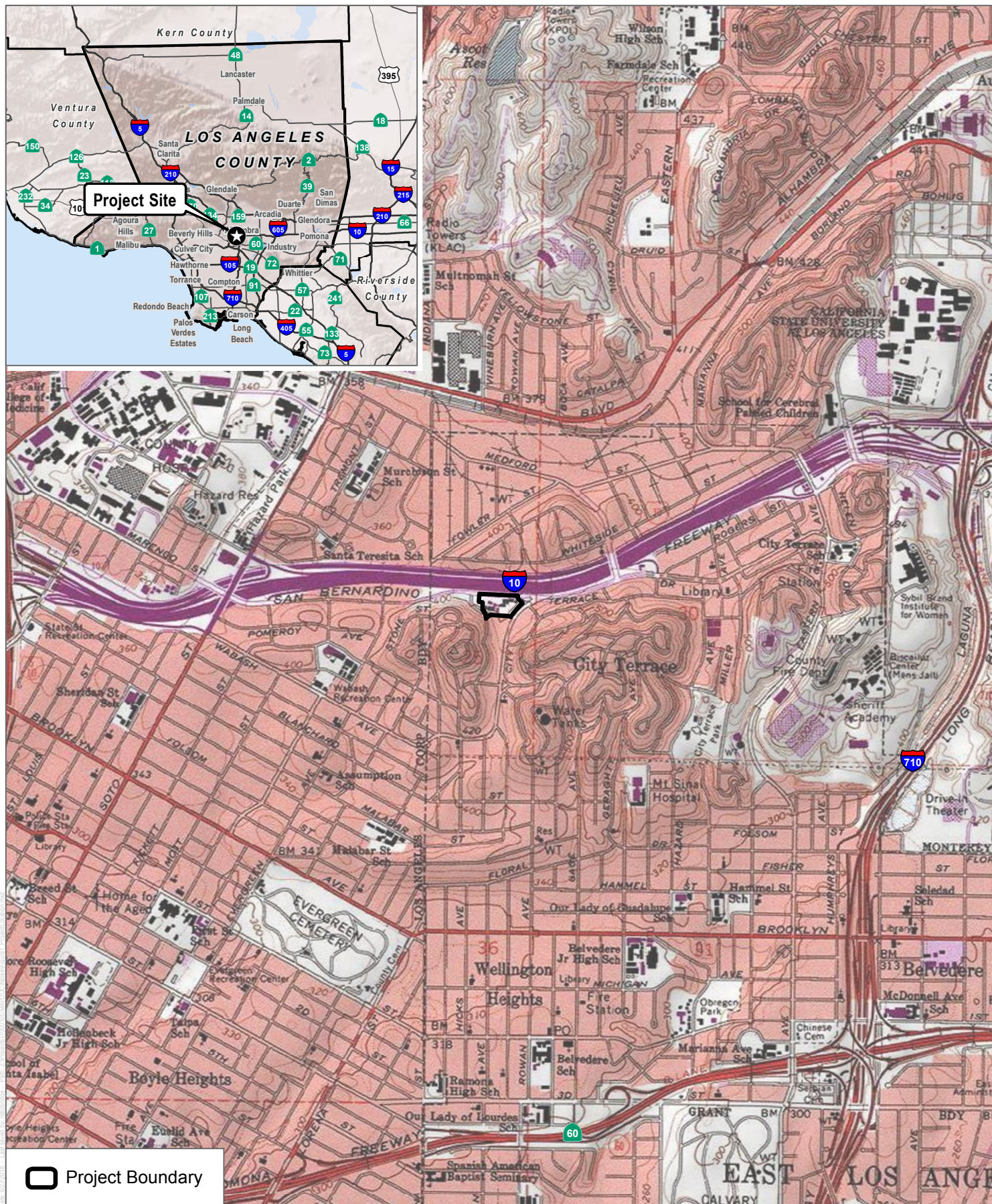
Sincerely,



Mike Greene

INCE Board Certified, Acoustician

Att.: *Attachment A – Detailed Soundwall Design*
Attachment B - Noise Terminology and Fundamentals
Attachment C – Field Noise Measuring Data Sheets
Attachment D - Traffic Noise Modeling Input / Output



SOURCE: USGS 7.5-Minute Series Los Angeles Quadrangle

DUDEK



A horizontal scale bar with tick marks at 0, 1,000, and 2,000 feet. The word "Feet" is written at the right end of the bar.

FIGURE 1

Project Location

Harrison Elementary School Project

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SOURCE: Bing Maps 2018; Los Angeles County 2011

DUDEK



0 75 150 Feet

Noise Measurement and Modeling Locations and Proposed Final Soundwall Design

Harrison Elementary School Project

FIGURE 2

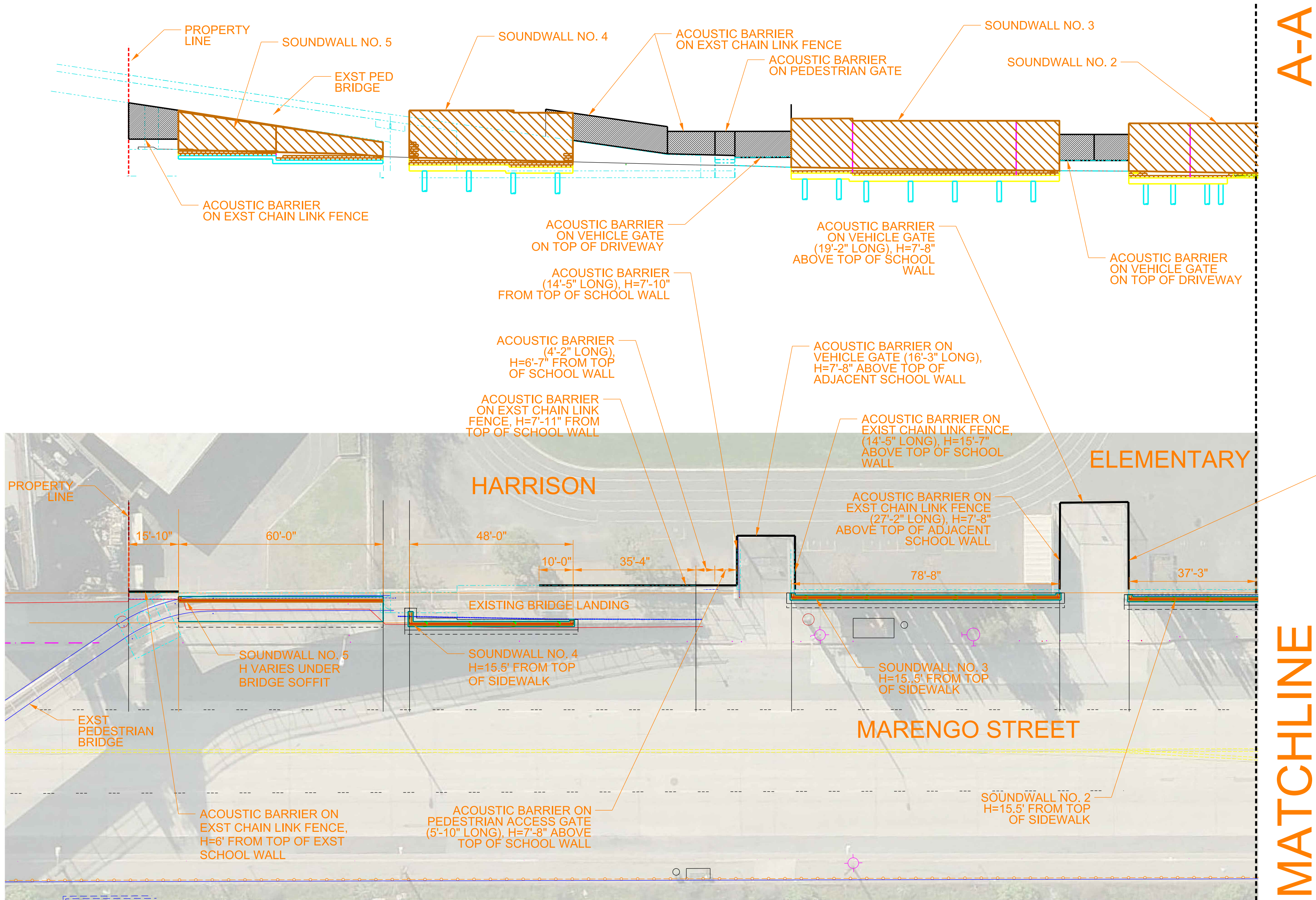
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Attachment A

Detailed Soundwall Design

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A-A

MATCHLINE

CADD PROJECT FILE NAME
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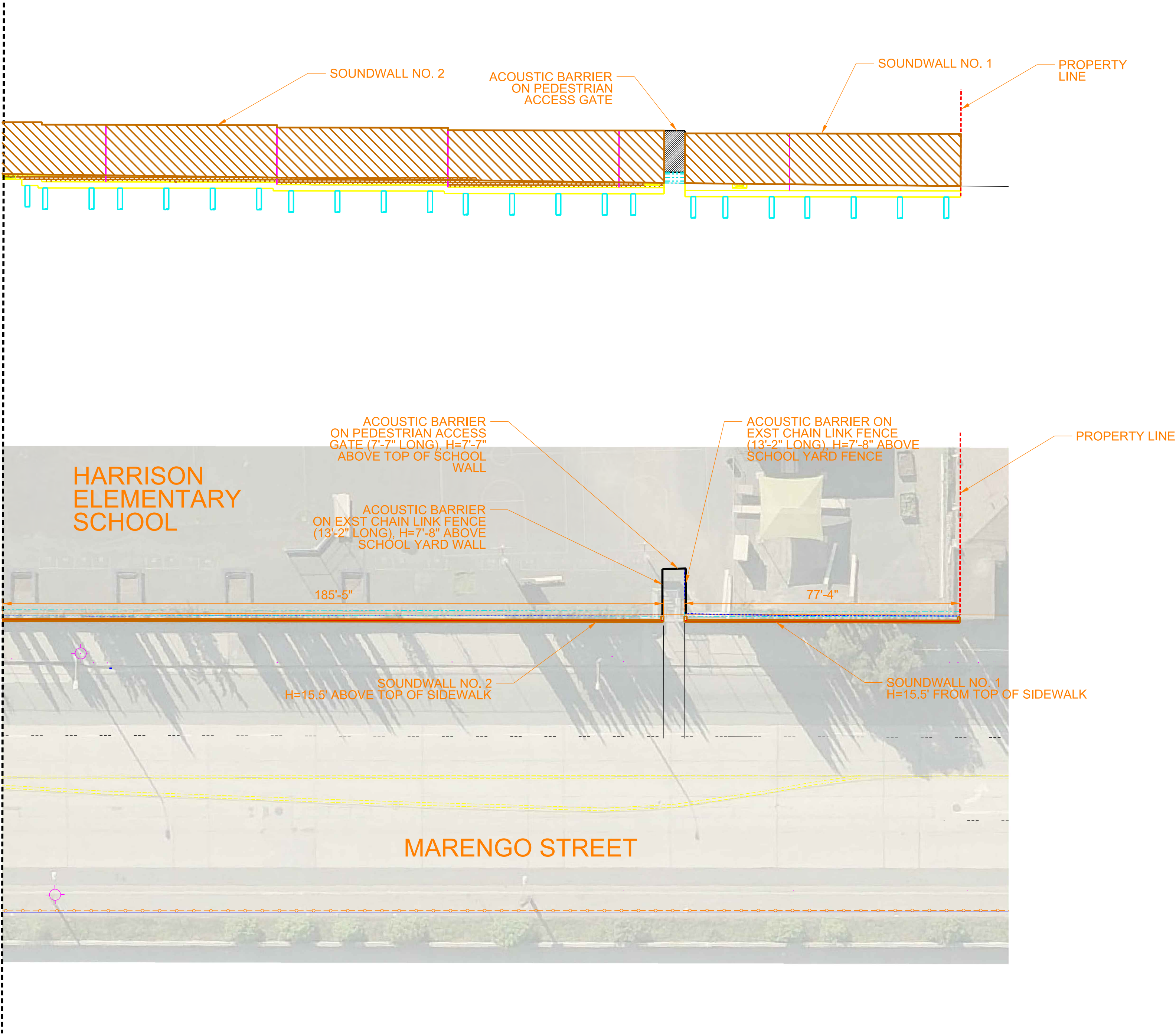
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REVISIONS		

	PROJECT ENGINEER	DATE
	DWG	PD

LOS ANGELES COUNTY PUBLIC WORKS	
HARRISON ELEMENTARY SCHOOL SOUNDWALL	
PROJECT ID NO. RDC0016337 SOUNDWALL AND ACOUSTIC BARRIER 1	
SHEET 1 OF 2	

A-A

MATCHLINE



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CHECKER

DESIGNER

DRAFTER

DATE	MARK	DESCRIPTION
REVISIONS		

REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S NAME

CXXXX

CIVIL

STATE OF CALIFORNIA

PROJECT ENGINEER

DATE

LOS ANGELES COUNTY PUBLIC WORKS

HARRISON ELEMENTARY SCHOOL
SOUNDWALL

PROJECT ID NO. RDCXXXXXXX
SOUNDWALL AND ACOUSTIC BARRIER 2

DWG

PD

SHEET 2 OF 2



Attachment B

Noise Terminology and Fundamentals

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ATTACHMENT B

Noise Terminology and Fundamentals

NOISE TERMINOLOGY

The following is a brief discussion of fundamental noise concepts and basic terminology.

Sound Pressure Levels and Decibels

The amplitude of a sound determines its loudness. Loudness of sound increases with increasing amplitude. Sound pressure amplitude is measured in units of micronewton per square meter, also called micropascal. One micropascal is approximately one-hundred billionth (0.0000000001) of normal atmospheric pressure. The pressure of a very loud sound may be 200 million micropascals, or 10 million times the pressure of the weakest audible sound. Because expressing sound levels in terms of micropascal would be very cumbersome, sound pressure level in logarithmic units is used instead to describe the ratio of actual sound pressure to a reference pressure squared. These units are called Bels. To provide a finer resolution, a Bel is subdivided into 10 decibels (dB).

A-Weighted Sound Level

Sound pressure level alone is not a reliable indicator of loudness. The frequency, or pitch, of a sound also has a substantial effect on how humans will respond. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness, or human response, is determined by the characteristics of the human ear.

Human hearing is limited not only in the range of audible frequencies, but also in the way it perceives the sound in that range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 hertz, and it perceives a sound within that range as more intense than a sound of higher or lower frequency with the same magnitude. To approximate the frequency response of the human ear, a series of sound level adjustments is usually applied to the sound measured by a sound level meter. The adjustments (referred to as a weighting network) are frequency-dependent.

The A-scale weighting network approximates the frequency response of the average young ear when listening to ordinary sounds. When people make judgments about the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special situations (e.g., B-scale, C-scale, D-scale), but these scales are rarely used in conjunction with most environmental noise. Noise levels are typically reported in terms of A-weighted sound levels. All sound levels discussed in this report are A-weighted decibels (dBA). Examples of typical noise levels for common indoor and outdoor activities are depicted in Table 1.

ATTACHMENT B (Continued)

Table 1
Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
	110	Rock band
Jet fly over at 300 meters (1,000 feet)	100	
Gas lawn mower at 1 meter (3 feet)	90	
Diesel truck at 15 meters (50 feet), at 80 kilometers per hour (50 miles per hour)	80	Food blender at 1 meter (3 feet); garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime; gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)
Commercial area; heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)
Quite urban, daytime	50	Large business office; dishwasher next room
Quite urban, nighttime	40	Theater; large conference room (background)
Quite suburban, nighttime	30	Library
Quite rural, nighttime	20	Bedroom at night; concert hall (background)
	10	Broadcast/Recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2013

Human Response to Changes in Noise Levels

Under controlled conditions in an acoustics laboratory, the trained, healthy human ear is able to discern changes in sound levels of 1 dBA when exposed to steady, single-frequency signals in the mid-frequency range. Outside such controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise. It is widely accepted that the average healthy ear, however, can barely perceive noise level changes of 3 dBA. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as twice or half as loud. A doubling of sound energy results in a 3 dBA increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a road) would result in a barely perceptible change in sound level).

Noise Descriptors

Additional units of measure have been developed to evaluate the long-term characteristics of sound. The equivalent sound level (L_{eq}) is also referred to as the time-average sound level. It is the equivalent steady-state sound level that in a stated period of time would contain the same acoustical energy as the time-varying sound level during the same time period. The 1-hour A-weighted equivalent sound level, $L_{eq}(h)$, is the energy average of the A-weighted sound levels occurring during a 1-hour period, and is the basis for Caltrans and LAUSD noise criteria. Percentile-exceeded sound level (L_{xx}) is the sound level exceeded x percent of a specific time period. For example, L_{10} is the sound level exceeded 10% of the time.

ATTACHMENT B (Continued)

People are generally more sensitive and annoyed by noise occurring during the evening and nighttime hours. Thus, another noise descriptor used in community noise assessments—the community noise equivalent level (CNEL)—was introduced. The CNEL scale represents a time-weighted, 24-hour average noise level based on the A-weighted sound level. The CNEL accounts for the increased noise sensitivity during the evening hours (7 p.m. to 10 p.m.) and nighttime hours (10 p.m. to 7 a.m.) by adding 5 dBA and 10 dBA, respectively, to the average sound levels occurring during the evening and nighttime hours.

Sound Propagation

Sound propagation (i.e., the passage of sound from a noise source to a receiver) is influenced by geometric spreading, ground absorption, atmospheric effects, and shielding by natural and/or built features.

Sound levels attenuate (or diminish) at a rate of approximately 6 dBA per doubling of distance from an outdoor point source due to the geometric spreading of the sound waves. Atmospheric conditions such as humidity, temperature, and wind gradients can also temporarily either increase or decrease sound levels. In general, the greater the distance the receiver is from the source, the greater the potential for variation in sound levels due to atmospheric effects. Additional sound attenuation can result from built features such as intervening walls and buildings, and by natural features such as hills and dense woods.

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Attachment C

Field Noise Measurement Data Sheets

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FIELD NOISE MEASUREMENT DATA

PROJECT	HARRISON ELEMENTARY		PROJECT #	
SITE ID			OBSERVER(S)	MG, PV
SITE ADDRESS				
START DATE	6/5/18	END DATE	6/5/18	
START TIME	9:05	END TIME		

METEOROLOGICAL CONDITIONS

TEMP 74 F HUMIDITY 64 % R.H. WIND CALM LIGHT MODERATE
 WINDSPD 2 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
 SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT RION NL62 TYPE 1 2 SERIAL #
 CALIBRATOR RION NC-76 SERIAL # 35125809
 CALIBRATION CHECK PRE-TEST 93.9 dBA SPL POST-TEST 93.3 dBA SPL WINDSCRN ✓
 SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leg	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
RM 14-1	9:50	10:00	42.2	61.0	42.0	42.6	43.6	46.3	
14-2	10:00	10:10	53.4	62.0	50.2	51.1	53	54.8	

COMMENTS

RM 14-1 INTERIOR, FNT DOOR CLOSED, RR DOOR OPEN
 3-MIN, 48.1 INTERIOR
 RM 14-2 " FNT DOOR OPEN

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
 ROADWAY TYPE: I-10, SOME CLIFF DIST. TO RDWY C/L OR EOP:
 TRAFFIC COUNT DURATION: MIN SPEED TECHNICAL

COUNT 1 (OR RDWY 1)	DIRECTION	NB/EB		SB/WB		IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2 (OR RDWY 2)	NB/EB		SB/WB	
		NB/EB	SB/WB	NB/EB	SB/WB			NB/EB	SB/WB		
AUTOS											
MED TRKS											
HVY TRKS											
BUSES											
MOTRCLS											

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE

POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
 OTHER:

DESCRIPTION / SKETCH

TERRAIN HARD SOFT MIXED FLAT OTHER:PHOTOS ✓

OTHER COMMENTS / SKETCH



FIELD NOISE MEASUREMENT DATA

PROJECT <u>NARRISDA ELEMONTA</u>	PROJECT # _____
SITE ID <u>RM 15</u>	OBSERVER(S) <u>MZ, AV</u>
SITE ADDRESS _____	
START DATE _____	END DATE _____
START TIME _____	END TIME _____

METEOROLOGICAL CONDITIONS

TEMP 69 F HUMIDITY 74 % R.H. WIND CALM LIGHT MODERATE
 WINDSPD 0-2 MPH DIR N NE S SE S SW W NW VARIABLE STEADY GUSTY
 SKY SUNNY CLEAR OVCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT R10W NC-62 TYPE 1 2 SERIAL # _____
 CALIBRATOR R10W NC-24 SERIAL # 35125809
 CALIBRATION CHECK PRE-TEST 93.9 dBA SPL POST-TEST 93.8 dBA SPL WINDSCRN ✓

SETTINGS

A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: _____

REC. #	BEGIN	END	Leg	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
<u>RM 15-1</u>	<u>10:16</u>	<u>10:26</u>	<u>55.8</u>	<u>62.1</u>	<u>50.5</u>	<u>53.2</u>	<u>51.4</u>	<u>57.8</u>	
<u>PAC-H</u>	<u>10:29</u>	<u>10:39</u>	<u>69.0</u>	<u>74.6</u>	<u>65.1</u>	<u>67.2</u>	<u>68.7</u>	<u>70.4</u>	
<u>PLAYGROUND</u>									

COMMENTS

PLAYGROUND ABOUT 25' FM P/L

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE

TRAFFIC

AIRCRAFT

RAIL

INDUSTRIAL

OTHER: _____

ROADWAY TYPE:

I-10

DIST. TO RDWY C/L OR EOP: _____

TRAFFIC COUNT DURATION: _____

MIN

SPEED

MIN

SPEED

COUNT 1
(OR RDWY 1)

DIRECTION

NB/EB

SB/WB

NB/EB

SB/WB

IF COUNTING
BOTH
DIRECTIONS
AS ONE,
CHECK HERECOUNT 2
(OR RDWY 2)

NB/EB

SB/WB

NB/EB

SB/WB

AUTOS

MED TRKS

HVY TRKS

BUSES

MOTRCLS

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE

POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIALDIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE

OTHER: _____

DESCRIPTION / SKETCH

TERRAIN HARD SOFT MIXED FLAT OTHER: _____PHOTOS ✓

OTHER COMMENTS / SKETCH

MODERN TRL PEO 65TH RD OVERPASSING!




FIELD NOISE MEASUREMENT DATA

DUDEK

PROJECT <u>PARADISE EMBANKMENT</u>	PROJECT # _____
SITE ID _____	
SITE ADDRESS _____	OBSERVER(S) <u>MG, PV</u>
START DATE <u>6/5/18</u>	END DATE <u>6/5/18</u>
START TIME _____	END TIME _____

METEOROLOGICAL CONDITIONS									
TEMP <u>69</u> F	HUMIDITY <u>79</u> % R.H.	WIND <u>CALM</u> <u>LIGHT</u>	MODERATE						
WINDSPD <u>8-12</u> MPH	DIR. N NE S SE S SW W NW	VARIABLE	STEADY GUSTY						
SKY <u>SUNNY</u> <u>CLEAR</u>	<u>OVERCAST</u> PRTLY CLDY FOG	RAIN							
ACOUSTIC MEASUREMENTS									
MEAS. INSTRUMENT <u>BIDW NL-62</u>	TYPE <u>1</u> 2	SERIAL # _____							
CALIBRATOR <u>RON NC-7</u>		SERIAL # <u>35121809</u>							
CALIBRATION CHECK	PRE-TEST <u>93.9</u> dBA SPL	POST-TEST <u>93.8</u> dBA SPL	WINDSCRN <u>V</u>						
SETTINGS <u>A-WTD</u> <u>SLOW</u> FAST FRONTAL <u>RANDOM</u> <u>ANSI</u> OTHER: _____									
REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
<u>COWER</u>	<u>10.53</u>	<u>10.53</u>	<u>67.8</u>	<u>75.9</u>	<u>63.7</u>	<u>65.5</u>	<u>67.5</u>	<u>69.7</u>	
<u>PLACEMENT</u>									
<u>COWER</u>	<u>10.57</u>	<u>11.07</u>	<u>65.8</u>	<u>69.3</u>	<u>61.3</u>	<u>65.2</u>	<u>65.6</u>	<u>67.1</u>	
<u>TECHNICAL</u>									
COMMENTS									

SOURCE INFO AND TRAFFIC COUNTS																																																																																									
PRIMARY NOISE SOURCE <u>TRAFFIC</u> AIRCRAFT RAIL INDUSTRIAL OTHER: _____																																																																																									
ROADWAY TYPE: <u>I-10</u> DIST. TO RDWY C/L OR EOP: _____																																																																																									
TRAFFIC COUNT DURATION: _____ MIN SPEED _____ MIN SPEED _____																																																																																									
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DIRECTION				IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE				DIRECTION																																																																																	
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MED TRKS																																																																																									
HVY TRKS																																																																																									
BUSES																																																																																									
MOTRCLS																																																																																									
SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE																																																																																									
POSTED SPEED LIMIT SIGNS SAY:																																																																																									
OTHER NOISE SOURCES (BACKGROUND): <u>DIST. AIRCRAFT</u> <u>RUSTLING LEAVES</u> <u>DIST. BARKING DOGS</u> <u>BIRDS</u> <u>DIST. INDUSTRIAL</u>																																																																																									
<u>DIST. KIDS PLAYING</u> <u>DIST. CONVRTNS / YELLING</u> <u>DIST. TRAFFIC (LIST RDWYS BELOW)</u> <u>DIST. GARDENERS/LANDSCAPING NOISE</u>																																																																																									
OTHER: _____																																																																																									

DESCRIPTION / SKETCH											
TERRAIN <u>HARD</u> SOFT MIXED FLAT OTHER: _____											
PHOTOS <u>✓</u>											
OTHER COMMENTS / SKETCH											
											

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Attachment D

Traffic Noise Modeling Input / Output

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INPUT: ROADWAYS
Harrison Elementary Soundwall Design

Dudek CB						14 July 2020 TNM 2.5						
INPUT: ROADWAYS												
PROJECT/CONTRACT:	Harrison Elementary Soundwall Design						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA					
RUN:	No Noise Barriers											
Roadway Name	Width	Points Name	No.	Coordinates (pavement)			Flow Control			Segment		
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?	
	ft			ft	ft	ft		mph	%			
I-10 WB	92.0	point7	7	1,282,115.5	12,365,531.0	-2.00				Average		
		point8	8	1,281,802.0	12,365,398.0	-2.00				Average		
		point9	9	1,281,483.5	12,365,309.0	-2.00				Average		
		point10	10	1,281,107.8	12,365,260.0	-2.00				Average		
		point11	11	1,280,686.5	12,365,267.0	-2.00				Average		
		point12	12	1,280,203.5	12,365,293.0	-2.00				Average		
		point13	13	1,279,595.4	12,365,319.0	-2.00				Average		
		point14	14	1,279,043.4	12,365,345.0	-2.00				Average		
		point15	15	1,278,646.0	12,365,367.0	-2.00						
I-10 EB	92.0	point16	16	1,278,642.1	12,365,261.0	-2.00				Average		
		point17	17	1,279,093.1	12,365,240.0	-2.00				Average		
		point18	18	1,279,669.0	12,365,217.0	-2.00				Average		
		point19	19	1,280,193.8	12,365,195.0	-2.00				Average		
		point20	20	1,280,697.4	12,365,164.0	-2.00				Average		
		point21	21	1,281,019.6	12,365,164.0	-2.00				Average		
		point22	22	1,281,383.4	12,365,202.0	-2.00				Average		
		point23	23	1,281,716.8	12,365,285.0	-2.00				Average		
		point24	24	1,281,982.5	12,365,362.0	-2.00				Average		
		point25	25	1,282,135.4	12,365,450.0	-2.00						

INPUT: TRAFFIC FOR LAeq1h Volumes
Harrison Elementary Soundwall Design

Dudek												
CB												
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:	Harrison Elementary Soundwall Design											
RUN:	No Noise Barriers											
Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
I-10 WB	point7	7	11337	65	129	65	234	65	0	0	0	0
	point8	8	11337	65	129	65	234	65	0	0	0	0
	point9	9	11337	65	129	65	234	65	0	0	0	0
	point10	10	11337	65	129	65	234	65	0	0	0	0
	point11	11	11337	65	129	65	234	65	0	0	0	0
	point12	12	11337	65	129	65	234	65	0	0	0	0
	point13	13	11337	65	129	65	234	65	0	0	0	0
	point14	14	11337	65	129	65	234	65	0	0	0	0
	point15	15										
I-10 EB	point16	16	11337	65	129	65	234	65	0	0	0	0
	point17	17	11337	65	129	65	234	65	0	0	0	0
	point18	18	11337	65	129	65	234	65	0	0	0	0
	point19	19	11337	65	129	65	234	65	0	0	0	0
	point20	20	11337	65	129	65	234	65	0	0	0	0
	point21	21	11337	65	129	65	234	65	0	0	0	0
	point22	22	11337	65	129	65	234	65	0	0	0	0
	point23	23	11337	65	129	65	234	65	0	0	0	0
	point24	24	11337	65	129	65	234	65	0	0	0	0
	point25	25										

INPUT: RECEIVERS
Harrison Elementary Soundwall Design

Dudek						14 July 2020					
CB						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:		Harrison Elementary Soundwall Design									
RUN:		No Noise Barriers									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'I	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Room 14	4	1	1,280,659.6	12,364,946.0	0.00	5.00	0.00	66	10.0	8.0	Y
Room 15	5	1	1,280,680.8	12,364,956.0	0.00	5.00	0.00	66	10.0	8.0	Y
Pre-K Playground	6	1	1,280,656.0	12,364,982.0	0.00	5.00	0.00	66	10.0	8.0	Y
Lower Playground	7	1	1,280,487.8	12,365,000.0	0.00	5.00	0.00	66	10.0	8.0	Y
Upper Terrace	8	1	1,280,469.1	12,364,830.0	0.00	5.00	0.00	66	10.0	8.0	Y

INPUT: BARRIERS

Harrison Elementary Soundwall Design

Dudek					14 July 2020														
CB					TNM 2.5														
INPUT: BARRIERS																			
PROJECT/CONTRACT:				Harrison Elementary Soundwall Design															
RUN:				No Noise Barriers															
Barrier										Points									
Name	Type	Height		If Wall	If Berm			Add'tnl		Name	No.	Coordinates	(bottom)	Height	Segment				
		Min	Max	\$ per Unit Area	\$ per Unit Vol.	Top Width	Run:Rise	\$ per Unit Length				X	Y	Z	at Point	Seg Ht	Perturbs	On	Important
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft				ft	ft	ft	ft	ft	#Up	#Dn	Reflec-tions?
Barrier5	W	0.00	99.99	0.00				0.00		point16	16	1,280,114.6	12,365,057.0	0.00	1.00	0.00	0	0	
										point17	17	1,280,147.8	12,365,055.0	0.00	1.00	0.00	0	0	
										point18	18	1,280,187.2	12,365,054.0	0.00	1.00				
Barrier6	W	0.00	99.99	0.00				0.00		point19	19	1,280,194.9	12,365,054.0	0.00	1.00	0.00	0	0	
										point20	20	1,280,417.2	12,365,046.0	0.00	1.00				
Barrier10	W	0.00	99.99	0.00				0.00		point27	27	1,280,516.8	12,365,042.0	0.00	1.00	0.00	0	0	
										point28	28	1,280,494.9	12,365,042.0	0.00	1.00	0.00	0	0	
										point29	29	1,280,438.4	12,365,044.0	0.00	1.00				
Barrier13	W	0.00	99.99	0.00				0.00		point92	92	1,280,840.0	12,365,133.0	20.00	7.00	0.00	0	0	
										point93	93	1,280,796.2	12,365,104.0	20.00	7.00	0.00	0	0	
										point94	94	1,280,767.5	12,365,086.0	20.00	7.00	0.00	0	0	
										point95	95	1,280,733.1	12,365,063.0	20.00	7.00	0.00	0	0	
										point96	96	1,280,714.2	12,365,051.0	20.00	7.00				
Barrier14	W	0.00	99.99	0.00				0.00		point99	99	1,280,844.6	12,365,124.0	20.00	7.00	0.00	0	0	
										point100	100	1,280,819.0	12,365,107.0	20.00	7.00	0.00	0	0	
										point101	101	1,280,794.4	12,365,092.0	20.00	7.00	0.00	0	0	
										point102	102	1,280,757.8	12,365,068.0	20.00	7.00	0.00	0	0	
										point103	103	1,280,712.9	12,365,040.0	20.00	7.00				
Barrier16	W	0.00	99.99	0.00				0.00		point111	111	1,280,766.9	12,364,940.0	0.00	20.00	0.00	0	0	
										point112	112	1,280,804.8	12,364,974.0	0.00	20.00	0.00	0	0	
										point113	113	1,280,802.4	12,364,977.0	0.00	20.00	0.00	0	0	
										point114	114	1,280,805.9	12,364,980.0	0.00	20.00	0.00	0	0	
										point115	115	1,280,790.2	12,364,997.0	0.00	20.00	0.00	0	0	
										point116	116	1,280,785.8	12,364,993.0	0.00	20.00	0.00	0	0	
										point117	117	1,280,759.4	12,365,022.0	0.00	20.00	0.00	0	0	
										point118	118	1,280,731.2	12,364,997.0	0.00	20.00	0.00	0	0	
										point119	119	1,280,727.4	12,365,001.0	0.00	20.00	0.00	0	0	
										point120	120	1,280,718.6	12,364,993.0	0.00	20.00	0.00	0	0	
										point121	121	1,280,766.9	12,364,940.0	0.00	20.00				
Barrier17	W	0.00	99.99	0.00				0.00		point123	123	1,280,354.8	12,364,632.0	0.00	20.00	0.00	0	0	
										point124	124	1,280,349.1	12,364,601.0	0.00	20.00	0.00	0	0	
										point125	125	1,280,361.6	12,364,594.0	0.00	20.00	0.00	0	0	
										point126	126	1,280,360.9	12,364,587.0	0.00	20.00	0.00	0	0	
										point127	127	1,280,394.9	12,364,580.0	0.00	20.00	0.00	0	0	
										point128	128	1,280,396.2	12,364,587.0	0.00	20.00	0.00	0	0	

INPUT: BARRIERS

Harrison Elementary Soundwall Design

									point129	129	1,280,411.6	12,364,589.0	0.00	20.00	0.00	0	0		
									point130	130	1,280,413.5	12,364,599.0	0.00	20.00	0.00	0	0		
									point131	131	1,280,428.2	12,364,596.0	0.00	20.00	0.00	0	0		
									point132	132	1,280,424.0	12,364,574.0	0.00	20.00	0.00	0	0		
									point133	133	1,280,469.0	12,364,566.0	0.00	20.00	0.00	0	0		
									point134	134	1,280,467.8	12,364,559.0	0.00	20.00	0.00	0	0		
									point135	135	1,280,502.1	12,364,552.0	0.00	20.00	0.00	0	0		
									point136	136	1,280,503.4	12,364,559.0	0.00	20.00	0.00	0	0		
									point137	137	1,280,518.9	12,364,561.0	0.00	20.00	0.00	0	0		
									point138	138	1,280,523.2	12,364,583.0	0.00	20.00	0.00	0	0		
									point139	139	1,280,533.9	12,364,581.0	0.00	20.00	0.00	0	0		
									point140	140	1,280,538.0	12,364,602.0	0.00	20.00	0.00	0	0		
									point141	141	1,280,527.1	12,364,604.0	0.00	20.00	0.00	0	0		
									point142	142	1,280,531.5	12,364,626.0	0.00	20.00	0.00	0	0		
									point143	143	1,280,518.6	12,364,634.0	0.00	20.00	0.00	0	0		
									point144	144	1,280,487.6	12,364,639.0	0.00	20.00	0.00	0	0		
									point145	145	1,280,494.9	12,364,677.0	0.00	20.00	0.00	0	0		
									point146	146	1,280,459.4	12,364,684.0	0.00	20.00	0.00	0	0		
									point147	147	1,280,453.0	12,364,651.0	0.00	20.00	0.00	0	0		
									point148	148	1,280,433.4	12,364,655.0	0.00	20.00	0.00	0	0		
									point149	149	1,280,447.9	12,364,731.0	0.00	20.00	0.00	0	0		
									point150	150	1,280,526.5	12,364,716.0	0.00	20.00	0.00	0	0		
									point151	151	1,280,519.9	12,364,680.0	0.00	20.00	0.00	0	0		
									point152	152	1,280,537.5	12,364,660.0	0.00	20.00	0.00	0	0		
									point153	153	1,280,553.9	12,364,657.0	0.00	20.00	0.00	0	0		
									point154	154	1,280,568.9	12,364,658.0	0.00	20.00	0.00	0	0		
									point155	155	1,280,571.2	12,364,670.0	0.00	20.00	0.00	0	0		
									point156	156	1,280,580.0	12,364,669.0	0.00	20.00	0.00	0	0		
									point157	157	1,280,593.0	12,364,735.0	0.00	20.00	0.00	0	0		
									point158	158	1,280,607.6	12,364,732.0	0.00	20.00	0.00	0	0		
									point159	159	1,280,613.9	12,364,763.0	0.00	20.00	0.00	0	0		
									point160	160	1,280,451.8	12,364,795.0	0.00	20.00	0.00	0	0		
									point161	161	1,280,438.6	12,364,802.0	0.00	20.00	0.00	0	0		
									point162	162	1,280,403.8	12,364,809.0	0.00	20.00	0.00	0	0		
									point163	163	1,280,388.9	12,364,807.0	0.00	20.00	0.00	0	0		
									point164	164	1,280,383.8	12,364,780.0	0.00	20.00	0.00	0	0		
									point165	165	1,280,375.0	12,364,782.0	0.00	20.00	0.00	0	0		
									point166	166	1,280,367.0	12,364,740.0	0.00	20.00	0.00	0	0		
									point167	167	1,280,359.4	12,364,727.0	0.00	20.00	0.00	0	0		
									point168	168	1,280,352.4	12,364,691.0	0.00	20.00	0.00	0	0		
									point169	169	1,280,354.2	12,364,676.0	0.00	20.00	0.00	0	0		
									point170	170	1,280,346.5	12,364,633.0	0.00	20.00	0.00	0	0		
									point171	171	1,280,354.8	12,364,632.0	0.00	20.00					
Barrier18	W	0.00	99.99	0.00				0.00	point173	173	1,280,130.5	12,364,918.0	0.00	20.00	0.00	0	0		
									point174	174	1,280,129.2	12,364,888.0	0.00	20.00	0.00	0	0		
									point175	175	1,280,156.5	12,364,887.0	0.00	20.00	0.00	0	0		
									point176	176	1,280,157.4	12,364,908.0	0.00	20.00	0.00	0	0		
									point177	177	1,280,159.2	12,364,907.0	0.00	20.00	0.00	0	0		
									point178	178	1,280,159.8	12,364,922.0	0.00	20.00	0.00	0	0		

INPUT: BARRIERS

Harrison Elementary Soundwall Design

									point179	179	1,280,135.9	12,364,923.0	0.00	20.00	0.00	0	0		
									point180	180	1,280,135.6	12,364,918.0	0.00	20.00	0.00	0	0		
									point181	181	1,280,130.5	12,364,918.0	0.00	20.00					
Barrier19	W	0.00	99.99	0.00				0.00	point183	183	1,280,137.2	12,365,005.0	0.00	20.00	0.00	0	0		
									point184	184	1,280,135.2	12,364,955.0	0.00	20.00	0.00	0	0		
									point185	185	1,280,170.8	12,364,954.0	0.00	20.00	0.00	0	0		
									point186	186	1,280,172.8	12,365,004.0	0.00	20.00	0.00	0	0		
									point187	187	1,280,137.2	12,365,005.0	0.00	20.00					
Barrier20	W	0.00	99.99	0.00				0.00	point189	189	1,280,104.8	12,364,887.0	0.00	20.00	0.00	0	0		
									point190	190	1,280,106.2	12,364,917.0	0.00	20.00	0.00	0	0		
									point191	191	1,280,101.8	12,364,917.0	0.00	20.00	0.00	0	0		
									point192	192	1,280,102.1	12,364,924.0	0.00	20.00	0.00	0	0		
									point193	193	1,280,086.1	12,364,925.0	0.00	20.00	0.00	0	0		
									point194	194	1,280,085.9	12,364,918.0	0.00	20.00	0.00	0	0		
									point195	195	1,280,083.0	12,364,918.0	0.00	20.00	0.00	0	0		
									point196	196	1,280,082.0	12,364,897.0	0.00	20.00	0.00	0	0		
									point197	197	1,280,083.2	12,364,897.0	0.00	20.00	0.00	0	0		
									point198	198	1,280,082.9	12,364,888.0	0.00	20.00	0.00	0	0		
									point199	199	1,280,104.8	12,364,887.0	0.00	20.00					
Barrier21	W	0.00	99.99	0.00				0.00	point201	201	1,280,071.9	12,364,953.0	0.00	20.00	0.00	0	0		
									point202	202	1,280,063.5	12,364,960.0	0.00	20.00	0.00	0	0		
									point203	203	1,280,059.0	12,364,955.0	0.00	20.00	0.00	0	0		
									point204	204	1,280,057.6	12,364,956.0	0.00	20.00	0.00	0	0		
									point205	205	1,280,030.4	12,364,925.0	0.00	20.00	0.00	0	0		
									point206	206	1,280,048.9	12,364,909.0	0.00	20.00	0.00	0	0		
									point207	207	1,280,074.6	12,364,939.0	0.00	20.00	0.00	0	0		
									point208	208	1,280,080.6	12,364,934.0	0.00	20.00	0.00	0	0		
									point209	209	1,280,088.9	12,364,944.0	0.00	20.00	0.00	0	0		
									point210	210	1,280,074.2	12,364,956.0	0.00	20.00	0.00	0	0		
									point211	211	1,280,071.9	12,364,953.0	0.00	20.00					
Barrier22	W	0.00	99.99	0.00				0.00	point213	213	1,280,066.6	12,364,958.0	0.00	20.00	0.00	0	0		
									point214	214	1,280,108.1	12,364,958.0	0.00	20.00	0.00	0	0		
									point215	215	1,280,108.5	12,364,985.0	0.00	20.00	0.00	0	0		
									point216	216	1,280,099.8	12,364,985.0	0.00	20.00	0.00	0	0		
									point217	217	1,280,099.9	12,364,992.0	0.00	20.00	0.00	0	0		
									point218	218	1,280,082.9	12,364,993.0	0.00	20.00	0.00	0	0		
									point219	219	1,280,082.8	12,364,986.0	0.00	20.00	0.00	0	0		
									point220	220	1,280,072.6	12,364,986.0	0.00	20.00	0.00	0	0		
									point221	221	1,280,072.4	12,364,973.0	0.00	20.00	0.00	0	0		
									point222	222	1,280,066.9	12,364,973.0	0.00	20.00	0.00	0	0		
									point223	223	1,280,066.6	12,364,958.0	0.00	20.00					
Barrier23	W	0.00	99.99	0.00				0.00	point225	225	1,280,075.8	12,365,003.0	0.00	20.00	0.00	0	0		
									point226	226	1,280,109.8	12,365,002.0	0.00	20.00	0.00	0	0		
									point227	227	1,280,110.9	12,365,036.0	0.00	20.00	0.00	0	0		
									point228	228	1,280,112.4	12,365,036.0	0.00	20.00	0.00	0	0		
									point229	229	1,280,113.1	12,365,056.0	0.00	20.00	0.00	0	0		
									point230	230	1,280,101.4	12,365,056.0	0.00	20.00	0.00	0	0		
									point231	231	1,280,100.8	12,365,040.0	0.00	20.00	0.00	0	0		
									point232	232	1,280,097.8	12,365,040.0	0.00	20.00	0.00	0	0		

INPUT: BARRIERS
Harrison Elementary Soundwall Design

									point233	233	1,280,097.8	12,365,042.0	0.00	20.00	0.00	0	0		
									point234	234	1,280,084.4	12,365,042.0	0.00	20.00	0.00	0	0		
									point235	235	1,280,084.2	12,365,039.0	0.00	20.00	0.00	0	0		
									point236	236	1,280,076.9	12,365,039.0	0.00	20.00	0.00	0	0		
									point237	237	1,280,075.8	12,365,003.0	0.00	20.00					
Barrier24	W	0.00	99.99	0.00				0.00	point238	238	1,280,194.9	12,365,054.0	0.00	1.00	0.00	0	0		
									point239	239	1,280,194.6	12,365,045.0	0.00	1.00					
Barrier25	W	0.00	99.99	0.00				0.00	point242	242	1,280,438.4	12,365,044.0	0.00	1.00	0.00	0	0		
									point243	243	1,280,437.0	12,365,017.0	0.00	1.00	0.00	0	0		
									point244	244	1,280,416.5	12,365,017.0	0.00	1.00	0.00	0	0		
									point245	245	1,280,417.2	12,365,046.0	0.00	1.00					
Barrier26	W	0.00	99.99	0.00				0.00	point246	246	1,280,589.4	12,365,037.0	0.00	1.00	0.00	0	0		
									point247	247	1,280,573.2	12,365,037.0	0.00	1.00	0.00	0	0		
									point269	269	1,280,563.6	12,365,037.0	0.00	1.00	0.00	0	0		
									point270	270	1,280,554.1	12,365,038.0	0.00	1.00	0.00	0	0		
									point248	248	1,280,544.5	12,365,038.0	0.00	1.00					
Barrier26-2	W	0.00	99.99	0.00				0.00	point271	271	1,280,515.6	12,365,023.0	0.00	1.00	0.00	0	0		
									point254	254	1,280,516.8	12,365,042.0	0.00	1.00					
Barrier26-2	W	0.00	99.99	0.00				0.00	point272	272	1,280,532.5	12,365,036.0	0.00	1.00	0.00	0	0		
									point252	252	1,280,532.2	12,365,022.0	0.00	1.00					
Barrier24-2-2	W	0.00	99.99	0.00				0.00	point290	290	1,280,187.2	12,365,045.0	0.00	0.50	0.00	0	0		
									point241	241	1,280,187.6	12,365,054.0	0.00	0.50					
Barrier26-2	W	0.00	99.99	0.00				0.00	point291	291	1,280,544.5	12,365,038.0	0.00	1.00	0.00	0	0		
									point249	249	1,280,539.0	12,365,038.0	0.00	1.00					
Barrier26-2-2	W	0.00	99.99	0.00				0.00	point292	292	1,280,532.6	12,365,038.0	0.00	0.00	0.00	0	0		
									point251	251	1,280,532.5	12,365,036.0	0.00	0.00					
Barrier39	W	0.00	99.99	0.00				0.00	point296	296	1,280,712.6	12,365,032.0	0.00	6.00	0.00	0	0		
									point297	297	1,280,712.8	12,365,004.0	0.00	6.00					
Barrier40	W	0.00	99.99	0.00				0.00	point298	298	1,280,706.8	12,365,034.0	0.00	1.00	0.00	0	0		
									point299	299	1,280,589.4	12,365,037.0	0.00	1.00					

RESULTS: SOUND LEVELS
Harrison Elementary Soundwall Design

Dudek CB													
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:													
RUN:													
BARRIER DESIGN:													
ATMOSPHERICS:													
Receiver													
Name	No.	#DUs	Existing	No Barrier					With Barrier				
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'l Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
Room 14	4	1	0.0	75.9	66	75.9	10	Snd Lvl	75.9	0.0	8	-8.0	
Room 15	5	1	0.0	75.7	66	75.7	10	Snd Lvl	75.7	0.0	8	-8.0	
Pre-K Playground	6	1	0.0	77.3	66	77.3	10	Snd Lvl	77.3	0.0	8	-8.0	
Lower Playground	7	1	0.0	75.4	66	75.4	10	Snd Lvl	75.4	0.0	8	-8.0	
Upper Terrace	8	1	0.0	70.7	66	70.7	10	Snd Lvl	70.7	0.0	8	-8.0	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		5	0.0	0.0	0.0								
All Impacted		5	0.0	0.0	0.0								
All that meet NR Goal		0	0.0	0.0	0.0								

INPUT: ROADWAYS
Harrison Elementary Soundwall Design

Dudek CB					14 July 2020 TNM 2.5						
INPUT: ROADWAYS											
PROJECT/CONTRACT:	Harrison Elementary Soundwall Design						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA				
RUN:	Final Soundwall Design										
Roadway Name	Width	Points Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
I-10 WB	92.0	point7	7	1,282,115.5	12,365,531.0	-2.00				Average	
		point8	8	1,281,802.0	12,365,398.0	-2.00				Average	
		point9	9	1,281,483.5	12,365,309.0	-2.00				Average	
		point10	10	1,281,107.8	12,365,260.0	-2.00				Average	
		point11	11	1,280,686.5	12,365,267.0	-2.00				Average	
		point12	12	1,280,203.5	12,365,293.0	-2.00				Average	
		point13	13	1,279,595.4	12,365,319.0	-2.00				Average	
		point14	14	1,279,043.4	12,365,345.0	-2.00				Average	
		point15	15	1,278,646.0	12,365,367.0	-2.00					
I-10 EB	92.0	point16	16	1,278,642.1	12,365,261.0	-2.00				Average	
		point17	17	1,279,093.1	12,365,240.0	-2.00				Average	
		point18	18	1,279,669.0	12,365,217.0	-2.00				Average	
		point19	19	1,280,193.8	12,365,195.0	-2.00				Average	
		point20	20	1,280,697.4	12,365,164.0	-2.00				Average	
		point21	21	1,281,019.6	12,365,164.0	-2.00				Average	
		point22	22	1,281,383.4	12,365,202.0	-2.00				Average	
		point23	23	1,281,716.8	12,365,285.0	-2.00				Average	
		point24	24	1,281,982.5	12,365,362.0	-2.00				Average	
		point25	25	1,282,135.4	12,365,450.0	-2.00					

INPUT: TRAFFIC FOR LAeq1h Volumes
Harrison Elementary Soundwall Design

Dudek												
CB												
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:	Harrison Elementary Soundwall Design											
RUN:	Final Soundwall Design											
Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
I-10 WB	point7	7	11337	65	129	65	234	65	0	0	0	0
	point8	8	11337	65	129	65	234	65	0	0	0	0
	point9	9	11337	65	129	65	234	65	0	0	0	0
	point10	10	11337	65	129	65	234	65	0	0	0	0
	point11	11	11337	65	129	65	234	65	0	0	0	0
	point12	12	11337	65	129	65	234	65	0	0	0	0
	point13	13	11337	65	129	65	234	65	0	0	0	0
	point14	14	11337	65	129	65	234	65	0	0	0	0
	point15	15										
I-10 EB	point16	16	11337	65	129	65	234	65	0	0	0	0
	point17	17	11337	65	129	65	234	65	0	0	0	0
	point18	18	11337	65	129	65	234	65	0	0	0	0
	point19	19	11337	65	129	65	234	65	0	0	0	0
	point20	20	11337	65	129	65	234	65	0	0	0	0
	point21	21	11337	65	129	65	234	65	0	0	0	0
	point22	22	11337	65	129	65	234	65	0	0	0	0
	point23	23	11337	65	129	65	234	65	0	0	0	0
	point24	24	11337	65	129	65	234	65	0	0	0	0
	point25	25										

INPUT: RECEIVERS**Harrison Elementary Soundwall Design**

Dudek						14 July 2020					
CB						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	Harrison Elementary Soundwall Design										
RUN:	Final Soundwall Design										
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'I	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Room 14	4	1	1,280,659.6	12,364,946.0	0.00	5.00	0.00	66	10.0	8.0	Y
Room 15	5	1	1,280,680.8	12,364,956.0	0.00	5.00	0.00	66	10.0	8.0	Y
Pre-K Playground	6	1	1,280,656.0	12,364,982.0	0.00	5.00	0.00	66	10.0	8.0	Y
Lower Playground	7	1	1,280,487.8	12,365,000.0	0.00	5.00	0.00	66	10.0	8.0	Y
Upper Terrace	8	1	1,280,469.1	12,364,830.0	0.00	5.00	0.00	66	10.0	8.0	Y

INPUT: BARRIERS

Harrison Elementary Soundwall Design

Dudek					14 July 2020														
CB					TNM 2.5														
INPUT: BARRIERS																			
PROJECT/CONTRACT:					Harrison Elementary Soundwall Design														
RUN:					Final Soundwall Design														
Barrier										Points									
Name	Type	Height		If Wall	If Berm			Add'tnl		Name	No.	Coordinates	(bottom)	Height	Segment				
		Min	Max	\$ per Unit Area	\$ per Unit Vol.	Top Width	Run:Rise	\$ per Unit Length				X	Y	Z	at Point	Seg Ht	Perturbs	On	Important
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft				ft	ft	ft	ft	ft	#Up	#Dn	Reflec-tions?
Barrier5	W	0.00	99.99	0.00				0.00		point16	16	1,280,114.6	12,365,057.0	20.00	15.50	0.00	0	0	
										point17	17	1,280,147.8	12,365,055.0	20.00	15.50	0.00	0	0	
										point18	18	1,280,187.2	12,365,054.0	20.00	15.50				
Barrier6	W	0.00	99.99	0.00				0.00		point19	19	1,280,194.9	12,365,054.0	0.00	15.50	0.00	0	0	
										point20	20	1,280,417.2	12,365,046.0	0.00	15.50				
Barrier8	W	0.00	99.99	0.00				0.00		point23	23	1,280,583.0	12,365,046.0	0.00	15.50	0.00	0	0	
										point24	24	1,280,632.5	12,365,044.0	0.00	15.50				
Barrier9	W	0.00	99.99	0.00				0.00		point25	25	1,280,636.6	12,365,037.0	0.00	5.00	0.00	0	0	
										point274	274	1,280,646.9	12,365,036.0	0.00	8.00	0.00	0	0	
										point275	275	1,280,657.2	12,365,036.0	0.00	11.00	0.00	0	0	
										point276	276	1,280,667.5	12,365,036.0	0.00	14.00	0.00	0	0	
										point277	277	1,280,677.8	12,365,035.0	0.00	15.00	0.00	0	0	
										point278	278	1,280,688.1	12,365,034.0	0.00	15.00	0.00	0	0	
										point26	26	1,280,697.8	12,365,035.0	0.00	15.00				
Barrier10	W	0.00	99.99	0.00				0.00		point27	27	1,280,516.8	12,365,042.0	0.00	15.50	0.00	0	0	
										point28	28	1,280,494.9	12,365,042.0	0.00	15.50	0.00	0	0	
										point29	29	1,280,438.4	12,365,044.0	0.00	15.50				
Barrier11	W	0.00	99.99	0.00				0.00		point30	30	1,280,713.9	12,365,051.0	20.00	7.00	0.00	0	0	
										point31	31	1,280,709.1	12,365,047.0	19.00	7.00	0.00	0	0	
										point32	32	1,280,708.2	12,365,047.0	18.00	7.00	0.00	0	0	
										point33	33	1,280,707.2	12,365,046.0	17.00	7.00	0.00	0	0	
										point34	34	1,280,706.4	12,365,046.0	16.00	7.00	0.00	0	0	
										point35	35	1,280,705.5	12,365,046.0	15.00	7.00	0.00	0	0	
										point36	36	1,280,704.5	12,365,045.0	15.00	7.00	0.00	0	0	
										point37	37	1,280,703.6	12,365,045.0	15.00	7.00	0.00	0	0	
										point38	38	1,280,702.8	12,365,044.0	15.00	7.00	0.00	0	0	
										point39	39	1,280,701.8	12,365,044.0	15.00	7.00	0.00	0	0	
										point40	40	1,280,700.8	12,365,044.0	15.00	7.00	0.00	0	0	
										point41	41	1,280,699.9	12,365,043.0	15.00	7.00	0.00	0	0	
										point42	42	1,280,698.9	12,365,043.0	15.00	7.00	0.00	0	0	
										point43	43	1,280,697.9	12,365,043.0	15.00	7.00	0.00	0	0	
										point44	44	1,280,696.9	12,365,042.0	15.00	7.00	0.00	0	0	
										point45	45	1,280,695.9	12,365,042.0	15.00	7.00	0.00	0	0	
										point46	46	1,280,695.2	12,365,042.0	15.00	7.00	0.00	0	0	
										point47	47	1,280,694.5	12,365,042.0	15.00	7.00	0.00	0	0	

INPUT: BARRIERS

Harrison Elementary Soundwall Design

									point48	48	1,280,693.9	12,365,042.0	15.00	7.00	0.00	0	0		
									point49	49	1,280,693.1	12,365,042.0	15.00	7.00	0.00	0	0		
									point50	50	1,280,692.4	12,365,042.0	15.00	7.00	0.00	0	0		
									point51	51	1,280,691.8	12,365,041.0	15.00	7.00	0.00	0	0		
									point52	52	1,280,691.0	12,365,041.0	15.00	7.00	0.00	0	0		
									point53	53	1,280,690.2	12,365,041.0	15.00	7.00	0.00	0	0		
									point54	54	1,280,689.5	12,365,041.0	15.00	7.00	0.00	0	0		
									point55	55	1,280,688.9	12,365,041.0	15.00	7.00	0.00	0	0		
									point56	56	1,280,688.1	12,365,041.0	15.00	7.00	0.00	0	0		
									point57	57	1,280,687.4	12,365,041.0	15.00	7.00	0.00	0	0		
									point58	58	1,280,686.8	12,365,041.0	15.00	7.00	0.00	0	0		
									point59	59	1,280,686.0	12,365,041.0	15.00	7.00	0.00	0	0		
									point60	60	1,280,684.9	12,365,040.0	15.00	7.00	0.00	0	0		
									point255	255	1,280,675.5	12,365,040.0	14.00	7.00	0.00	0	0		
									point256	256	1,280,666.2	12,365,041.0	11.00	7.00	0.00	0	0		
									point257	257	1,280,656.9	12,365,041.0	8.00	7.00	0.00	0	0		
									point258	258	1,280,647.5	12,365,041.0	5.00	7.00	0.00	0	0		
									point259	259	1,280,636.9	12,365,042.0	0.00	12.00	0.00	0	0		
									point260	260	1,280,628.9	12,365,042.0	0.00	12.00	0.00	0	0		
									point261	261	1,280,619.5	12,365,042.0	0.00	12.00	0.00	0	0		
									point262	262	1,280,610.1	12,365,043.0	0.00	10.00	0.00	0	0		
									point263	263	1,280,600.8	12,365,043.0	0.00	8.00	0.00	0	0		
									point264	264	1,280,591.5	12,365,043.0	0.00	6.00	0.00	0	0		
									point265	265	1,280,582.1	12,365,044.0	0.00	5.00	0.00	0	0		
									point266	266	1,280,572.8	12,365,044.0	0.00	4.00	0.00	0	0		
									point267	267	1,280,563.4	12,365,044.0	0.00	3.00	0.00	0	0		
									point268	268	1,280,554.1	12,365,045.0	0.00	2.00	0.00	0	0		
									point61	61	1,280,544.8	12,365,045.0	0.00	2.00					
Barrier12	W	0.00	99.99	0.00				0.00	point62	62	1,280,712.1	12,365,039.0	15.00	7.00	0.00	0	0		
									point63	63	1,280,711.1	12,365,039.0	15.00	7.00	0.00	0	0		
									point64	64	1,280,709.2	12,365,038.0	15.00	7.00	0.00	0	0		
									point65	65	1,280,708.2	12,365,037.0	20.00	7.00	0.00	0	0		
									point66	66	1,280,707.1	12,365,037.0	19.00	7.00	0.00	0	0		
									point67	67	1,280,706.1	12,365,036.0	18.00	7.00	0.00	0	0		
									point68	68	1,280,705.1	12,365,036.0	17.00	7.00	0.00	0	0		
									point69	69	1,280,704.0	12,365,036.0	16.00	7.00	0.00	0	0		
									point70	70	1,280,701.9	12,365,035.0	15.00	7.00	0.00	0	0		
									point71	71	1,280,700.9	12,365,034.0	15.00	7.00	0.00	0	0		
									point72	72	1,280,699.8	12,365,034.0	15.00	7.00	0.00	0	0		
									point73	73	1,280,698.6	12,365,034.0	15.00	7.00	0.00	0	0		
									point74	74	1,280,697.6	12,365,033.0	15.00	7.00	0.00	0	0		
									point75	75	1,280,696.5	12,365,033.0	15.00	7.00	0.00	0	0		
									point76	76	1,280,695.8	12,365,033.0	15.00	7.00	0.00	0	0		
									point77	77	1,280,695.0	12,365,033.0	15.00	7.00	0.00	0	0		
									point78	78	1,280,694.2	12,365,033.0	15.00	7.00	0.00	0	0		
									point79	79	1,280,693.4	12,365,033.0	15.00	7.00	0.00	0	0		
									point80	80	1,280,692.6	12,365,033.0	15.00	7.00	0.00	0	0		
									point81	81	1,280,691.9	12,365,032.0	15.00	7.00	0.00	0	0		
									point82	82	1,280,691.1	12,365,032.0	15.00	7.00	0.00	0	0		

INPUT: BARRIERS

Harrison Elementary Soundwall Design

									point83	83	1,280,690.4	12,365,032.0	15.00	7.00	0.00	0	0		
									point84	84	1,280,689.6	12,365,032.0	15.00	7.00	0.00	0	0		
									point85	85	1,280,688.8	12,365,032.0	15.00	7.00	0.00	0	0		
									point86	86	1,280,688.0	12,365,032.0	15.00	7.00	0.00	0	0		
									point87	87	1,280,687.2	12,365,032.0	15.00	7.00	0.00	0	0		
									point88	88	1,280,686.5	12,365,032.0	15.00	7.00	0.00	0	0		
									point89	89	1,280,685.8	12,365,032.0	15.00	7.00	0.00	0	0		
									point90	90	1,280,684.9	12,365,032.0	15.00	7.00	0.00	0	0		
									point282	282	1,280,684.2	12,365,032.0	15.00	7.00	0.00	0	0		
									point283	283	1,280,674.8	12,365,032.0	14.00	7.00	0.00	0	0		
									point284	284	1,280,666.5	12,365,033.0	11.00	7.00	0.00	0	0		
									point285	285	1,280,657.1	12,365,033.0	8.00	7.00	0.00	0	0		
									point286	286	1,280,646.5	12,365,033.0	5.00	7.00	0.00	0	0		
									point287	287	1,280,636.6	12,365,034.0	0.00	12.00	0.00	0	0		
									point91	91	1,280,629.8	12,365,034.0	0.00	0.00					
Barrier13	W	0.00	99.99	0.00				0.00	point92	92	1,280,840.0	12,365,133.0	20.00	7.00	0.00	0	0		
									point93	93	1,280,796.2	12,365,104.0	20.00	7.00	0.00	0	0		
									point94	94	1,280,767.5	12,365,086.0	20.00	7.00	0.00	0	0		
									point95	95	1,280,733.1	12,365,063.0	20.00	7.00	0.00	0	0		
									point96	96	1,280,714.2	12,365,051.0	20.00	7.00					
Barrier14	W	0.00	99.99	0.00				0.00	point99	99	1,280,844.6	12,365,124.0	20.00	7.00	0.00	0	0		
									point100	100	1,280,819.0	12,365,107.0	20.00	7.00	0.00	0	0		
									point101	101	1,280,794.4	12,365,092.0	20.00	7.00	0.00	0	0		
									point102	102	1,280,757.8	12,365,068.0	20.00	7.00	0.00	0	0		
									point103	103	1,280,712.9	12,365,040.0	20.00	7.00					
Barrier16	W	0.00	99.99	0.00				0.00	point111	111	1,280,766.9	12,364,940.0	0.00	20.00	0.00	0	0		
									point112	112	1,280,804.8	12,364,974.0	0.00	20.00	0.00	0	0		
									point113	113	1,280,802.4	12,364,977.0	0.00	20.00	0.00	0	0		
									point114	114	1,280,805.9	12,364,980.0	0.00	20.00	0.00	0	0		
									point115	115	1,280,790.2	12,364,997.0	0.00	20.00	0.00	0	0		
									point116	116	1,280,785.8	12,364,993.0	0.00	20.00	0.00	0	0		
									point117	117	1,280,759.4	12,365,022.0	0.00	20.00	0.00	0	0		
									point118	118	1,280,731.2	12,364,997.0	0.00	20.00	0.00	0	0		
									point119	119	1,280,727.4	12,365,001.0	0.00	20.00	0.00	0	0		
									point120	120	1,280,718.6	12,364,993.0	0.00	20.00	0.00	0	0		
									point121	121	1,280,766.9	12,364,940.0	0.00	20.00					
Barrier17	W	0.00	99.99	0.00				0.00	point123	123	1,280,354.8	12,364,632.0	0.00	20.00	0.00	0	0		
									point124	124	1,280,349.1	12,364,601.0	0.00	20.00	0.00	0	0		
									point125	125	1,280,361.6	12,364,594.0	0.00	20.00	0.00	0	0		
									point126	126	1,280,360.9	12,364,587.0	0.00	20.00	0.00	0	0		
									point127	127	1,280,394.9	12,364,580.0	0.00	20.00	0.00	0	0		
									point128	128	1,280,396.2	12,364,587.0	0.00	20.00	0.00	0	0		
									point129	129	1,280,411.6	12,364,589.0	0.00	20.00	0.00	0	0		
									point130	130	1,280,413.5	12,364,599.0	0.00	20.00	0.00	0	0		
									point131	131	1,280,428.2	12,364,596.0	0.00	20.00	0.00	0	0		
									point132	132	1,280,424.0	12,364,574.0	0.00	20.00	0.00	0	0		
									point133	133	1,280,469.0	12,364,566.0	0.00	20.00	0.00	0	0		
									point134	134	1,280,467.8	12,364,559.0	0.00	20.00	0.00	0	0		
									point135	135	1,280,502.1	12,364,552.0	0.00	20.00	0.00	0	0		

INPUT: BARRIERS

Harrison Elementary Soundwall Design

									point136	136	1,280,503.4	12,364,559.0	0.00	20.00	0.00	0	0		
									point137	137	1,280,518.9	12,364,561.0	0.00	20.00	0.00	0	0		
									point138	138	1,280,523.2	12,364,583.0	0.00	20.00	0.00	0	0		
									point139	139	1,280,533.9	12,364,581.0	0.00	20.00	0.00	0	0		
									point140	140	1,280,538.0	12,364,602.0	0.00	20.00	0.00	0	0		
									point141	141	1,280,527.1	12,364,604.0	0.00	20.00	0.00	0	0		
									point142	142	1,280,531.5	12,364,626.0	0.00	20.00	0.00	0	0		
									point143	143	1,280,518.6	12,364,634.0	0.00	20.00	0.00	0	0		
									point144	144	1,280,487.6	12,364,639.0	0.00	20.00	0.00	0	0		
									point145	145	1,280,494.9	12,364,677.0	0.00	20.00	0.00	0	0		
									point146	146	1,280,459.4	12,364,684.0	0.00	20.00	0.00	0	0		
									point147	147	1,280,453.0	12,364,651.0	0.00	20.00	0.00	0	0		
									point148	148	1,280,433.4	12,364,655.0	0.00	20.00	0.00	0	0		
									point149	149	1,280,447.9	12,364,731.0	0.00	20.00	0.00	0	0		
									point150	150	1,280,526.5	12,364,716.0	0.00	20.00	0.00	0	0		
									point151	151	1,280,519.9	12,364,680.0	0.00	20.00	0.00	0	0		
									point152	152	1,280,537.5	12,364,660.0	0.00	20.00	0.00	0	0		
									point153	153	1,280,553.9	12,364,657.0	0.00	20.00	0.00	0	0		
									point154	154	1,280,568.9	12,364,658.0	0.00	20.00	0.00	0	0		
									point155	155	1,280,571.2	12,364,670.0	0.00	20.00	0.00	0	0		
									point156	156	1,280,580.0	12,364,669.0	0.00	20.00	0.00	0	0		
									point157	157	1,280,593.0	12,364,735.0	0.00	20.00	0.00	0	0		
									point158	158	1,280,607.6	12,364,732.0	0.00	20.00	0.00	0	0		
									point159	159	1,280,613.9	12,364,763.0	0.00	20.00	0.00	0	0		
									point160	160	1,280,451.8	12,364,795.0	0.00	20.00	0.00	0	0		
									point161	161	1,280,438.6	12,364,802.0	0.00	20.00	0.00	0	0		
									point162	162	1,280,403.8	12,364,809.0	0.00	20.00	0.00	0	0		
									point163	163	1,280,388.9	12,364,807.0	0.00	20.00	0.00	0	0		
									point164	164	1,280,383.8	12,364,780.0	0.00	20.00	0.00	0	0		
									point165	165	1,280,375.0	12,364,782.0	0.00	20.00	0.00	0	0		
									point166	166	1,280,367.0	12,364,740.0	0.00	20.00	0.00	0	0		
									point167	167	1,280,359.4	12,364,727.0	0.00	20.00	0.00	0	0		
									point168	168	1,280,352.4	12,364,691.0	0.00	20.00	0.00	0	0		
									point169	169	1,280,354.2	12,364,676.0	0.00	20.00	0.00	0	0		
									point170	170	1,280,346.5	12,364,633.0	0.00	20.00	0.00	0	0		
									point171	171	1,280,354.8	12,364,632.0	0.00	20.00					
Barrier18	W	0.00	99.99	0.00				0.00	point173	173	1,280,130.5	12,364,918.0	0.00	20.00	0.00	0	0		
									point174	174	1,280,129.2	12,364,888.0	0.00	20.00	0.00	0	0		
									point175	175	1,280,156.5	12,364,887.0	0.00	20.00	0.00	0	0		
									point176	176	1,280,157.4	12,364,908.0	0.00	20.00	0.00	0	0		
									point177	177	1,280,159.2	12,364,907.0	0.00	20.00	0.00	0	0		
									point178	178	1,280,159.8	12,364,922.0	0.00	20.00	0.00	0	0		
									point179	179	1,280,135.9	12,364,923.0	0.00	20.00	0.00	0	0		
									point180	180	1,280,135.6	12,364,918.0	0.00	20.00	0.00	0	0		
									point181	181	1,280,130.5	12,364,918.0	0.00	20.00					
Barrier19	W	0.00	99.99	0.00				0.00	point183	183	1,280,137.2	12,365,005.0	0.00	20.00	0.00	0	0		
									point184	184	1,280,135.2	12,364,955.0	0.00	20.00	0.00	0	0		
									point185	185	1,280,170.8	12,364,954.0	0.00	20.00	0.00	0	0		
									point186	186	1,280,172.8	12,365,004.0	0.00	20.00	0.00	0	0		

INPUT: BARRIERS
Harrison Elementary Soundwall Design

									point187	187	1,280,137.2	12,365,005.0	0.00	20.00				
Barrier20	W	0.00	99.99	0.00				0.00	point189	189	1,280,104.8	12,364,887.0	0.00	20.00	0.00	0	0	
									point190	190	1,280,106.2	12,364,917.0	0.00	20.00	0.00	0	0	
									point191	191	1,280,101.8	12,364,917.0	0.00	20.00	0.00	0	0	
									point192	192	1,280,102.1	12,364,924.0	0.00	20.00	0.00	0	0	
									point193	193	1,280,086.1	12,364,925.0	0.00	20.00	0.00	0	0	
									point194	194	1,280,085.9	12,364,918.0	0.00	20.00	0.00	0	0	
									point195	195	1,280,083.0	12,364,918.0	0.00	20.00	0.00	0	0	
									point196	196	1,280,082.0	12,364,897.0	0.00	20.00	0.00	0	0	
									point197	197	1,280,083.2	12,364,897.0	0.00	20.00	0.00	0	0	
									point198	198	1,280,082.9	12,364,888.0	0.00	20.00	0.00	0	0	
									point199	199	1,280,104.8	12,364,887.0	0.00	20.00				
Barrier21	W	0.00	99.99	0.00				0.00	point201	201	1,280,071.9	12,364,953.0	0.00	20.00	0.00	0	0	
									point202	202	1,280,063.5	12,364,960.0	0.00	20.00	0.00	0	0	
									point203	203	1,280,059.0	12,364,955.0	0.00	20.00	0.00	0	0	
									point204	204	1,280,057.6	12,364,956.0	0.00	20.00	0.00	0	0	
									point205	205	1,280,030.4	12,364,925.0	0.00	20.00	0.00	0	0	
									point206	206	1,280,048.9	12,364,909.0	0.00	20.00	0.00	0	0	
									point207	207	1,280,074.6	12,364,939.0	0.00	20.00	0.00	0	0	
									point208	208	1,280,080.6	12,364,934.0	0.00	20.00	0.00	0	0	
									point209	209	1,280,088.9	12,364,944.0	0.00	20.00	0.00	0	0	
									point210	210	1,280,074.2	12,364,956.0	0.00	20.00	0.00	0	0	
									point211	211	1,280,071.9	12,364,953.0	0.00	20.00				
Barrier22	W	0.00	99.99	0.00				0.00	point213	213	1,280,066.6	12,364,958.0	0.00	20.00	0.00	0	0	
									point214	214	1,280,108.1	12,364,958.0	0.00	20.00	0.00	0	0	
									point215	215	1,280,108.5	12,364,985.0	0.00	20.00	0.00	0	0	
									point216	216	1,280,099.8	12,364,985.0	0.00	20.00	0.00	0	0	
									point217	217	1,280,099.9	12,364,992.0	0.00	20.00	0.00	0	0	
									point218	218	1,280,082.9	12,364,993.0	0.00	20.00	0.00	0	0	
									point219	219	1,280,082.8	12,364,986.0	0.00	20.00	0.00	0	0	
									point220	220	1,280,072.6	12,364,986.0	0.00	20.00	0.00	0	0	
									point221	221	1,280,072.4	12,364,973.0	0.00	20.00	0.00	0	0	
									point222	222	1,280,066.9	12,364,973.0	0.00	20.00	0.00	0	0	
									point223	223	1,280,066.6	12,364,958.0	0.00	20.00				
Barrier23	W	0.00	99.99	0.00				0.00	point225	225	1,280,075.8	12,365,003.0	0.00	20.00	0.00	0	0	
									point226	226	1,280,109.8	12,365,002.0	0.00	20.00	0.00	0	0	
									point227	227	1,280,110.9	12,365,036.0	0.00	20.00	0.00	0	0	
									point228	228	1,280,112.4	12,365,036.0	0.00	20.00	0.00	0	0	
									point229	229	1,280,113.1	12,365,056.0	0.00	20.00	0.00	0	0	
									point230	230	1,280,101.4	12,365,056.0	0.00	20.00	0.00	0	0	
									point231	231	1,280,100.8	12,365,040.0	0.00	20.00	0.00	0	0	
									point232	232	1,280,097.8	12,365,040.0	0.00	20.00	0.00	0	0	
									point233	233	1,280,097.8	12,365,042.0	0.00	20.00	0.00	0	0	
									point234	234	1,280,084.4	12,365,042.0	0.00	20.00	0.00	0	0	
									point235	235	1,280,084.2	12,365,039.0	0.00	20.00	0.00	0	0	
									point236	236	1,280,076.9	12,365,039.0	0.00	20.00	0.00	0	0	
									point237	237	1,280,075.8	12,365,003.0	0.00	20.00				
Barrier24	W	0.00	99.99	0.00				0.00	point238	238	1,280,194.9	12,365,054.0	0.00	7.50	0.00	0	0	
									point239	239	1,280,194.6	12,365,045.0	0.00	7.50				

INPUT: BARRIERS
Harrison Elementary Soundwall Design

Barrier25	W	0.00	99.99	0.00				0.00	point242	242	1,280,438.4	12,365,044.0	0.00	7.50	0.00	0	0		
									point243	243	1,280,437.0	12,365,017.0	0.00	7.50	0.00	0	0		
									point244	244	1,280,416.5	12,365,017.0	0.00	7.50	0.00	0	0		
									point245	245	1,280,417.2	12,365,046.0	0.00	7.50					
Barrier26	W	0.00	99.99	0.00				0.00	point246	246	1,280,589.4	12,365,037.0	0.00	12.50	0.00	0	0		
									point247	247	1,280,573.2	12,365,037.0	0.00	11.50	0.00	0	0		
									point269	269	1,280,563.6	12,365,037.0	0.00	10.50	0.00	0	0		
									point270	270	1,280,554.1	12,365,038.0	0.00	9.50	0.00	0	0		
									point248	248	1,280,544.5	12,365,038.0	0.00	7.50					
Barrier26-2	W	0.00	99.99	0.00				0.00	point271	271	1,280,515.6	12,365,023.0	0.00	7.50	0.00	0	0		
									point254	254	1,280,516.8	12,365,042.0	0.00	7.50					
Barrier26-2	W	0.00	99.99	0.00				0.00	point272	272	1,280,532.5	12,365,036.0	0.00	8.00	0.00	0	0		
									point252	252	1,280,532.2	12,365,022.0	0.00	8.00					
Barrier31	W	0.00	99.99	0.00				0.00	point280	280	1,280,699.6	12,365,032.0	0.00	6.00	0.00	0	0		
									point281	281	1,280,712.6	12,365,032.0	0.00	6.00					
Barrier24-2-2	W	0.00	99.99	0.00				0.00	point290	290	1,280,187.2	12,365,045.0	0.00	7.50	0.00	0	0		
									point241	241	1,280,187.6	12,365,054.0	0.00	7.50					
Barrier26-2	W	0.00	99.99	0.00				0.00	point291	291	1,280,544.5	12,365,038.0	0.00	7.50	0.00	0	0		
									point249	249	1,280,539.0	12,365,038.0	0.00	7.50					
Barrier26-2-2	W	0.00	99.99	0.00				0.00	point292	292	1,280,532.6	12,365,038.0	0.00	6.50	0.00	0	0		
									point251	251	1,280,532.5	12,365,036.0	0.00	6.50					
Barrier39	W	0.00	99.99	0.00				0.00	point296	296	1,280,712.6	12,365,032.0	0.00	6.00	0.00	0	0		
									point297	297	1,280,712.8	12,365,004.0	0.00	6.00					

RESULTS: SOUND LEVELS
Harrison Elementary Soundwall Design

Dudek CB													
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:													
RUN:													
BARRIER DESIGN:													
ATMOSPHERICS:													
Receiver													
Name	No.	#DUs	Existing	No Barrier					With Barrier				
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'l Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
Room 14	4	1	0.0	65.9	66	65.9	10	----	65.9	0.0	8	-8.0	
Room 15	5	1	0.0	64.0	66	64.0	10	----	64.0	0.0	8	-8.0	
Pre-K Playground	6	1	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0	8	-8.0	
Lower Playground	7	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0	
Upper Terrace	8	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		5	0.0	0.0	0.0								
All Impacted		1	0.0	0.0	0.0								
All that meet NR Goal		0	0.0	0.0	0.0								

INPUT: ROADWAYS
Harrison Elementary Soundwall Design

Dudek CB					14 July 2020 TNM 2.5						
INPUT: ROADWAYS											
PROJECT/CONTRACT:	Harrison Elementary Soundwall Design						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA				
RUN:	Final Soundwall Design - No Ac Fnce										
Roadway Name	Width	Points Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
I-10 WB	92.0	point7	7	1,282,115.5	12,365,531.0	-2.00				Average	
		point8	8	1,281,802.0	12,365,398.0	-2.00				Average	
		point9	9	1,281,483.5	12,365,309.0	-2.00				Average	
		point10	10	1,281,107.8	12,365,260.0	-2.00				Average	
		point11	11	1,280,686.5	12,365,267.0	-2.00				Average	
		point12	12	1,280,203.5	12,365,293.0	-2.00				Average	
		point13	13	1,279,595.4	12,365,319.0	-2.00				Average	
		point14	14	1,279,043.4	12,365,345.0	-2.00				Average	
		point15	15	1,278,646.0	12,365,367.0	-2.00					
I-10 EB	92.0	point16	16	1,278,642.1	12,365,261.0	-2.00				Average	
		point17	17	1,279,093.1	12,365,240.0	-2.00				Average	
		point18	18	1,279,669.0	12,365,217.0	-2.00				Average	
		point19	19	1,280,193.8	12,365,195.0	-2.00				Average	
		point20	20	1,280,697.4	12,365,164.0	-2.00				Average	
		point21	21	1,281,019.6	12,365,164.0	-2.00				Average	
		point22	22	1,281,383.4	12,365,202.0	-2.00				Average	
		point23	23	1,281,716.8	12,365,285.0	-2.00				Average	
		point24	24	1,281,982.5	12,365,362.0	-2.00				Average	
		point25	25	1,282,135.4	12,365,450.0	-2.00					

INPUT: TRAFFIC FOR LAeq1h Volumes
Harrison Elementary Soundwall Design

Dudek												
CB												
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:	Harrison Elementary Soundwall Design											
RUN:	Final Soundwall Design - No Ac Fnce											
Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
I-10 WB	point7	7	11337	65	129	65	234	65	0	0	0	0
	point8	8	11337	65	129	65	234	65	0	0	0	0
	point9	9	11337	65	129	65	234	65	0	0	0	0
	point10	10	11337	65	129	65	234	65	0	0	0	0
	point11	11	11337	65	129	65	234	65	0	0	0	0
	point12	12	11337	65	129	65	234	65	0	0	0	0
	point13	13	11337	65	129	65	234	65	0	0	0	0
	point14	14	11337	65	129	65	234	65	0	0	0	0
	point15	15										
I-10 EB	point16	16	11337	65	129	65	234	65	0	0	0	0
	point17	17	11337	65	129	65	234	65	0	0	0	0
	point18	18	11337	65	129	65	234	65	0	0	0	0
	point19	19	11337	65	129	65	234	65	0	0	0	0
	point20	20	11337	65	129	65	234	65	0	0	0	0
	point21	21	11337	65	129	65	234	65	0	0	0	0
	point22	22	11337	65	129	65	234	65	0	0	0	0
	point23	23	11337	65	129	65	234	65	0	0	0	0
	point24	24	11337	65	129	65	234	65	0	0	0	0
	point25	25										

INPUT: RECEIVERS**Harrison Elementary Soundwall Design**

Dudek						14 July 2020					
CB						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	Harrison Elementary Soundwall Design										
RUN:	Final Soundwall Design - No Ac Fnce										
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Room 14	4	1	1,280,659.6	12,364,946.0	0.00	5.00	0.00	66	10.0	8.0	Y
Room 15	5	1	1,280,680.8	12,364,956.0	0.00	5.00	0.00	66	10.0	8.0	Y
Pre-K Playground	6	1	1,280,656.0	12,364,982.0	0.00	5.00	0.00	66	10.0	8.0	Y
Lower Playground	7	1	1,280,487.8	12,365,000.0	0.00	5.00	0.00	66	10.0	8.0	Y
Upper Terrace	8	1	1,280,469.1	12,364,830.0	0.00	5.00	0.00	66	10.0	8.0	Y

INPUT: BARRIERS

Harrison Elementary Soundwall Design

Dudek					14 July 2020														
CB					TNM 2.5														
INPUT: BARRIERS																			
PROJECT/CONTRACT:					Harrison Elementary Soundwall Design														
RUN:					Final Soundwall Design - No Ac Fnce														
Barrier										Points									
Name	Type	Height		If Wall	If Berm			Add'tnl		Name	No.	Coordinates	(bottom)	Height	Segment				
		Min	Max	\$ per Unit Area	\$ per Unit Vol.	Top Width	Run:Rise	\$ per Unit Length				X	Y	Z	at Point	Seg Ht	Perturbs	On	Important
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft				ft	ft	ft	ft	ft	#Up	#Dn	Reflec-tions?
Barrier5	W	0.00	99.99	0.00				0.00		point16	16	1,280,114.6	12,365,057.0	20.00	15.50	0.00	0	0	
										point17	17	1,280,147.8	12,365,055.0	20.00	15.50	0.00	0	0	
										point18	18	1,280,187.2	12,365,054.0	20.00	15.50				
Barrier6	W	0.00	99.99	0.00				0.00		point19	19	1,280,194.9	12,365,054.0	0.00	15.50	0.00	0	0	
										point20	20	1,280,417.2	12,365,046.0	0.00	15.50				
Barrier8	W	0.00	99.99	0.00				0.00		point23	23	1,280,583.0	12,365,046.0	0.00	15.50	0.00	0	0	
										point24	24	1,280,632.5	12,365,044.0	0.00	15.50				
Barrier9	W	0.00	99.99	0.00				0.00		point25	25	1,280,636.6	12,365,037.0	0.00	5.00	0.00	0	0	
										point274	274	1,280,646.9	12,365,036.0	0.00	8.00	0.00	0	0	
										point275	275	1,280,657.2	12,365,036.0	0.00	11.00	0.00	0	0	
										point276	276	1,280,667.5	12,365,036.0	0.00	14.00	0.00	0	0	
										point277	277	1,280,677.8	12,365,035.0	0.00	15.00	0.00	0	0	
										point278	278	1,280,688.1	12,365,034.0	0.00	15.00	0.00	0	0	
										point26	26	1,280,697.8	12,365,035.0	0.00	15.00				
Barrier10	W	0.00	99.99	0.00				0.00		point27	27	1,280,516.8	12,365,042.0	0.00	15.50	0.00	0	0	
										point28	28	1,280,494.9	12,365,042.0	0.00	15.50	0.00	0	0	
										point29	29	1,280,438.4	12,365,044.0	0.00	15.50				
Barrier11	W	0.00	99.99	0.00				0.00		point30	30	1,280,713.9	12,365,051.0	20.00	7.00	0.00	0	0	
										point31	31	1,280,709.1	12,365,047.0	19.00	7.00	0.00	0	0	
										point32	32	1,280,708.2	12,365,047.0	18.00	7.00	0.00	0	0	
										point33	33	1,280,707.2	12,365,046.0	17.00	7.00	0.00	0	0	
										point34	34	1,280,706.4	12,365,046.0	16.00	7.00	0.00	0	0	
										point35	35	1,280,705.5	12,365,046.0	15.00	7.00	0.00	0	0	
										point36	36	1,280,704.5	12,365,045.0	15.00	7.00	0.00	0	0	
										point37	37	1,280,703.6	12,365,045.0	15.00	7.00	0.00	0	0	
										point38	38	1,280,702.8	12,365,044.0	15.00	7.00	0.00	0	0	
										point39	39	1,280,701.8	12,365,044.0	15.00	7.00	0.00	0	0	
										point40	40	1,280,700.8	12,365,044.0	15.00	7.00	0.00	0	0	
										point41	41	1,280,699.9	12,365,043.0	15.00	7.00	0.00	0	0	
										point42	42	1,280,698.9	12,365,043.0	15.00	7.00	0.00	0	0	
										point43	43	1,280,697.9	12,365,043.0	15.00	7.00	0.00	0	0	
										point44	44	1,280,696.9	12,365,042.0	15.00	7.00	0.00	0	0	
										point45	45	1,280,695.9	12,365,042.0	15.00	7.00	0.00	0	0	
										point46	46	1,280,695.2	12,365,042.0	15.00	7.00	0.00	0	0	
										point47	47	1,280,694.5	12,365,042.0	15.00	7.00	0.00	0	0	

INPUT: BARRIERS

Harrison Elementary Soundwall Design

									point48	48	1,280,693.9	12,365,042.0	15.00	7.00	0.00	0	0		
									point49	49	1,280,693.1	12,365,042.0	15.00	7.00	0.00	0	0		
									point50	50	1,280,692.4	12,365,042.0	15.00	7.00	0.00	0	0		
									point51	51	1,280,691.8	12,365,041.0	15.00	7.00	0.00	0	0		
									point52	52	1,280,691.0	12,365,041.0	15.00	7.00	0.00	0	0		
									point53	53	1,280,690.2	12,365,041.0	15.00	7.00	0.00	0	0		
									point54	54	1,280,689.5	12,365,041.0	15.00	7.00	0.00	0	0		
									point55	55	1,280,688.9	12,365,041.0	15.00	7.00	0.00	0	0		
									point56	56	1,280,688.1	12,365,041.0	15.00	7.00	0.00	0	0		
									point57	57	1,280,687.4	12,365,041.0	15.00	7.00	0.00	0	0		
									point58	58	1,280,686.8	12,365,041.0	15.00	7.00	0.00	0	0		
									point59	59	1,280,686.0	12,365,041.0	15.00	7.00	0.00	0	0		
									point60	60	1,280,684.9	12,365,040.0	15.00	7.00	0.00	0	0		
									point255	255	1,280,675.5	12,365,040.0	14.00	7.00	0.00	0	0		
									point256	256	1,280,666.2	12,365,041.0	11.00	7.00	0.00	0	0		
									point257	257	1,280,656.9	12,365,041.0	8.00	7.00	0.00	0	0		
									point258	258	1,280,647.5	12,365,041.0	5.00	7.00	0.00	0	0		
									point259	259	1,280,636.9	12,365,042.0	0.00	12.00	0.00	0	0		
									point260	260	1,280,628.9	12,365,042.0	0.00	12.00	0.00	0	0		
									point261	261	1,280,619.5	12,365,042.0	0.00	12.00	0.00	0	0		
									point262	262	1,280,610.1	12,365,043.0	0.00	10.00	0.00	0	0		
									point263	263	1,280,600.8	12,365,043.0	0.00	8.00	0.00	0	0		
									point264	264	1,280,591.5	12,365,043.0	0.00	6.00	0.00	0	0		
									point265	265	1,280,582.1	12,365,044.0	0.00	5.00	0.00	0	0		
									point266	266	1,280,572.8	12,365,044.0	0.00	4.00	0.00	0	0		
									point267	267	1,280,563.4	12,365,044.0	0.00	3.00	0.00	0	0		
									point268	268	1,280,554.1	12,365,045.0	0.00	2.00	0.00	0	0		
									point61	61	1,280,544.8	12,365,045.0	0.00	2.00					
Barrier12	W	0.00	99.99	0.00				0.00	point62	62	1,280,712.1	12,365,039.0	15.00	7.00	0.00	0	0		
									point63	63	1,280,711.1	12,365,039.0	15.00	7.00	0.00	0	0		
									point64	64	1,280,709.2	12,365,038.0	15.00	7.00	0.00	0	0		
									point65	65	1,280,708.2	12,365,037.0	20.00	7.00	0.00	0	0		
									point66	66	1,280,707.1	12,365,037.0	19.00	7.00	0.00	0	0		
									point67	67	1,280,706.1	12,365,036.0	18.00	7.00	0.00	0	0		
									point68	68	1,280,705.1	12,365,036.0	17.00	7.00	0.00	0	0		
									point69	69	1,280,704.0	12,365,036.0	16.00	7.00	0.00	0	0		
									point70	70	1,280,701.9	12,365,035.0	15.00	7.00	0.00	0	0		
									point71	71	1,280,700.9	12,365,034.0	15.00	7.00	0.00	0	0		
									point72	72	1,280,699.8	12,365,034.0	15.00	7.00	0.00	0	0		
									point73	73	1,280,698.6	12,365,034.0	15.00	7.00	0.00	0	0		
									point74	74	1,280,697.6	12,365,033.0	15.00	7.00	0.00	0	0		
									point75	75	1,280,696.5	12,365,033.0	15.00	7.00	0.00	0	0		
									point76	76	1,280,695.8	12,365,033.0	15.00	7.00	0.00	0	0		
									point77	77	1,280,695.0	12,365,033.0	15.00	7.00	0.00	0	0		
									point78	78	1,280,694.2	12,365,033.0	15.00	7.00	0.00	0	0		
									point79	79	1,280,693.4	12,365,033.0	15.00	7.00	0.00	0	0		
									point80	80	1,280,692.6	12,365,033.0	15.00	7.00	0.00	0	0		
									point81	81	1,280,691.9	12,365,032.0	15.00	7.00	0.00	0	0		
									point82	82	1,280,691.1	12,365,032.0	15.00	7.00	0.00	0	0		

INPUT: BARRIERS
Harrison Elementary Soundwall Design

									point83	83	1,280,690.4	12,365,032.0	15.00	7.00	0.00	0	0		
									point84	84	1,280,689.6	12,365,032.0	15.00	7.00	0.00	0	0		
									point85	85	1,280,688.8	12,365,032.0	15.00	7.00	0.00	0	0		
									point86	86	1,280,688.0	12,365,032.0	15.00	7.00	0.00	0	0		
									point87	87	1,280,687.2	12,365,032.0	15.00	7.00	0.00	0	0		
									point88	88	1,280,686.5	12,365,032.0	15.00	7.00	0.00	0	0		
									point89	89	1,280,685.8	12,365,032.0	15.00	7.00	0.00	0	0		
									point90	90	1,280,684.9	12,365,032.0	15.00	7.00	0.00	0	0		
									point282	282	1,280,684.2	12,365,032.0	15.00	7.00	0.00	0	0		
									point283	283	1,280,674.8	12,365,032.0	14.00	7.00	0.00	0	0		
									point284	284	1,280,666.5	12,365,033.0	11.00	7.00	0.00	0	0		
									point285	285	1,280,657.1	12,365,033.0	8.00	7.00	0.00	0	0		
									point286	286	1,280,646.5	12,365,033.0	5.00	7.00	0.00	0	0		
									point287	287	1,280,636.6	12,365,034.0	0.00	12.00	0.00	0	0		
									point91	91	1,280,629.8	12,365,034.0	0.00	0.00					
Barrier13	W	0.00	99.99	0.00				0.00	point92	92	1,280,840.0	12,365,133.0	20.00	7.00	0.00	0	0		
									point93	93	1,280,796.2	12,365,104.0	20.00	7.00	0.00	0	0		
									point94	94	1,280,767.5	12,365,086.0	20.00	7.00	0.00	0	0		
									point95	95	1,280,733.1	12,365,063.0	20.00	7.00	0.00	0	0		
									point96	96	1,280,714.2	12,365,051.0	20.00	7.00					
Barrier14	W	0.00	99.99	0.00				0.00	point99	99	1,280,844.6	12,365,124.0	20.00	7.00	0.00	0	0		
									point100	100	1,280,819.0	12,365,107.0	20.00	7.00	0.00	0	0		
									point101	101	1,280,794.4	12,365,092.0	20.00	7.00	0.00	0	0		
									point102	102	1,280,757.8	12,365,068.0	20.00	7.00	0.00	0	0		
									point103	103	1,280,712.9	12,365,040.0	20.00	7.00					
Barrier16	W	0.00	99.99	0.00				0.00	point111	111	1,280,766.9	12,364,940.0	0.00	20.00	0.00	0	0		
									point112	112	1,280,804.8	12,364,974.0	0.00	20.00	0.00	0	0		
									point113	113	1,280,802.4	12,364,977.0	0.00	20.00	0.00	0	0		
									point114	114	1,280,805.9	12,364,980.0	0.00	20.00	0.00	0	0		
									point115	115	1,280,790.2	12,364,997.0	0.00	20.00	0.00	0	0		
									point116	116	1,280,785.8	12,364,993.0	0.00	20.00	0.00	0	0		
									point117	117	1,280,759.4	12,365,022.0	0.00	20.00	0.00	0	0		
									point118	118	1,280,731.2	12,364,997.0	0.00	20.00	0.00	0	0		
									point119	119	1,280,727.4	12,365,001.0	0.00	20.00	0.00	0	0		
									point120	120	1,280,718.6	12,364,993.0	0.00	20.00	0.00	0	0		
									point121	121	1,280,766.9	12,364,940.0	0.00	20.00					
Barrier17	W	0.00	99.99	0.00				0.00	point123	123	1,280,354.8	12,364,632.0	0.00	20.00	0.00	0	0		
									point124	124	1,280,349.1	12,364,601.0	0.00	20.00	0.00	0	0		
									point125	125	1,280,361.6	12,364,594.0	0.00	20.00	0.00	0	0		
									point126	126	1,280,360.9	12,364,587.0	0.00	20.00	0.00	0	0		
									point127	127	1,280,394.9	12,364,580.0	0.00	20.00	0.00	0	0		
									point128	128	1,280,396.2	12,364,587.0	0.00	20.00	0.00	0	0		
									point129	129	1,280,411.6	12,364,589.0	0.00	20.00	0.00	0	0		
									point130	130	1,280,413.5	12,364,599.0	0.00	20.00	0.00	0	0		
									point131	131	1,280,428.2	12,364,596.0	0.00	20.00	0.00	0	0		
									point132	132	1,280,424.0	12,364,574.0	0.00	20.00	0.00	0	0		
									point133	133	1,280,469.0	12,364,566.0	0.00	20.00	0.00	0	0		
									point134	134	1,280,467.8	12,364,559.0	0.00	20.00	0.00	0	0		
									point135	135	1,280,502.1	12,364,552.0	0.00	20.00	0.00	0	0		

INPUT: BARRIERS
Harrison Elementary Soundwall Design

									point136	136	1,280,503.4	12,364,559.0	0.00	20.00	0.00	0	0		
									point137	137	1,280,518.9	12,364,561.0	0.00	20.00	0.00	0	0		
									point138	138	1,280,523.2	12,364,583.0	0.00	20.00	0.00	0	0		
									point139	139	1,280,533.9	12,364,581.0	0.00	20.00	0.00	0	0		
									point140	140	1,280,538.0	12,364,602.0	0.00	20.00	0.00	0	0		
									point141	141	1,280,527.1	12,364,604.0	0.00	20.00	0.00	0	0		
									point142	142	1,280,531.5	12,364,626.0	0.00	20.00	0.00	0	0		
									point143	143	1,280,518.6	12,364,634.0	0.00	20.00	0.00	0	0		
									point144	144	1,280,487.6	12,364,639.0	0.00	20.00	0.00	0	0		
									point145	145	1,280,494.9	12,364,677.0	0.00	20.00	0.00	0	0		
									point146	146	1,280,459.4	12,364,684.0	0.00	20.00	0.00	0	0		
									point147	147	1,280,453.0	12,364,651.0	0.00	20.00	0.00	0	0		
									point148	148	1,280,433.4	12,364,655.0	0.00	20.00	0.00	0	0		
									point149	149	1,280,447.9	12,364,731.0	0.00	20.00	0.00	0	0		
									point150	150	1,280,526.5	12,364,716.0	0.00	20.00	0.00	0	0		
									point151	151	1,280,519.9	12,364,680.0	0.00	20.00	0.00	0	0		
									point152	152	1,280,537.5	12,364,660.0	0.00	20.00	0.00	0	0		
									point153	153	1,280,553.9	12,364,657.0	0.00	20.00	0.00	0	0		
									point154	154	1,280,568.9	12,364,658.0	0.00	20.00	0.00	0	0		
									point155	155	1,280,571.2	12,364,670.0	0.00	20.00	0.00	0	0		
									point156	156	1,280,580.0	12,364,669.0	0.00	20.00	0.00	0	0		
									point157	157	1,280,593.0	12,364,735.0	0.00	20.00	0.00	0	0		
									point158	158	1,280,607.6	12,364,732.0	0.00	20.00	0.00	0	0		
									point159	159	1,280,613.9	12,364,763.0	0.00	20.00	0.00	0	0		
									point160	160	1,280,451.8	12,364,795.0	0.00	20.00	0.00	0	0		
									point161	161	1,280,438.6	12,364,802.0	0.00	20.00	0.00	0	0		
									point162	162	1,280,403.8	12,364,809.0	0.00	20.00	0.00	0	0		
									point163	163	1,280,388.9	12,364,807.0	0.00	20.00	0.00	0	0		
									point164	164	1,280,383.8	12,364,780.0	0.00	20.00	0.00	0	0		
									point165	165	1,280,375.0	12,364,782.0	0.00	20.00	0.00	0	0		
									point166	166	1,280,367.0	12,364,740.0	0.00	20.00	0.00	0	0		
									point167	167	1,280,359.4	12,364,727.0	0.00	20.00	0.00	0	0		
									point168	168	1,280,352.4	12,364,691.0	0.00	20.00	0.00	0	0		
									point169	169	1,280,354.2	12,364,676.0	0.00	20.00	0.00	0	0		
									point170	170	1,280,346.5	12,364,633.0	0.00	20.00	0.00	0	0		
									point171	171	1,280,354.8	12,364,632.0	0.00	20.00					
Barrier18	W	0.00	99.99	0.00				0.00	point173	173	1,280,130.5	12,364,918.0	0.00	20.00	0.00	0	0		
									point174	174	1,280,129.2	12,364,888.0	0.00	20.00	0.00	0	0		
									point175	175	1,280,156.5	12,364,887.0	0.00	20.00	0.00	0	0		
									point176	176	1,280,157.4	12,364,908.0	0.00	20.00	0.00	0	0		
									point177	177	1,280,159.2	12,364,907.0	0.00	20.00	0.00	0	0		
									point178	178	1,280,159.8	12,364,922.0	0.00	20.00	0.00	0	0		
									point179	179	1,280,135.9	12,364,923.0	0.00	20.00	0.00	0	0		
									point180	180	1,280,135.6	12,364,918.0	0.00	20.00	0.00	0	0		
									point181	181	1,280,130.5	12,364,918.0	0.00	20.00					
Barrier19	W	0.00	99.99	0.00				0.00	point183	183	1,280,137.2	12,365,005.0	0.00	20.00	0.00	0	0		
									point184	184	1,280,135.2	12,364,955.0	0.00	20.00	0.00	0	0		
									point185	185	1,280,170.8	12,364,954.0	0.00	20.00	0.00	0	0		
									point186	186	1,280,172.8	12,365,004.0	0.00	20.00	0.00	0	0		

INPUT: BARRIERS

Harrison Elementary Soundwall Design

									point187	187	1,280,137.2	12,365,005.0	0.00	20.00				
Barrier20	W	0.00	99.99	0.00				0.00	point189	189	1,280,104.8	12,364,887.0	0.00	20.00	0.00	0	0	
									point190	190	1,280,106.2	12,364,917.0	0.00	20.00	0.00	0	0	
									point191	191	1,280,101.8	12,364,917.0	0.00	20.00	0.00	0	0	
									point192	192	1,280,102.1	12,364,924.0	0.00	20.00	0.00	0	0	
									point193	193	1,280,086.1	12,364,925.0	0.00	20.00	0.00	0	0	
									point194	194	1,280,085.9	12,364,918.0	0.00	20.00	0.00	0	0	
									point195	195	1,280,083.0	12,364,918.0	0.00	20.00	0.00	0	0	
									point196	196	1,280,082.0	12,364,897.0	0.00	20.00	0.00	0	0	
									point197	197	1,280,083.2	12,364,897.0	0.00	20.00	0.00	0	0	
									point198	198	1,280,082.9	12,364,888.0	0.00	20.00	0.00	0	0	
									point199	199	1,280,104.8	12,364,887.0	0.00	20.00				
Barrier21	W	0.00	99.99	0.00				0.00	point201	201	1,280,071.9	12,364,953.0	0.00	20.00	0.00	0	0	
									point202	202	1,280,063.5	12,364,960.0	0.00	20.00	0.00	0	0	
									point203	203	1,280,059.0	12,364,955.0	0.00	20.00	0.00	0	0	
									point204	204	1,280,057.6	12,364,956.0	0.00	20.00	0.00	0	0	
									point205	205	1,280,030.4	12,364,925.0	0.00	20.00	0.00	0	0	
									point206	206	1,280,048.9	12,364,909.0	0.00	20.00	0.00	0	0	
									point207	207	1,280,074.6	12,364,939.0	0.00	20.00	0.00	0	0	
									point208	208	1,280,080.6	12,364,934.0	0.00	20.00	0.00	0	0	
									point209	209	1,280,088.9	12,364,944.0	0.00	20.00	0.00	0	0	
									point210	210	1,280,074.2	12,364,956.0	0.00	20.00	0.00	0	0	
									point211	211	1,280,071.9	12,364,953.0	0.00	20.00				
Barrier22	W	0.00	99.99	0.00				0.00	point213	213	1,280,066.6	12,364,958.0	0.00	20.00	0.00	0	0	
									point214	214	1,280,108.1	12,364,958.0	0.00	20.00	0.00	0	0	
									point215	215	1,280,108.5	12,364,985.0	0.00	20.00	0.00	0	0	
									point216	216	1,280,099.8	12,364,985.0	0.00	20.00	0.00	0	0	
									point217	217	1,280,099.9	12,364,992.0	0.00	20.00	0.00	0	0	
									point218	218	1,280,082.9	12,364,993.0	0.00	20.00	0.00	0	0	
									point219	219	1,280,082.8	12,364,986.0	0.00	20.00	0.00	0	0	
									point220	220	1,280,072.6	12,364,986.0	0.00	20.00	0.00	0	0	
									point221	221	1,280,072.4	12,364,973.0	0.00	20.00	0.00	0	0	
									point222	222	1,280,066.9	12,364,973.0	0.00	20.00	0.00	0	0	
									point223	223	1,280,066.6	12,364,958.0	0.00	20.00				
Barrier23	W	0.00	99.99	0.00				0.00	point225	225	1,280,075.8	12,365,003.0	0.00	20.00	0.00	0	0	
									point226	226	1,280,109.8	12,365,002.0	0.00	20.00	0.00	0	0	
									point227	227	1,280,110.9	12,365,036.0	0.00	20.00	0.00	0	0	
									point228	228	1,280,112.4	12,365,036.0	0.00	20.00	0.00	0	0	
									point229	229	1,280,113.1	12,365,056.0	0.00	20.00	0.00	0	0	
									point230	230	1,280,101.4	12,365,056.0	0.00	20.00	0.00	0	0	
									point231	231	1,280,100.8	12,365,040.0	0.00	20.00	0.00	0	0	
									point232	232	1,280,097.8	12,365,040.0	0.00	20.00	0.00	0	0	
									point233	233	1,280,097.8	12,365,042.0	0.00	20.00	0.00	0	0	
									point234	234	1,280,084.4	12,365,042.0	0.00	20.00	0.00	0	0	
									point235	235	1,280,084.2	12,365,039.0	0.00	20.00	0.00	0	0	
									point236	236	1,280,076.9	12,365,039.0	0.00	20.00	0.00	0	0	
									point237	237	1,280,075.8	12,365,003.0	0.00	20.00				
Barrier39	W	0.00	99.99	0.00				0.00	point296	296	1,280,712.6	12,365,032.0	0.00	6.00	0.00	0	0	
									point297	297	1,280,712.8	12,365,004.0	0.00	6.00				

RESULTS: SOUND LEVELS
Harrison Elementary Soundwall Design

Dudek CB												
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:												
RUN:												
BARRIER DESIGN:												
ATMOSPHERICS:												
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Room 14	4	1	0.0	69.0	66	69.0	10	Snd Lvl	69.0	0.0	8	-8.0
Room 15	5	1	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	8	-8.0
Pre-K Playground	6	1	0.0	69.0	66	69.0	10	Snd Lvl	69.0	0.0	8	-8.0
Lower Playground	7	1	0.0	69.8	66	69.8	10	Snd Lvl	69.8	0.0	8	-8.0
Upper Terrace	8	1	0.0	66.9	66	66.9	10	Snd Lvl	66.9	0.0	8	-8.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		5	0.0	0.0	0.0							
All Impacted		5	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

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APPENDIX B

AIR QUALITY/GREENHOUSE GAS CALCULATIONS

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Project Summary

Activity	Criteria Emissions (Max Pounds per Day)					GHG Emissions (Total Tonnes)			
	ROG	CO	NO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ e
Week 1 Construction	0.267	2.581	2.465	0.147	0.136	1.11	0.00033	N/A	1.12
Week 1 Employees	0.020	0.959	0.071	0.002	0.042	0.94	0.00001	0.00002	0.94
Week 1 Total	0.29	3.54	2.54	0.15	0.18	2.05	0.00034	0.00002	2.06
Weeks 2 & 3 Construction	1.284	7.696	14.555	0.502	0.462	15.75	0.00479	N/A	15.87
Weeks 2 & 3 Employees	0.020	0.959	0.071	0.002	0.042	1.88	0.00003	0.00004	1.89
Weeks 2 & 3 Total	1.30	8.65	14.63	0.50	0.50	17.63	0.00482	0.00004	17.76
Week 4 Construction	0.566	5.061	5.140	0.301	0.280	2.30	0.00066	N/A	2.31
Week 4 Employees	0.020	0.959	0.071	0.002	0.042	0.94	0.00001	0.00002	0.94
Week 4 Total	0.59	6.02	5.21	0.30	0.32	3.24	0.00068	0.00002	3.26
Weeks 5 & 6 Construction	1.578	9.009	18.564	0.676	0.625	19.29	0.00610	N/A	19.45
Weeks 5 & 6 Employees	0.020	0.959	0.071	0.002	0.042	1.88	0.00003	0.00004	1.89
Weeks 5 & 6 Total	1.60	9.97	18.63	0.68	0.67	21.17	0.00613	0.00004	21.34
Week 7 Construction	0.458	4.014	3.847	0.211	0.211	2.14	0.00013	N/A	2.14
Week 7 Employees	0.020	0.959	0.071	0.002	0.042	0.94	0.00001	0.00002	0.94
Week 7 Total	0.48	4.97	3.92	0.21	0.25	3.08	0.00014	0.00002	3.09
Weeks 8 through 11 Construction	0.293	3.605	3.025	0.158	0.146	6.37	0.00196	N/A	6.42
Weeks 8 through 11 Employees	0.020	0.959	0.071	0.002	0.042	3.75	0.00006	0.00008	3.78
Weeks 8 through 11 Total	0.31	4.56	3.10	0.16	0.19	10.12	0.00202	0.00008	10.20
Week 12 Construction	0.126	2.268	1.546	0.042	0.039	1.32	0.00011	N/A	1.32
Week 12 Employees	0.020	0.959	0.071	0.002	0.042	0.94	0.00001	0.00002	0.94
Week 12 Total	0.15	3.23	1.62	0.04	0.08	2.25	0.00012	0.00002	2.26
Week 13 Construction	0.523	4.493	4.702	0.330	0.305	1.85	0.00057	N/A	1.87
Week 13 Employees	0.020	0.959	0.071	0.002	0.042	0.94	0.00001	0.00002	0.94
Week 13 Total	0.54	5.45	4.77	0.33	0.35	2.79	0.00059	0.00002	2.81
Project Max Pounds per Day / Total Tonnes	1.60	9.97	18.63	0.68	0.67	62.3	0.0148	0.0003	62.8

Construction Employee Commute

Construction Employee Vehicle Activity

Activity	Total Work Days	Trips per day	Round Trip (mi)	VMT per day	Total VMT (mi)
Week 1 - Traffic Control	7	10	43	430	3,010
Weeks 2 & 3 - CIDH Piles	14	10	43	430	6,020
Week 4 - Structural Excavation Pile Cap	7	10	43	430	3,010
Weeks 5 & 6 - Pile Cap	14	10	43	430	6,020
Week 7 - L Footing	7	10	43	430	3,010
Weeks 8 through 11 - Masonry Block Wall	28	10	43	430	12,040
Week 12 - Masonry Block Wall	7	10	43	430	3,010
Week 13 - Remove K Rails, Traffic Control	7	10	43	430	3,010
Totals				3,440	39,130

Construction Employee Criteria Emissions

Activity	Pounds per Day				
	ROG	CO	NO _x	PM ₁₀	PM _{2.5}
Week 1 - Traffic Control	0.020	0.959	0.071	0.002	0.042
Weeks 2 & 3 - CIDH Piles	0.020	0.959	0.071	0.002	0.042
Week 4 - Structural Excavation Pile Cap	0.020	0.959	0.071	0.002	0.042
Weeks 5 & 6 - Pile Cap	0.020	0.959	0.071	0.002	0.042
Week 7 - L Footing	0.020	0.959	0.071	0.002	0.042
Weeks 8 through 11 - Masonry Block Wall	0.020	0.959	0.071	0.002	0.042
Week 12 - Masonry Block Wall	0.020	0.959	0.071	0.002	0.042
Week 13 - Remove K Rails, Traffic Control	0.020	0.959	0.071	0.002	0.042
Maximum Pounds per Day	0.02	0.96	0.07	0.00	0.04

Construction Employee GHG Emissions

Activity	Total Tonnes			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Week 1 - Traffic Control	0.94	0.00001	0.00002	0.94
Weeks 2 & 3 - CIDH Piles	1.88	0.00003	0.00004	1.89
Week 4 - Structural Excavation Pile Cap	0.94	0.00001	0.00002	0.94
Weeks 5 & 6 - Pile Cap	1.88	0.00003	0.00004	1.89
Week 7 - L Footing	0.94	0.00001	0.00002	0.94
Weeks 8 through 11 - Masonry Block Wall	3.75	0.00006	0.00008	3.78
Week 12 - Masonry Block Wall	0.94	0.00001	0.00002	0.94
Week 13 - Remove K Rails, Traffic Control	0.94	0.00001	0.00002	0.94
<i>Totals</i>	<i>12.2</i>	<i>0.0002</i>	<i>0.0003</i>	<i>12.3</i>

Off-road Equipment Emissions

Week 1 - Traffic Control

Equipment Type	Activity						Criteria Emissions (lbs/d)					GHG Emissions (tonnes)		
	BHP	Load Factor	Length (wkday)	hrs/day	Number	total hours	ROG	CO	NO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	CO _{2e}
Tractors/Loaders/Backhoes	97	0.37	7	8	1	56	0.21	2.28	2.11	0.13	0.12	0.95	0.0003	0.96
Signal Boards	6	0.82	7	8	1	56	0.06	0.30	0.36	0.01	0.01	0.16	0.0000	0.16
Totals							0.3	2.6	2.5	0.1	0.1	1.1	0.000	1.1

Weeks 2 & 3 - CIDH Piles

Equipment Type	Activity						Criteria Emissions (lbs/d)					GHG Emissions (tonnes)		
	BHP	Load Factor	Length (wkday)	hrs/day	Number	total hours	ROG	CO	NO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	CO _{2e}
Bore/Drill Rigs	221	0.5	14	8	1	112	0.28	2.08	3.52	0.10	0.09	5.78	0.0019	5.82
Rubber Tired Loaders	203	0.36	14	8	2	112	0.75	3.27	8.82	0.29	0.27	7.69	0.0025	7.75
Tractors/Loaders/Backhoes	97	0.37	14	4	1	56	0.10	1.14	1.05	0.07	0.06	0.95	0.0003	0.96
Cement and Mortar Mixers	9	0.56	14	8	2	112	0.12	0.62	0.74	0.03	0.03	0.64	0.0001	0.64
Dumpers/Tenders	16	0.38	14	2	1	28	0.02	0.06	0.12	0.00	0.00	0.10	0.0000	0.10
Air Compressors	78	0.48	14	2	1	28	0.02	0.52	0.31	0.01	0.01	0.60	0.0000	0.60
Signal Boards	6	0.82	14	6	1	84	0.04	0.23	0.27	0.01	0.01	0.23	0.0000	0.24
Totals							1.3	7.7	14.6	0.5	0.5	15.8	0.005	15.9

Week 4 - Structural Excavation Pile Cap

Equipment Type	Activity						Criteria Emissions (lbs/d)					GHG Emissions (tonnes)		
	BHP	Load Factor	Length (wkday)	hrs/day	Number	total hours	ROG	CO	NO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	CO _{2e}
Tractors/Loaders/Backhoes	97	0.37	7	8	2	56	0.42	4.56	4.21	0.27	0.24	1.91	0.0006	1.93
Dumpers/Tenders	16	0.38	7	8	2	56	0.15	0.50	0.93	0.04	0.04	0.39	0.0000	0.39
Signal Boards	6	0.82	7	6	1	42	0.04	0.23	0.27	0.01	0.01	0.12	0.0000	0.12
Totals							0.6	5.1	5.1	0.3	0.3	2.3	0.001	2.3

Weeks 5 & 6 - Pile Cap

Equipment Type	Activity						Criteria Emissions (lbs/d)					GHG Emissions (tonnes)		
	BHP	Load Factor	Length (wkday)	hrs/day	Number	total hours	ROG	CO	NO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	CO ₂ e
Bore/Drill Rigs	221	0.5	14	8	2	112	0.55	4.16	7.04	0.20	0.19	11.56	0.0037	11.65
Cement and Mortar Mixers	9	0.56	14	8	2	112	0.12	0.62	0.74	0.03	0.03	0.64	0.0001	0.64
Cranes	231	0.29	14	8	2	112	0.91	4.23	10.78	0.44	0.41	7.10	0.0023	7.15
Signal Boards	6	0.82	14	6	1	84	0.04	0.23	0.27	0.01	0.01	0.23	0.0000	0.24
Totals							1.6	9.0	18.6	0.7	0.6	19.3	0.006	19.4

Week 7 - L Footing

Equipment Type	Activity						Criteria Emissions (lbs/d)					GHG Emissions (tonnes)		
	BHP	Load Factor	Length (wkday)	hrs/day	Number	total hours	ROG	CO	NO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	CO ₂ e
Cement and Mortar Mixers	9	0.56	7	8	1	56	0.06	0.31	0.37	0.01	0.01	0.16	0.0000	0.16
Generator Sets	84	0.74	7	8	1	56	0.40	3.71	3.48	0.20	0.20	1.98	0.0001	1.98
Signal Boards	6	0.82	7	6	1	42	0.04	0.23	0.27	0.01	0.01	0.12	0.0000	0.12
Totals							0.5	4.0	3.8	0.2	0.2	2.1	0.000	2.1

Weeks 8 through 11 - Masonry Block Wall

Equipment Type	Activity						Criteria Emissions (lbs/d)					GHG Emissions (tonnes)		
	BHP	Load Factor	Length (wkday)	hrs/day	Number	total hours	ROG	CO	NO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	CO ₂ e
Aerial Lifts	63	0.31	28	8	1	224	0.04	1.09	0.64	0.01	0.01	2.07	0.0007	2.08
Tractors/Loaders/Backhoes	97	0.37	28	8	1	224	0.21	2.28	2.11	0.13	0.12	3.82	0.0012	3.85
Cement and Mortar Mixers	9	0.56	28	6	1	168	0.04	0.23	0.28	0.01	0.01	0.48	0.0000	0.48
Signal Boards	6	0.82	28	6	1	168	0.04	0.23	0.27	0.01	0.01	0.47	0.0000	0.47
Totals							0.3	3.6	3.0	0.2	0.1	6.4	0.002	6.4

Week 12 - Masonry Block Wall

Equipment Type	Activity						Criteria Emissions (lbs/d)				
	BHP	Load Factor	Length (wkday)	hrs/day	Number	total hours	ROG	CO	NO _x	PM ₁₀	PM _{2.5}
Pressure Washers	13	0.3	7	8	1	56	0.05	0.17	0.31	0.01	0.01
Air Compressors	78	0.48	7	8	1	56	0.08	2.10	1.23	0.03	0.03
Signal Boards	6	0.82	7	6	1	42	0.04	0.23	0.27	0.01	0.01
Totals							0.1	2.3	1.5	0.0	0.0

GHG Emissions (tonnes)		
CO ₂	CH ₄	CO ₂ e
0.12	0.0000	0.12
1.19	0.0001	1.19
0.12	0.0000	0.12
1.3	0.000	1.3

Week 13 - Remove K Rails, Traffic Control

Equipment Type	Activity						Criteria Emissions (lbs/d)				
	BHP	Load Factor	Length (wkday)	hrs/day	Number	total hours	ROG	CO	NO _x	PM ₁₀	PM _{2.5}
Tractors/Loaders/Backhoes	97	0.37	7	8	1	56	0.21	2.28	2.11	0.13	0.12
Sweepers/Scrubbers	64	0.46	7	8	1	56	0.27	1.99	2.33	0.19	0.17
Signal Boards	6	0.82	7	6	1	42	0.04	0.23	0.27	0.01	0.01
Totals							0.5	4.5	4.7	0.3	0.3
MAX Daily							1.6	9.0	18.6	0.7	0.6

GHG Emissions (tonnes)		
CO ₂	CH ₄	CO ₂ e
0.95	0.0003	0.96
0.78	0.0003	0.79
0.12	0.0000	0.12
1.9	0.001	1.9

Project Total

GHG Emissions (tonnes)		
CO ₂	CH ₄	CO ₂ e
50.1	0.015	50.5

2020 Offroad Emission Factors

Equipment Type	BHP	Load Factor	Emission Factor (g/bhp-hr)						
			ROG	CO	NO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄
Aerial Lifts	63	0.31	0.115	3.177	1.869	0.042	0.038	472.1	0.153
Air Compressors	78	0.48	0.489	3.698	3.400	0.224	0.224	568.3	0.044
Bore/Drill Rigs	221	0.50	0.142	1.068	1.807	0.052	0.048	466.8	0.151
Cement and Mortar Mixers	9	0.56	0.661	3.470	4.142	0.161	0.161	568.3	0.059
Cranes	231	0.29	0.384	1.790	4.563	0.188	0.173	472.9	0.153
Dumpers/Tenders	16	0.38	0.685	2.339	4.336	0.165	0.165	568.3	0.061
Generator Sets	84	0.74	0.364	3.380	3.173	0.179	0.179	568.3	0.032
Pressure Washers	13	0.30	0.721	2.473	4.538	0.205	0.205	568.3	0.065
Rubber Tired Loaders	203	0.36	0.290	1.269	3.421	0.114	0.104	469.5	0.152
Signal Boards	6	0.82	0.661	3.469	4.142	0.161	0.161	568.3	0.059
Sweepers/Scrubbers	64	0.46	0.520	3.828	4.482	0.360	0.331	474.1	0.153
Tractors/Loaders/Backhoes	97	0.37	0.331	3.601	3.326	0.210	0.193	475.2	0.154

From: CalEEMod Users Guide - Appendix D (October 2017)

Week #	Activity	Equipment Associated
1	Traffic Control	
2	CIDH Piles	Drill rig, crane (60 t), skip loader, backhoe, concrete pump & trucks, dump trucks, air compressors
3		
4	Structural excavation pile cap	
5	Pile cap	
6		
7	L footing	
8	Masonry block wall	Scaffolding, Manlift, portable concrete mixer
9		
10		
11		
12	Masonry Block Wall	
13	Remove K trails, traffic control	

550 foot long
 16 foot tall
 Soundwall in LA County

10 deliveries by 18 wheelers
 10 workers per day
 Work 7 to 3:30

EMFAC2017 (v1.0.2) Emission Rates*EMFAC2011 Vehicle Categories**Los Angeles COUNTY***Calendar Year 2020**

Vehicle Info			Emission Factors (grams/mile)											
Type	Fuel	VMT	ROG	CO	NO _x	PM ₁₀			PM _{2.5}			CO ₂	CH ₄	N ₂ O
						Exhaust	TW+BW	Total	Exhaust	TW+BW	Total			
LDA	GAS	3,064,802	0.0167	0.8808	0.0543	0.0020	0.0448	0.0467	0.0014	0.0178	0.0191	291.5	0.0041	0.0056
LDA	DSL	31,086	0.0280	0.3322	0.1159	0.0140	0.0448	0.0587	0.0113	0.0178	0.0290	226.5	0.0013	0.0356
LDT1	GAS	210,289	0.0467	1.8582	0.1615	0.0032	0.0448	0.0479	0.0026	0.0178	0.0204	337.7	0.0103	0.0112
LDT1	DSL	242	0.2097	1.2186	1.1522	0.1587	0.0448	0.2035	0.1041	0.0178	0.1218	475.6	0.0097	0.0748
LDT2	GAS	1,017,315	0.0271	1.2525	0.1160	0.0021	0.0448	0.0469	0.0014	0.0178	0.0192	370.0	0.0064	0.0088
LDT2	DSL	1,775	0.0244	0.1867	0.0560	0.0076	0.0448	0.0523	0.0048	0.0178	0.0226	309.2	0.0011	0.0486
Weighted Average for Employees			0.021	1.012	0.075	0.002	0.045	0.047	0.002	0.018	0.019	311.8	0.005	0.007

Notes: - Criteria and CO₂, CH₄, and N₂O factors come from 2020 EMFAC2017 (v1.0.2) and represent Estimated Annual Emission Rates for Los Angeles County

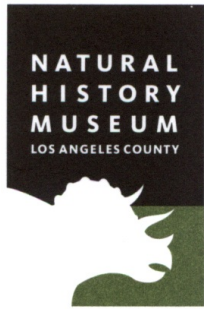
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APPENDIX C

PALEONTOLOGICAL RECORDS SEARCH

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Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007
tel 213.763.DINO
www.nhm.org



Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

17 January 2020

Ericsson-Grant, Inc.
418 Parkwood Lane, Suite 200
Encinitas, CA 92024

Attn: Melanie J. Halajian

re: Vertebrate Paleontology Records Check for paleontological resources for the proposed Harrison Elementary School Soundwall Project, in the City of Los Angeles, Los Angeles County, project area

Dear Melanie:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed Harrison Elementary School Soundwall Project, in the City of Los Angeles, Los Angeles County, project area as outlined on the portion of the Los Angeles USGS topographic quadrangle map that you sent to me via e-mail on 6 January 2020. We do not have any vertebrate fossil localities that occur within the boundaries of the proposed project area, but we do have localities nearby from the same sedimentary deposits that probably occur at depth in the proposed project area.

The entire proposed project area has surface deposits composed of younger Quaternary Alluvium, derived as alluvial fan deposits from the surrounding more elevated terrain. These deposits typically do not contain significant vertebrate fossils, at least in the uppermost layers, but at relatively shallow depth they may be underlain with older sedimentary deposits that do contain significant vertebrate fossils. Our closest vertebrate fossil locality from older Quaternary deposits beneath the younger Quaternary Alluvium is LACM 2032, west-northwest of the proposed project area near the intersection of Mission Road and Daly Street around the Golden State Freeway (I-5), that produced fossil specimens of pond turtle, *Clemmys mamorata*, ground sloth, *Paramylodon harlani*, mastodon, *Mammuthus americanum*, mammoth, *Mammuthus imperator*, horse, *Equus*, and camel, *Camelops*, at a depth of 20-35 feet below the surface. The pond turtle specimens from locality LACM 2032 were figured in the scientific literature by B.H.


Brattstrom and A. Sturn (1959. A new species of fossil turtle from the Pliocene of Oregon, with notes on other fossil *Clemmys* from western North America. Bulletin of the Southern California Academy of Sciences, 58(2):65-71). At our locality LACM 1023, just north of locality LACM 2032 near the intersection of Workman Street and Alhambra Avenue, excavations for a storm drain recovered fossil specimens of turkey, *Meleagris californicus*, sabre-toothed cat, *Smilodon fatalis*, horse, *Equus*, and deer, *Odocoileus*, at unstated depth. A specimen of the turkey, *Meleagris*, from this locality was published in the scientific literatus by D. W. Steadman (1980. A Review of the Osteology and Paleontology of Turkeys (Aves: Meleagridinae). Contributions in Science, Natural History Museum of Los Angeles County, 330:131-207).

In the surrounding elevated terrain there are exposures of the marine late Miocene Puente Formation [that may also be referred to as the Modelo Formation or even an unnamed shale in this area], and these deposits may occur at relatively shallow depth in the proposed project area. Our closest vertebrate fossil locality from the Puente Formation is LACM 7007, northeast of the proposed project area west of Alhambra Avenue west of the intersection of Chester Street and Vaquero Avenue, that produced a specimen of undetermined fossil fish, Osteichthyes. A little farther east and just south, near the intersection of Valley Boulevard and Highbury Avenue, our Puente Formation locality LACM 1027 produced fossil fish specimens of the extinct herring *Xyne grex*. Our next closest vertebrate fossil locality from the Puente Formation is LACM 5961, almost due west of the proposed project area in downtown Los Angeles at the intersection of 1st Street and Hill Street. Locality LACM 5961 yielded a deep sea fish specimen of bristlemouth, *Cyclothone*.

Shallow excavations in the younger Quaternary Alluvium exposed throughout the proposed project area are unlikely to uncover any significant vertebrate fossils. Deeper excavations that extend down into the older sedimentary deposits, however, may well encounter significant vertebrate fossil remains. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Also, sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

A handwritten signature in black ink, reading "Samuel A. McLeod". The signature is written in a cursive, flowing style.

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice