

3.14 NOISE

The information in this section is based on the *Traffic Noise Study Report* (January 2012) and the *Noise Abatement Decision Report* (May 2012).

3.14.1 REGULATORY SETTING

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

3.14.1.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires a strict baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless such measures are not feasible. The rest of this section will focus on the NEPA-23 CFR 772 noise analysis; please see Chapter 4.0 of this document for further information regarding noise analysis under CEQA.

3.14.1.2 NATIONAL ENVIRONMENTAL POLICY ACT AND 23 CFR 772

For highway transportation projects with Federal Highway Administration (FHWA) (and Caltrans, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. These regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design stages of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 A-weighted decibels [dBA]) is lower than the NAC for commercial areas (72 dBA). Table 3.14-1 lists the NAC for use in the NEPA-23 CFR 772 analysis.

Figure 3.14-1 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

Table 3.14-1 Noise Abatement Criteria

Activity Category	Activity $L_{eq}[h]$¹	Evaluation Location	Description of Activities
A	57 (Exterior)	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ²	67 (Exterior)	Exterior	Residential
C ²	67 (Exterior)	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	—	—	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	—	—	Undeveloped lands that are not permitted.

Source: *Caltrans Traffic Noise Protocol*, May 2011.

¹ The $L_{eq}(h)$ activity criteria values are for impact determination only and are not design standards for noise abatement measures. All values are A-weighted decibels (dBA).

² Includes undeveloped lands permitted for this activity category.

$L_{eq}(h)$ = equivalent continuous sound level per hour

NAC = Noise Abatement Criteria

Figure 3.14-1 Noise Levels of Common Activities

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet 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 Traffic Noise Analysis Protocol, May 2011.

In accordance with the *Caltrans Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects* (May 2011), a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within one dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications.

This document discusses the noise abatement measures that would likely be incorporated in the project.

The Caltrans Traffic Noise Analysis Protocol sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum seven dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include residents' acceptance and the cost per benefited residence.

3.14.2 AFFECTED ENVIRONMENT

3.14.2.1 SURROUNDING LAND USES AND SENSITIVE RECEPTORS

Land use within the Study Area was determined by a number of field visits and review of aerial maps of the Study Area. Land uses within the Study Area vary and include residential, commercial, industrial, parks, recreation areas, and undeveloped land. Schools and medical facilities are located throughout the Study Area. The Interstate 710 (I-710) freeway mainline is on the west side of the Los Angeles River, from Ocean Blvd. in the city of Long Beach to Imperial Hwy. in the city of South Gate, and on the east side of the Los Angeles River, from Imperial Hwy. in the city of South Gate to State Route 60 (SR-60) in East Los Angeles. A total of 221 sites were evaluated within the Study Area. The locations of these sites are shown in Figures 3.14-2 and 3.14-3 for Alternatives 5A and 6A/B/C, respectively. Figures 3.14-2 and 3.14-3 are provided following the last page of text in this section to minimize disruptions in the text for the reader.

3.14.2.2 EXISTING NOISE ENVIRONMENT

The existing noise environment in the project area was determined by performing both short-term (ten-minute) and long-term (24-hour) noise readings. A few of the short-term noise level measurements were performed for 15 minutes. These short-term noise level measurements were used to calibrate the noise model. A total of 125 short-term monitoring locations were performed using MetroSonics Model dB-3080 Type 2 sound level meters within the Study Area. The results of the short-term noise monitoring are provided in Tables 6-1-1 through 6-1-10 in the *Traffic Noise Study Report* for the proposed project.

Community background noise readings for a duration of ten minutes were taken at 17 locations within the project limits. They ranged between 50 and 61 dBA one-hour A-weighted equivalent continuous sound level ($L_{eq}[h]$). Background noise is the total of all noise generated within a

community and is measured away from the freeway where freeway traffic noise does not contribute to the total noise level. Background noise levels are typically measured to determine the acoustical feasibility (noise reducibility of five dBA) of noise abatement and to ensure that noise reduction goals can be achieved.

Long-term monitoring was conducted at 24 locations using MetroSonics Model dB-3080 Type 2 sound level meters. The purpose of these measurements was to capture variations in traffic noise levels throughout the day, rather than absolute noise levels at a specific receptor of concern. The long-term sound level data was collected over 144 consecutive ten-minute intervals over a 24-hour period. The long-term 24-hour monitoring locations were used to determine the worst-hour within the project limits and adjust each noise measurement site to the worst-hour. The results of the long-term 24-hour noise monitoring were provided in Tables 6-3-1 through 6-3-4 in the *Traffic Noise Study Report* for the proposed project.

In addition to performing noise level measurements, the existing noise levels were determined at 72 modeled locations, which were acoustically representative of the entire Study Area. The existing worst-hour noise levels are shown in Table 3.14-2. All noise monitoring and modeled locations are shown in Figures 3.14-1 and 3.14-2.

3.14.3 PUBLIC HEALTH CONSIDERATIONS

There are several types of public health considerations that have been studied over the years related to traffic noise. Although permanent hearing loss is not predicted, since most traffic sound level exposures would remain below 85 decibels (dB) over an eight-hour period, there are potential stress-induced health factors that should be considered:

- **Annoyance:** The expression of negative feelings resulting from interference with an individual's activities including disruption of one's peace of mind.
- **Sleep Disturbance:** Noise exposure lessening of the quality and duration of sleep. Particularly vulnerable groups include night workers, mothers with babies, elderly persons, persons vulnerable to physical and mental disorders, and persons with sleep disorders.
- **Immune Effects:** Noise disturbance of sleep stages resulting in immunosuppressive effects.
- **Ergonomics:** Disruption in attention resulting in decreased quality of work.
- **Psychology:** Increased stress resulting in psychic tension.

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Table 3.14-2 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5A	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternatives 6A/B/C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
NB-A ²⁴	101 Golden Shore St.	P	C (67)	63.0	60.4	2.6	66.0	67.0	1.0	67.0	A/E	1.0	0.0	67.0	A/E	1.0	0.0
NB-B	Modeled Site	P	C (67)	--	65.0	-	65.0	66.0	1.0	67.0	A/E	2.0	1.0	67.0	A/E	2.0	1.0
NB-C	701 W. Ocean Blvd.	H	E (72)	61.6	62.5	-0.9	65.0	68.0	3.0	70.0	N	5.0	2.0	70.0	N	5.0	2.0
NB-1	401 Golden Ave.	P	C (67)	59.1	57.8	1.3	63.6	62.3	-1.3	60.9	N	-2.7	-1.4	62.6	N	-1.0	0.3
NB-1A	730 W. 3rd St. - Interior	S	D (52)	47.0	43.1	3.9	50.7	48.7	-2.0	48.7	N	-2.0	0.0	49.1	N	-1.6	0.4
NB-1B	730 W. 3rd St. - Exterior	S	C (67)	63.3	59.4	3.9	67.0	65.0	-2.0	65.0	N	-2.0	0.0	65.4	N	-1.6	0.4
NB-2	Cesar Chavez Park	P	C (67)	57.7	55.6	2.1	62.2	61.3	-0.9	60.5	N	-1.7	-0.8	61.5	N	-0.7	0.2
NB-3	625 Main St. - Exterior	S	C (67)	62.3	60.9	1.4	65.8	66.5	0.7	64.0	N	-1.8	-2.5	63.0	N	-2.8	-3.5
NB-3A	625 Main St. - Interior	S	D (52)	41.0	39.6	1.4	44.5	45.2	0.7	42.7	N	-1.8	-2.5	42.8	N	-1.7	-2.4
NB-4 ²⁴	976 Loma Vista Dr.	R	B (67)	54.6	55.4	-0.8	59.5	59.4	-0.1	57.8	N	-1.7	-1.6	61.1	N	1.6	1.7
SB-1	1302 Parade St.	R	B (67)	57.2	59.0	-1.8	57.2	61.3	4.1	65.2	N	8.0	3.9	68.5	A/E	11.3	7.2
MS B-1	Modeled Site	R	B (67)	-	62.4	-	62.4	66.1	3.7	67.0	A/E	4.6	0.9	69.4	A/E	7.0	3.3
SB-2	1901 Gale Ave.	R	B (67)	62.4	64.0	-1.6	62.4	66.0	3.6	71.7	A/E	9.3	5.7	72.6	A/E	10.2	6.6
MS B-2	Modeled Site	R	B (67)	-	59.1	-	59.1	62.8	3.7	65.3	N	6.2	2.5	69.1	A/E	10.0	6.3
SB-3 ²⁴	1980 Gale Ave.	R	B (67)	66.6	66.8	-0.2	66.6	70.0	3.4	79.0	A/E	12.4	9.0	79.1	A/E	12.5	9.1
MS B-3	Modeled Site	R	B (67)	-	62.0	-	62.0	65.7	3.7	72.6	A/E	10.6	6.9	72.8	A/E	10.8	7.1
SB-4	2100 Gale Ave.	R	B (67)	61.4	64.3	-2.9	61.4	64.0	2.6	74.2	A/E	12.8	10.2	74.2	A/E	12.8	10.2
SB-5	1247 21st St.	R	B (67)	58.5	60.0	-1.5	58.5	61.5	3.0	70.0	A/E	11.5	8.5	71.8	A/E	13.3	10.3
MS B-5	Modeled Site	R	B (67)	-	62.3	-	62.3	65.3	3.0	69.4	A/E	7.1	4.1	71.8	A/E	9.5	6.5
SB-6	1228 23rd St.	R	B (67)	63.5	65.7	-2.2	63.7	66.2	2.5	78.5	A/E	14.8	12.3	77.9	A/E	14.2	11.7
MS B-6	Modeled Site	R	B (67)	-	63.4	-	63.6	66.5	2.9	71.2	A/E	7.6	4.7	72.4	A/E	8.8	5.9
SB-8	1265 W. 25th St.	R	B (67)	59.3	61.1	-1.8	59.5	62.1	2.6	69.3	A/E	9.8	7.2	70.1	A/E	10.6	8.0
MS B-8	Modeled Site	R	B (67)	-	66.3	-	66.5	69.3	2.8	77.7	A/E	11.2	8.4	77.1	A/E	10.6	7.8
MS B-8A	Modeled Site	R	B (67)	-	62.5	-	62.7	65.6	2.9	69.1	A/E	6.4	3.5	71.2	A/E	8.5	5.6
MS B-8B	Modeled Site	R	B (67)	-	65.1	-	65.3	68.2	2.9	75.2	A/E	9.9	7.0	75.6	A/E	10.3	7.4
MS B-8C	Modeled Site	R	B (67)	-	63.0	-	63.2	65.9	2.7	71.6	A/E	8.4	5.7	71.9	A/E	8.7	6.0
SB-9	2556 Fashion Ave.	R	B (67)	59.1	60.4	-1.3	59.8	62.0	2.2	68.4	A/E	8.6	6.4	69.3	A/E	9.5	7.3
NB-5	1871 San Francisco Ave.	R	B (67)	55.8	54.7	1.1	57.3	58.7	1.4	61.4	N	4.1	2.7	62.5	N	5.2	3.8
NB-6	2200 DeForest Ave.	R	B (67)	48.3	50.5	-2.2	49.8	52.2	2.4	51.8	N	2.0	-0.4	55.0	N	5.2	2.8
NB-7	2530 DeForest Ave.	R	B (67)	52.2	50.9	1.3	52.9	56.0	3.1	55.9	N	3.0	-0.1	60.3	N	7.4	4.3
SB-10	2701 Gale Ave.	R	B (67)	63.5	63.5	-2.7	61.7	63.8	2.1	72.3	A/E	10.6	8.5	73.3	A/E	11.6	9.5
MS B-10	Modeled Site	R	B (67)	59.7	59.7	-	60.6	63.1	2.5	69.0	A/E	8.4	5.9	70.0	A/E	9.4	6.9
MS B-10A	Modeled Site	R	B (67)	57.1	57.1	-	58.0	60.4	2.4	66.0	A/E	8.0	5.6	68.5	A/E	10.5	8.1
SB-11 ²⁴	2820 Gale Ave.	R	B (67)	64.1	64.1	-3.0	62.0	64.1	2.1	74.9	A/E	12.9	10.8	74.4	A/E	12.4	10.3
MS B-11	Modeled Site	R	B (67)	61.5	61.5	-	62.4	64.9	2.5	70.7	A/E	8.3	5.8	71.4	A/E	9.0	6.5
SB-12	1222 Spring St.	R	B (67)	66.7	66.7	-1.4	66.2	68.2	2.0	78.6	A/E	12.4	10.4	77.6	A/E	11.4	9.4
SB-13	2990 Gale Ave.	R	B (67)	63.2	63.2	-2.4	61.4	64.0	2.6	72.4	A/E	11.0	8.4	72.5	A/E	11.1	8.5
MS B-13	Modeled Site	R	B (67)	61.7	61.7	-	62.3	65.0	2.7	70.1	A/E	7.8	5.1	71.1	A/E	8.8	6.1
MS B-13A	Modeled Site	R	B (67)	66.5	66.5	-	67.1	68.9	1.8	76.1	A/E	9.0	7.2	74.4	A/E	7.3	5.5
MS B-13B	Modeled Site	R	B (67)	62.3	62.3	-	62.9	65.0	2.1	70.2	A/E	7.3	5.2	69.8	A/E	6.9	4.8

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Receptor No.	Location	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5A	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternatives 6A/B/C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
SB-14	1223 33rd St.	R	B (67)	67.7	67.7	- 1.7	66.6	68.4	1.8	81.3	A/E	14.7	12.9	79.8	A/E	13.2	11.4
MS B-14	Modeled Site	R	B (67)	63.9	63.9	-	64.5	66.6	2.1	74.1	A/E	9.6	7.5	73.4	A/E	8.9	6.8
MS B-14A	Modeled Site	R	B (67)	65.0	65.0	-	65.6	68.0	2.4	71.7	A/E	6.1	3.7	71.3	A/E	5.7	3.3
SB-15	3540 Gale Ave.	R	B (67)	68.9	68.9	- 1.7	68.0	70.1	2.1	Full Right-of-way Acquisition				Full Right-of-way Acquisition			
MS B-15	Modeled Site	R	B (67)	66.1	66.1	-	66.9	68.7	1.8	78.0	A/E	11.1	9.3	76.9	A/E	10.0	8.2
MS B-15A	Modeled Site	R	B (67)	65.6	65.6	-	66.4	68.7	2.3	73.7	A/E	7.3	5.0	73.2	A/E	6.8	4.5
MS B-15B	Modeled Site	R	B (67)	66.6	66.6	-	67.4	69.8	2.4	73.9	A/E	6.5	4.1	73.5	A/E	6.1	3.7
MS B-15C	Modeled Site	R	B (67)	63.2	63.2	-	64.0	66.6	2.6	70.8	A/E	6.8	4.2	70.8	A/E	6.8	4.2
MS B-15D	Modeled Site	R	B (67)	58.2	58.2	-	59.0	61.4	2.4	68.3	A/E	9.3	6.9	68.6	A/E	9.6	7.2
SB-16	3618 Gale Ave.	R	B (67)	64.9	64.9	-0.2	64.7	68.1	3.4	Full Right-of-way Acquisition				Full Right-of-way Acquisition			
MS B-16	Modeled Site	R	B (67)	64.4	64.4	-	64.4	67.8	3.4	75.8	A/E	11.4	8.0	75.4	A/E	11.0	7.6
SB-17	3635 Gale Ave.	R	B (67)	64.0	64.0	-2.4	61.6	65.0	3.4	72.3	A/E	10.7	7.3	71.8	A/E	10.2	6.8
MS B-17	Modeled Site	R	B (67)	63.7	63.7	-	63.7	67.2	3.5	67.5	A/E	3.8	0.3	67.4	A/E	3.7	0.2
MS B-17A	Modeled Site	R	B (67)	68.9	68.9	-	68.9	72.7	3.8	70.8	A/E	1.9	-1.9	70.1	A/E	1.2	-2.6
MS B-17B	Modeled Site	R	B (67)	64.1	64.1	-	64.1	67.9	3.8	67.6	A/E	3.5	-0.3	67.1	A/E	3.0	-0.8
NB-8	2800 DeForest Ave.	R	B (67)	48.4	48.4	0.6	49.3	52.3	3.0	54.1	N	4.8	1.8	56.7	N	7.4	4.4
NB-9	3095 San Francisco Ave.	R	B (67)	48.6	48.6	-2.9	46.0	48.7	2.7	49.4	N	3.4	0.7	53.4	N	7.4	4.7
NB-10	3384 DeForest Ave.	R	B (67)	52.7	52.7	-4.0	49.7	52.2	2.5	51.2	N	1.5	-1.0	53.6	N	3.9	1.4
MNB-10	Modeled Site	R	B (67)	50.7	50.7	-	51.7	54.3	2.6	54.6	N	2.9	0.3	57.4	N	5.7	3.1
NB-13	Virginia Country Club	G	C (67)	55.5	56.4	-0.9	60.5	56.7	-3.8	57.1	N	-3.4	0.4	59.0	N	-1.5	2.3
MNB-13A	Modeled Site	R	B (67)	-	52.5	-	53.0	54.9	1.9	56.0	N	3.0	1.1	58.0	N	5.0	3.1
MNB-13B	Modeled Site	R	B (67)	-	53.6	-	54.1	55.0	0.9	55.7	N	1.6	0.7	57.0	N	2.9	2.0
NB-14 ²⁴	4921 Holly Ave.	R	B (67)	56.0	56.8	-0.8	61.0	57.4	-3.6	62.8	N	1.8	5.4	61.6	N	0.6	4.2
NB-15	5075 Daisy Ave. - Exterior	S	C (67)	57.4	57.0	0.4	58.5	59.0	0.5	61.7	N	3.2	2.7	64.2	N	5.7	5.2
NB-15A	5075 Daisy Ave. - Interior	S	D (52)	42.2	41.8	0.4	43.3	43.8	0.5	44.4	N	1.1	0.6	49.5	N	6.2	5.7
NB-17	156 W. Mountain View	R	B (67)	51.0	54.9	-3.9	54.9	54.4	-0.5	55.7	N	0.8	1.3	58.5	N	3.6	4.1
NB-18 ²⁴	165 Market St.			55.7	57.7	-2.0	56.8	58.0	1.2	59.3	N	2.5	1.3	61.4	N	4.6	3.4
NB-19	Shady Acres Mobile Park No. 15	R	B (67)	55.8	56.8	-1.0	59.7	58.7	-1.0	59.9	N	0.2	1.2	60.3	N	0.6	1.6
NB-20	5798 Chestnut Ave.	R	B (67)	55.6	54.4	1.2	57.5	58.9	1.4	60.6	N	3.1	1.7	61.5	N	4.0	2.6
NB-21	101 E. 60th St.	R	B (67)	58.2	56.2	2.0	60.8	61.8	1.0	62.6	N	1.8	0.8	65.3	N	4.5	3.5
NB-22	6255 DeForest Ave.	R	B (67)	52.2	54.2	-2.0	54.2	56.3	2.1	56.8	N	2.6	0.5	60.3	N	6.1	4.0
NB-23	937 Paradise Ln.	R	B (67)	52.6	52.0	0.6	54.6	56.1	1.5	56.8	N	2.2	0.7	62.3	N	7.7	6.2
MNB-23	Modeled Site	R	B (67)	-	55.5	-	57.5	57.8	0.3	57.5	N	0.0	-0.3	65.8	A/E	8.3	8.0
SB-19	150 Victoria St. - Exterior	S	C (67)	55.3	56.6	-1.3	64.2	58.4	-5.8	64.2	N	0.0	5.8	64.2	N	0.0	5.8
SB-19A	150 Victoria St. - Interior	S	D (52)	41.5	42.8	-1.3	50.4	44.6	-5.8	50.4	N	0.0	5.8	50.4	N	0.0	5.8
SB-20	5950 Long Beach Blvd. - Exterior	H	E (72)	61.3	64.2	-2.9	62.8	65.0	2.2	70.8	A/E	8.0	5.8	71.4	A/E	8.6	6.4
SB-20C	261 E. Barclay St.	R	B (67)	61.9	65.1	-3.2	64.5	64.9	0.4	71.7	A/E	7.2	6.8	70.1	A/E	5.6	5.2
SB-21 ²⁴	325 Scott St.	R	B (67)	61.2	65.6	-4.4	63.4	64.4	1.0	65.0	N	1.6	0.6	65.0	N	1.6	0.6
SB-23	333 Forhan St.	R	B (67)	59.2	64.2	-5.0	61.1	60.5	-0.6	64.6	N	3.5	4.1	66.8	A/E	5.7	6.3
MS B-23A	Modeled Site	R	B (67)	-	62.9	-	64.8	65.5	0.7	66.1	A/E	1.3	0.6	69.9	A/E	5.1	4.4

Table 3.14-2 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5A	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternatives 6A/B/C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
MS B-23B	Modeled Site	R	B (67)	-	65.8	-	67.7	68.5	0.8	69.1	A/E	1.4	0.6	71.9	A/E	4.2	3.4
SB-25	6910 Coachella Ave.	R	B (67)	63.2	63.3	-0.1	64.5	65.0	0.5	69.1	A/E	4.6	4.1	69.2	A/E	4.7	4.2
SB-26	6911 Coachella Ave.	R	B (67)	55.9	60.7	-4.8	57.2	57.5	0.3	62.5	N	5.3	5.0	64.0	N	6.8	6.5
SB-27 ²⁴	1612 Atlantic Dr.	R	B (67)	60.6	63.3	-2.7	62.3	63.5	1.2	76.6	A/E	14.3	13.1	74.4	A/E	12.1	10.9
MS B-27	Modeled Site	R	B (67)	-	62.9	-2.7	63.1	63.1	0.0	72.5	A/E	9.4	9.4	71.9	A/E	8.8	8.8
SB-28	1316 Atlantic Dr.	R	B (67)	56.3	59.9	-3.6	58.3	60.1	1.8	63.7	N	5.4	3.6	63.7	N	5.4	3.6
SB-29	1311 Atlantic Dr.	R	B (67)	56.7	59.3	-2.6	58.8	60.3	1.5	63.9	N	5.1	3.6	64.4	N	5.6	4.1
SB-30	16002 S. Atlantic Dr.	R	B (67)	59.3	61.0	-1.7	61.0	66.6	5.6	Full Right-of-way Acquisition			Full Right-of-way Acquisition				
MS B-30	Modeled Site	R	B (67)	-	60.4	-1.7	62.1	66.1	4.0	75.6	A/E	13.5	9.5	75.1	A/E	13.0	9.0
SB-31	15539 S. Gibson Ave.	R	B (67)	61.4	64.3	-2.9	62.5	65.4	2.9	Full Right-of-way Acquisition			Full Right-of-way Acquisition				
SB-32	15519 S. Gibson Ave.	R	B (67)	60.0	64.2	-4.2	61.1	63.4	2.3	77.5	A/E	16.4	14.1	77.6	A/E	16.5	14.2
SB-33	4827 Rose St.	R	B (67)	58.9	62.9	-4.0	60.3	65.1	4.8	65.9	A/E	5.6	0.8	68.4	A/E	8.1	3.3
SB-34A ²⁴	15116 S. Gibson Ave. - Interior	S	D (52)	40.9	45.8	-4.9	42.0	43.5	1.5	44.5	N	2.5	1.0	49.1	N	7.1	5.6
SB-34B	15116 S. Gibson Ave. - Exterior	S	C (67)	61.3	66.2	-4.9	62.4	63.9	1.5	64.9	N	2.5	1.0	69.5	A/E	7.1	5.6
SB-35 ²⁴	4930 E. San Marcos	R	B (67)	61.5	64.2	-2.7	63.1	63.6	0.5	64.1	N	1.0	0.5	66.0	A/E	2.9	2.4
SB-36 ²⁴	4947 E. San Vicente St.	R	B (67)	65.8	64.8	1.0	66.4	66.2	-0.2	66.3	A/E	-0.1	0.1	68.0	A/E	1.6	1.8
SB-37	4955 E. San Juan St.	R	B (67)	59.9	64.9	-5.0	60.3	61.2	0.9	61.7	N	1.4	0.5	63.2	N	2.9	2.0
SB-38	4951 E. San Juan St.	R	B (67)	59.9	65.5	-5.6	60.3	61.3	1.0	61.7	N	1.4	0.4	66.1	A/E	5.8	4.8
SB-39	4964 E. San Rafael St.	R	B (67)	57.0	62.6	-5.6	57.8	58.3	0.5	58.2	N	0.4	-0.1	62.2	N	4.4	3.9
SB-40 ²⁴	12310 Edgebrook Ave.	R	B (67)	62.2	63.7	-1.5	67.8	65.9	-1.9	67.8	A/E	0.0	1.9	64.3	N	-3.5	-1.6
SB-41	12830 S. Manette Pl.	R	B (67)	51.1	55.4	-4.3	54.1	54.4	0.3	54.9	N	0.8	0.5	57.0	N	2.9	2.6
SB-42	5450 McMillan St.	R	B (67)	58.6	56.0	2.6	61.6	63.5	1.9	63.9	N	2.3	0.4	67.6	A/E	6.0	4.1
SB-43	12501 Edgebrook Ave.	R	B (67)	64.1	62.1	2.0	67.5	68.7	1.2	70.5	A/E	3.0	1.8	70.7	A/E	3.2	2.0
SB-44	5520 Lavinia Ave.	R	B (67)	56.6	59.1	-2.5	60.0	58.8	-1.2	64.1	N	4.1	5.3	62.1	N	2.1	3.3
SB-45	12323 Edgebrook Ave.	R	B (67)	59.0	57.8	1.2	62.0	63.7	1.7	65.2	N	3.2	1.5	65.4	N	3.4	1.7
SB-46	5542 Pelleur St.	R	B (67)	56.0	58.6	-2.6	59.0	60.9	1.9	62.2	N	3.2	1.3	62.7	N	3.7	1.8
SB-49*	5246 Martin Luther King Jr. Blvd. - Interior	S	D (52)	43.5	41.7	1.8	44.1	40.1	-4.0	42.1	N	-2.0	2.0	44.8	N	0.7	4.7
SB-50	5246 Martin Luther King Jr. Blvd. - Exterior	S	C (67)	65.9	64.1	1.8	66.5	63.0	-3.5	64.5	N	-2.0	1.5	67.2	A/E	0.7	4.2
SB-51	11323 Wright Rd.	R	B (67)	59.9	61.5	-1.6	62.3	57.8	-4.5	58.9	N	-3.4	1.1	62.3	N	0.0	4.5
SB-52	11300 Wright Rd. - Interior	S	D (52)	50.1	53.2	-3.1	51.2	51.6	0.4	54.2	A/E	3.0	2.6	55.6	A/E	4.4	4.0
SB-53	11300 Wright Rd. - Exterior	S	C (67)	59.6	62.7	-3.1	60.7	61.1	0.4	63.6	N	2.9	2.5	65.1	N	4.4	4.0
MS B-53	11638 Louise Ave.	R	B (67)	-	62.3	-3.1	63.3	63.4	0.1	65.0	N	1.7	1.6	66.4	A/E	3.1	3.0
SB-55	5327 Beechwood Ave.	R	B (67)	56.8	60.0	-3.2	59.0	55.8	-3.2	55.6	N	-3.4	-0.2	61.0	N	2.0	5.2
SB-56	11111 Wright Rd.	R	B (67)	60.2	63.4	-3.2	62.6	61.3	-1.3	60.6	N	-2.0	-0.7	62.8	N	0.2	1.5
SB-5724	10969 Wright Rd.	R	B (67)	69.8	69.5	0.3	72.6	71.1	-1.5	61.3	N	-11.3	-9.8	69.1	A/E	-3.5	-2.0
SB-58	10914 Wright Rd.	R	B (67)	64.8	67.0	-2.2	66.5	65.6	-0.9	58.1	N	-8.4	-7.5	65.6	A/E	-0.9	0.0
SB-59	10920 Duncan Ave.	R	B (67)	65.0	65.2	-0.2	66.7	65.7	-1.0	59.6	N	-7.1	-6.1	67.0	A/E	0.3	1.3
NB-25	6975 Atlantic Ave.	R	B (67)	61.6	60.2	1.4	63.0	64.1	1.1	64.1	N	1.1	0.0	69.7	A/E	6.7	5.6
NB-26	6312 Rancho Rio Rd.	R	B (67)	56.4	58.4	-2.0	57.8	58.6	0.8	60.3	N	2.5	1.7	65.1	N	7.3	6.5

Table 3.14-2 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5A	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternatives 6A/B/C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
NB-27	6400 E. Compton Blvd.	G	C (67)	53.3	56.1	-2.8	54.3	60.1	5.8	63.6	N	9.3	3.5	68.2	A/E	13.9	8.1
NB-27A	6500 E. Compton Blvd. - Interior	S	D (52)	43.5	42.9	0.6	45.0	45.0	0.0	38.0	N	-7.0	-7.0	46.0	N	1.0	1.0
NB-27C	6500 E. Compton Blvd. - Exterior	S	C (67)	62.7	62.7	0.0	64.3	56.0	-8.3	57.3	N	-7.0	1.3	65.3	N	1.0	9.3
NB-27B	15301 San Jose - Exterior	S	C (67)	57.0	56.4	0.6	59.5	55.5	-4.0	56.8	N	-2.7	1.3	64.8	N	5.3	9.3
NB-27D	15301 San Jose - Interior	S	D (52)	42.8	42.2	0.6	45.3	45.3	0.0	45.3	N	0.0	0.0	50.6	N	5.3	5.3
NB-28	6443 San Marcus St.	R	B (67)	49.5	54.2	-4.7	50.8	53.4	2.6	51.6	N	0.8	-1.8	63.7	SNI	12.9	10.3
NB-29	14703 San Antonio Ave.	R	B (67)	51.6	54.7	-3.1	52.9	54.8	1.9	53.3	N	0.4	-1.5	65.5	SNI	12.6	10.7
NB-30	6500 San Juan St.	P	C (67)	48.0	53.9	-5.9	48.8	51.9	3.1	50.3	N	1.5	-1.6	63.1	SNI	14.3	11.2
NB-30A	6556 Rosecrans No. S 35	R	B (67)	53.1	52.2	0.9	54.0	54.8	0.8	54.0	N	0.0	-0.8	67.4	A/E	13.4	12.6
NB-31	13425 Rancho Camino	R	B (67)	52.8	56.2	-3.4	55.1	55.4	0.3	55.5	N	0.4	0.1	59.9	N	4.8	4.5
MNB-31	7102 Cortland Ave.	R	B (67)	-	61.6	-3.4	61.3	59.0	-2.3	56.2	N	-5.1	-2.8	61.1	N	-0.2	2.1
MNB-32	5511 Century Blvd.	S	C (67)	-	54.0	-3.4	53.2	53.1	-0.1	52.9	N	-0.3	-0.2	56.9	N	3.7	3.8
NB-34	11599 Rio Hondo Dr.	P	C (67)	55.4	58.0	-2.6	57.7	57.9	0.2	57.8	N	0.1	-0.1	63.6	N	5.9	5.7
NB-35	11319 Idaho Ave.	R	B (67)	54.5	57.6	-3.1	56.8	56.8	0.0	56.6	N	-0.2	-0.2	62.5	N	5.7	5.7
NB-36 ²⁴	8201 Specht Ave.	R	B (67)	75.2	77.4	-2.2	75.2	78.0	2.8	82.9	A/E	7.7	4.9	82.7	A/E	7.5	4.7
NB-37	7940 Bell Garden Ave.	R	B (67)	66.4	69.1	-2.7	68.0	69.6	1.6	79.8	A/E	11.8	10.2	79.5	A/E	11.5	9.9
NB-38	7728 Bell Garden Ave.	R	B (67)	63.9	66.0	-2.1	65.1	66.2	1.1	66.8	A/E	1.7	0.6	75.3	A/E	10.2	9.1
NB-39	6809 Marlow Ave.	R	B (67)	66.1	68.1	-2.0	66.5	68.5	2.0	69.3	A/E	2.8	0.8	72.0	A/E	5.5	3.5
NB-40	6516 Selfland Ave.	R	B (67)	67.8	67.7	0.1	68.2	68.2	0.0	68.7	A/E	0.5	0.5	75.0	A/E	6.8	6.8
NB-41 ²⁴	5510 Lanto St.	R	B (67)	66.9	69.3	-2.4	66.9	69.4	2.5	70.3	A/E	3.4	0.9	75.0	A/E	8.1	5.6
NB-42	5517 Watcher St.	R	B (67)	63.4	65.8	-2.4	64.3	65.8	1.5	67.5	A/E	3.2	1.7	72.0	A/E	7.7	6.2
NB-43	4721 Noble St.	R	B (67)	71.9	69.3	2.6	72.6	62.8*	0.0	72.4	A/E	0.0	9.6	71.8/71.7	A/E	0.0/0.0	9.0/8.9
NB-44 ²⁴	4701 Leonis St.	R	B (67)	64.0	65.6	-1.6	64.0	61.9*	0.0	70.5	A/E	6.5	8.6	67.1/66.5	A/E	3.1/2.5	5.2/4.6
NB-44 M1	4715 Leonis St.	R	B (67)	-	69.2	-	69.2	62.3*	0.0	71.4	A/E	2.2	9.1	70.5/69.7	A/E	1.3/0.5	8.2/7.4
NB-44 M2	4725 Astor Ave.	P	C (67)	-	70.9	-	70.9	63.0*	0.0	66.2	A/E	0.0	3.2	65.8/66.6	A/E	0.0/0.0	2.8/3.6
NB-45	4643 Noakes St.	R	B (67)	69.2	70.4	-1.2	69.8	63.7*	0.0	64.6*	N	0.0	0.9	70.1/71.7	A/E	0.3/1.9	6.4/8.0
NB-46	1448 Duncan Ave.	R	B (67)	61.8	63.4	-1.6	62.2	63.2*	1.0	64.1*	N	1.9	0.9	72.4/73.4	A/E	10.2/11.2	9.2/10.2
NB-47	1354 Duncan Ave.	R	B (67)	62.5	63.2	-0.7	62.8	65.5*	2.7	63.4*	N	0.6	0.9	66.7/66.7	A/E	3.9/3.9	1.2/1.2
NB-48	1278 Duncan Ave.	R	B (67)	65.0	67.2	-2.2	65.2	67.2	2.0	68.5	A/E	3.3	1.3	71.3	A/E	6.1	4.1
NB-49	1269 Duncan Ave.	R	B (67)	57.0	58.3	-1.3	57.4	58.4	1.0	59.5	N	2.1	1.1	61.4	N	4.0	3.0
NB-50	1118 Burger Ave.	R	B (67)	66.5	68.6	-2.1	66.9	67.6*	0.7	73.6	A/E	6.7	6.0	66.6*	A/E	0.0	-1.0
NB-50 M1	1148 Burger Ave.	R	B (67)	-	70.6	-	70.6	66.9*	0.0	72.9	A/E	2.3	6.0	67.8*	A/E	0.0	0.9
NB-51	716 Burger Ave.	R	B (67)	63.8	62.1	1.7	63.8	66.1*	2.6	74.5	A/E	10.7	8.4	67.5*	A/E	1.4	1.4
NB-52	604 Burger Ave.	R	B (67)	67.9	68.4	-0.5	67.9	71.8*	4.2	74.8	A/E	6.9	3.0	72.7*	A/E	4.8	0.9
NB-53	438 Betty Ave.	R	B (67)	60.7	64.1	-3.4	61.7	64.8	3.1	65.7	A/E	4.0	0.9	67.9	A/E	6.2	3.1
NB-54	426 Betty Ave.	R	B (67)	63.0	64.2	-1.2	64.0	64.6	0.6	65.2	N	1.2	0.6	66.0	A/E	2.0	1.4
NB-55	4464 4th St.	R	B (67)	60.0	62.5	-2.5	61.0	62.8	1.8	63.6	N	2.6	0.8	64.2	N	3.2	1.4
NB-56	4524 E. 2nd St.	R	B (67)	64.0	64.5	-0.5	64.8	65.0	0.2	66.2	A/E	1.4	1.2	68.7	A/E	3.9	3.7
NB-57	4533 E. 2nd St.	R	B (67)	62.1	63.6	-1.5	63.9	63.9	0.0	65.1	N	1.2	1.2	69.2	A/E	5.3	5.3
SB-61	10518 Blumont Rd.	R	B (67)	66.4	69.2	-2.8	66.5	64.4*	0.0	66.2	A/E	0.0	1.8	69.5	A/E	3.0	5.1

Table 3.14-2 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5A	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternatives 6A/B/C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
SB-MS1	5230 Pendleton Ave.	R	B (67)	-	59.7	-	59.7	61.0	1.3	55.1	N	0.0	-5.9	56.0	N	0.0	-5.0
SB-62 ²⁴	10442 Blumont Rd.	R	B (67)	68.0	71.8	-3.8	68.0	72.7	4.7	67.2	A/E	0.0	-5.5	70.7	A/E	2.7	-2.0
SB-63	10334 Blumont Rd.	R	B (67)	65.8	69.3	-3.5	65.8	69.9	4.1	67.0	A/E	1.2	-2.9	70.2	A/E	4.4	0.3
SB-64	No. 20 W. Frontage Rd.	R	B (67)	74.2	75.8	-1.6	74.3	75.7	1.4	74.6	A/E	0.3	-1.1	75.6	A/E	1.3	-0.1
SB-65	No. 4 Frontage Rd.	R	B (67)	74.7	77.0	-2.3	74.8	76.5	1.7	76.3	A/E	1.5	-0.2	77.0	A/E	2.2	0.5
SB-66	No. 221 W. Frontage Rd.	R	B (67)	78.7	80.4	-1.7	78.8	79.8	1.0	81.6	A/E	2.8	1.8	81.3	A/E	2.5	1.5
SB-67	4644 Leonis St.	R	B (67)	65.8	67.5	-1.7	66.5	60.0*	0.0	64.9	N	0.0	4.9	Full Right-of-way Acquisition			
SB-67 M2	4632 Leonis St.	R	B (67)	-	69.8	-	69.8	62.7*	0.0	68.7	A/E	0.0	6.0	NA/69.8	A/E	NA/0.0	7.1
SB-67 M3	2308 Connor Ave.	R	B (67)	-	70.4	-	70.4	62.1*	0.0	70.2	A/E	0.0	8.1	NA/71.6	A/E	NA/1.2	9.5
SB-67 M4	2326 Connor Ave.	R	B (67)	-	70.0	-	70.0	60.9*	0.0	69.4	A/E	0.0	8.5	NA/71.3	A/E	NA/1.3	11.0
SB-67 M5	2347 Connor Ave.	R	B (67)	-	67.4	-	67.4	65.1*	0.0	68.7	A/E	1.3	3.6	NA/68.9	A/E	NA/1.5	3.8
SB-68	4627 Leonis St.	R	B (67)	60.1	61.2	-1.1	60.8	57.5*	0.0	61.5	N	0.7	4.0	NA/64.1	A/E	NA/3.3	6.6
SB-69	1501 S. Sydney St.	R	B (67)	64.6	64.9	-0.3	65.2	62.9*	0.0	64.3*	N	0.0	1.4	Full Right-of-way Acquisition			
SB-69 M1	4543 Dunham St.	R	B (67)	-	63.3	-	63.3	61.6*	0.0	63.9*	N	0.6	2.3	67.6/68.2	A/E	4.3/4.9	6.0/6.6
SB-69 M2	4497 Lovett St.	R	B (67)	-	63.6	-	63.6	64.2*	0.6	66.2*	A/E	2.6	2.0	69.6/69.9	A/E	6.0/6.3	5.4/5.7
SB-69 M3	4476 Triggs St.	R	B (67)	-	63.3	-	63.3	64.2*	0.9	65.9*	A/E	2.6	1.7	68.9/69.0	A/E	5.6/5.7	4.7/4.8
SB-70	1334 Eastern Ave.	R	B (67)	64.9	65.9	-1.0	64.5	66.5*	2.0	66.2*	A/E	1.7	-0.3	Full Right-of-way Acquisition			
SB-70 M1	1333 S. Eastern Ave.	R	B (67)	-	68.5	-	68.5	69.3*	0.8	70.6*	A/E	2.1	1.3	75.6/75.7	A/E	7.1/7.2	6.3/6.4
SB-70 M2	4481 Tuttle St.	R	B (67)	-	67.4	-	67.4	68.7*	1.3	69.7*	A/E	2.3	1.0	72.2/72.2	A/E	4.8/4.8	3.5/3.5
SB-70 M3	1226 Wilkens Ave.	R	B (67)	-	62.7	-	62.7	63.7	1.0	63.9	N	1.2	0.2	66.8	A/E	4.1	3.1
SB-70 M4	4480 E. Olympic Blvd.	C	C (72)	-	65.6	-	65.6	66.3	0.7	69.9	N	4.3	3.6	72.2	A/E	6.6	5.9
SB-70 M5	4334 Whittier Blvd.	K	B (67)	-	69.0	-	69.0	69.0	0.0	71.1	A/E	2.1	2.1	71.5	A/E	2.5	2.5
SB-71 ²⁴	716 Sydney St.	R	B (67)	66.7	68.0	-1.3	66.7	66.4*	0.0	78.3	A/E	11.6	11.9	78.0	A/E	11.3	11.6
SB-71 M1	930 S. Eastern Ave.	R	B (67)	-	63.4	-	63.4	66.6	3.2	69.2	A/E	5.8	2.6	69.8	A/E	6.4	3.2
SB-71 M2	4334 Whittier Blvd.	K	B (67)	-	62.2	-	62.2	65.9	3.7	68.4	A/E	6.2	2.5	69.4	A/E	7.2	3.5
SB-72	4341 5th St.	R	B (67)	64.1	63.3	0.8	63.8	65.7	1.9	67.0	A/E	3.2	1.3	68.0	A/E	4.2	2.3
SB-73 ²⁴	356 S. Humphreys Ave.	R	B (67)	62.8	64.8	-2.0	62.8	65.0	2.2	65.6	A/E	2.8	0.6	68.2	A/E	5.4	3.2
SB-74	211 S. Humphreys Ave.	K	B (67)	64.4	63.7	0.7	66.7	65.6	-1.1	68.0	A/E	1.3	2.4	67.4	A/E	0.7	1.8
All Sites along SR-91 (west and east of I-710) in Long Beach, CA 90805																	
EB-1	205 E. Neece St.	R	B (67)	62.0	63.1	-1.1	63.3	63.5	0.2	63.7	N	0.4	0.2	63.7	N	0.4	0.2
MEB-1	Modeled Site	R	B (67)	-	59.2	-1.1	59.4	59.5	0.1	59.7	N	0.3	0.2	59.7	N	0.3	0.2
MEB-1A	171 W. Bort St.	S	C (67)	-	64.3	-1.1	64.5	64.4	-0.1	64.6	N	0.1	0.2	64.6	N	0.1	0.2
EB-2 ²⁴	277 E. 65th St.	R	B (67)	61.5	63.4	-1.9	62.8	62.7	-0.1	62.8	N	0.0	0.1	62.8	N	0.0	0.1
EB-3 ²⁴	6691 Myrtle Ave.	R	B (67)	61.0	63.2	-2.2	61.0	62.4	1.4	62.4	N	1.4	0.0	64.0	N	3.0	1.6
MEB-3	Modeled Site	R	B (67)	-	64.4	-2.2	64.4	63.5	-0.9	63.6	N	-0.8	0.1	65.7	A/E	1.3	2.2
MEB-3A	Modeled Site	R	B (67)	-	68.9	-2.2	68.9	67.5	-1.4	67.5	A/E	-1.4	0.0	68.9	A/E	0.0	1.4
EB-4	1230 E. 67th St.	R	B (67)	63.7	63.4	0.3	63.7	65.0	1.3	64.7	N	1.0	-0.3	69.4	A/E	5.7	4.4
EB-5	6679 Gaviota Ave.	R	B (67)	66.6	64.3	2.3	66.6	68.0	1.4	66.6	A/E	0.0	-1.4	68.2	A/E	1.6	0.2
WB-1*	233 Artesia Blvd.	R	B (67)	68.4	68.7	-0.3	69.6	68.4	-1.2	65.2	N	-4.4	-3.2	65.2	N	-4.4	-3.2
MWB-1*	6255 DeForest Ave.	P	C (67)	-	64.1	-0.3	65.3	65.0	-0.3	63.2	N	-2.1	-1.8	63.3	N	-2.0	-1.7

Table 3.14-2 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5A	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternatives 6A/B/C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
WB-2	250 E. Artesia Blvd.	R	B (67)	64.2	62.1	2.1	64.8	67.7	2.9	69.7	A/E	4.9	2.0	69.3	A/E	4.5	1.6
WB-3	315 Artesia Ln.	R	B (67)	63.8	61.4	2.4	64.1	67.3	3.2	71.7	A/E	7.6	4.4	71.8	A/E	7.7	4.5
MWB-3	Modeled Site	R	B (67)	-	62.3	2.4	64.2	67.7	3.5	67.9	A/E	3.7	0.2	67.9	A/E	3.7	0.2
WB-5	6757 Lime Ave.	R	B (67)	62.9	62.3	0.6	63.6	64.1	0.5	64.1	N	0.5	0.0	66.5	A/E	2.9	2.4
MWB-5	Modeled Site	R	B (67)	-	61.8	0.6	64.8	63.5	-1.3	65.3	N	0.5	1.8	68.6	A/E	3.8	5.1
WB-6	6755 Lewis Ave.	R	B (67)	65.9	63.4	2.5	65.8	67.2	1.4	67.2	A/E	1.4	0.0	70.0	A/E	4.2	2.8
WB-7	1233 E. Eleanor St.	R	B (67)	67.5	64.8	2.7	67.7	68.0	0.3	68.0	A/E	0.3	0.0	72.5	A/E	4.8	4.5
WB-8	6734 Gaviota Ave.	R	B (67)	63.1	63.2	-0.1	63.3	63.8	0.5	63.9	N	0.6	0.1	70.9	A/E	7.6	7.1
All Sites along I-405 (west and east of I-710) in Long Beach, CA 90805																	
R1	Long Beach Golf Course	G	C (67)	63.5	-	-	65.7	65.7	0.0	65.7	A/E	0.0	0.0	65.7	A/E	0.0	0.0
MR1-A	Modeled Site	R	B (67)	-	-	-	-	62.1	-	64.4	N	-	2.3	64.4	N	-	2.3
MR1-B	Modeled Site	R	B (67)	-	-	-	-	64.0	-	64.2	N	-	0.2	64.2	N	-	0.2
MR1-C	Modeled Site	R	B (67)	-	-	-	-	65.2	-	65.3	N	-	0.1	65.3	N	-	0.1
R2 ²⁴	3730 Magnolia Ave.	R	B (67)	65.2	-	-	65.2	65.2	0.0	65.2	N	0.0	0.0	65.2	N	0.0	0.0
MR2	Modeled Site	R	B (67)	-	-	-	-	60.9	-	60.9	N	-	0.0	60.9	N	-	0.0
R3	3840 Golden Ave.	R	B (67)	62.4	-	-	64.0	64.0	0.0	65.3	N	1.3	1.3	65.3	N	1.3	1.3
R4	22117 Carlerick Ave.	R	B (67)	61.4	-	-	62.1	62.1	0.0	63.1	N	1.0	1.0	63.1	N	1.0	1.0
R5	2850 221st Pl.	R	B (67)	62.7	-	-	63.5	63.5	0.0	64.8	N	1.3	1.3	64.8	N	1.3	1.3
MR5-A	Modeled Site	R	B (67)	-	-	-	-	63.3	-	63.3	N	-	0.0	63.3	N	-	0.0
MR5-B	Modeled Site	R	B (67)	-	-	-	-	65.9	-	65.9	A/E	-	0.0	65.9	A/E	-	0.0
MR5-C	Modeled Site	R	B (67)	-	-	-	-	63.0	-	63.0	N	-	0.0	63.0	N	-	0.0
R6 ²⁴	2005 Wardlow Rd.	R	B (67)	64.0	-	-	64.0	64.0	0.0	64.0	N	0.0	0.0	64.0	N	0.0	0.0
MR6-A	Modeled Site	R	B (67)	-	-	-	-	62.6	-	62.6	N	-	0.0	62.6	N	-	0.0
MR6-B	Modeled Site	R	B (67)	-	-	-	-	63.1	-	63.1	N	-	0.0	63.1	N	-	0.0

Source: I-710 Corridor Project Traffic Noise Study Report, January 2012.

²⁴ 24-hour noise measurement site.

Notes: All noise levels are in dBA L_{eq}(h).

Land Use: R=Residential; S=School; P=Park & Recreation; G=Golf Course; K=Cemetery; H=Hotel/Motel

Impact Type: N=No Impact; A=Approaches; E=Exceeds; SNI=Substantial Noise Increase

* Predicted noise levels exclude noise contribution from Artesia Blvd.

dBA = A-weighted decibels

I-405 = Interstate 405

I-710 = Interstate 710

L_{eq}(h) = one-hour A-weighted equivalent continuous sound level

SR-91 = State Route 91

- **Cardiovascular Disease:** Specifically increased blood pressure and hypertension associated with prolonged noise exposure near roadways above 70 dBA (Bodin et al., 2009).

3.14.4 ENVIRONMENTAL CONSEQUENCES

3.14.4.1 PERMANENT IMPACTS

GROUNDBORNE NOISE AND VIBRATION IMPACTS. Because the rubber tires and suspension systems of trucks and other on-road vehicles provide vibration isolation, it is unusual for on-road vehicles to cause groundborne noise or vibration problems. When on-road vehicles cause effects, such as the rattling of windows, the source is almost always airborne noise. Groundborne vibrations are mostly associated with passenger vehicles and trucks traveling on poor roadway conditions such as potholes, bumps, expansion joints, or other discontinuities in the road surface. Smoothing the bump or filling the pothole will usually solve the problem. As the proposed project will use new asphalt pavement followed with proper maintenance, there will be no potholes, bumps, expansion joints, or other discontinuities in the road surface that would generate groundborne vibration or direct or indirect noise impacts from vehicular traffic traveling on I-710.

TRAFFIC NOISE IMPACTS. Future noise levels were predicted using traffic characteristics that would yield the worst hourly traffic noise impact on a regular basis. The design-year (2035) peak-hour traffic volumes, vehicle classification percentages, and traffic speeds were provided by the project engineer and used as the future traffic for areas between Ocean Blvd. and SR-60.

Table 3.14-2 summarizes the traffic noise modeling results for the design-year conditions with and without the project. Predicted design-year traffic noise levels with the project are compared to existing conditions and to design-year no-build conditions. The comparison to existing conditions is included in the analysis to identify traffic noise impacts under 23 CFR 772. The comparison to the future no build condition indicates the traffic noise increase resulting from the project. Traffic noise impacts are predicted to occur at Activity Category B, C, D, and E land uses within the Study Area, and noise abatement has been considered at all noise receptors where such impacts were predicted.

3.14.5 NOISE ABATEMENT CONSIDERATION

In accordance with 23 CFR 772, noise abatement was considered where noise impacts were predicted in areas of frequent human use that would benefit from a lowered noise level. Potential noise abatement measures identified in the Traffic Noise Analysis Protocol include the following:

- Avoiding the impact by using design alternatives, such as altering the horizontal and vertical alignment of the project;
- Constructing noise barriers;
- Acquiring property to serve as a buffer zone;
- Using traffic management measures to regulate types of vehicles and speeds; and
- Acoustically insulating public-use or nonprofit institutional structures.

All of these abatement options have been considered. However, because of the configuration and location of the project, abatement in the form of soundwalls and acoustic insulation are the only type of abatement that is considered feasible. The following is a discussion of noise abatement considered for each Activity Category and evaluation area for which traffic noise impacts are predicted.

3.14.5.1 ACTIVITY CATEGORY A

There are no noise-sensitive receptors under this activity category.

3.14.5.2 ACTIVITY CATEGORY B

Most of the noise-sensitive land uses are residences along the I-710 between Ocean Blvd. and SR-60. Traffic noise impacts are considered to occur at receptor locations where predicted design-year noise levels are at least 12 dBA greater than existing noise levels (substantial noise increase), or where predicted design-year noise levels approach (within one dBA) or exceed the 67 dBA $L_{eq}(h)$ NAC. All impacted residential areas within the project limits have been considered for noise abatement, and acoustically feasible soundwalls have been provided in the *Traffic Noise Study Report* for the proposed project. Table 3.14-2 shows all the impacted sites for which noise abatement has been considered. There are impacted residential areas where, due to the presence of an existing noise barrier, raising the height of the barrier did not achieve the minimum required five dB noise attenuation and at least seven dB noise reduction at one or more benefited receptors. The noise reduction charts are provided in Appendix B of the *Traffic Noise Study Report*.

3.14.5.3 ACTIVITY CATEGORY C

This activity category includes parks and recreational areas, golf courses, a medical facility, places of worship, schools, and cemeteries.

1. Golden Shore Recreational Vehicle (RV) Park (represented by noise barrier Site Nos. NB-A and NB-B) is located south of Shoreline Dr. and east of the Los Angeles River. Noise measurements were conducted at a swimming pool and modeled at a nearby RV in order to determine noise impacts. Noise impacts are predicted to occur at the RV Park for both Alternatives 5A and 6A/B/C, and noise abatement in the form of soundwalls (SW-500 and SW-600, respectively) has been considered.
2. Cesar E Chavez Park is located on the southeast corner of Shoreline Dr. and 6th St. east of the Los Angeles River in the city of Long Beach and is represented by Site Nos. NB-1 and NB-2. No noise impacts were identified at the park for both Alternatives 5A and 6A/B/C, and no noise abatement has been considered.
3. Virginia Country Club is located between I-405 and Del Amo Blvd. along northbound I-710 in the city of Long Beach. Site No. NB-13 represents an outdoor golf course area. No impacts were identified at the golf course for both Alternatives 5A and 6A/B/C, and no noise abatement has been considered.
4. The City of Compton Golf Course is located between Alondra Blvd. and Compton/ Somerset Blvds. along northbound I-710 in the city of Compton. This golf course is represented by Site No. NB-27. Based on the noise analysis, noise impacts have been predicted to occur at this golf course for Alternatives 6A/B/C only. Therefore, noise abatement in the form of a soundwall (SW-613) was considered.
5. Dills Park is located between Compton Blvd. and Rosecrans Ave. along northbound I-710 in the city of Paramount and is represented by Site No. NB-30. No noise impacts have been identified for this park under Alternative 5A. However, noise impacts were identified at this park because a substantial noise increase of 12 dB or more is predicted under Alternatives 6A/B/C. Noise abatement in the form of a soundwall (SW-615) was considered under Alternatives 6A/B/C only.
6. Hollydale Park is located between I-105 and SR-90 along northbound I-710 in the city of South Gate. This park is represented by Site No. NB-34. No noise impacts were identified at this park under both Alternatives 5A and 6A/B/C, and no noise abatement was considered.
7. Julia Russ Asmus Park is located at 8321 Jaboneria Rd. in the city of Bell Gardens. The bench (a noise-sensitive area) located in the park is represented by the nearby Site No. NB-36. Traffic noise impacts were identified at this park under both Alternatives 5A and 6A/B/C. Noise abatement in the form of soundwalls (SW-510 for Alternative 5A and SW-617A/B + SW-617TL for Alternatives 6A/B/C) was considered.

8. Bandini Park (Site No. NB-44M2) is located between Washington Blvd. and I-5 in the city of Commerce. This park is represented by Site No. NB-44M2. Traffic noise impacts were identified at this park for Alternative 5A, Alternatives 6A/B/C under Design Option 1, and Alternatives 6A/B/C under Design Option 2. Noise abatement in the form of soundwalls (SW-512 for Alternative 5A, SW-621A for Alternatives 6A/B/C under Design Option 1, and SW-621B for Alternatives 6A/B/C under Design Option 2) was considered for this area.
9. The Kingdom Hall (place of worship) is located along the I-710 southbound off-ramp at Pacific Coast Hwy.; however, there is no exterior area of frequent human use that would benefit from a lowered noise level.
10. Iglesia Bautista (place of worship) is located on the southwest corner of I-710 and I-5 and has no exterior area of frequent human use that would benefit from a lowered noise level.
11. Cesar Chavez Elementary School is located between Broadway and 3rd St. along northbound I-710 in the city of Long Beach. This school is represented by Site Nos. NB-1A (inside classroom) and NB-1B (outside area of frequent human use). Based on the noise analysis, no traffic noise impacts were predicted to occur at this school for both Alternatives 5A and 6A/B/C, and no noise abatement was considered.
12. Edison Elementary School is located between 6th St. and 7th St. along the northbound side of I-710 in the city of Long Beach. This school is represented by Site Nos. NB-3 (exterior) and NB-3A (interior). Based on the noise analysis, no noise impacts were predicted to occur at this school for both Alternatives 5A and 6A/B/C, and no noise abatement was considered.
13. Perry Lindsey Academy is located at the northwestern corner of Del Amo Blvd. and Long Beach Blvd. along northbound I-710 in the city of Long Beach. This school is represented by Site Nos. NB-15 (exterior) and NB-15A (interior). No noise impacts were predicted to occur at this school for both Alternatives 5A and 6A/B/C, and no noise abatement was considered.
14. Colin Powell Academy is located at the northwestern corner of Victoria St. and Long Beach Blvd. along southbound I-710 in the city of Long Beach. This school is represented by Site Nos. SB-19 (exterior) and SB-19A (interior classroom). Based on the noise analysis, no noise impacts are predicted to occur at this school for both Alternatives 5A and 6A/B/C, and no noise abatement was considered.

15. Boystown of California School is located between Alondra Blvd. and Compton Blvd. along southbound I-710 in the city of Compton. This school is represented by Site Nos. SB-34A (interior) and SB-34B (exterior). The exterior noise levels at this school exceed the NAC under Alternatives 6A/B/C. Noise abatement in the form of a soundwall was considered. However, based on the noise analysis, increasing the height of the existing 12-foot-high soundwall to 20 ft in combination with a 20-foot-high soundwall on the edge of the truck lanes would only provide a noise level reduction up to three dB and would not provide the minimum required noise reduction of five dB for acoustical feasibility and seven dB noise reduction to at least one receptor for reasonableness.
16. Marco Santonio Firebaugh High School is located between I-105 and Martin Luther King Jr. Blvd. along southbound I-710 in the city of Lynwood. This school is represented by Site Nos. SB-49 (inside classroom) and SB-50 (exterior). Based on the noise analysis, traffic noise impacts at the outdoor frequent human use area associated with the school are predicted to occur under Alternatives 6A/B/C only. Noise abatement in the form of a soundwall was considered. However, based on the noise analysis, an eight-foot- to 16-foot-high soundwall along the edge of the freeway provides only a noise reduction of one to two dB. Additionally, the combination of a 20-foot-high soundwall on the edge of the freeway and a 20-foot-high soundwall on the edge of the truck lanes would provide a noise level reduction of three dB, which does not meet the minimum required noise reduction of five dB for acoustical feasibility and seven dB noise reduction to at least one receptor for reasonableness.
17. Vista High School is located between Martin Luther King Jr. Blvd. and State Route 90 (SR-90) along southbound I-710 in the city of Lynwood. This school is represented by Site No. SB-53 (exterior). Based on the noise analysis, traffic noise impacts are not predicted to occur for both Alternatives 5A and 6A/B/C, and no noise abatement was considered.
18. Jefferson Clinton Elementary School is located between Alondra Blvd. and Compton Blvd. along northbound I-710 in the city of Compton. This school is represented by Site No. NB-27A (classroom interior) and Site No. NB-27C (exterior). Based on the noise analysis, no traffic noise impacts were predicted at the school for both Alternatives 5A and 6A/B/C for both exterior and interior. No noise abatement was considered.
19. Dominguez High School is located between Alondra Blvd. and Compton Blvd. along northbound I-710 in the city of Compton. This school is represented by Site Nos. 27B (exterior) and 27-D (classroom interior). Based on the noise analysis, no traffic noise impacts were predicted to occur at this school for both Alternatives 5A and 6A/B/C for both exterior or interior. No noise abatement has been considered.

20. Hollydale School is located between Interstate 105 (I-105) and SR-90 along northbound I-710 in the city of South Gate. The school is represented by Site No. NB-32 (exterior). Based on the noise analysis, no traffic noise impacts were predicted to occur at this school for both Alternatives 5A and 6A/B/C, and no noise abatement was considered.
21. Bell Gardens Elementary School is located at 5620 Quinn St. in the city of Bell Gardens. The school is represented by Site Nos. NB-36 and NB-37. The playing field near the freeway is generally not considered an area of frequent human use that would benefit from a lowered noise level. Classroom interior noise levels were not measured because they are more than 300 feet away from the freeway. Acoustically feasible soundwalls SW-510 under Alternative 5A and SW-617 + SW-617TL under Alternatives 6A/B/C would provide sufficient noise abatement for the Bell Gardens Elementary School.
22. Humphreys Avenue Elementary School is located at 500 South Humphreys Ave. in the city of Los Angeles. There are existing 12-foot-high soundwalls along the northbound I-710. The school is represented by Site No. NB-53. Traffic noise impacts were predicted to occur at this school under both Alternatives 5A and 6A/B/C, and noise abatement was considered. However, based on the noise analysis, increasing the height of the existing ten-foot- to 12-foot-high soundwall to 16 feet only would only provide a noise level reduction of one to two dB. Therefore, a higher soundwall would not provide the minimum required noise reduction of five dB for acoustical feasibility and seven dB noise reduction to at least one receptor for reasonableness.
23. The Los Angeles County Fire Station (which may contain housing for firefighters) is located near the southwest corner of I-710 and Whittier Blvd. This fire station is represented by Site No. SB-71M1. Traffic noise impacts were predicted to occur under both Alternatives 5A and 6A/B/C, and noise abatement in the form of soundwalls (SW-518 + SW-519 under Alternative 5A and SW-624 + SW-625 under Alternatives 6A/B/C) along southbound I-710 were considered.
24. Home of Peace Memorial Park is a cemetery located at the southwest corner of Whittier Blvd. and South Eastern Ave. along the southbound side of I-710 in the city of Los Angeles. This cemetery is represented by Site No. SB-70M5. Traffic noise impacts were predicted to occur for both Alternatives 5A and 6A/B/C, and noise abatement in the form of soundwalls (SW-517 + SW-518 under Alternative 5A and SW-623 + SW-624 under Alternative 6A/B/C) were considered.
25. Calvary Cemetery is located adjacent and north of Home of Peace Memorial Park in the city of Los Angeles. The nearest noise-sensitive area is over 500 feet away from the I-710. Therefore, noise measurements were not conducted or modeled for this cemetery.

26. Serbian Cemetery is located at the southwest quadrant of the I-710 and SR-60 interchange in the city of Los Angeles. The cemetery is represented by Site No. SB-74. This site is located beyond the roadwork limits but is within the project limits. A noise measurement was taken at the adjacent chapel outdoor area. Traffic noise impacts were predicted to occur at the outdoor area associated with the chapel for both Alternatives 5A and 6A/B/C. Noise abatement in the form of soundwalls (SW-520 under Alternative 5A and SW-627 under Alternatives 6A/B/C) was considered.

3.14.5.4 ACTIVITY CATEGORY D

This activity category evaluates interior noise levels that have the following activities: auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.

1. Vista High School is located between Martin Luther King Jr. Blvd. and SR-90 along southbound I-710 in the city of Lynwood. The school is represented by Site No. SB-52 (classroom interior). Traffic noise impacts were predicted for both Alternatives 5A and 6A/B/C, and noise abatement in the form of soundwalls were considered. However, based on the noise analysis, an eight-foot- to 16-foot-high soundwall along the edge of shoulder that would provide a noise level reduction of one to two dB would not meet the acoustical feasibility criteria of a minimum five dB noise reduction and a reasonableness criteria of seven dB noise reduction for at least one receptor. Therefore, in accordance with Section 216 of the California Street and Highway Code, interior noise abatement measures are required to reduce noise levels to 52 dBA L_{eq} or below.

3.14.5.5 ACTIVITY CATEGORY E

This activity category evaluates exterior noise levels that have the following activities: hotel, motels, offices, and restaurants/bars.

1. The Hilton Hotel, Long Beach, is located on the northeast corner of Ocean Blvd. and Golden Shore in the city of Long Beach. The swimming pool is located approximately 25–30 feet above ground in elevation. No traffic noise impacts are predicted to occur at the swimming pool area.
2. The Luxury Inn Motel is located just north of Long Beach Blvd. along southbound I-710. The outdoor frequent human use area (spa) associated with the motel is represented by Site No. SB-20. Based on the noise analysis, no traffic noise impacts were predicted to occur.

3. The McDonald's Restaurant is located at the southwest corner of Olympic Blvd. and Eastern Ave. in the city of Los Angeles. The outdoor seating area associated with the fast-food restaurant is represented by Site No. SB-70M4. Traffic noise impacts were predicted to occur at the outdoor seating area for Alternatives 6A/B/C, and noise abatement in the form of a soundwall was considered. Based on the noise analysis, a 16-foot-high soundwall at the edge of shoulder would meet the acoustical feasibility criteria, but even a 20-foot-high soundwall would not meet the reasonableness criteria of a seven dB noise reduction for at least one receptor.

3.14.5.6 ACTIVITY CATEGORY F

There are many industrial buildings, maintenance facilities, manufacturing, retail facilities, and warehousing units located within the project limits. Additionally, there is a logging facility, a bus yard, and several rail yards identified along the I-710 within project limits. However, since no areas of frequent human use were identified in this category, noise abatement was not necessary to consider.

3.14.5.7 FEASIBILITY

Each soundwall was evaluated for feasibility based on achievable noise reduction. For each sound barrier found to be acoustically feasible, the reasonable cost allowances were calculated. The following is a description of acoustically feasible sound barriers for the build alternatives. The locations of acoustically feasible soundwalls for the build alternatives are shown in Figures 3.14-2 and 3.14-3.

ALTERNATIVE 5A: SOUTHBOUND I-710.

- Soundwall SW-500 is located on the southwestern corner of Shoreline Dr. and Golden Shore. SW-500, with a height that ranges from eight feet to 14 feet, would provide noise reduction of up to 11 dBA for the residences associated with the Golden Shore RV Park.
- Soundwall SW-501 is located along southbound I-710, between Pacific Coast Hwy. and Willow St. SW-501 would replace the existing ten-foot- to 12-foot-high soundwall due to the improvements of the proposed project. SW-501 would provide a noise level reduction of five dB or more for residences located behind this barrier.
- Soundwall SW-502 is located along southbound I-710, between Willow St. and north of Wardlow Rd. SW-502 would replace the existing ten-foot-high soundwall due to the improvements of the proposed project. The current loop off-ramp at Wardlow Rd. would be closed. SW-502 would provide a noise level reduction of five dB or more for residences located behind this barrier.

- Soundwall SW-503 is located along the southbound Interstate 405 (I-405) to the southbound I-710 connector between north of Wardlow Rd. and the I-405. SW-503 would provide a noise level reduction of five dB or more for residences located behind this barrier.
- Soundwall SW-503A is located along the southbound I-710, between Long Beach Blvd. and Barclay St. SW-503A would join the existing eight-foot-high soundwall located on the State right-of-way between Barclay St. and Adams St. SW-503A would provide a noise level reduction of five dB or more for residences located behind this barrier.
- Soundwall SW-503B is located along southbound I-710, between Barclay St. and Adams St. The existing 8-foot-high soundwall was evaluated for a higher height from ten feet to 16 feet. SW-503B would provide a noise level reduction of five dB or more for residences located behind this barrier.
- Soundwall SW-504 is located along southbound I-710, between the southbound I-710 to eastbound SR-91 connector and the Atlantic Ave. Bridge. SW-504 would provide a noise level reduction of five dB or more at residences located behind the barrier.
- Soundwall SW-505 is located along southbound I-710, between north of Atlantic Ave. and Alondra Blvd.
- Soundwall SW-506 is located along southbound I-710 at the edge of shoulder, between Alondra Blvd. and the I-710 southbound on-ramp. Both SW-505 and SW-506 would provide a noise level reduction of five dB or more at the mobile homes located behind the barrier.
- Soundwall SW-507 is located along southbound I-710, between north of Alondra Blvd. and the Compton Blvd. Bridge. SW-507 would provide a noise level reduction of five dB or more at residences located behind the barrier.
- Soundwall SW-509 is located along southbound I-710 at the edge of shoulder, between Imperial Hwy. and Firestone Blvd. A 12-foot-high soundwall would be constructed under Expenditure Authorization (EA) 202100 between Imperial Hwy. and the Los Angeles River, and for the purpose of this project, is assumed to be an existing soundwall. It will be removed and replaced with SW-509. SW-509 would provide a noise level reduction of five dB or more for noise-sensitive receptors located behind the barrier. A total of 55 to 272 noise-sensitive receptors, including the Thunderbird Villa Mobile Home Park, would benefit from the barrier.

- Soundwalls SW-513 and SW-514 are located along southbound I-710 at the edge of shoulder, between Washington Blvd. and Noakes St. A 12-foot-high soundwall would be constructed under EA 202100 along the southbound off-ramp to Washington Blvd. and is assumed to be an existing sound wall and would be removed due to the improvements of the proposed project.
- Soundwalls SW-517 and SW-518 are located along southbound I-710 at the edge of shoulder, between Olympic Blvd. and Whittier Blvd. Both SW-517 and SW-518 would provide a noise level reduction of five dB or more at the Home of Peace Memorial Park cemetery and one residential property located on South Eastern Ave.
- Soundwall SW-519 is located along southbound I-710 and the I-710 off-ramp to South Eastern Ave. at the edge of shoulder between Olympic Blvd. and South Humphreys Ave. SW-519 would provide a noise level reduction of five dB or more for the Los Angeles County Fire Department Fire Station No. 3, the Home of Peace Memorial Park cemetery, and residences located along Whittier Blvd. The Davita Doctors Dialysis Center of East Los Angeles and East Los Angeles Family Dentistry are medical facilities adjacent to Fire Station No. 3. The two medical facilities do not have outdoor frequent human use areas and are not considered noise-sensitive receptors. A 12-foot-high soundwall would be constructed under EA 202100 and would be replaced due to the improvements of the proposed project.
- Soundwall SW-520 is located on the southwestern corner of I-710 and SR-60 along the State right-of-way. SW-520 would provide a noise level reduction of five dB or more at the outdoor frequent human use area associated with the chapel for the Serbian Cemetery.

ALTERNATIVE 5A: NORTHBOUND I-710.

- Soundwall SW-510 is located along northbound I-710, at the State right-of-way, between Firestone Blvd. and Clara St. SW-510 would provide a noise level reduction of five dB or more for the residences represented by Site Nos. NB-36 and NB-37 and the Bell Gardens Elementary School located between Site Nos. NB-36 and NB-37. SW-510 would replace a section of the existing 12-foot-high soundwall due to the improvements of the proposed project located near Site No. NB-37. The north end of SW-510 would join the existing soundwall at STA 1013+00 along the State right-of-way.
- Soundwalls SW-511 and SW-512 are located along northbound I-710 at the edge of shoulder between Washington Blvd. and Noakes St. A soundwall would be constructed along the northbound on-ramp from Washington Blvd. under EA 202100 and would be

removed due to the improvements of the proposed project. Both SW-511 and SW-512 would provide a noise level reduction of five dB or more for residences located behind the barrier.

- Soundwalls SW-515 and SW-516 are located along northbound I-710 at the edge of shoulder between Olympic Blvd. and South Humphreys Ave. The existing soundwalls would be constructed under EA 202101 and would be demolished due to the proposed improvements under Alternative 5. SW-515 and SW-516 would attenuate traffic noise levels by five dB or more for residences located along the northbound side of I-710.

ALTERNATIVE 5A: NORTHBOUND I-405.

- Soundwall SW-405A is located along northbound I-405 at the edge of shoulder, and the existing ten-foot-high soundwall would be replaced from Union Pacific Railroad (UP Railroad) to the northbound off-ramp at Alameda St. Although acoustically not feasible, SW-405A must be constructed to replace the existing ten-foot-high soundwall.

ALTERNATIVE 5A: SOUTHBOUND I-405.

- Soundwall SW-405B is located along northbound I-710 to southbound I-405 connector at the edge of shoulder to match the existing ten-foot-high soundwall just south of Pacific Pl./UP Railroad bridge. SW-405B would replace the existing ten-foot-high soundwall between the Pacific Pl. off-ramp and Pacific Pl. due to the improvements of the proposed project. Although acoustically not feasible, SW-405B must be constructed to replace the existing ten-foot-high soundwall.

ALTERNATIVES 6A/B/C: SOUTHBOUND I-710.

- Soundwall SW-600 is located on the southwest corner of Shoreline Dr. and Golden Shore. It would benefit the residential area associated with Golden Shore RV Park. SW-500 would provide a noise level reduction of five dB or more for residences located at the Golden Shore RV Park.
- Soundwall SW-601 is located along southbound I-710, between Pacific Coast Hwy. and Willow St. SW-601 would replace the existing ten-foot- to 12-foot-high soundwall due to the improvements of the proposed project. Because of the presence of the elevated freight corridor and associated noise impacts, SW-601 would benefit far fewer homes. Therefore, SW-601TL, an eight-foot- to ten-foot-high soundwall in conjunction with SW-601 on the southbound freight corridor, would provide a noise level reduction of five dB or more for residences located behind the barrier.

- Soundwall SW-602 is located along southbound I-710 between Willow St. and north of Wardlow Rd. SW-602 would replace the existing ten-foot-high soundwall due to the improvements of the proposed project. The current loop off-ramp at Wardlow Rd. would be closed. SW-602TL, which comprises one eight-foot-high and one ten-foot-high soundwall in conjunction with SW-602 on the southbound freight corridor, was analyzed and would provide a noise level reduction of five dB or more for the residences located behind the barrier.
- Soundwall SW-603 is located along southbound I-710, between north of Wardlow Rd. and the I-405 along the southbound I-405 to southbound I-710 connector. SW-603 would provide a noise level reduction of five dB or more for residences located behind the barrier.
- Soundwall SW-603A 603B is located along southbound I-710, between Long Beach Blvd. and Barclay St. SW-503A would join the existing eight-foot-high soundwall located on the State right-of-way between Barclay St. and Adams St. SW-503A would provide a noise level reduction of five dB or more for residences located behind the barrier.
- Soundwall SW-603B is located along southbound I-710, between Barclay St. and Adams St. SW-603B would provide a noise level reduction of five dB or more for residences located behind the barrier. The existing 8-foot-high soundwall was evaluated with a higher height from ten feet to 16 feet.
- Soundwall SW-608 is located along southbound I-710 from the I-710 southbound to SR-91 eastbound connector to the Atlantic Ave. Bridge. SW-608 would provide a noise level reduction of five dB or more at residences located behind the barrier.
- Soundwall SW-610 is located along southbound I-710 at the edge of shoulder, between north of Atlantic Ave. and Alondra Blvd.
- Soundwall SW-611 is located along southbound I-710 at the edge of shoulder, between Alondra Blvd. and the I-710 southbound on-ramp. Both SW-610 and SW-611 would provide a noise level reduction of five dB or more for the mobile homes located behind the barrier.
- Soundwall SW-612 is located along southbound I-710, between north of Alondra Blvd. and Rose St. SW-612 would provide a noise level reduction of five dB or more for residences located behind the barrier.

- Soundwall SW-614 is located along southbound I-710, between north of Rosecrans Ave. and Olanda St. SW-614 would provide a noise level reduction of five dB or more for residences located behind the barrier.
- Soundwall SW-616 is located along southbound I-710 at the edge of shoulder, between Imperial Hwy. and Firestone Blvd. SW-616 would provide a noise level reduction of five dB for the Thunderbird Villa Mobile Home Park without constructing soundwalls on the freight corridor structure. A 12-foot-high soundwall that would be constructed under EA 202100 between Imperial Hwy. and the Los Angeles River is assumed to be existing and would be removed due to the improvements of the proposed project. A total of 19 to 71 noise-sensitive receptors would benefit from this barrier.
- Soundwalls SW-616 and SW-616TL are located along southbound I-710 at the edge of shoulder and on the freight corridor structure between Imperial Hwy. and Firestone Blvd. A 12-foot-high soundwall that would be constructed under EA 202100, between Imperial Hwy. and the Los Angeles River, is assumed to be existing and would be removed under this project. Both SW-616 and SW-616TL, at 10 feet high along the truck lane structure, would provide a noise level reduction of five dB or more at residences located west of the Los Angeles River and the Thunderbird Villa Mobile Home Park. A total of 67 to 255 noise-sensitive receptors would benefit from these barriers.
- Soundwalls SW-620A and SW-620B are located along southbound I-710 at the edge of shoulder, between Washington Blvd. and Noakes St. Both SW-620A and SW-620B would provide a noise level reduction of five dB or more for residences under Alternatives 6A/B/C Design Option 2. A 12-foot-high soundwall would be constructed under EA 202100 along the southbound off-ramp to Washington Blvd. and would be removed due to the improvements of the proposed project.
- Soundwalls SW-622A and SW-622B are located along southbound I-710 at the edge of shoulder between Noakes St. and Interstate 5 (I-5). Both SW-622A and SW-622B would replace an existing soundwall and a 12-foot-high soundwall that would be constructed under EA 202100 due to the improvements of the proposed project. Both SW-622A and SW-622B would not provide a noise level reduction of five dB or more. Both SW-622A and SW-622B, in combination with soundwalls on the viaduct, would have to be 24 feet high to provide a seven dBA noise reduction at Site No. SB70M1. The combination of soundwalls would have to be 30 feet high to provide a noise level reduction of five dB at Site No. SB69M1. The decision to provide soundwalls, in excess of SW-622A and SW-622B, would need to be made based on feasibility and reasonableness criteria. This soundwall analysis is applicable to Alternatives 6A/B/C Design Options 1 and 2.

- Soundwalls SW-623, SW-624, and SW-625 are located along southbound I-710 at the edge of shoulder between Olympic Blvd. and Whittier Blvd. These soundwalls would provide a noise level reduction of five dB or more at the Home of Peace Memorial Park cemetery, the Los Angeles County Fire Department Fire Station No. 3, and one residential property on South Eastern Ave. The Davita Doctors Dialysis Center of East Los Angeles and East Los Angeles Family Dentistry are medical facilities adjacent to Fire Station No. 3. These two medical facilities do not have outdoor frequent human use areas and are not considered noise-sensitive receptors. SW-625 is an extension of a 12-foot-high soundwall that would be constructed under EA 202100. SW-626 would replace a section of the 12-foot-high soundwall that would be constructed under EA 202100 due to the improvements of the proposed project.
- Soundwall SW-626 is located along southbound I-710 at the edge of shoulder between Whittier Blvd. and South Humphreys Ave. A 12-foot-high soundwall near Site No. SB-71 that would be constructed under EA 202101 is assumed to be an existing soundwall, and a portion of the barrier would be removed due to the improvements of the proposed project. SW-626 is required to replace the removed section.
- Soundwall SW-627 is located on the southwestern corner of I-710 and SR-60 along southbound I-710 California Department of Transportation (Caltrans) right-of-way. SW-627 would provide a noise level reduction of five dB or more at the outdoor frequent human use area associated with the chapel for the Serbian Cemetery. An 18-foot-high soundwall is the minimum height wall that would meet the noise reduction design goal of providing at least a seven dBA noise reduction at one or more benefited receptors.

ALTERNATIVES 6A/B/C: NORTHBOUND I-710.

- Soundwall SW-604 is located along northbound I-710 and on the east side of Los Angeles River near a dike, between Ginger Dr. and Artesia Blvd. SW-604 would provide a noise level reduction of five dB or more for residences located behind the barrier.
- Soundwall SW-609A and SW-609B are located along northbound I-710 and the east side of the Los Angeles River near a dike, between SR-91 and Alondra Blvd. Both SW-609A and SW-609B would provide a noise level reduction of five dB or more for residences located south and north of Atlantic Ave. Based on the noise analysis, a 12-foot- to 16-foot-high soundwall on the northbound side of the freight corridor would provide a noise level reduction of four dB. Also, a 20-foot-high soundwall would provide a noise level reduction of five dB.

- Soundwall SW-613 is located along northbound I-710 and the east side of the Los Angeles River near a dike, between Alondra Blvd. and Somerset Blvd. SW-613 would provide a traffic noise reduction of five dB or more for the golf course located south of Summerset Blvd. Based on the noise analysis, a 14-foot- to 20-foot-high soundwall located on the northbound side of the freight corridor would provide a noise level reduction of four dB for the impacted receptors located east of the Los Angeles River.
- Soundwall SW-615 is located along northbound I-710 and the east side of the Los Angeles River near a dike, between Somerset Blvd. and Rosecrans Ave. SW-615 would provide a noise level reduction of five dB or more for residences located north of Somerset Blvd. and south of Rosecrans Ave. Based on the noise analysis, a ten-foot- to 20-foot-high soundwall on the northbound side of the freight corridor would provide two to five dB noise reduction for the impacted receptors located east of the Los Angeles River.
- Soundwall SW-617A is located along northbound I-710 Caltrans right-of-way, between Firestone Blvd. and Clara St. SW-617A would provide a noise level reduction of five dB or more without constructing soundwalls on the freight corridor structure for receptors represented by Site Nos. NB-36 and NB-37. Also, SW-617A located near Site No. NB-37 would replace the existing 12-foot-high soundwall due to the improvements of the proposed project. The north end of SW-617A would join the existing soundwall at Caltrans right-of-way.
- Soundwalls SW-617B, SW-617TLN, and SW-617TLS are located along northbound I-710 Caltrans right-of-way and on the truck lane structures, between Firestone Blvd. and Clara St. A ten-foot-high soundwall on both the northbound and southbound freight corridor structure is the minimum height that would provide a traffic noise reduction of five dB or more at residences represented by Site No. NB-37.
- Soundwalls SW-618, SW-619, SW-618TLN, and SW-618TLS are located along northbound I-710 Caltrans right-of-way and on the freight corridor structures between Florence Ave. and Slauson Ave. The existing 14-foot-high wall located along the Caltrans right-of-way line on the northbound side of I-710 would need to be raised or replaced with a higher soundwall. A 10-foot-high soundwall on both the northbound and southbound freight corridor structures is the minimum height that would provide a traffic noise reduction of five dB or more at residences located north and south of Gage Ave.
- Soundwalls SW-620 and SW-621A are located along northbound I-710 at the edge of shoulder, between Washington Blvd. and Noakes St. Both SW-620 and SW-621A would provide a noise level reduction of five dB or more at residences located behind the

barrier under Alternatives 6A/B/C Design Option 1. A soundwall would be constructed under EA 202100 along the northbound on-ramp at Washington Blvd. and would be removed due to the improvements of the proposed project. Also, a soundwall would be constructed under EA 202100 along the southbound off-ramp to Washington Blvd. and would be removed under Alternatives 6A/B/C Design Option 1 due to the improvements of the proposed project.

- Soundwalls SW-620 and SW-621B are located along northbound I-710 at the edge of shoulder between Washington Blvd. and Noakes St. Both SW-620 and SW-621B provided a noise level reduction of five dB or more at residences located behind the barrier and Bandini Park under Alternatives 6A/B/C Design Option 2. A soundwall would be constructed under EA 202100 along the northbound on-ramp at Washington Blvd. and would be removed due to the improvements of the proposed project.
- Soundwall SW-622 is located along northbound I-710 at the edge of shoulder between Noakes St. and the I-5. A 12-foot-high soundwall would be constructed under EA 202101 and would be demolished due to the improvements of the proposed project. SW-622 would provide a noise level reduction of five dB or more and would be required for Alternatives 6A/B/C Design Options 1 and 2. A 12-foot-high soundwall would be constructed under EA 202100, and the existing 12-foot-high soundwall along the I-5 to the southbound I-710 connector would be removed due to the improvements of the proposed project.

ALTERNATIVES 6A/B/C: EASTBOUND SR-91.

- Soundwall SW-606 is located along eastbound SR-91, between Atlantic Blvd. and east of Orange Ave. SW-606 is located on the retaining wall and would provide a noise level reduction of five dB or more at residences located behind the barrier. Also, SW-606 would replace a portion of the existing ten-foot-high soundwall due to the improvements of the proposed project.

ALTERNATIVES 6A/B/C: WESTBOUND SR-91.

- Soundwall SW-607 is located along westbound SR-91, between east of Atlantic Blvd. and Rose Ave. SW-607 is located on the retaining wall and would provide a traffic noise reduction of five dB or more at the residences located behind the barrier. Also, SW-607 would replace a major portion of the existing 10-foot-high soundwall due to the improvements of the proposed project.

ALTERNATIVES 6A/B/C: NORTHBOUND I-405.

- Soundwall SW-405A is located along northbound I-405 at the edge of shoulder. SW-405A would replace the existing ten-foot-high soundwall from the UP Railroad to the northbound off-ramp at Alameda St. Although acoustically not feasible, SW-405A must be constructed at a minimum height of ten feet to replace the existing soundwall.

ALTERNATIVES 6A/B/C: SOUTHBOUND I-405.

- Soundwall SW-405B is located along southbound I-405 from the northbound I-710 to the southbound I-405 connector at the edge of shoulder. SW-405B would match with the existing ten-foot-high soundwall located south of Pacific Pl./UP Railroad Bridge and would replace the existing ten-foot-high soundwall between Pacific Pl. off-ramp and Pacific Pl. due to the widening of the freeway. Although acoustically not feasible, SW-405B must be constructed at a minimum height of ten feet to replace the existing soundwall.

3.14.5.8 REASONABLENESS

The reasonableness of a sound barrier is determined by comparing the estimated cost of the sound wall construction against the total reasonable allowance. The total reasonable allowance is determined based on the number of benefited residences multiplied by the reasonable allowance per residence. Additionally, in accordance with the Caltrans Traffic Noise Analysis Protocol, each sound barrier must provide at least seven dBA of noise reduction at one or more benefited receiver(s) to be considered reasonable. Therefore, if the estimated sound barrier construction cost exceeds the total reasonable allowance or was not predicted to provide at least seven dBA of noise reduction at one or more benefited receiver, the sound barrier is determined to be not reasonable. However, if the estimated sound barrier construction cost is within the total reasonable allowance and is predicted to provide at least seven dBA of noise reduction at one or more benefited receiver, the sound barrier is determined to be reasonable.

The estimated construction cost was prepared based on the Caltrans 2010 Contract Cost Data with a 5 percent increase, a 10 percent increase for mobilization, a 5 percent increase for supplemental work items, and a 20 percent increase for contingencies. The unit costs for material used in the estimate include \$20 per square foot of soundwall based on masonry construction, \$100 per linear foot of concrete barrier, and \$110 per linear foot of concrete barrier on bridge structure. Some sections of soundwalls will be built on top of retaining walls and bridge structures. The cost of constructing the retaining walls or bridge structures were not included in the estimate for the soundwalls because the retaining walls and bridge structures are to be built regardless of the placement of the soundwalls. Therefore, the cost to construct

retaining walls or bridge structures is included as part of the overall project, not noise abatement.

Table 3.14-3 lists the acoustically feasible soundwalls for Alternatives 5A and 6A/B/C along with the design-year (2035) noise levels, the height, approximate length, the noise attenuation, number of benefited receptors, the reasonable allowance per benefited residence, the total reasonable allowances per barrier, the estimated sound wall construction cost, and whether the sound wall is reasonable.

3.14.5.9 NON-ACOUSTICAL FACTORS RELATING TO FEASIBILITY

Several horizontal curves were identified within the project limits where soundwalls are required. A total of ten of these horizontal curves would not provide a driver an unobstructed line of sight over the required stopping sight distance because of the design speed, curve radius, and the proposed location of the soundwall. Nine of the horizontal curves occur on proposed ramps and one (SW-616TL) occurs on the proposed freight corridor.

Table 3.14.4 identifies the subject soundwalls along with the required and available stopping sight distance. The required stopping sight distance is based on Table 201.1 in the Caltrans Highway Design Manual (HDM). The available stopping sight distance is based on the curve radius and the proposed soundwall offset from the edge of traveled way (ETW). The evaluations conducted for soundwalls listed in Table 3.14.4 are included in Appendix C of the NADR.

Two potentially feasible solutions are presented to retain portions of the soundwalls and obtain the required stopping sight distance. The first potential solution involves shortening soundwalls or removing portions of soundwalls that are within the limits of obstruction to the driver's line of sight over the required stopping sight distance. Areas such as at the terminus of an on/off ramp may be appropriate for this solution. The second potential solution suggests that the soundwall be further set back from the edge of the freeway in order to remove the obstruction to the driver's line of sight over the required stopping sight distance. Right-of-way constraints would need to be investigated prior to selection of this solution. Table 3.14.4 presents locations where the evaluated soundwalls contain horizontal curves that restrict and reduce sight distance along with the two potential feasible solutions.

Table 3.14-3 Summary of Reasonableness Determination Data for Soundwalls

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
5A	SW-500	8	623	8	16	\$55,000	\$880,000	\$233,000	Yes
		10	623	10	24	\$55,000	\$1,320,000	\$269,000	Yes
		12	623	10	24	\$55,000	\$1,320,000	\$304,000	Yes
		14	623	11	25	\$55,000	\$1,375,000	\$340,000	Yes
	SW-501	8	5,370	8	45	\$55,000	\$2,475,000	\$2,007,000	Yes
		10	5,370	10	52	\$55,000	\$2,860,000	\$2,316,000	Yes
		12	5,370	12	97	\$55,000	\$5,335,000	\$2,625,000	Yes
		14	5,370	13	144	\$55,000	\$7,920,000	\$2,933,000	Yes
		16	5,370	13	185	\$55,000	\$10,175,000	\$3,242,000	Yes
	SW-502	8	7,109	10	55	\$55,000	\$3,025,000	\$2,657,000	Yes
		10	7,109	12	138	\$55,000	\$7,590,000	\$3,066,000	Yes
		12	7,109	13	192	\$55,000	\$10,560,000	\$3,475,000	Yes
		14	7,109	14	206	\$55,000	\$11,330,000	\$3,883,000	Yes
		16	7,109	15	219	\$55,000	\$12,045,000	\$4,292,000	Yes
	SW-503	8	1,458	4	0	\$55,000	\$0	\$545,000	No
		10	1,458	6	11	\$55,000	\$605,000	\$629,000	No
		12	1,458	7	17	\$55,000	\$935,000	\$713,000	Yes
		14	1,458	8	30	\$55,000	\$1,650,000	\$796,000	Yes
		16	1,458	9	30	\$55,000	\$1,650,000	\$880,000	Yes
	SW-405A	8	2,842	2	0	\$55,000	\$0	\$1,066,000	No ¹
		10	2,842	3	0	\$55,000	\$0	\$1,230,000	No ¹
		12	2,842	3	0	\$55,000	\$0	\$1,393,000	No ¹
		14	2,842	3	0	\$55,000	\$0	\$1,556,000	No ¹
		16	2,842	4	0	\$55,000	\$0	\$1,720,000	No ¹

Table 3.14-3 Summary of Reasonableness Determination Data for Soundwalls

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
5A	SW-405B	8	2,222	2	0	\$55,000	\$0	\$647,000	No ¹
		10	2,222	3	0	\$55,000	\$0	\$744,000	No ¹
		12	2,222	3	0	\$55,000	\$0	\$842,000	No ¹
		14	2,222	3	0	\$55,000	\$0	\$939,000	No ¹
		16	2,222	4	0	\$55,000	\$0	\$1,037,000	No ¹
	SW-503A	8	1,365	1	0	\$55,000	\$0	\$510,000	No ¹
		10	1,365	1	0	\$55,000	\$0	\$589,000	No ¹
		12	1,365	3	0	\$55,000	\$0	\$667,000	No ¹
		14	1,365	5	10	\$55,000	\$550,000	\$746,000	No ²
		16	1,365	5	10	\$55,000	\$550,000	\$824,000	No ²
	SW-503B	10	1,176	4	0	\$55,000	\$0	\$237,000	No
		12	1,176	4	0	\$55,000	\$0	\$304,000	No
		14	1,176	5	10	\$55,000	\$550,000	\$372,000	Yes
		16	1,176	6	10	\$55,000	\$550,000	\$440,000	Yes
	SW-504	8	2,301	8	14	\$55,000	\$770,000	\$860,000	No
		10	2,301	9	27	\$55,000	\$1,485,000	\$992,000	Yes
		12	2,301	10	37	\$55,000	\$2,035,000	\$1,125,000	Yes
		14	2,301	11	45	\$55,000	\$2,475,000	\$1,257,000	Yes
		16	2,301	12	45	\$55,000	\$2,475,000	\$1,389,000	Yes
	SW-505 + SW-506	8	1,113+891	6	30	\$55,000	\$1,650,000	\$756,000	Yes
10		1,113+891	7	45	\$55,000	\$2,475,000	\$871,000	Yes	
12		1,113+891	8	45	\$55,000	\$2,475,000	\$987,000	Yes	
14		1,113+891	9	60	\$55,000	\$3,300,000	\$1,102,000	Yes	
16		1,113+891	9	60	\$55,000	\$3,300,000	\$1,217,000	Yes	

Table 3.14-3 Summary of Reasonableness Determination Data for Soundwalls

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
5A	SW-507	8	2,702	4	0	\$55,000	\$0	\$1,010,000	No
		10	2,702	5	24	\$55,000	\$1,320,000	\$1,165,000	Yes
		12	2,702	5	24	\$55,000	\$1,320,000	\$1,321,000	No
		14	2,702	8	54	\$55,000	\$2,970,000	\$1,476,000	Yes
		16	2,702	10	64	\$55,000	\$3,520,000	\$1,631,000	Yes
	SW-509	8	5,194	7	55	\$55,000	\$3,025,000	\$1,953,000	Yes
		10	5,194	10	166	\$55,000	\$9,130,000	\$2,252,000	Yes
		12	5,194	12	245	\$55,000	\$13,475,000	\$2,551,000	Yes
		14	5,194	13	263	\$55,000	\$14,465,000	\$2,849,000	Yes
		16	5,194	14	272	\$55,000	\$14,960,000	\$3,148,000	Yes
	SW-510	8	2,005	7	13	\$55,000	\$715,000	\$749,000	No
		10	2,005	10	13	\$55,000	\$715,000	\$865,000	No
		12	2,005	11	27	\$55,000	\$1,485,000	\$980,000	Yes
		14	2,005	12	39	\$55,000	\$2,145,000	\$1,095,000	Yes
		16	2,005	14	39	\$55,000	\$2,145,000	\$1,211,000	Yes
	SW-511 + SW-512	8	507 + 1,409	8	4	\$55,000	\$220,000	\$683,000	No ²
		10	507 + 1,409	9	5	\$55,000	\$275,000	\$788,000	No ²
		12	507 + 1,409	9	10	\$55,000	\$550,000	\$893,000	No ²
		14	507 + 1,409	10	10	\$55,000	\$550,000	\$998,000	No ²
		16	507 + 1,409	11	10	\$55,000	\$550,000	\$1,103,000	No ²
	SW-513 + SW-514	8	331 + 1,396	4	0	\$55,000	\$0	\$651,000	No
		10	331 + 1,396	5	4	\$55,000	\$220,000	\$751,000	No
		12	331 + 1,396	6	19	\$55,000	\$1,045,000	\$850,000	Yes
		14	331 + 1,396	6	19	\$55,000	\$1,045,000	\$949,000	Yes
		16	331 + 1,396	8	25	\$55,000	\$1,375,000	\$1,048,000	Yes

Table 3.14-3 Summary of Reasonableness Determination Data for Soundwalls

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
5A	SW-515 + SW-516	8	496 + 2,655	6	47	\$55,000	\$2,585,000	\$1,180,000	Yes
		10	496 + 2,655	8	47	\$55,000	\$2,585,000	\$1,361,000	Yes
		12	496 + 2,655	8	50	\$55,000	\$2,750,000	\$1,542,000	Yes
		14	496 + 2,655	9	57	\$55,000	\$3,135,000	\$1,724,000	Yes
		16	496 + 2,655	10	57	\$55,000	\$3,135,000	\$1,905,000	Yes
	SW-517 + SW-518	8	514 + 600	6	9	\$55,000	\$495,000	\$374,000	No ³
		10	514 + 600	7	9	\$55,000	\$495,000	\$431,000	No ³
		12	514 + 600	8	9	\$55,000	\$495,000	\$489,000	No ³
		14	514 + 600	9	9	\$55,000	\$495,000	\$546,000	No ³
		16	514 + 600	9	9	\$55,000	\$495,000	\$604,000	No ³
	SW-519	8	1,398	8	4	\$55,000	\$220,000	\$525,000	No
		10	1,398	9	16	\$55,000	\$880,000	\$605,000	Yes
		12	1,398	11	20	\$55,000	\$1,100,000	\$685,000	Yes
		14	1,398	12	20	\$55,000	\$1,100,000	\$766,000	Yes
		16	1,398	12	20	\$55,000	\$1,100,000	\$846,000	Yes
	SW-520	8	537	3	0	\$55,000	\$0	\$201,000	No ³
		10	537	4	0	\$55,000	\$0	\$232,000	No ³
		12	537	5	2	\$55,000	\$110,000	\$262,000	No ³
		14	537	6	2	\$55,000	\$110,000	\$293,000	No ³
		16	537	7	2	\$55,000	\$110,000	\$324,000	No ³
SW-600	8	623	8	16	\$55,000	\$880,000	\$233,000	Yes	
	10	623	10	24	\$55,000	\$1,320,000	\$269,000	Yes	
	12	623	10	24	\$55,000	\$1,320,000	\$304,000	Yes	
	14	623	11	25	\$55,000	\$1,375,000	\$340,000	Yes	

Table 3.14-3 Summary of Reasonableness Determination Data for Soundwalls

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
6A/B/C	SW-601	8	5,370	6	25	\$55,000	\$1,375,000	\$2,007,000	No ²
		10	5,370	6	25	\$55,000	\$1,375,000	\$2,316,000	No ²
		12	5,370	7	37	\$55,000	\$2,035,000	\$2,625,000	No ²
		14	5,370	7	37	\$55,000	\$2,035,000	\$2,933,000	No ²
		16	5,370	7	47	\$55,000	\$2,585,000	\$3,242,000	No ²
	SW-601 + SW-601TL	8+8	5,370 + 6,205	8	45	\$55,000	\$2,475,000	\$4,816,000	No
		10+8	5,370 + 6,205	9	45	\$55,000	\$2,475,000	\$5,173,000	No
		12+8	5,370 + 6,205	10	60	\$55,000	\$3,300,000	\$5,064,000	No
		14+8	5,370 + 6,205	11	84	\$55,000	\$4,620,000	\$5,472,000	No
		16+8	5,370 + 6,205	12	84	\$55,000	\$4,620,000	\$5,881,000	No
		16+10	5,370 + 6,205	12	195	\$55,000	\$10,725,000	\$6,238,000	Yes
	SW-602	8	7,106	10	55	\$55,000	\$3,025,000	\$2,656,000	Yes
		10	7,106	11	110	\$55,000	\$6,050,000	\$3,064,000	Yes
		12	7,106	13	133	\$55,000	\$7,315,000	\$3,473,000	Yes
		14	7,106	13	154	\$55,000	\$8,470,000	\$3,882,000	Yes
		16	7,106	14	180	\$55,000	\$9,900,000	\$4,290,000	Yes
	SW-602 + SW-602TL	8	6,998 + 3,896	10	58	\$55,000	\$3,190,000	\$4,168,000	No
		10	6,998 + 3,896	11	108	\$55,000	\$5,940,000	\$4,576,000	Yes
		12	6,998 + 3,896	13	130	\$55,000	\$7,150,000	\$4,985,000	Yes
		14	6,998 + 3,896	13	172	\$55,000	\$9,460,000	\$5,394,000	Yes
		16+8	6,998 + 3,896	14	184	\$55,000	\$10,120,000	\$5,802,000	Yes
		16+10	6,998 + 3,896	14	211	\$55,000	\$11,605,000	\$6,026,000	Yes
	SW-603	8	1,447	0	0	\$55,000	\$0	\$541,000	No
		10	1,447	6	11	\$55,000	\$605,000	\$624,000	No
12		1,447	7	17	\$55,000	\$935,000	\$707,000	Yes	

Table 3.14-3 Summary of Reasonableness Determination Data for Soundwalls

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
6A/B/C	SW-603	14	1,447	8	30	\$55,000	\$1,650,000	\$790,000	Yes
		16	1,447	9	30	\$55,000	\$1,650,000	\$874,000	Yes
	SW-405A	8	2,842	2	0	\$55,000	\$0	\$1,066,000	No ¹
		10	2,842	3	0	\$55,000	\$0	\$1,230,000	No ¹
		12	2,842	3	0	\$55,000	\$0	\$1,393,000	No ¹
		14	2,842	3	0	\$55,000	\$0	\$1,556,000	No ¹
		16	2,842	4	0	\$55,000	\$0	\$1,720,000	No ¹
	SW-405B	8	2,222	2	0	\$55,000	\$0	\$647,000	No ¹
		10	2,222	3	0	\$55,000	\$0	\$744,000	No ¹
		12	2,222	3	0	\$55,000	\$0	\$842,000	No ¹
		14	2,222	3	0	\$55,000	\$0	\$939,000	No ¹
		16	2,222	4	0	\$55,000	\$0	\$1,037,000	No ¹
	SW-603A	8	1,365	1	0	\$55,000	\$0	\$510,000	No ¹
		10	1,365	1	0	\$55,000	\$0	\$589,000	No ¹
		12	1,365	3	0	\$55,000	\$0	\$667,000	No ²
		14	1,365	5	10	\$55,000	\$550,000	\$746,000	No ²
		16	1,365	5	10	\$55,000	\$550,000	\$824,000	No ²
	SW-603B	10	1,176	4	0	\$55,000	\$0	\$237,000	No ¹
		12	1,176	4	0	\$55,000	\$0	\$304,000	No ¹
		14	1,176	5	10	\$55,000	\$550,000	\$372,000	Yes
16		1,176	6	10	\$55,000	\$550,000	\$440,000	Yes	

Table 3.14-3 Summary of Reasonableness Determination Data for Soundwalls

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
6A/B/C	SW-604	8	2,087	6	20	\$55,000	\$1,100,000	\$480,000	Yes
		10	2,087	6	20	\$55,000	\$1,100,000	\$600,000	Yes
		12	2,087	7	20	\$55,000	\$1,100,000	\$720,000	Yes
		14	2,087	7	20	\$55,000	\$1,100,000	\$840,000	Yes
		16	2,087	8	20	\$55,000	\$1,100,000	\$960,000	Yes
	SW-605	8	1,683	-	0	\$55,000	\$0		
		10	1,683	3	0	\$55,000	\$0		
		12	1,683	4	0	\$55,000	\$0		
		14	1,683	6	4	\$55,000	\$220,000		
		16	1,683	6	6	\$55,000	\$330,000		
	SW-606	8	2,423	3	0	\$55,000	\$0	\$911,000	No ¹
		10	2,423	4	0	\$55,000	\$0	\$1,050,000	No ¹
		12	2,423	5	20	\$55,000	\$1,100,000	\$1,189,000	No ²
		14	2,423	5	22	\$55,000	\$1,210,000	\$1,329,000	No ²
		16	2,423	6	28	\$55,000	\$1,540,000	\$1,468,000	Yes
	SW-607	8	3,665	6	40	\$55,000	\$2,200,000	\$1,379,000	Yes
		10	3,665	7	44	\$55,000	\$2,420,000	\$1,589,000	Yes
		12	3,665	8	51	\$55,000	\$2,805,000	\$1,800,000	Yes
		14	3,665	8	54	\$55,000	\$2,970,000	\$2,011,000	Yes
		16	3,665	9	54	\$55,000	\$2,970,000	\$2,222,000	Yes
	SW-608	8	2,301	6	14	\$55,000	\$770,000	\$860,000	No ²
		10	2,301	7	27	\$55,000	\$1,485,000	\$992,000	Yes
		12	2,301	9	37	\$55,000	\$2,035,000	\$1,125,000	Yes
		14	2,301	10	45	\$55,000	\$2,475,000	\$1,257,000	Yes
		16	2,301	10	45	\$55,000	\$2,475,000	\$1,389,000	Yes

Table 3.14-3 Summary of Reasonableness Determination Data for Soundwalls

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?	
6A/B/C	SW-609A + SW-609B	8	489 + 1,283	5	18	\$55,000	\$990,000	\$408,000	Yes	
		10	489 + 1,283	5	18	\$55,000	\$990,000	\$509,000	Yes	
		12	489 + 1,283	6	18	\$55,000	\$990,000	\$611,000	Yes	
		14	489 + 1,283	7	18	\$55,000	\$990,000	\$713,000	Yes	
		16	489 + 1,283	7	18	\$55,000	\$990,000	\$815,000	Yes	
	SW-610 + SW-611	8	1,113 + 891	4	0	0	\$55,000	\$0	\$756,000	No ¹
		10	1,113 + 891	4	0	0	\$55,000	\$0	\$871,000	No ¹
		12	1,113 + 891	5	45	45	\$55,000	\$2,475,000	\$987,000	Yes
		14	1,113 + 891	6	60	60	\$55,000	\$3,300,000	\$1,102,000	Yes
		16	1,113 + 891	8	60	60	\$55,000	\$3,300,000	\$1,217,000	Yes
	SW-612	8	2,702	5	12	12	\$55,000	\$660,000	\$1,010,000	No ²
		10	2,702	6	12	12	\$55,000	\$660,000	\$1,165,000	No ²
		12	2,702	7	24	24	\$55,000	\$1,320,000	\$1,321,000	No ²
		14	2,702	7	24	24	\$55,000	\$1,320,000	\$1,476,000	No ²
		16	2,702	8	30	30	\$55,000	\$1,650,000	\$1,631,000	Yes
	SW-613	8	1,331	0	0	0	\$55,000	\$0	\$306,000	No
		10	1,331	1	0	0	\$55,000	\$0	\$383,000	No
		12	1,331	4	0	0	\$55,000	\$0	\$459,000	No
		14	1,331	6	13	13	\$55,000	\$715,000	\$536,000	Yes
		16	1,331	7	13	13	\$55,000	\$715,000	\$612,000	Yes
	SW-614	8	2,418	2	0	0	\$55,000	\$0	\$912,000	No ¹
		10	2,418	4	0	0	\$55,000	\$0	\$1,051,000	No ¹
		12	2,418	4	0	0	\$55,000	\$0	\$1,190,000	No ¹
		14	2,418	5	18	18	\$55,000	\$990,000	\$1,329,000	No ²
		16	2,418	5	18	18	\$55,000	\$990,000	\$1,468,000	No ²

Table 3.14-3 Summary of Reasonableness Determination Data for Soundwalls

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
6A/B/C	SW-615	8	2,979	2	0	\$55,000	\$0	\$685,000	No
		10	2,979	4	0	\$55,000	\$0	\$856,000	No
		12	2,979	5	22	\$55,000	\$1,210,000	\$1,028,000	Yes
		14	2,979	6	33	\$55,000	\$1,815,000	\$1,199,000	Yes
		16	2,979	7	60	\$55,000	\$3,300,000	\$1,370,000	Yes
	SW-616	8	5,194	4	0	\$55,000	\$0	\$1,953,000	No
		10	5,194	6	19	\$55,000	\$1,045,000	\$2,252,000	No
		12	5,194	7	51	\$55,000	\$2,805,000	\$2,551,000	Yes
		14	5,194	8	57	\$55,000	\$3,135,000	\$2,849,000	Yes
		16	5,194	9	71	\$55,000	\$3,905,000	\$3,148,000	Yes
	SW-616 + SW-616TL	8+8	5,194 + 6,084	7	67	\$55,000	\$3,685,000	\$4,314,000	No
		10+8	5,194 + 6,084	10	70	\$55,000	\$3,850,000	\$4,613,000	No
		12+8	5,194 + 6,084	11	96	\$55,000	\$5,280,000	\$4,912,000	Yes
		14+8	5,194 + 6,084	11	105	\$55,000	\$5,775,000	\$5,210,000	Yes
		16+8	5,194 + 6,084	12	203	\$55,000	\$11,165,000	\$5,509,000	Yes
		16+10	5,194 + 6,084	12	255	\$55,000	\$14,025,000	\$5,859,000	Yes
	SW-617A	8	1,998	4	0	\$55,000	\$0	\$747,000	No ¹
		10	1,998	5	9	\$55,000	\$495,000	\$862,000	No ²
		12	1,998	7	9	\$55,000	\$495,000	\$977,000	No ²
		14	1,998	9	9	\$55,000	\$495,000	\$1,091,000	No ²
		16	1,998	11	9	\$55,000	\$495,000	\$1,206,000	No ²

Table 3.14-3 Summary of Reasonableness Determination Data for Soundwalls

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
6A/B/C	SW-617B + SW-617TLN + SW-617TLS	8+8	2,643 + 3,668 + 2,751	5	9	\$55,000	\$495,000	\$3,480,000	No ³
		10+8		8	26	\$55,000	\$1,430,000	\$3,632,000	No ³
		12+8		10	26	\$55,000	\$1,430,000	\$3,784,000	No ³
		14+8		11	26	\$55,000	\$1,430,000	\$3,936,000	No ³
		16+8		12	26	\$55,000	\$1,430,000	\$4,088,000	No ³
		16+10		12	34	\$55,000	\$1,870,000	\$4,457,000	No ³
	SW-618 + SW-619 + SW-618TLN + SW-618TLS	8+8	1,029 + 1,237 + 4,202 + 2,206	3	0	\$55,000	\$0	\$3,334,000	No ³
		10+8		4	0	\$55,000	\$0	\$3,464,000	No ³
		12+8		5	5	\$55,000	\$275,000	\$3,595,000	No ³
		14+8		5	15	\$55,000	\$825,000	\$3,725,000	No ³
		16+8		6	18	\$55,000	\$990,000	\$3,855,000	No ³
		16+10		7	18	\$55,000	\$990,000	\$4,224,000	No
	SW-620 + SW-621A	8	1,015 + 1,409	7	8	\$55,000	\$440,000	\$793,000	No ²
		10	1,015 + 1,409	8	14	\$55,000	\$770,000	\$915,000	No ²
		12	1,015 + 1,409	9	14	\$55,000	\$770,000	\$1,037,000	No ²
		14	1,015 + 1,409	9	14	\$55,000	\$770,000	\$1,159,000	No ²
		16	1,015 + 1,409	9	14	\$55,000	\$770,000	\$1,281,000	No ²
	SW-620 + SW-621B	8	1,015 + 1,409	7	9	\$55,000	\$495,000	\$911,000	No ²
		10	1,015 + 1,409	8	16	\$55,000	\$880,000	\$1,051,000	No ²
		12	1,015 + 1,409	9	16	\$55,000	\$880,000	\$1,190,000	No ²
		14	1,015 + 1,409	10	16	\$55,000	\$880,000	\$1,329,000	No ²
		16	1,015 + 1,409	11	16	\$55,000	\$880,000	\$1,469,000	No ²
		16	1,520 + 1,003	13	20	\$55,000	\$1,100,000	-	-

Table 3.14-3 Summary of Reasonableness Determination Data for Soundwalls

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
6A/B/C	SW-622	8	1,368	5	17	\$55,000	\$935,000	\$511,000	Yes
		10	1,368	6	17	\$55,000	\$935,000	\$590,000	Yes
		12	1,368	7	17	\$55,000	\$935,000	\$669,000	Yes
		14	1,368	7	17	\$55,000	\$935,000	\$747,000	Yes
		16	1,368	7	17	\$55,000	\$935,000	\$826,000	Yes
	SW-622	8	1,368	5	17	\$55,000	\$935,000	\$511,000	Yes
		10	1,368	6	17	\$55,000	\$935,000	\$590,000	Yes
		12	1,368	7	17	\$55,000	\$935,000	\$669,000	Yes
		14	1,368	7	17	\$55,000	\$935,000	\$747,000	Yes
		16	1,368	8	17	\$55,000	\$935,000	\$826,000	Yes
	SW-622A + SW-622B	8	1,186 + 459	4	0	\$55,000	\$0	\$616,000	No ¹
		10	1,186 + 459	4	0	\$55,000	\$0	\$710,000	No ¹
		12	1,186 + 459	5	2	\$55,000	\$110,000	\$805,000	No ²
		14	1,186 + 459	5	2	\$55,000	\$110,000	\$899,000	No ²
		16	1,186 + 459	5	2	\$55,000	\$110,000	\$994,000	No ²
	SW-622A + SW-622B	8	1,186 + 459	3	0	\$55,000	\$0	\$616,000	No ¹
		10	1,186 + 459	4	0	\$55,000	\$0	\$710,000	No ¹
		12	1,186 + 459	4	0	\$55,000	\$0	\$805,000	No ¹
		14	1,186 + 459	4	0	\$55,000	\$0	\$899,000	No ¹
		16	1,186 + 459	4	0	\$55,000	\$0	\$994,000	No ¹
6A	SW-623 + SW-624 + SW-625	8	464 + 714 + 212	5	9	\$55,000	\$495,000	--	-- ³
		10		6	10	\$55,000	\$550,000	--	-- ³
		12		7	10	\$55,000	\$550,000	--	-- ³
		14		7	10	\$55,000	\$550,000	--	-- ³
		16		8	10	\$55,000	\$550,000	--	-- ³

Table 3.14-3 Summary of Reasonableness Determination Data for Soundwalls

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
6A	SW-626	8	294	7	8	\$55,000	\$440,000	\$110,000	Yes
		10	294	8	8	\$55,000	\$440,000	\$127,000	Yes
		12	294	10	8	\$55,000	\$440,000	\$144,000	Yes
		14	294	11	8	\$55,000	\$440,000	\$161,000	Yes
		16	294	12	8	\$55,000	\$440,000	\$178,000	Yes
	SW-627	8	537	2	0	\$55,000	\$0	\$201,000	No
		10	537	3	0	\$55,000	\$0	\$232,000	No
		12	537	4	0	\$55,000	\$0	\$262,000	No
		14	537	5	2	\$55,000	\$110,000	\$293,000	No
		16	537	5	2	\$55,000	\$110,000	\$324,000	No
		18	537	7	2	\$55,000	\$110,000	\$355,000	No

Source: I-710 Corridor Project *Traffic Noise Study Report*, May 2012.

¹ Although not acoustically feasible, this soundwall must be provided as a replacement of the existing soundwall by the proposed project.

² Although not reasonable, this sound wall must be provided as a replacement of the existing soundwall impacted by the proposed project.

³ Although not feasible or reasonable, the final decision to construct this soundwall will be made prior to public review of the EIR/EIS.

dBA = A-weighted decibels

EIR/EIS = Environmental Impact Report/Environmental Impact Statement

L_{eq}(h) = one-hour A-weighted equivalent continuous sound level

Table 3.14-4 Potential Solutions to Line of Sight Issues

SW No.		Required Sight Distance	Available Sight Distance	Potential Solution 1: Shorten or Remove SW (feet)	Potential Solution 2: Setback SW from ETW (feet)
Alternative 5	Alternative 6A				
SW-501	SW-601	250	158	330	32
SW-501	SW-601	250	168	285	40
SW-502	SW-602	250	182	190	28
SW-503	SW-603	430	305	N/A	22
SW-507	SW-612	250	169	240	35
N/A	SW-621A	250	175	260 ¹	30 ³
N/A	SW-621B	250	159	260 ¹	30 ³
SW-512	N/A	250	156	215 ¹	35 ³
SW-514	N/A	250	140	-- ²	40
N/A	SW-616TL	750	650	800	16

Source: Caltrans, *Noise Abatement Decision Report*, May 2012.

¹ Length indicated occurs in the middle of the curve.

² Realign to achieve required sight distance per recent right-of-way acquired

³ Impacts two parcels due to local street realignment.

Caltrans = California Department of Transportation

ETW = edge of traveled way

N/A = not applicable

SW = Soundwall

3.14.5.10 RECOMMENDED SOUNDWALLS

Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of barriers shown in Table 3.14-5, depending on the selected alternative. The following presents the preliminary noise abatement decision pertaining to each of the evaluated soundwalls under Alternatives 5 and 6A. Some of these barriers are required because they would replace existing sound walls that would be removed by the proposed project. The final decision on noise abatement will be made following the completion of public review of the Draft EIR/EIS and the public involvement processes.

ALTERNATIVE 5A.

- **SW-500.** This 623-foot-long soundwall is proposed along the right-of-way line at the southwest corner of the Shoreline Dr. and Golden Shore St. intersection, east of the Los Angeles River. The soundwall would be new construction (no existing soundwall at this location). As shown in Table 3.14-3, SW-500 was determined to be reasonable and the recommended height is ten feet.

Table 3.14-5 Preliminary Noise Abatement Decision

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
5A	SW-500	10	623	24	\$55,000	\$1,320,000	\$269,000	Yes
	SW-501	16	5,370	185	\$55,000	\$10,175,000	\$3,242,000	Yes
	SW-502	16	7,109	219	\$55,000	\$12,045,000	\$4,292,000	Yes
	SW-503	14	1,458	30	\$55,000	\$1,650,000	\$796,000	Yes
	SW-405A	10	2,842	0	\$55,000	\$0	\$1,230,000	No ¹
	SW-405B	10	2,222	0	\$55,000	\$0	\$744,000	No ¹
	SW-503A	16	1,365	10	\$55,000	\$550,000	\$824,000	No ²
	SW-503B	16	1,176	10	\$55,000	\$550,000	\$440,000	Yes ²
	SW-504	14	2,301	45	\$55,000	\$2,475,000	\$1,257,000	Yes
	SW-505 + SW-506	14	1,113+891	60	\$55,000	\$3,300,000	\$1,102,000	Yes
	SW-507	16	2,702	64	\$55,000	\$3,520,000	\$1,631,000	Yes
	SW-509	16	5,194	272	\$55,000	\$14,960,000	\$3,148,000	Yes
	SW-510	16	2,005	39	\$55,000	\$2,145,000	\$1,211,000	Yes
	SW-511 + SW-512	16	507 + 1,409	10	\$55,000	\$550,000	\$1,103,000	No ²
	SW-513 + SW-514	16	331 + 1,396	25	\$55,000	\$1,375,000	\$1,048,000	Yes
	SW-515 + SW-516	14	496 + 2,655	57	\$55,000	\$3,135,000	\$1,724,000	Yes
	SW-517			514 + 600	–	–	–	–
SW-519	14	1,398	20	\$55,000	\$1,100,000	\$766,000	Yes	
SW-520			537	–	–	–	–	-- ³
6A	SW-600	10	623	24	\$55,000	\$1,320,000	\$269,000	Yes
	SW-601 + SW-601TL	16+10	5,370 + 6,205	195	\$55,000	\$10,725,000	\$6,238,000	Yes
	SW-602 + SW-602TL	16+10	6,998 + 3,896	211	\$55,000	\$11,605,000	\$6,026,000	Yes
	SW-603	14	1,447	30	\$55,000	\$1,650,000	\$790,000	Yes
	SW-405A	10	2,842	0	\$55,000	\$0	\$1,230,000	No ¹
	SW-405B	10	2,222	0	\$55,000	\$0	\$744,000	No ¹
	SW-603A	16	1,365	10	\$55,000	\$550,000	\$824,000	No ²

Table 3.14-5 Preliminary Noise Abatement Decision

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
6A	SW-603B	16	1,176	10	\$55,000	\$550,000	\$440,000	Yes
	SW-604	12	2,087	20	\$55,000	\$1,100,000	\$720,000	Yes
	SW-606	16	2,423	28	\$55,000	\$1,540,000	\$1,468,000	Yes
	SW-607	14	3,665	54	\$55,000	\$2,970,000	\$2,011,000	Yes
	SW-608	14	2,301	45	\$55,000	\$2,475,000	\$1,257,000	Yes
	SW-609A + SW-609B	14	489 + 1,283	18	\$55,000	\$990,000	\$713,000	Yes
	SW-610 + SW-611	16	1,113 + 891	60	\$55,000	\$3,300,000	\$1,217,000	Yes
	SW-612	16	2,702	30	\$55,000	\$1,650,000	\$1,631,000	Yes
	SW-613	16	1,331	13	\$55,000	\$715,000	\$612,000	Yes
	SW-614	14	2,418	18	\$55,000	\$990,000	\$1,329,000	No ²
	SW-615	16	2,979	60	\$55,000	\$3,300,000	\$1,370,000	Yes
	SW-616 + SW-616TL	16+10	5,194 + 6,084	255	\$55,000	\$14,025,000	\$5,859,000	Yes
	SW-617A	16	1,998	9	\$55,000	\$495,000	\$1,206,000	No ²
	SW-617B + SW-617TLN + SW-617TLS	-	2,643 + 3,668 + 2,751	-	-	-	-	-- ³
	SW-618 + SW-619	16+10	1,029 + 1,237	18	\$55,000	\$990,000	\$1,498,000	No ²
	SW-618TLN + SW-618TLS	-	4,202 + 2,206	-	-	-	-	-- ³
	SW-620 + SW-621A (Design Option 1)	16	1,015 + 1,409	14	\$55,000	\$770,000	\$1,281,000	No ²
	SW-620 + SW-621B (Design Option 2)	16	1,015 + 1,409	16	\$55,000	\$880,000	\$1,469,000	No ²
	SW-622 (Design Option 1)	14	1,368	17	\$55,000	\$935,000	\$747,000	Yes
SW-622 (Design Option 2)	16	1,368	17	\$55,000	\$935,000	\$826,000	Yes	
SW-622A + SW-622B (Design Option 1)	12	1,186 + 459	2	\$55,000	\$110,000	\$805,000	No ²	

Table 3.14-5 Preliminary Noise Abatement Decision

Alternative	Sound Wall No.	Height (feet)	Approximate Length (feet)	Number of Benefited Receptors	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Sound Wall Construction Cost	Reasonable?
6A	SW-622A + SW-622B (Design Option 2)	12	1,186 + 459	0	\$55,000	\$0	\$805,000	No ¹
	SW-623 + SW-624 + SW-625	–	464 + 714 + 212	–	–	–	–	-- ³
	SW-626	16	294	8	\$55,000	\$440,000	\$178,000	Yes

Source: Caltrans, *Noise Abatement Decision Report*, May 2012.

¹ Although not acoustically feasible, this sound wall must be provided as a replacement of the existing soundwall by the proposed project.

² Although not reasonable, this sound wall must be provided as a replacement of the existing soundwall impacted by the proposed project.

³ Although not feasible or reasonable, the final decision to construct this soundwall will be made prior to public review of the EIR/EIS.

Caltrans = California Department of Transportation

EIR/EIS = Environmental Impact Report/Environmental Impact Statement

SW = Soundwall

- **SW-501.** This 5,370-foot-long soundwall is proposed along the edge of shoulder along southbound I-710 between the Pacific Coast Hwy. and Willow St. interchanges. The soundwall would replace the existing ten-foot- to 12-foot-high soundwall located along the right-of-way. As shown in Table 3.14-3, SW-501 was determined to be reasonable, and the recommended height is 16 feet.
- **SW-502.** This 7,109-foot-long soundwall is proposed along the edge of shoulder along southbound I-710 between Willow St. and just north of Wardlow Rd. The soundwall would replace the existing ten-foot-high soundwall located along the right-of-way. As shown in Table 3.14-3, SW-502 was determined to be reasonable, and the recommended height is 16 feet.
- **SW-503.** This 1,458-foot-long soundwall is proposed along the edge of shoulder along the southbound I-405 to southbound I-710 connector. The soundwall would be new construction (no existing soundwall at this location). As shown in Table 3.14-3, SW-503 was determined to be reasonable, and the recommended height is 14 feet.
- **SW-405A.** This 2,842-foot-long soundwall is proposed along the edge of shoulder on northbound I-405 between Santa Fe Ave. and Alameda St. The soundwall would replace the existing ten-foot-high wall along the edge of shoulder. Even though there are no benefited receivers and this wall is not acoustically feasible or cost reasonable, it must be constructed to replace the existing soundwall that would be impacted by the proposed freeway widening. The recommended height is ten feet to match the existing wall.
- **SW-405B.** This 1,694-foot-long soundwall is proposed along the edge of shoulder along the northbound I-710 to southbound I-405 connector, ending just southeast of the UP Railroad overhead structure to join with the existing 10-foot-high soundwall. The soundwall would replace the existing ten-foot-high wall along the edge of shoulder. Even though there are no benefited receivers and this wall is not acoustically feasible or cost reasonable, it must be constructed to replace the existing soundwall that would be impacted by the proposed freeway widening. The recommended height is ten feet to match the existing wall.
- **SW-503A.** This 1,365-foot-long soundwall is proposed to be placed at the edge of shoulder along the southbound I-710 off-ramp to Long Beach Blvd. SW-503A soundwall would join the existing eight-foot-high soundwall located at the right-of-way between Barclay St. and Adams St. The soundwall would replace the existing eight-foot-high soundwall located along the right-of-way (which is also supported by an eight-foot-high embankment). As shown in Table 3.14-3, SW-503A was determined to be not

reasonable. However, SW-503A must be constructed to replace an existing wall that serves the residential area consisting of mostly single-family homes located between Long Beach Blvd. and Barclay St. along the southbound I-710. The recommended height is 16 feet.

- **SW-503B.** At this location it is proposed to increase the height of the existing soundwall which is eight feet high. The soundwall is located along the right-of-way between Barclay St. and Adams St. The soundwall length is approximately 1,176 feet. As shown in Table 3.14-3, SW-503B was determined to be reasonable, and the recommended height is 16 feet.
- **SW-504.** This 2,301-foot-long soundwall is proposed along the edge of shoulder on the southbound side of I-710 to the eastbound SR-91 connector. The soundwall would replace the existing eight-foot- to ten-foot-high soundwall located along the edge of shoulder. As shown in Table 3.14-3, SW-504 was determined to be reasonable, and the recommended height is 14 feet.
- **SW-505 and SW-506.** SW-505 is approximately 1,113 feet long and is proposed along the edge of shoulder of the on-ramp from Alondra Blvd. to southbound I-710. SW-506 is approximately 891 feet long and is proposed along the edge of shoulder on the southbound side of I-710 to the eastbound SR-91 connector near Alondra Blvd. The combined soundwall length would be approximately 2,004 feet, and it would replace the existing 12-foot-high soundwall located along the right-of-way. As shown in Table 3.14-3, SW-505 and SW-506 were determined to be reasonable, and the recommended height for both walls is 14 feet.
- **SW-507.** This 2,702-foot-long soundwall is proposed along the edge of shoulder on the southbound side of I-710 between Alondra Blvd. and Somerset/Compton Blvd. The soundwall would replace the existing 12-foot-high soundwall located along the right-of-way between Linsley Ave. and Myrrh St. As shown in Table 3.14-3, SW-507 was determined to be reasonable, and the recommended height is 16 feet.
- **SW-509.** This 5,194-foot-long soundwall is proposed along the edge of shoulder on the southbound side of I-710 between Imperial Hwy. and Firestone Blvd. The 12-foot-high soundwall (to be built under EA 202100) between Imperial Hwy. and the Los Angeles River is assumed to be existing and would be replaced by SW-509. As shown in Table 3.14-3, SW-509 was determined to be reasonable, and the recommended height is 16 feet.

- **SW-510.** This 2,005-foot-long soundwall is proposed along the right-of-way on the northbound side of I-710 between Firestone Blvd. and Clara St. The soundwall would replace a section of the existing 12-foot-high soundwall that would be removed by the proposed project. The north end of SW-510 would join the existing soundwall along the right-of-way. As shown in Table 3.14-3, SW-510 was determined to be reasonable, and the recommended height is 16 feet.
- **SW-511 and SW-512.** SW-511 is approximately 507 feet long and is proposed along the edge of shoulder on the northbound side of I-710 between the two northbound hook ramps at Washington Blvd. SW-512 is approximately 1,320-foot-long and is proposed along the edge of shoulder on the northbound on-ramp from Washington Blvd. The combined soundwall length would be approximately 1,827 feet. A 12-foot-high soundwall on a three-foot-high concrete barrier (to be built under EA 202100) between Washington Blvd. and the I-710 overhead structure at the UP Railroad rail yard would be replaced by the proposed soundwall. As shown in Table 3.14-3, SW-511 and SW-512 were determined to be not reasonable. However, SW-511 and SW-512 must be constructed to replace a future soundwall wall (to be built before this project) that would serve the residential area east of I-710. The recommended height of the soundwall is 16 feet.
- **SW-513 and SW-514.** SW-513 is approximately 331 feet long and is proposed along the edge of shoulder on the southbound side of I-710 between the two northbound hook ramps at Washington Blvd. SW-514 is approximately 1,396 feet long and is proposed along the edge of shoulder on the southbound off-ramp to Washington Blvd. The combined soundwall length would be approximately 1,727 feet. A 12-foot-high soundwall on a concrete barrier (to be built under EA 202100) between Washington Blvd. and the I-710 overhead structure at the rail yard is assumed to be existing and would be replaced by the proposed soundwall. As shown in Table 3.14-3, SW-513 and SW-514 were determined to be reasonable, and the recommended heights of both walls are 16 feet.
- **SW-515 and SW-516.** SW-515 is approximately 496 feet long and is proposed along the edge of shoulder on the northbound side of I-710 between Olympic Blvd. and the proposed on-ramp from Olympic Blvd. SW-516 is approximately 2,655 feet long and is proposed along the edge of shoulder on the northbound side of I-710 between Olympic Blvd. and South Humphreys Ave. The combined soundwall length would be approximately 3,151 feet. A ten-foot-high soundwall (to be built under EA 202101) is assumed to be existing and would be replaced by the proposed soundwall. As shown in Table 3.14-3, SW-515 and SW-516 were determined to be reasonable, and the recommended heights of both walls are 14 feet.

- **SW-517.** This 1,000-foot-long soundwall is proposed along the edge of shoulder on the on-ramp from Eastern Ave. to southbound I-710. The soundwall would be new construction (no existing soundwall at this location). SW-517 may obstruct the view from the freeway to the commercial area located at the northwestern corner of the Eastern Ave. and Olympic Blvd. intersection. As shown in Table 3.14-3, SW-517 was determined to be not reasonable. Further considerations and evaluations may be necessary before Caltrans is able to reach the final decision to construct this wall.
- **SW-519.** This 1,398-foot-long soundwall is proposed along the edge of shoulder on the southbound side of I-710 and the off-ramp to Eastern Ave. The soundwall would replace a section of a 12-foot-high soundwall (to be built under EA 202101) as a result of the proposed project. As shown in Table 3.14-3, SW-519 was determined to be reasonable, and the recommended height is 14 feet.
- **SW-520.** This 537-foot-long soundwall is proposed along the right-of-way on the southwest quadrant of the I-710 and the SR-60 Interchange. The soundwall would be new construction (no existing soundwall at this location). As shown in Table 3.14-3, SW-520 was determined to be not reasonable. Further considerations and evaluations may be necessary before Caltrans is able to reach the final decision to construct this wall.

ALTERNATIVES 6A/B/C.

- **SW-600.** This 623-foot-long soundwall is identical to SW-500 and is proposed along the right-of-way line on the southwest corner of the Shoreline Dr. and Golden Shore St. intersection, east of the Los Angeles River. The soundwall would be new construction (no existing soundwall at this location). As shown in Table 3.14-3, SW-600 was determined to be reasonable, and the recommended height is ten feet.
- **SW-601 and SW-601TL.** SW-601 is approximately 5,370-foot-long and is identical. Also, this soundwall is proposed along the edge of shoulder on the southbound side of I-710 between the Pacific Coast Hwy. and Willow St. interchange. The soundwall would replace the existing 12-foot-high soundwall located along the right-of-way. SW-601 at 16 feet was determined to be not reasonable. SW-601TL is approximately 6,205 feet long and is proposed along the southbound freight corridor between Pacific Coast Hwy. and Willow St. because of the presence of the elevated freight corridor and the associated noise impacts. To achieve reasonableness, SW-601 and SW-601TL were combined with a total length of 11,575 feet. As shown in Table 3.14-3, SW-601 and SW-601TL were determined to be reasonable, and the recommended heights are 16 feet and ten feet, respectively.

- **SW-602 and SW-602TL.** SW-602 is approximately 7,106 feet long and is identical to SW-502. Also, this soundwall is proposed along the edge of shoulder on the southbound side of I-710 between Willow St. and just north of Wardlow Rd. The soundwall would replace the existing 12-foot-high soundwall located along the right-of-way. The recommended height is 16 feet. SW-601TL is approximately 3,896 feet long and is proposed along the southbound freight corridor between Pacific Coast Hwy. and Willow St. because of the presence of the elevated freight corridor and the associated noise impacts. To achieve reasonableness, SW-602 and SW-602TL were combined with a total length of 11,002 feet. As shown in Table 3.14-3, SW-602 and SW-602TL were determined to be reasonable, and the recommended heights are 16 feet and ten feet, respectively.
- **SW-603.** This soundwall is approximately 1,447 feet long and is identical to SW-503. Also, this soundwall is proposed along the edge of shoulder on the southbound side of I-405 to the southbound I-710 connector. The soundwall would be new construction (no existing soundwall at this location). As shown in Table 3.14-3, SW-603 was determined to be reasonable, and the recommended height is 14 feet.
- **SW-405A and SW-405B.** See discussions included for Alternative 5.
- **SW-603A.** This sound wall is approximately 1,365 feet long and is identical to SW-503A. Also, this soundwall is proposed along the edge of shoulder on the southbound I-710 off-ramp to Long Beach Blvd. SW-503A would join the existing eight-foot-high soundwall located at the right-of-way between Barclay St. and Adams St. The soundwall would replace the existing eight-foot-high soundwall located along the right-of-way, which is also supported by an eight-foot-high embankment. As shown in Table 3.14-3, SW-603A was determined to be not reasonable. However, SW-603A must be constructed to replace an existing wall that serves the residential area, which consists of mostly single-family homes located between Long Beach Blvd. and Barclay St. along the southbound I-710. The recommended height for SW-603A is 16 feet.
- **SW-603B.** At this location, it is proposed to increase the height of the existing soundwall which is eight feet high, similar to SW-503B. The soundwall is located along the right-of-way between Barclay St. and Adams St. The soundwall length is approximately 1,176 feet. As shown in Table 3.14-3, SW-603B was determined to be reasonable, and the recommended height is 16 feet.
- **SW-604.** This soundwall is approximately 2,087 feet long and is proposed along the edge of dike on the east side of the Los Angeles River, just south of Artesia Blvd. The soundwall would be new construction (no existing soundwall at this location). As shown

in Table 3.14-3, SW-604 was determined to be reasonable, and the recommended height is 12 feet.

- **SW-606.** This soundwall is approximately 2,423 feet long and is proposed along the edge of shoulder on the connector from the northbound freight corridor to eastbound SR-91. SW-606 would join the existing ten-foot-high soundwall located at the edge of shoulder just east of Orange Ave. The soundwall would replace the existing ten-foot-high soundwall impacted by the proposed project. As shown in Table 3.14-3, SW-606 was determined to be reasonable, and the recommended height is 16 feet.
- **SW-607.** This soundwall is approximately 3,665 feet long and is proposed along the edge of shoulder on the connector from westbound SR-91 to the southbound freight corridor. SW-607 would join the existing ten-foot-high soundwall located at the edge of shoulder just west of Rose Ave. The soundwall would replace the existing ten-foot-high soundwall impacted by the proposed project. As shown in Table 3.14-3, SW-607 was determined to be reasonable, and the recommended height is 14 feet.
- **SW-608.** This soundwall is approximately 2,301 feet long and is identical to SW-504. Also, this soundwall is proposed along the edge of shoulder on the southbound side of I-710 to the eastbound SR-91 connector. The soundwall would replace the existing eight-foot- to ten-foot-high soundwall located along the edge of shoulder. As shown in Table 3.14-3, SW-608 was determined to be reasonable, and the recommended height is 14 feet.
- **SW-609A and SW-609B.** Both soundwalls are proposed along the edge of dike on the east side of the Los Angeles River between Atlantic Blvd. and Alondra Blvd. The combined soundwall length would be approximately 1,772 feet, and it would be new construction (no existing soundwall at this location). As shown in Table 3.14-3, SW-609A and SW-609B were determined to be reasonable, and the recommended height for both walls is 14 feet.
- **SW-610 and SW-611.** SW-610 is approximately 1,113 feet long and is identical to SW-505. SW-610 is proposed along the edge of shoulder on the on-ramp from Alondra Blvd. to southbound I-710. SW-611 is approximately 891 feet long and is identical to SW-506. SW-611 is proposed along the edge of shoulder on the southbound I-710 to the eastbound SR-91 connector near Alondra Blvd. The combined soundwall length would be approximately 2,004 feet, and it would replace the existing 12-foot-high soundwall located along the right-of-way. As shown in Table 3.14-3, SW-610 and SW-611 were determined to be reasonable, and the recommended height for both walls is 16 feet.

- **SW-612.** This soundwall is approximately 2,702 feet long and is identical to SW-507. Also, this soundwall is proposed along the edge of shoulder on the southbound side of I-710 between Alondra Blvd. and Somerset/Compton Blvd. The soundwall would replace the existing 12-foot-high soundwall located along the right-of-way between Linsley Ave. and Myrrh St. As shown in Table 3.14-3, SW-613 was determined to be reasonable, and the recommended height is 16 feet.
- **SW-613.** This soundwall is approximately 1,331 feet long and is proposed along the edge of dike on the east side of the Los Angeles River, south of Somerset Blvd. The soundwall would be new construction (no existing soundwall at this location). As shown in Table 3.14-3, SW-613 was determined to be reasonable, and the recommended height is 16 feet.
- **SW-614.** This soundwall is approximately 2,418 feet long and is proposed along the edge of shoulder on the southbound I-710 off-ramp to Rosecrans Ave. The soundwall would supplement the existing eight-foot- to 12-foot-high soundwall located along the right-of-way between Olanda St. and the I-710/I-105 interchange. As shown in Table 3.14-3, SW-614 was determined to be not reasonable. However, SW-614 must be constructed because the new ramp in this area would be closer to the residential area. Additionally, the single-family homes located between Olanda St. and Rosecrans Ave. that currently are not protected by any soundwalls would benefit from this wall extension. The recommended height for SW-614 is 14 feet.
- **SW-615.** This soundwall is approximately 2,979 feet long and is proposed along the edge of dike on the east side of the Los Angeles River, between Somerset Blvd. and Rosecrans Ave. The soundwall would be new construction (no existing soundwall at this location). As shown in Table 3.14-3, SW-615 was determined to be reasonable, and the recommended height is 16 feet.
- **SW-616 and SW-616TL.** SW-616 is approximately 5,194 feet long and is identical to SW-509. Also, this soundwall is proposed along the edge of shoulder on the southbound side of I-710 between Imperial Hwy. and Firestone Blvd. A 12-foot-high soundwall (to be built under EA 202100) between Imperial Hwy. and the Los Angeles River is assumed to be existing and would be replaced by SW-616. The recommended height is 16 feet. SW-616TL is approximately 6,084 feet long and is proposed along the southbound freight corridor between Imperial Hwy. and Firestone Blvd. because of the presence of the elevated freight corridor and the associated noise impacts. Both SW-616 and SW-616TL were evaluated together and would have a combined length of 11,278 feet. As shown in Table 3.14-3, SW-616 and SW-616TL were determined to be reasonable, and the recommended heights are 16 feet and ten feet, respectively.

- **SW-617A, SW-617B, SW-617TLN, and SW-617TLS.** SW-617A is approximately 1,998 feet long and is identical to SW-510. Also, this soundwall is proposed along the right-of-way on the northbound side of I-710 between Firestone Blvd. and Clara St. This soundwall would replace a section of the existing 12-foot-high soundwall that would be removed by the proposed project. The north end of SW-617A is at Station 1013+00, where it joins the existing 12-foot-high soundwall. SW-617TLN and SW-617TLS are proposed along both the northbound and southbound freight corridor between Patata St. and Clara St. because of the presence of the elevated freight corridor and the associated noise impacts. The combined soundwall length of SW-617B, SW-617TLN, and SW-617TLS would be approximately 9,062 feet. As shown in Table 3.14-3, SW-617A, SW-617B, SW-617TLN, and SW-617TLS were determined to be not reasonable. However, SW-617A must be constructed to replace an existing wall to shield residences located between Patata St. and Clara St. east of the freeway. The recommended height for SW-617A is 16 feet.
- **SW-618, SW-619, SW-618TLN, and SW-618TLS.** SW-618 and SW-619 are located along the right-of-way on the northbound side of I-710 between Florence Ave. and Slauson Ave. The section of existing ten-foot- to 14-foot-high soundwall at the right-of-way line would be impacted by the proposed project. The combined soundwall length would be approximately 2,266 feet. As shown in Table 3.14-3, SW-618 and SW-619 were determined to be not reasonable. However, SW-618 and SW-619 must be constructed to replace an existing wall that serves the residential area, which consists of mostly single-family homes located between Florence Ave. and Slauson Ave. east of the freeway. SW-618TLN and SW-618TLS are proposed along both the northbound and southbound freight corridor between Florence Ave. and Slauson Ave. because of the presence of the elevated freight corridor and the associated noise impacts. The combined soundwall length would be approximately 6,468 feet. As shown in Table 3.14-3, SW-618TLN and SW-618TLS were determined to be not reasonable when combined with SW-618 and SW-619. Therefore, it is recommended to construct SW-618 and SW-619 to replace the existing ten-foot- to 14-foot-high soundwall at the right-of-way line.
- **SW-620 and SW-621A (Design Option 1).** SW-620 is approximately 1,015 feet long and is proposed along the edge of shoulder on the northbound side of I-710, north of Washington Blvd. terminating before the structure over the UP Railroad rail yard. SW-621A is approximately 1,107 feet long and is proposed along the edge of shoulder along the on-ramp from Washington Blvd. ending just north of Bandini Park. A 12-foot-high soundwall on top of a three-foot-high concrete barrier (to be built under EA 202100) along the northbound on-ramp from Washington Blvd. would be removed and replaced

by SW-621A. The combined soundwall length would be approximately 2,122 feet. The recommended height for both walls is 16 feet. As shown in Table 3.14-3, SW-620 and SW-621A under Design Option 1 were determined to be not reasonable. However, SW-620 and SW-621A under Design Option 1 must be constructed to replace a future soundwall (to be built under EA 202100) that would serve the residential area located between Washington Blvd. and the UP Railroad rail yard on the east side of I-710. The recommended height for both SW-620 and SW-621A is 16 feet.

- **SW-620 and SW-621B (Design Option 2).** SW-620 and SW-621B apply only to Design Option 2. SW-620 is proposed along the edge of shoulder on the northbound side of I-710, north of Washington Blvd. terminating before the structure over the UP Railroad rail yard. SW-621B is proposed along the edge of shoulder on the on-ramp from Washington Blvd. ending just north of Bandini Park. A 12-foot-high soundwall on top of a three-foot-high concrete barrier (to be built under EA 202100) along the northbound on-ramp from Washington Blvd. would be removed and replaced by SW-621A. The combined soundwall length would be approximately 2,424 feet. As shown in Table 3.14-3, SW-620 and SW-621B under Design Option 2 were determined to be not reasonable. However, SW-620 and SW-621B under Design Option 2 must be constructed to replace a future soundwall (to be built under EA 202100) that would serve the residential area located between Washington Blvd. and the UP Railroad rail yard on the east side of I-710. The recommended height for SW-620 and SW-621B under Design Option 2 is 16 feet.
- **SW-620A and SW-620B (Design Option 2).** SW-620A and SW-620B apply only to Design Option 2. SW-620A is approximately 1,520 feet long and is proposed along the edge of shoulder on the southbound side of I-710 between Washington Blvd. and Sheila St. SW-620B is approximately 1,003 feet long and is proposed along the edge of shoulder on the southbound off-ramp to Washington Blvd. A 12-foot-high soundwall (to be built under EA 202100) along the southbound off-ramp to Washington Blvd. would be removed and replaced by SW-620A and SW-620B. The combined soundwall length would be approximately 2,523 feet. As shown in Table 3.14-3, SW-620A and SW-620B under Design Option 2 were determined to be not reasonable. However, SW-620A and SW-620B under Design Option 2 must be constructed to replace a future soundwall (to be built under EA 202100) that would serve the residential area located between Washington Blvd. and the UP Railroad rail yard on the west side of I-710. The recommended height for SW-620A and SW-620B under Design Option 2 is 16 feet.
- **SW-622 (Design Options 1 and 2).** This soundwall is approximately 1,368 feet long and is proposed along the edge of shoulder on the northbound side of I-710 between

Noakes St. and I-5. A 12-foot-high soundwall (to be built under EA 202101) at this location would be demolished and replaced by SW-622. The recommended heights are 14 feet and 16 feet for Design Options 1 and 2, respectively.

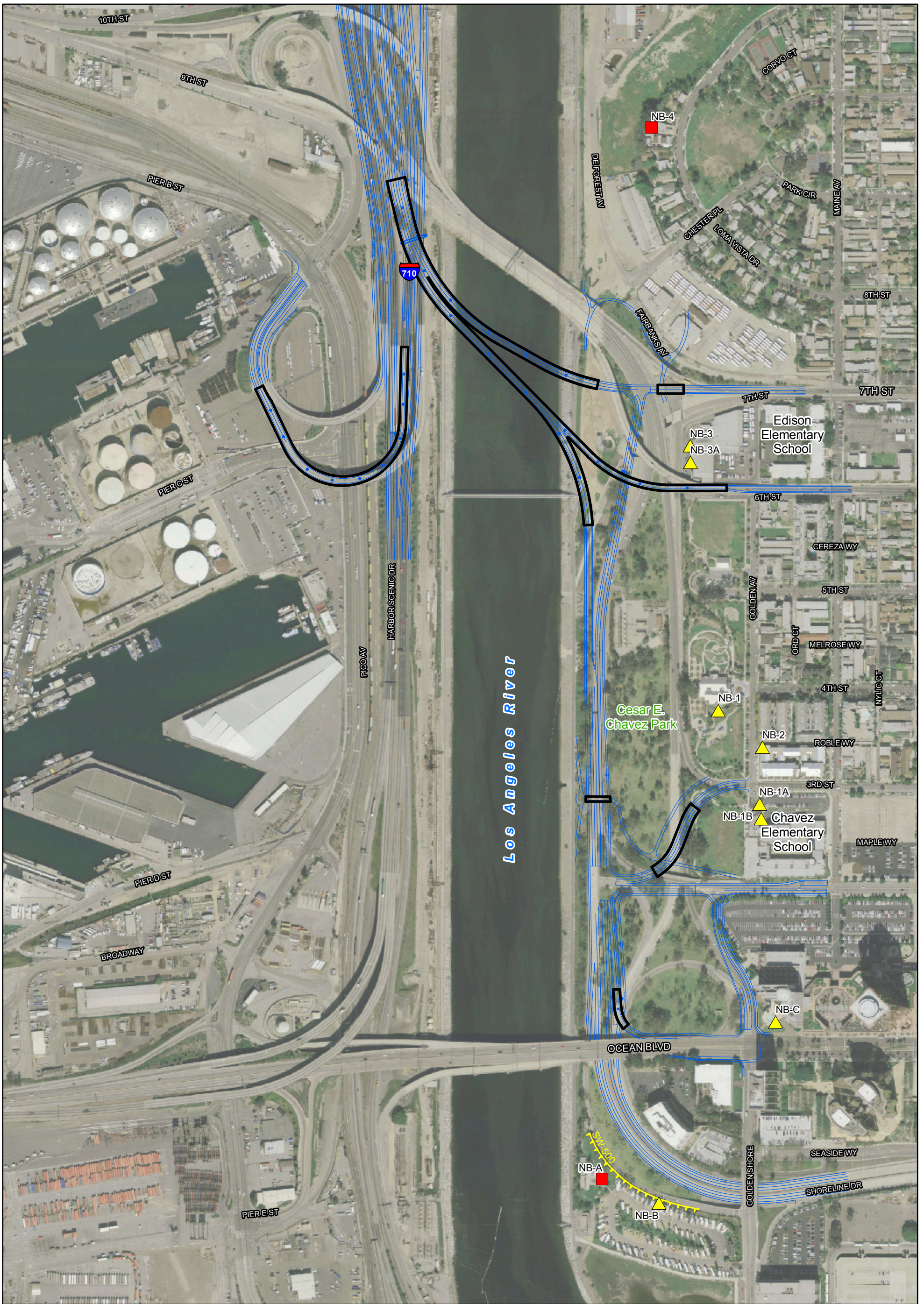
- **SW-622A and SW-622B (Design Options 1 and 2).** SW-622A and SW-622B apply to both Design Options 1 and 2. SW-622A is proposed along the edge of shoulder on the realigned southbound side of I-710 between Noakes St. and I-5. SW-622B is proposed along the edge of shoulder on the new southbound off-ramp to Washington Blvd. These soundwalls are proposed as a replacement to the existing soundwall and the future 12-foot-high soundwall (to be built under EA 202100), both of which would be impacted by the proposed project. The combined soundwall length would be approximately 1,645 feet. As shown in Table 3.14-3, SW-622A and SW-622B for both Design Options 1 and 2 were determined to be not reasonable. However, SW-622A and SW-622B for both Design Options 1 and 2 must be constructed to replace a future soundwall (to be built under EA 202100) that would serve the residential area located between the UP Railroad rail yard and I-5 on the west side of I-710. The recommended height for SW-622A and SW-622B is 12 feet under both Design Options 1 and 2.
- **SW-623 and SW-625.** Similar to SW-517 and SW-519, SW-623 and SW-625 are proposed along the edge of shoulder on the Eastern Ave. interchange on the southbound side of I-710. The combined soundwall length would be approximately 1,212 feet and would be new construction, with the exception of SW-625, which joins with a future 12-foot-high soundwall (to be built under EA 202100). Soundwall SW-623 may obstruct the view from the freeway to the commercial area located at the northwestern corner of the Eastern Ave. and Olympic Blvd. intersection. As shown in Table 3.14-3, SW-517 and SW-519 were determined to be not reasonable. Further considerations and evaluations may be necessary before Caltrans is able to reach a final decision to construct these walls.
- **SW-626.** This soundwall is approximately 294 feet long and is along the edge of shoulder on the southbound side of I-710 between Whittier Blvd. and South Humphreys Ave. The proposed project would remove a 294-foot section of the future 12-foot-high soundwall to be built under EA 202101. SW-626 is required to replace the removed section. The recommended height is 16 feet.

3.14.6 AVOIDANCE, MINIMIZATION, AND/OR ABATEMENT MEASURES

The following measures are required to minimize adverse construction noise impacts:

- N-1** Based on the studies completed to date, the California Department of Transportation (Caltrans) intends to incorporate noise abatement in the form of soundwalls listed in Table 3.14-4, depending on the selected alternative. During final design, Caltrans will make the final decision on noise abatement to be included in the selected build alternative, based on the final design of the proposed project and the public involvement process. If during final design, conditions have substantially changed, noise abatement at some of the locations noted above may not be necessary. Caltrans will incorporate the final noise abatement in the final project design and specifications.
- N-2** In accordance with Section 612 of the California Street and Highway Code, interior noise abatement measures are required to reduce noise levels to 52 A-weighted decibels of equivalent continuous noise level (dBA L_{eq}) or below for meeting rooms and classroom building located near Interstate 710 (I-710) at Vista High School.

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LEGEND

- Alternative 5A Features
- Elevated Structures and Columns
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- Existing Soundwall

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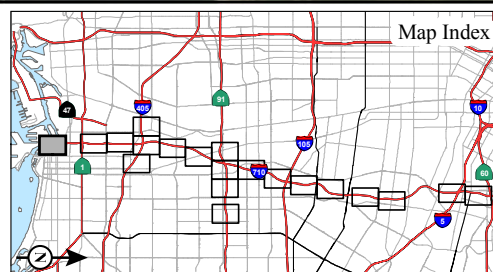
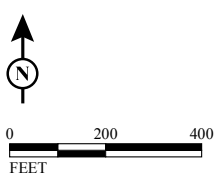


FIGURE 3.14-1
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LEGEND

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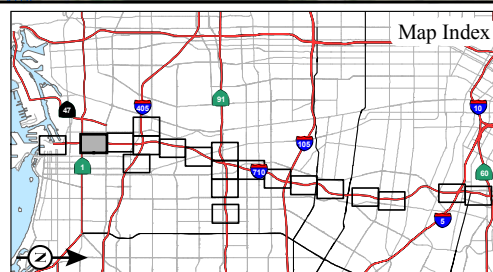
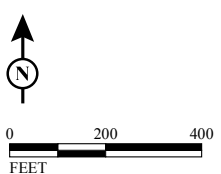
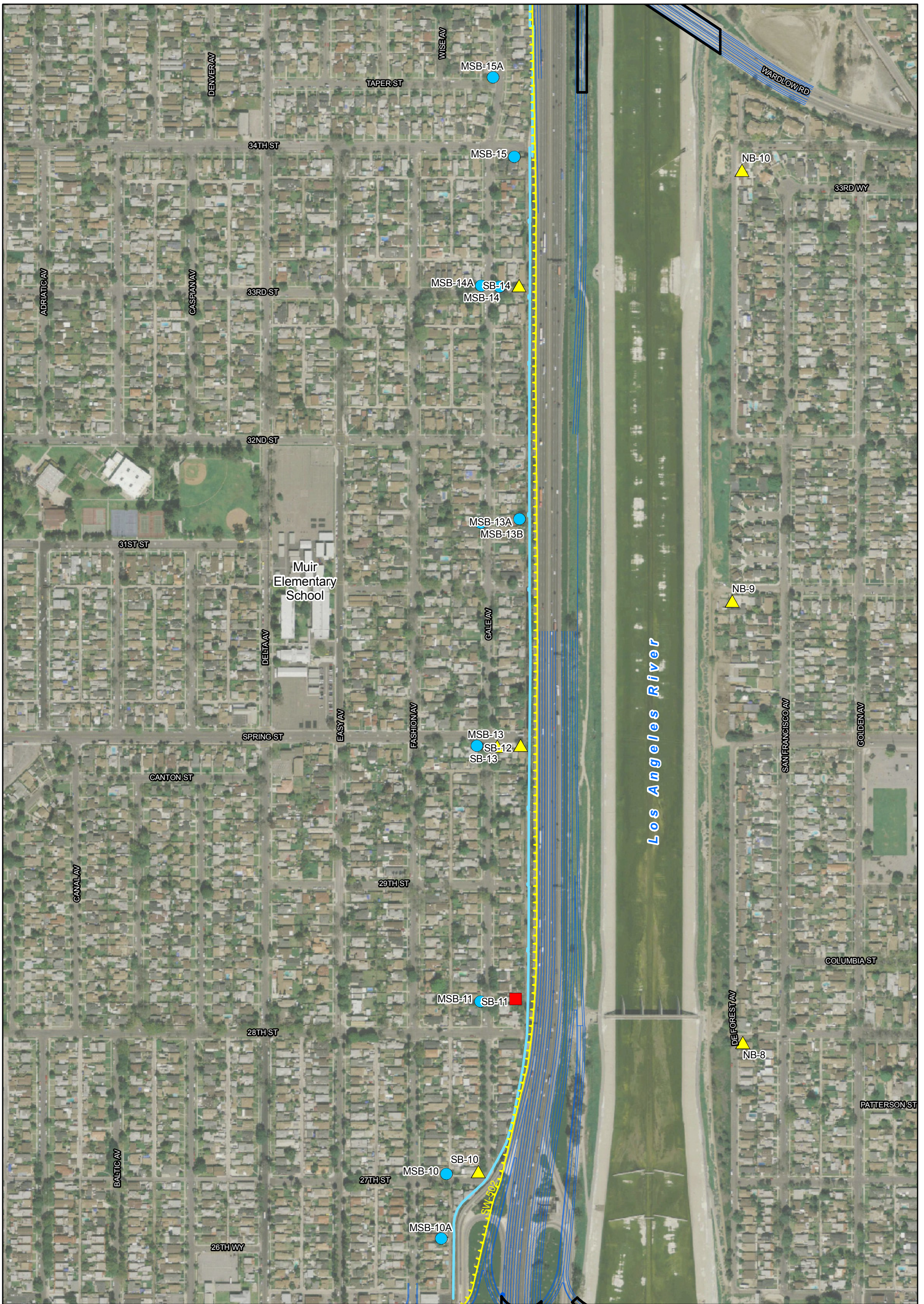


FIGURE 3.14-1
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I-710 Corridor Project EIR/EIS
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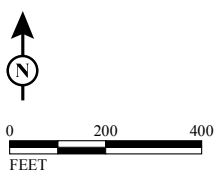
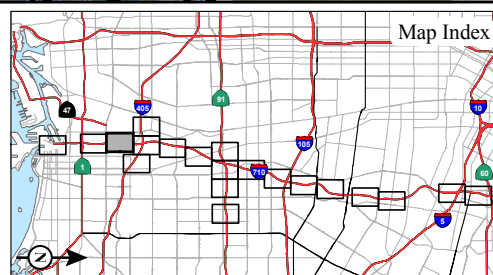
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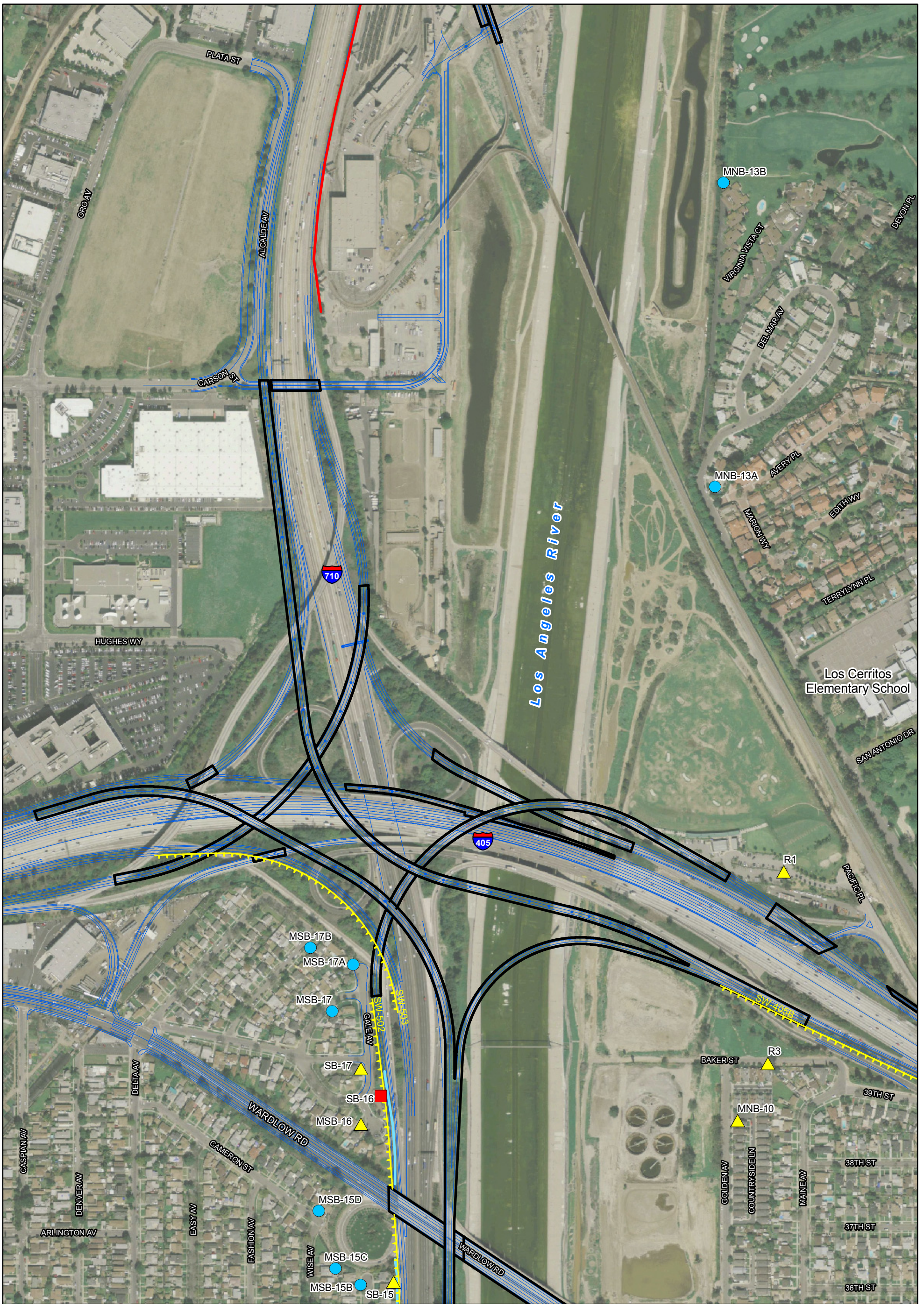


SOURCE: BING (2009); TBM (2008); URS (5/2011)
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FIGURE 3.14-1
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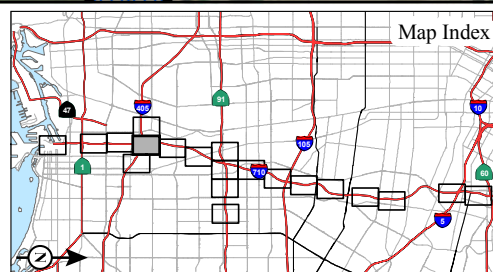
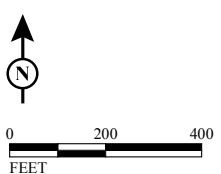
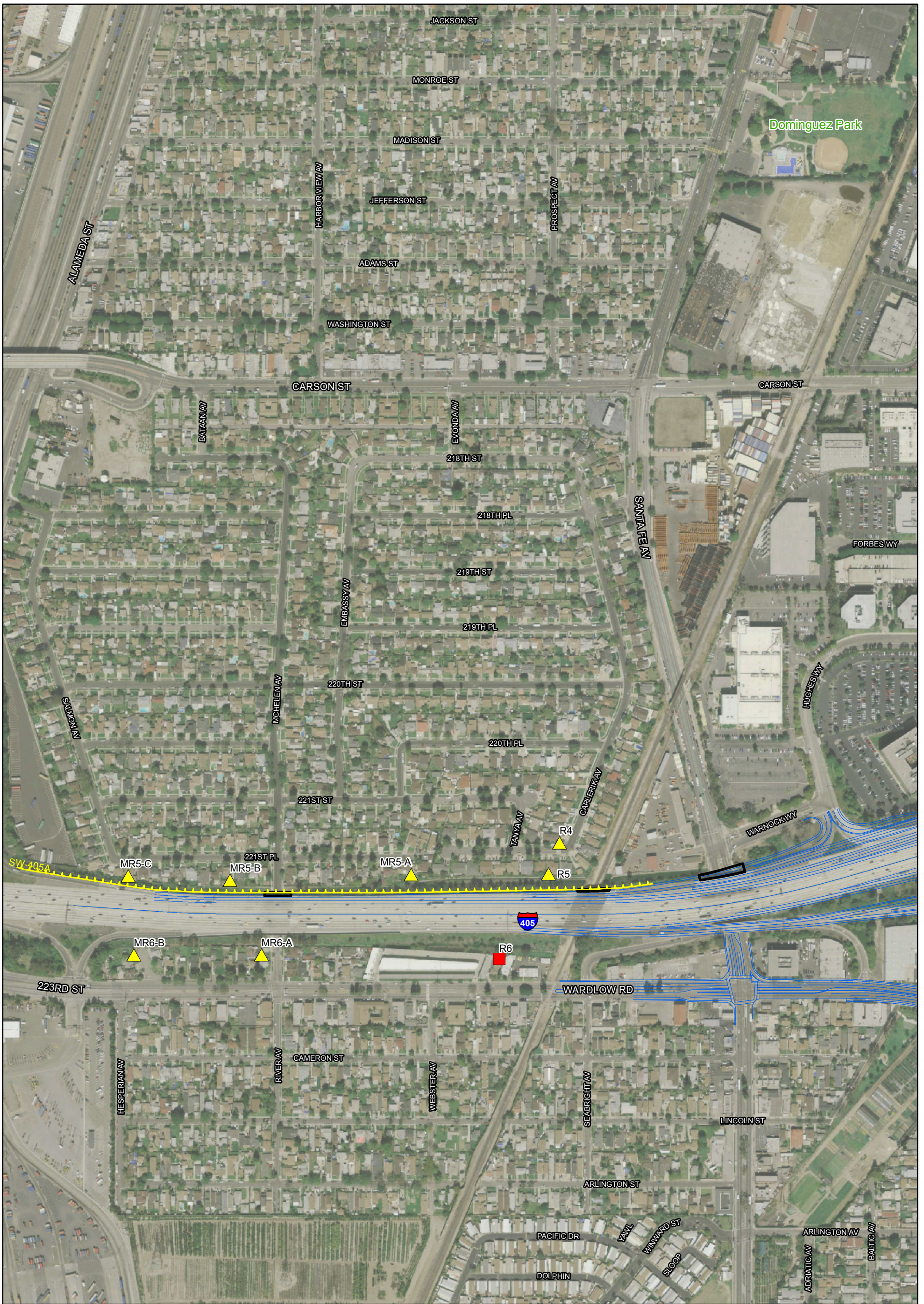


FIGURE 3.14-1
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I-710 Corridor Project EIR/EIS
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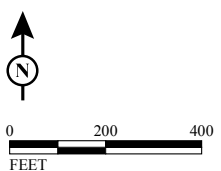
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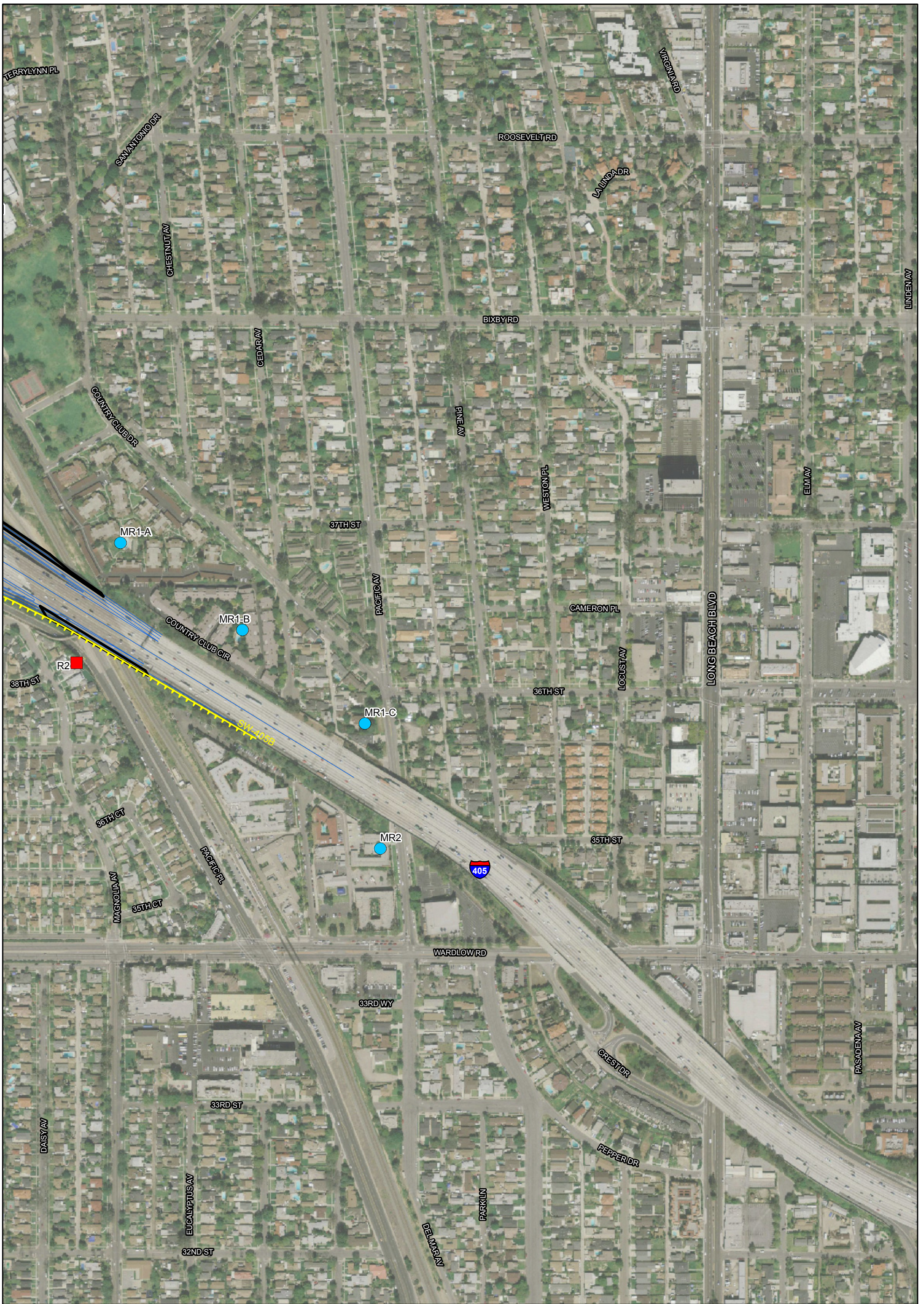


FIGURE 3.14-1
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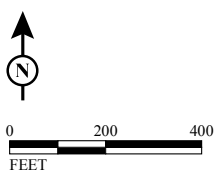
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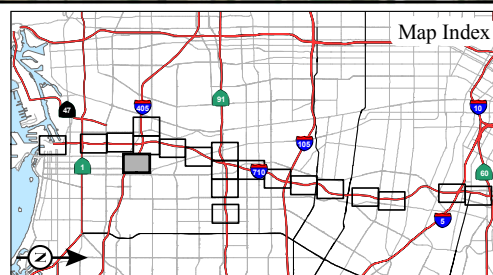


FIGURE 3.14-1
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I-710 Corridor Project EIR/EIS
 Alternative 5A - Noise Monitoring,
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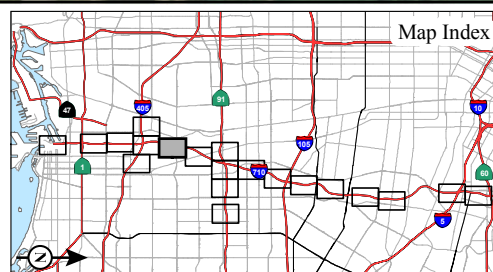
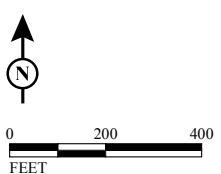


FIGURE 3.14-1
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I-710 Corridor Project EIR/EIS
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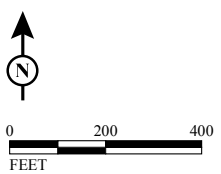
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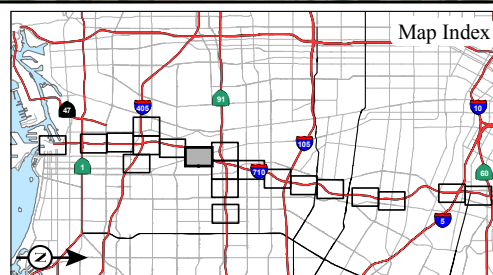
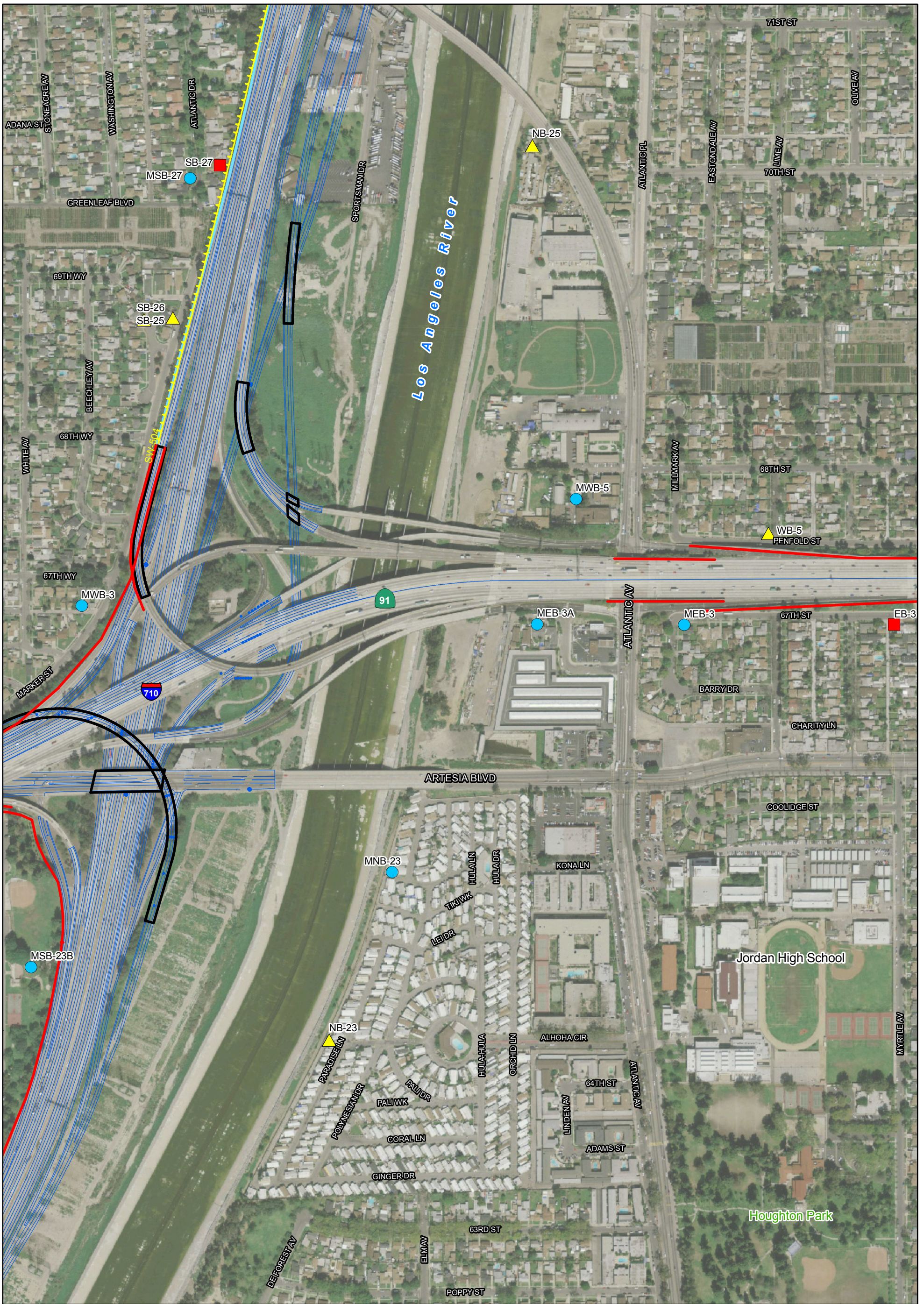


FIGURE 3.14-1
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I-710 Corridor Project EIR/EIS
 Alternative 5A - Noise Monitoring,
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 07-LA-710- PM 4.9/24.9
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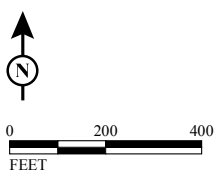
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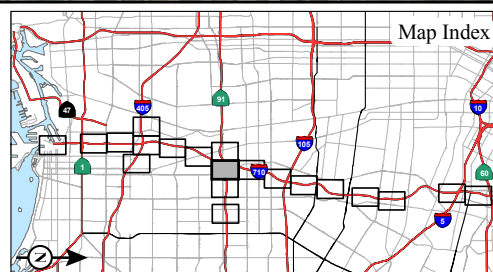


FIGURE 3.14-1
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 Alternative 5A - Noise Monitoring,
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LEGEND

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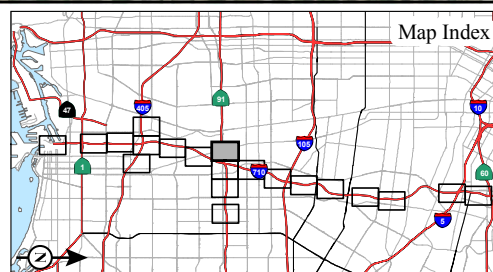
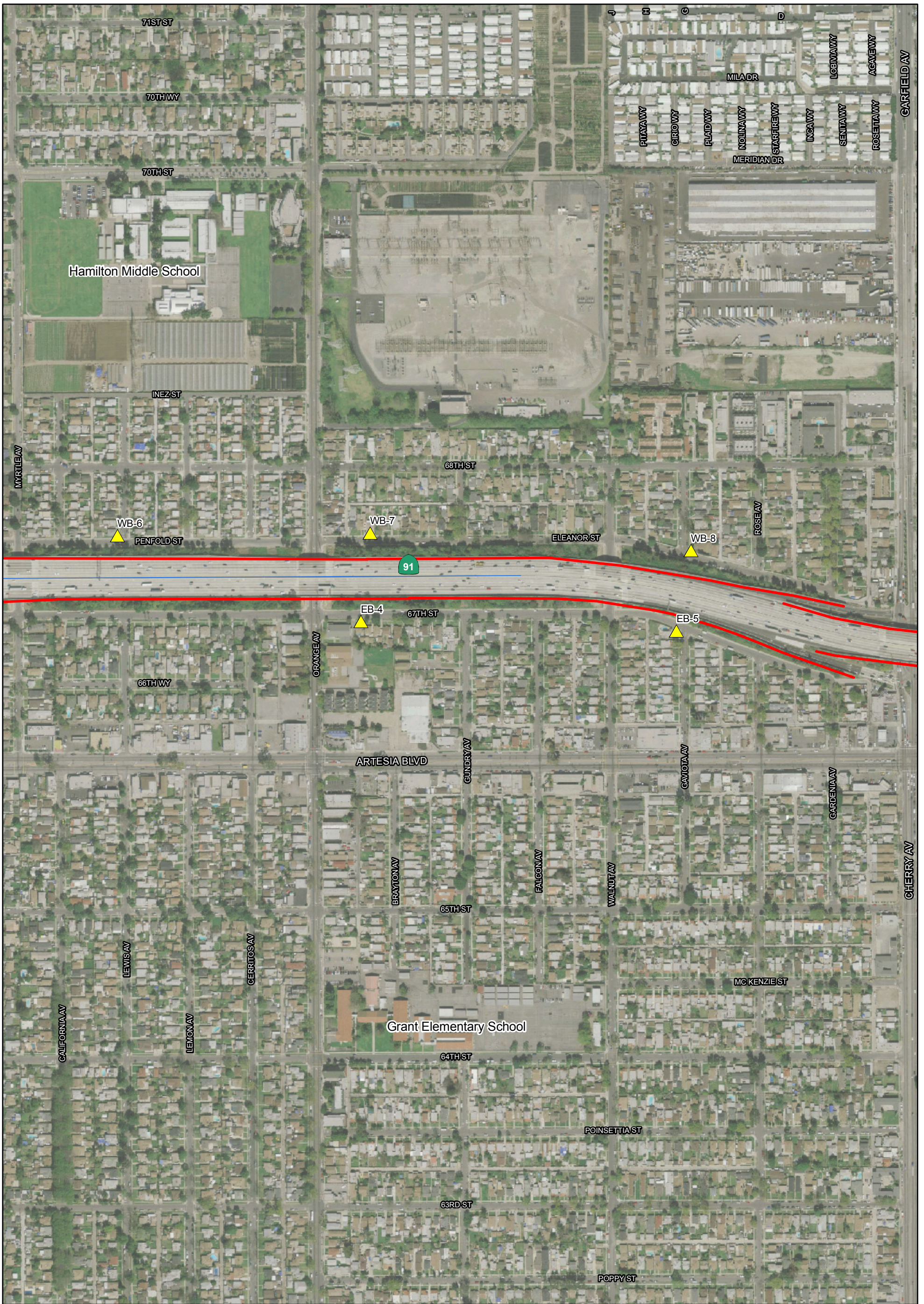


FIGURE 3.14-1
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I-710 Corridor Project EIR/EIS
Alternative 5A - Noise Monitoring,
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LEGEND

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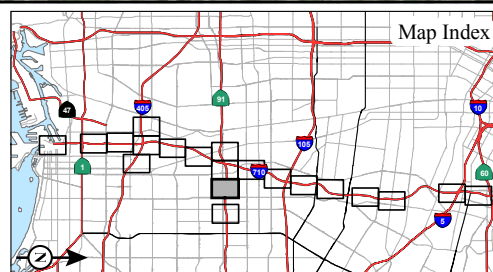
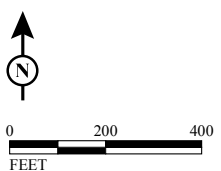
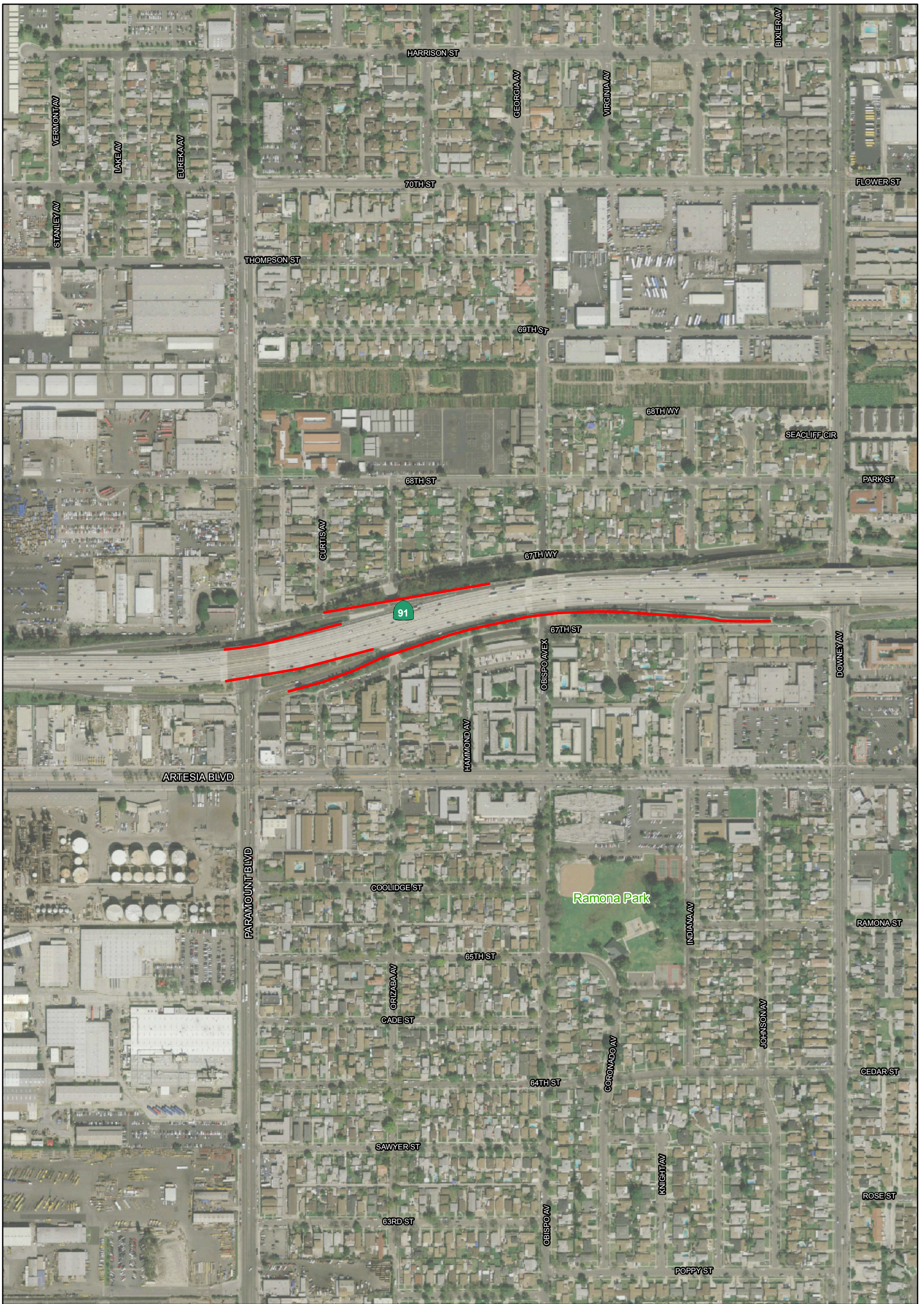


FIGURE 3.14-1
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I-710 Corridor Project EIR/EIS
Alternative 5A - Noise Monitoring,
Modeled Sites, and Sound Walls
07-LA-710- PM 4.9/24.9
EA 249900

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LEGEND

- Alternative 5A Features
 - Elevated Structures and Columns
 - 24-Hr Noise Site
 - Monitoring Noise Site
 - ▲ Modeled Site
 - Acoustically Feasible Soundwall
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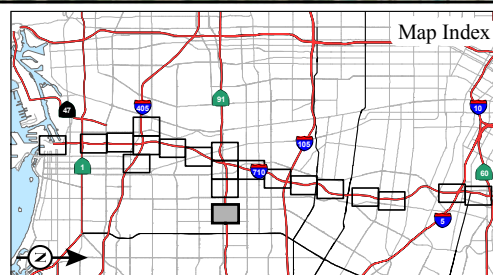
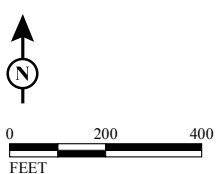


FIGURE 3.14-1
Sheet 12 of 20

I-710 Corridor Project EIR/EIS
Alternative 5A - Noise Monitoring,
Modeled Sites, and Sound Walls
07-LA-710- PM 4.9/24.9
EA 249900



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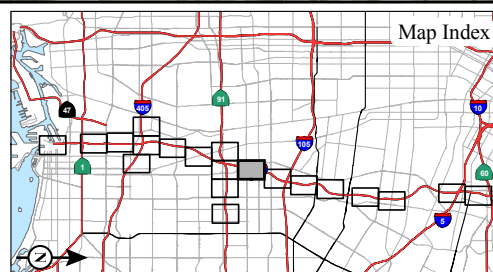
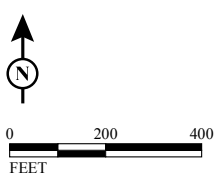
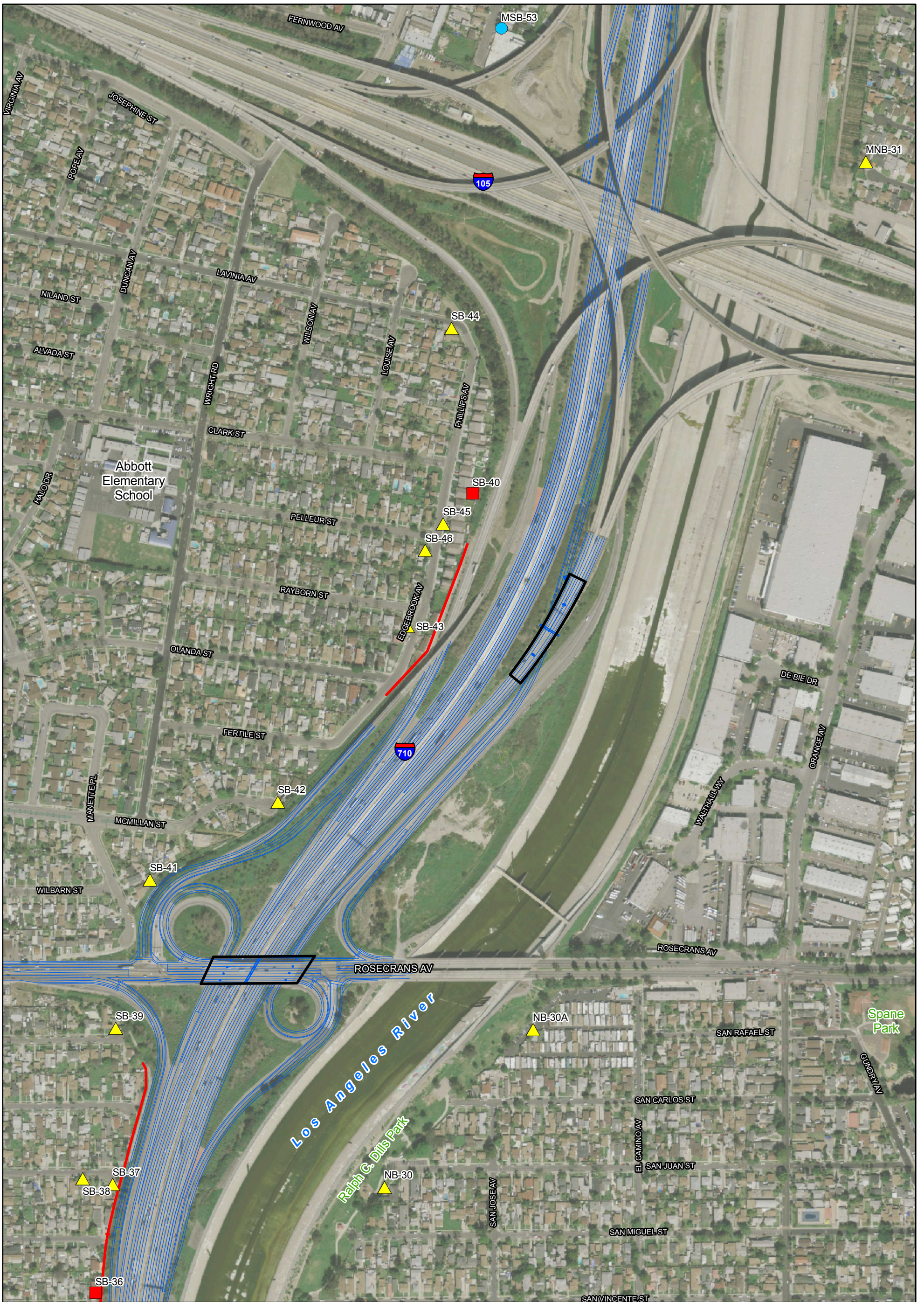


FIGURE 3.14-1
Sheet 13 of 20

I-710 Corridor Project EIR/EIS
Alternative 5A - Noise Monitoring,
Modeled Sites, and Sound Walls
07-LA-710- PM 4.9/24.9
EA 249900



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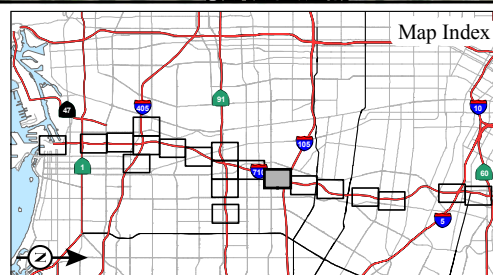


FIGURE 3.14-1
Sheet 14 of 20

I-710 Corridor Project EIR/EIS
Alternative 5A - Noise Monitoring,
Modeled Sites, and Sound Walls
07-LA-710- PM 4.9/24.9
EA 249900

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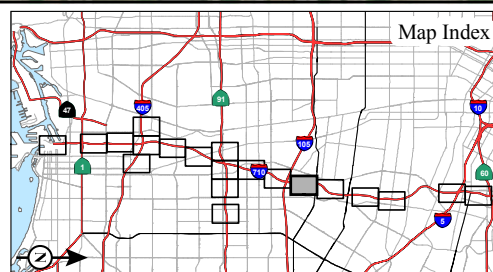
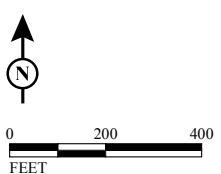


FIGURE 3.14-1
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I-710 Corridor Project EIR/EIS
Alternative 5A - Noise Monitoring,
Modeled Sites, and Sound Walls
07-LA-710- PM 4.9/24.9
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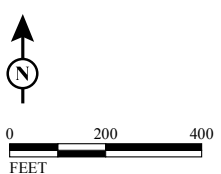
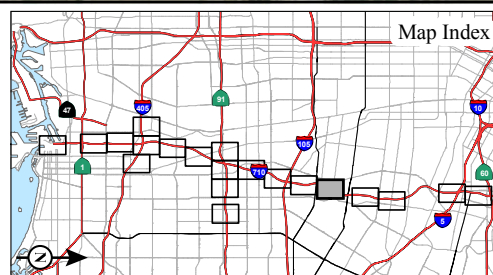
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LEGEND

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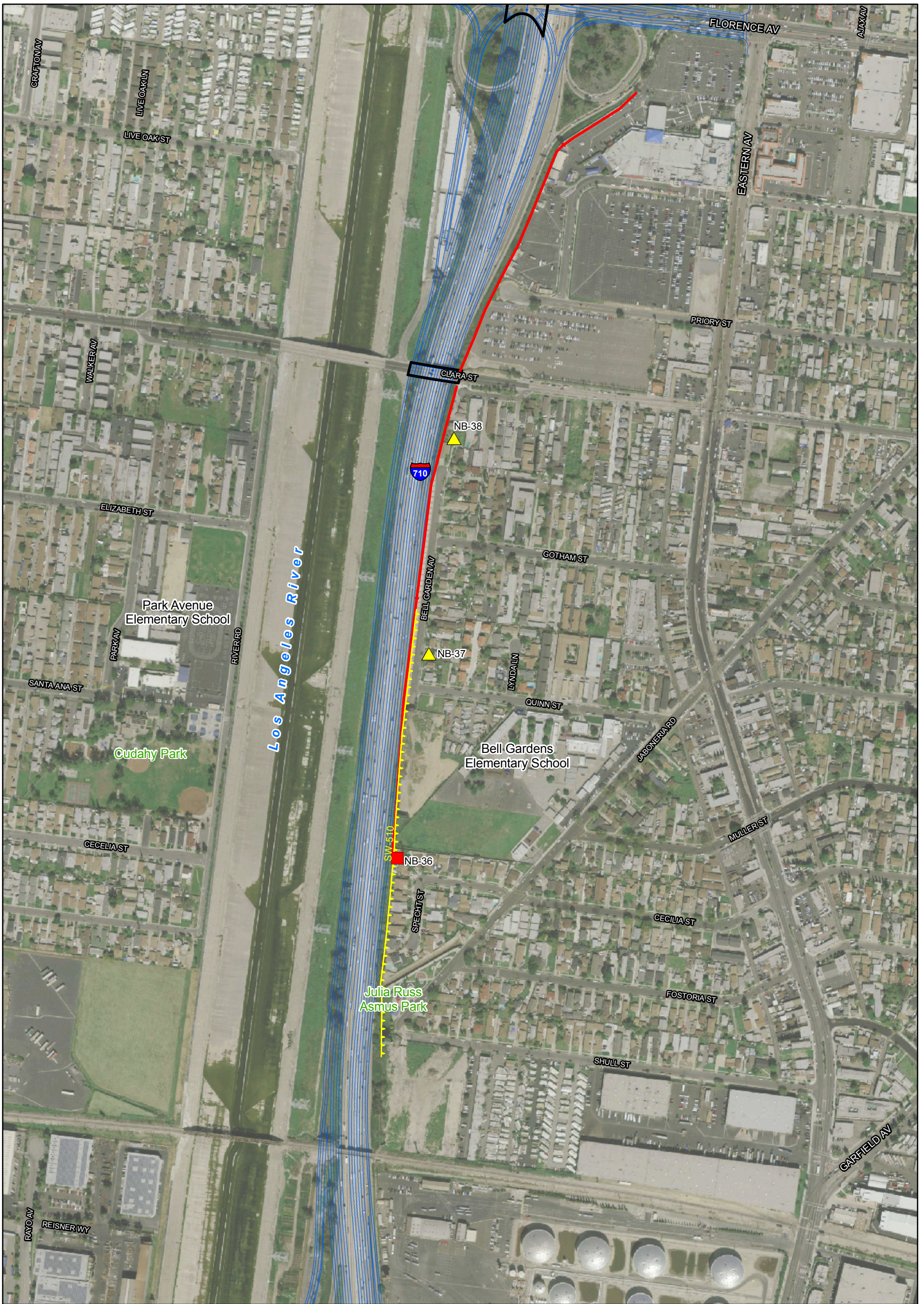


SOURCE: BING (2009); TBM (2008); URS (5/2011)
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FIGURE 3.14-1
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I-710 Corridor Project EIR/EIS
 Alternative 5A - Noise Monitoring,
 Modeled Sites, and Sound Walls
 07-LA-710- PM 4.9/24.9
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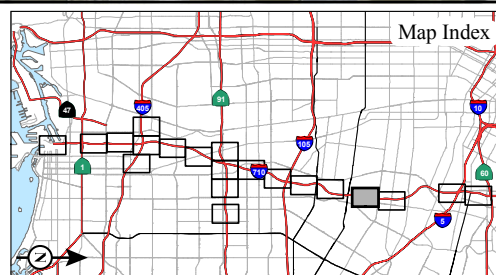
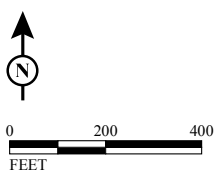


FIGURE 3.14-1
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I-710 Corridor Project EIR/EIS
Alternative 5A - Noise Monitoring,
Modeled Sites, and Sound Walls
07-LA-710- PM 4.9/24.9
EA 249900

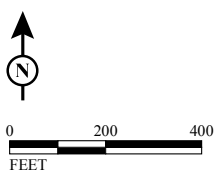
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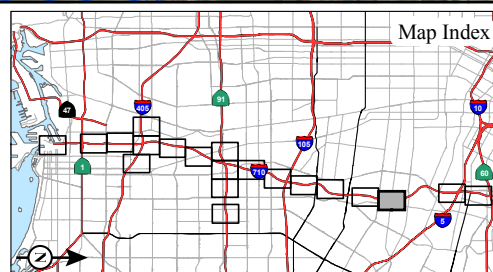
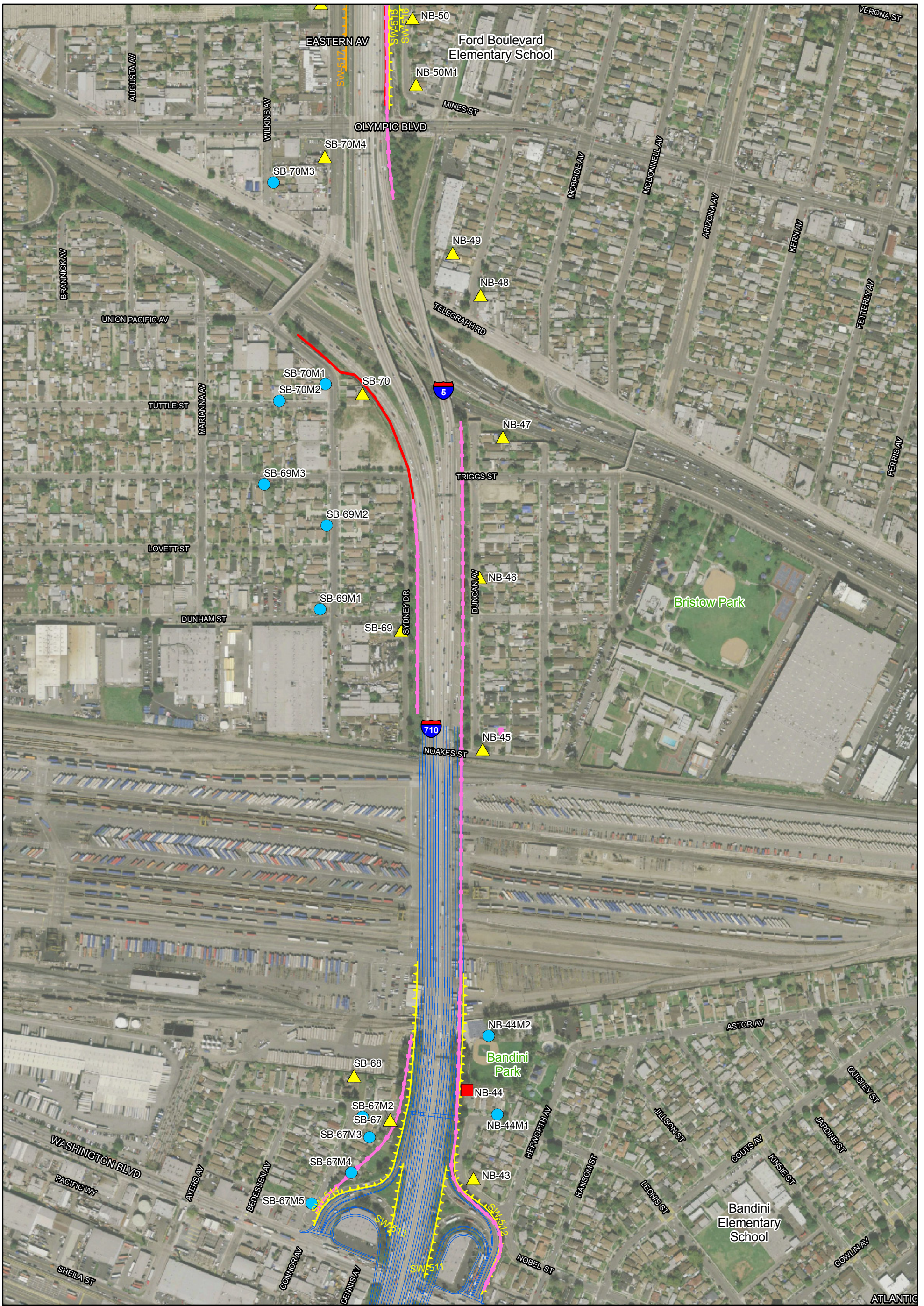


FIGURE 3.14-1
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I-710 Corridor Project EIR/EIS
 Alternative 5A - Noise Monitoring,
 Modeled Sites, and Sound Walls
 07-LA-710- PM 4.9/24.9
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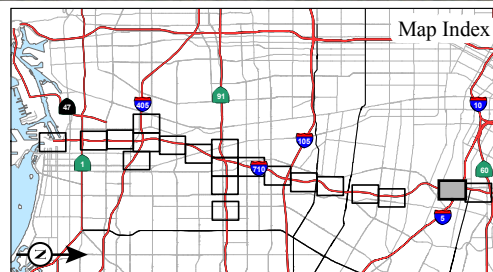
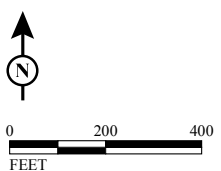
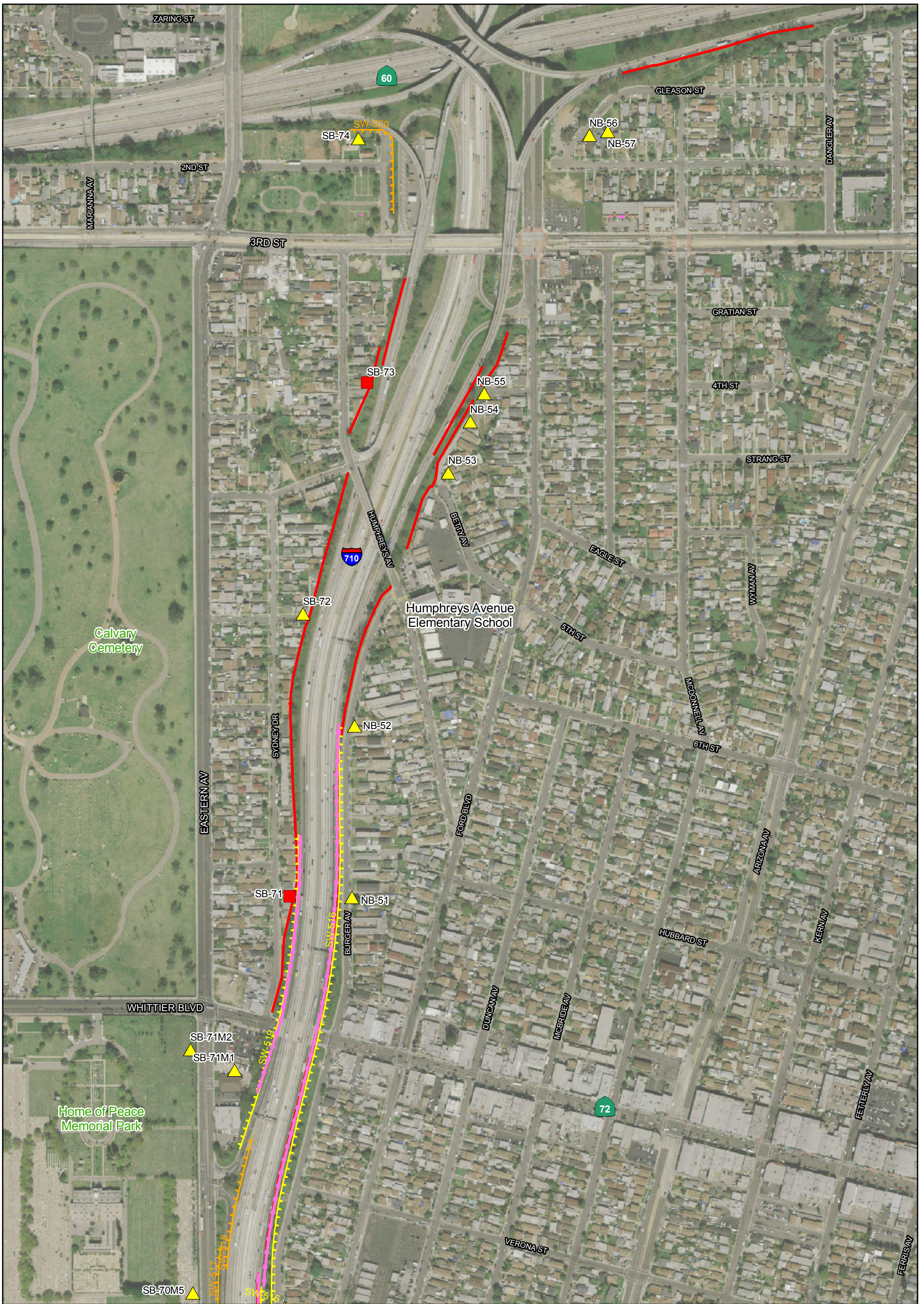


FIGURE 3.14-1
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I-710 Corridor Project EIR/EIS
Alternative 5A - Noise Monitoring,
Modeled Sites, and Sound Walls
07-LA-710- PM 4.9/24.9
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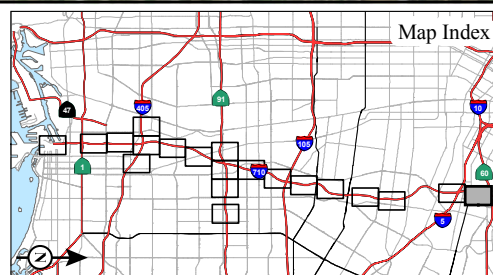
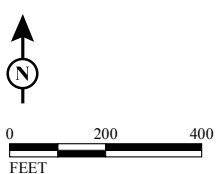


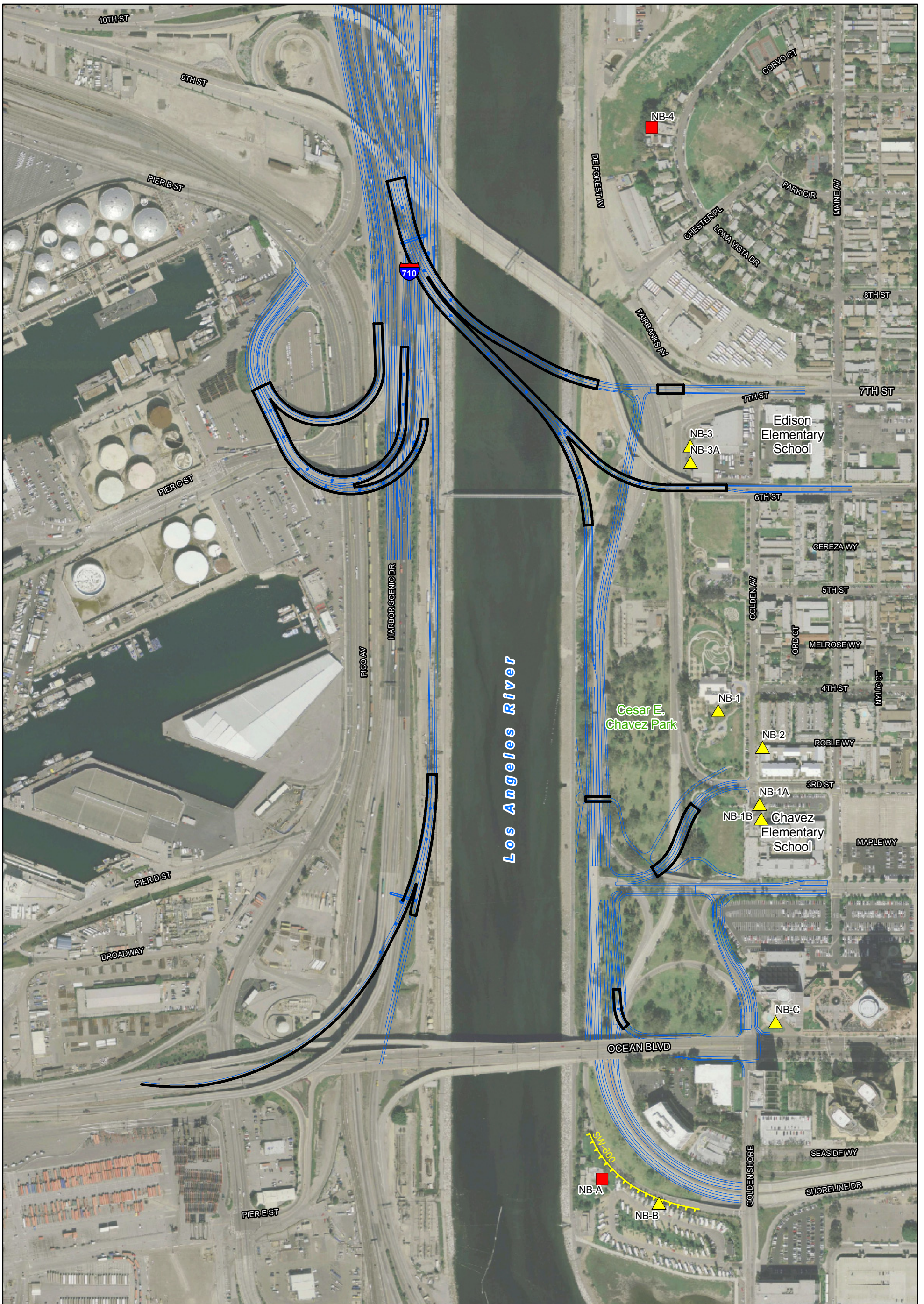
FIGURE 3.14-1
Sheet 20 of 20

I-710 Corridor Project EIR/EIS
Alternative 5A - Noise Monitoring,
Modeled Sites, and Sound Walls
07-LA-710- PM 4.9/24.9
EA 249900



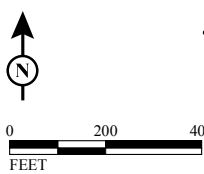
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LEGEND

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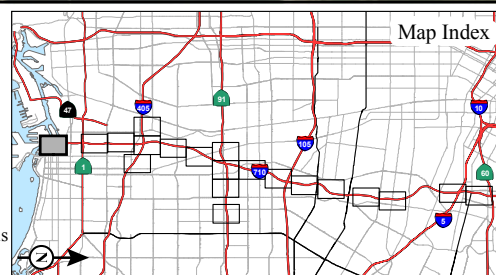
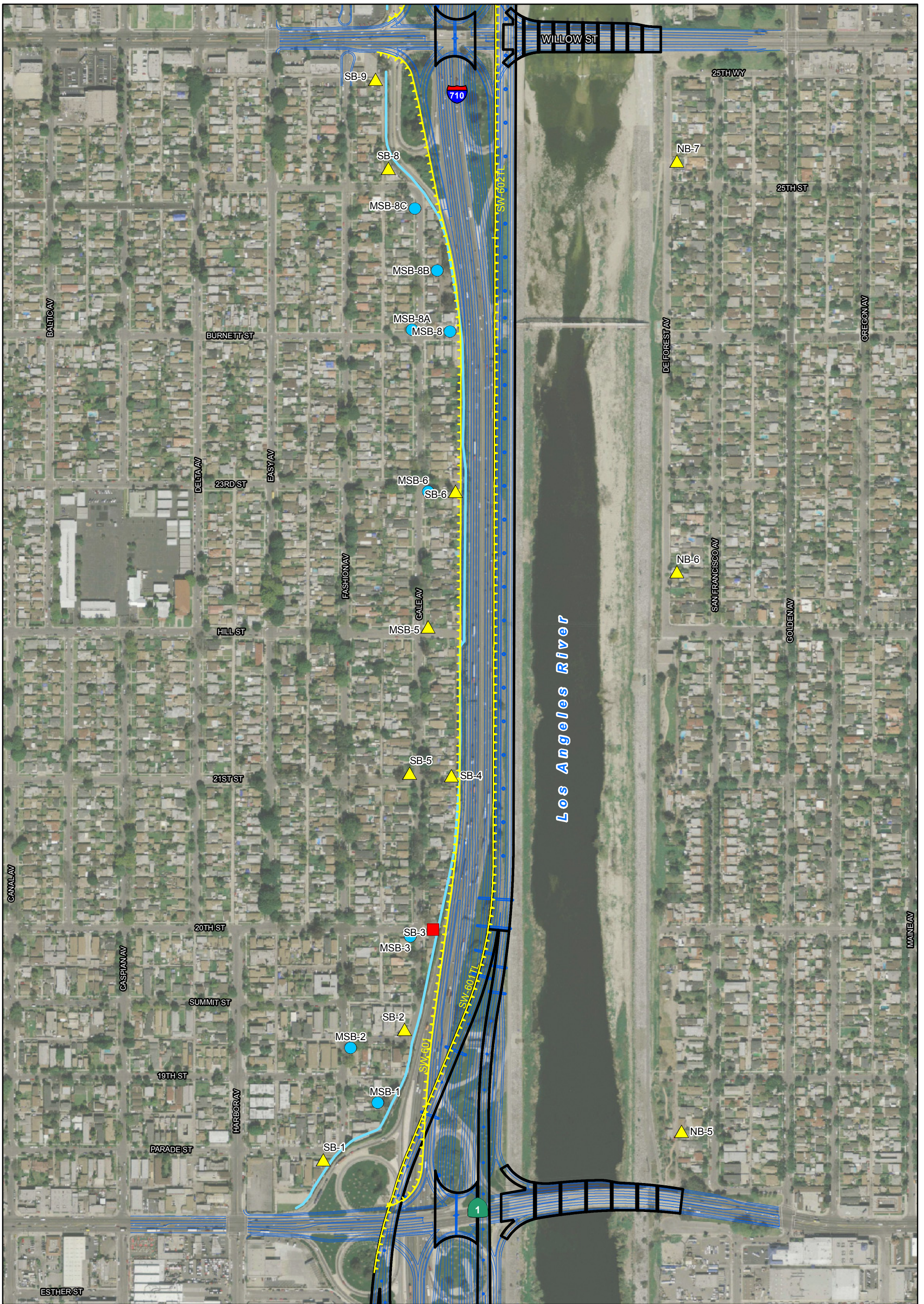


FIGURE 3.14-2
 Sheet 1 of 20

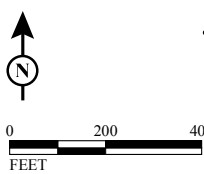
I-710 Corridor Project EIR/EIS
 Alternatives 6A/B/C - Noise Monitoring,
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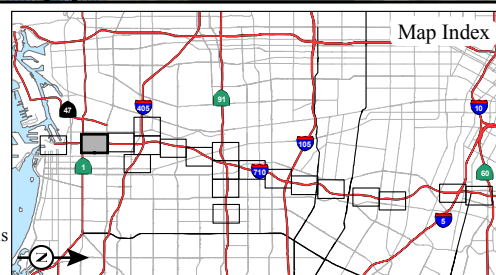
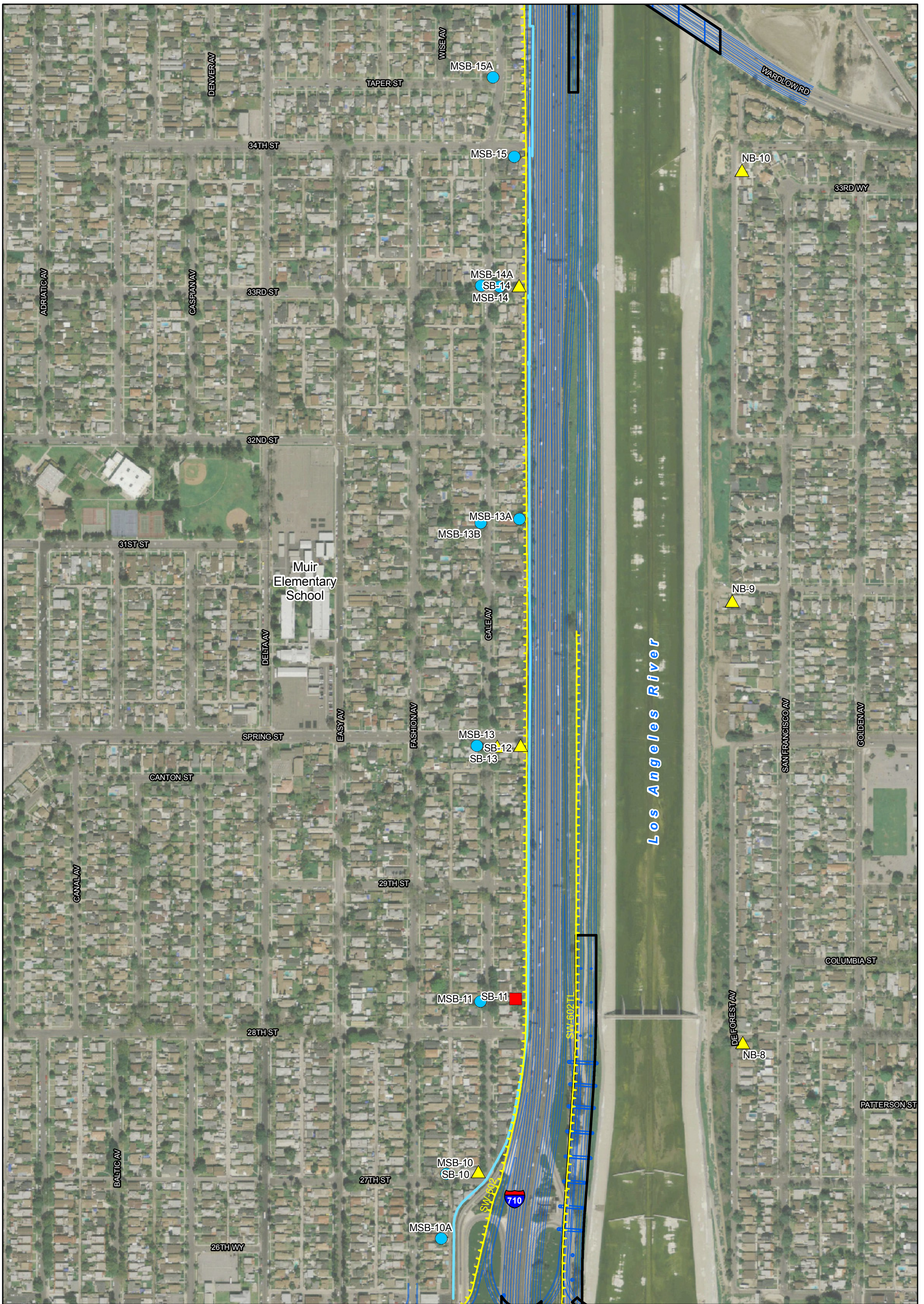


FIGURE 3.14-2
 Sheet 2 of 20

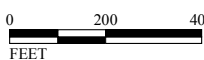
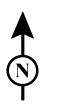
I-710 Corridor Project EIR/EIS
 Alternatives 6A/B/C - Noise Monitoring,
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 07-LA-710- PM 4.9/24.9
 EA 249900

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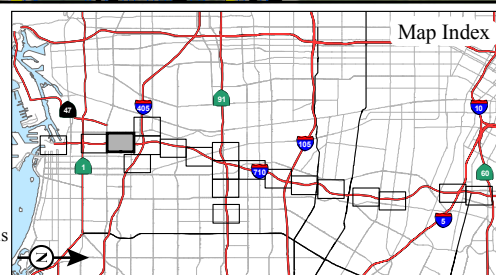
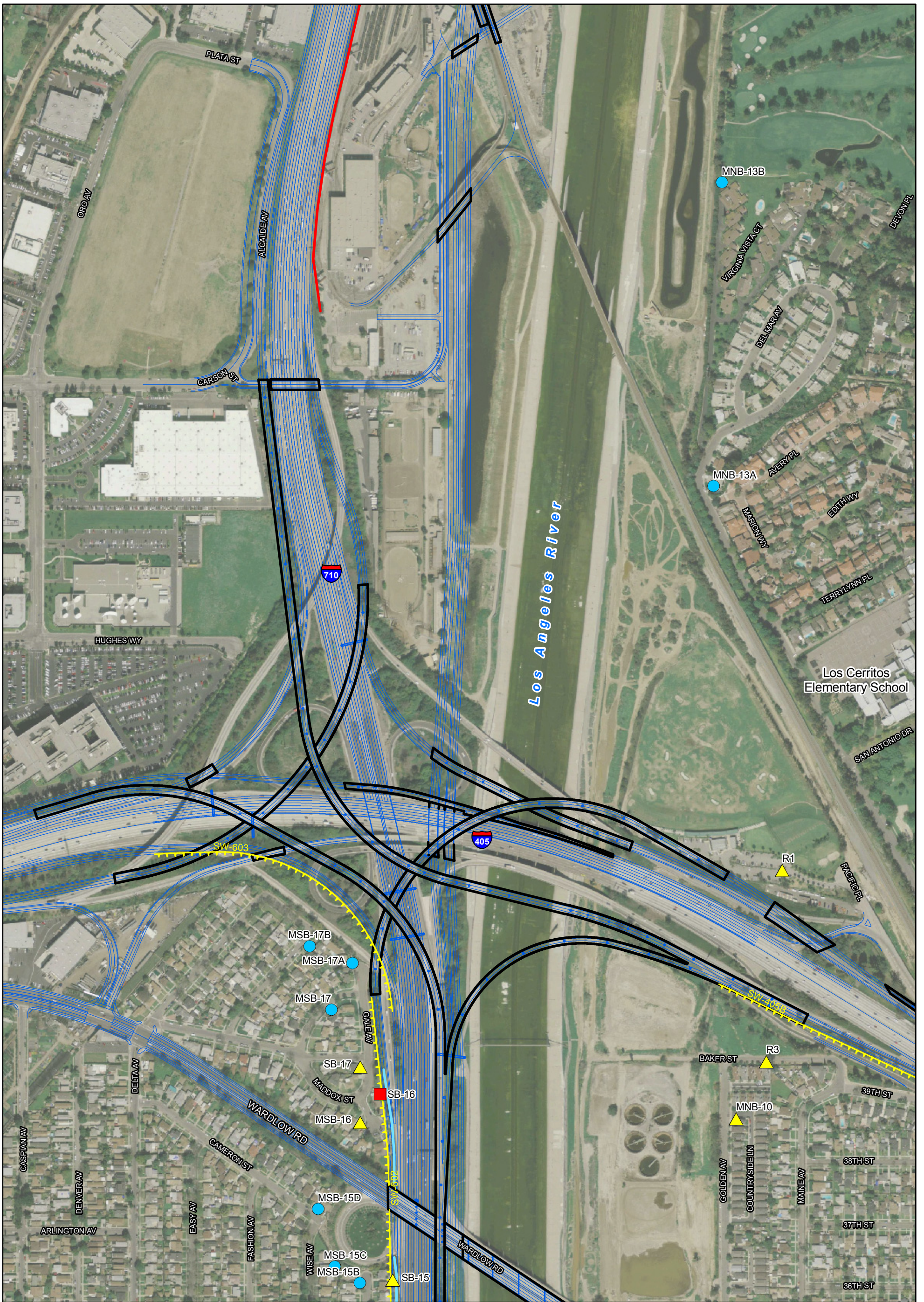


FIGURE 3.14-2
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I-710 Corridor Project EIR/EIS
 Alternatives 6A/B/C - Noise Monitoring,
 Modeled Sites, and Sound Walls
 07-LA-710- PM 4.9/24.9
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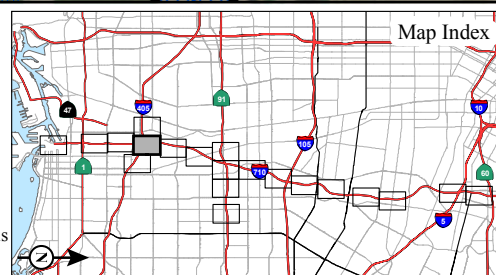
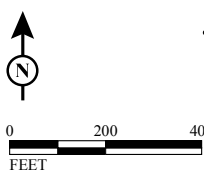
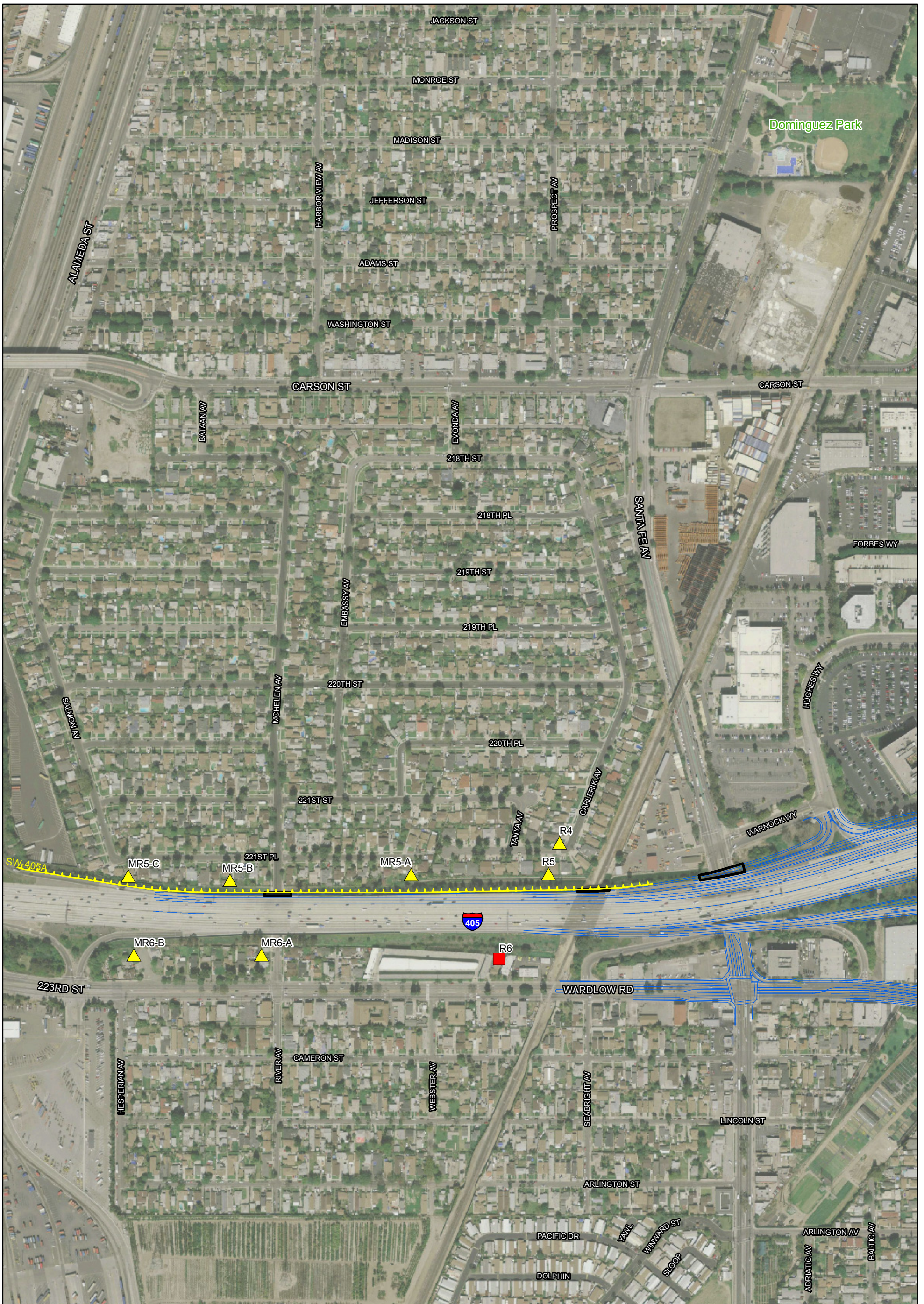


FIGURE 3.14-2
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I-710 Corridor Project EIR/EIS
**Alternatives 6A/B/C - Noise Monitoring,
 Modeled Sites, and Sound Walls**
 07-LA-710- PM 4.9/24.9
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LEGEND

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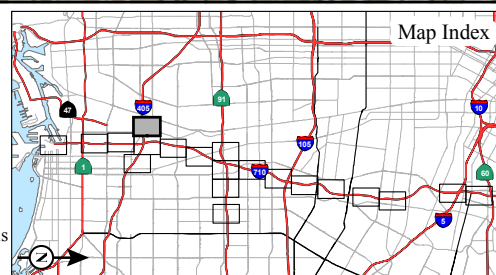
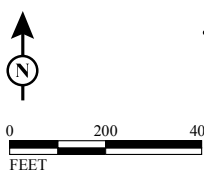
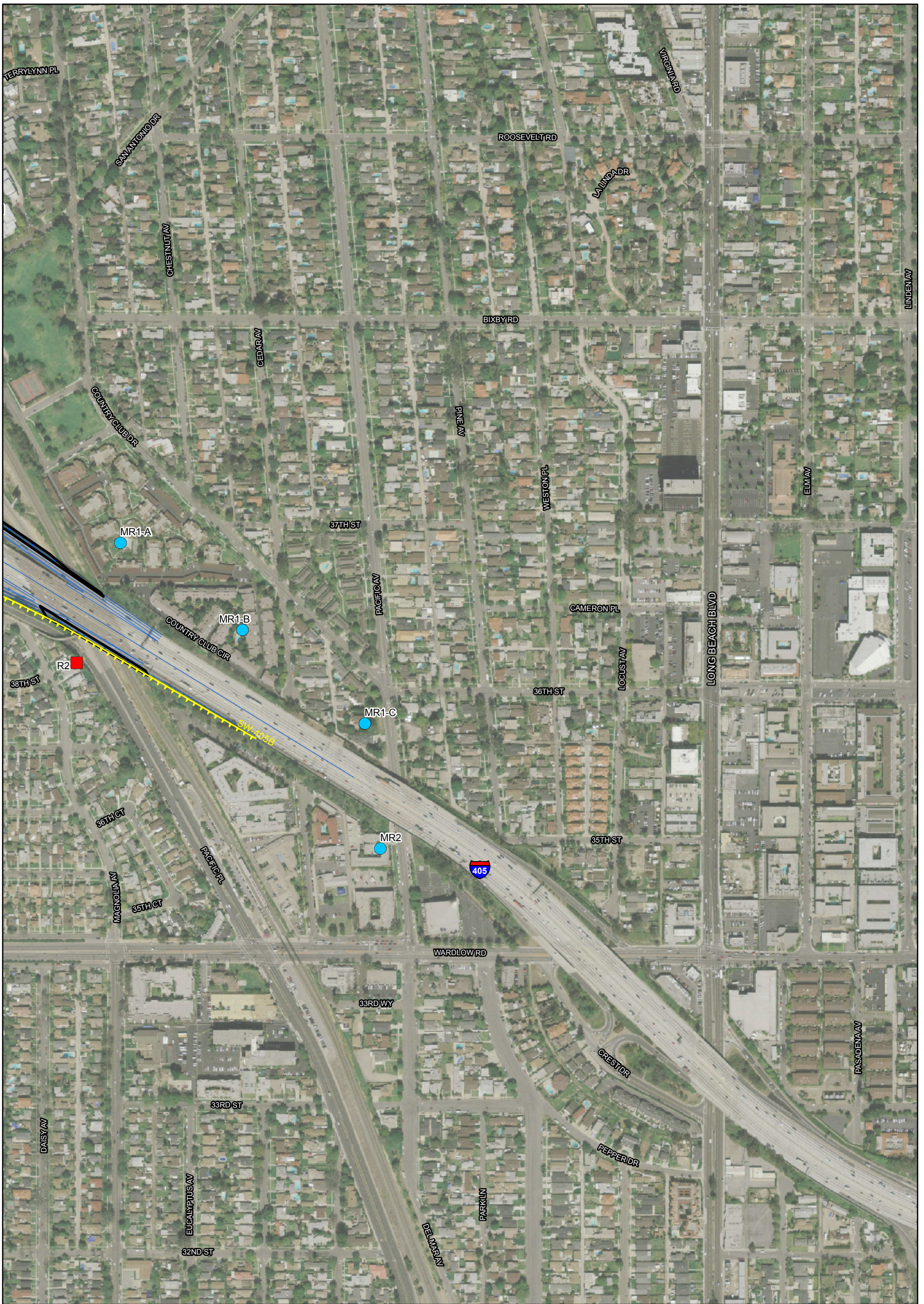


FIGURE 3.14-2
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I-710 Corridor Project EIR/EIS
 Alternatives 6A/B/C - Noise Monitoring,
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 07-LA-710- PM 4.9/24.9
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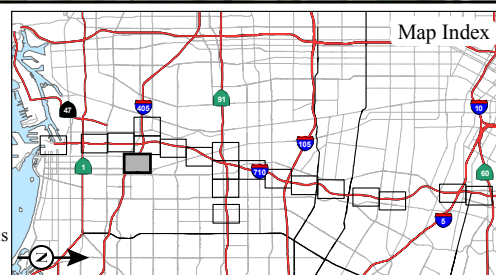
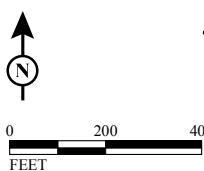
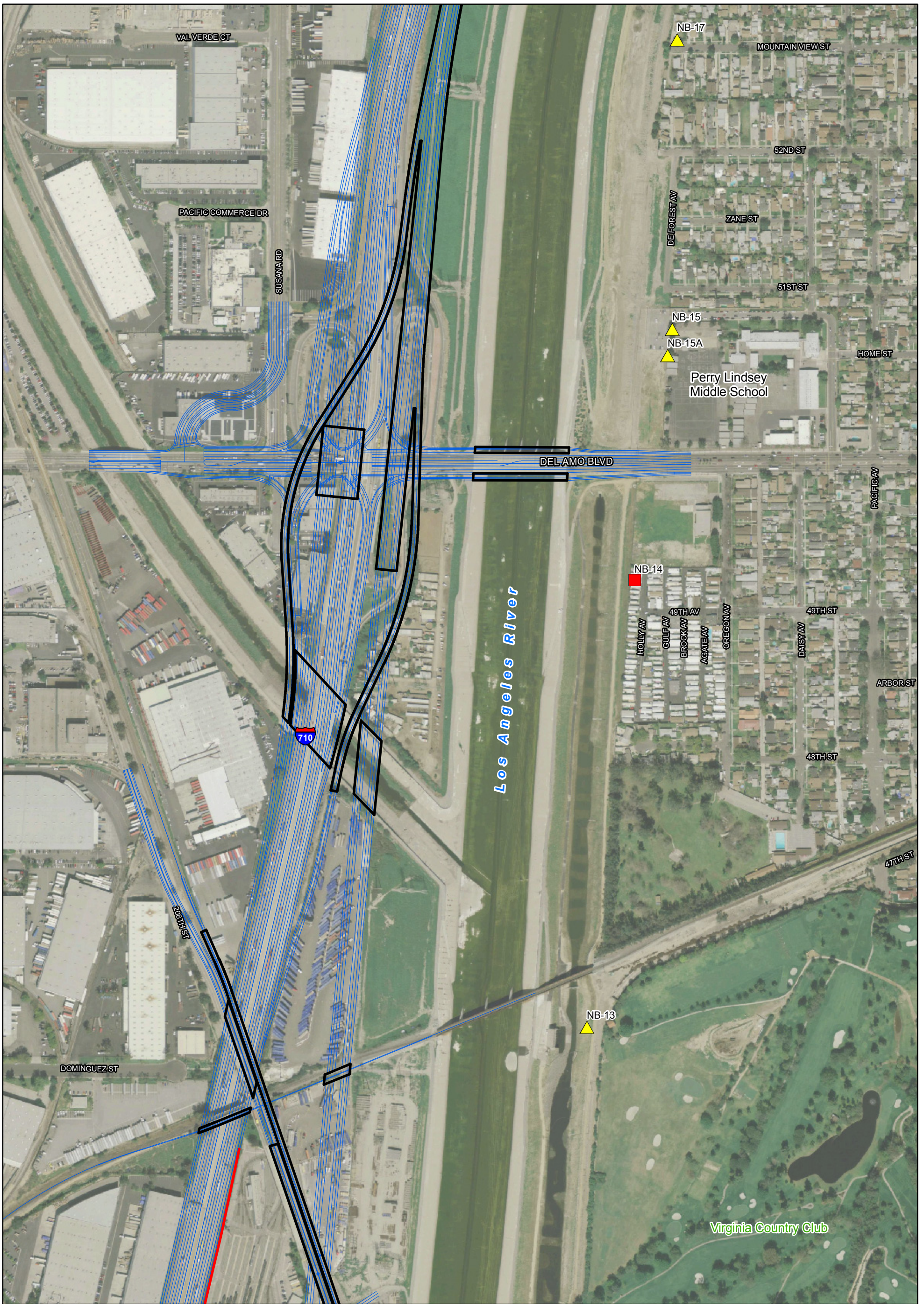


FIGURE 3.14-2
Sheet 6 of 20

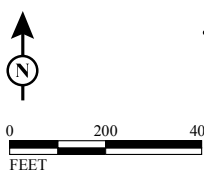
I-710 Corridor Project EIR/EIS
**Alternatives 6A/B/C - Noise Monitoring,
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 07-LA-710- PM 4.9/24.9
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SOURCE: BING (2009); TBM (2008); URS (5/2011)
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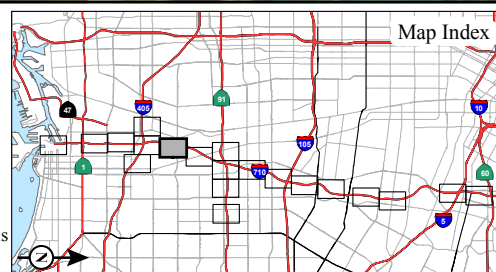


FIGURE 3.14-2
 Sheet 7 of 20

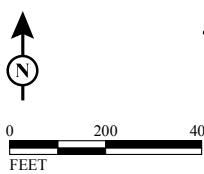
I-710 Corridor Project EIR/EIS
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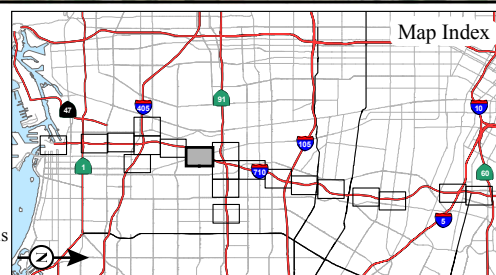
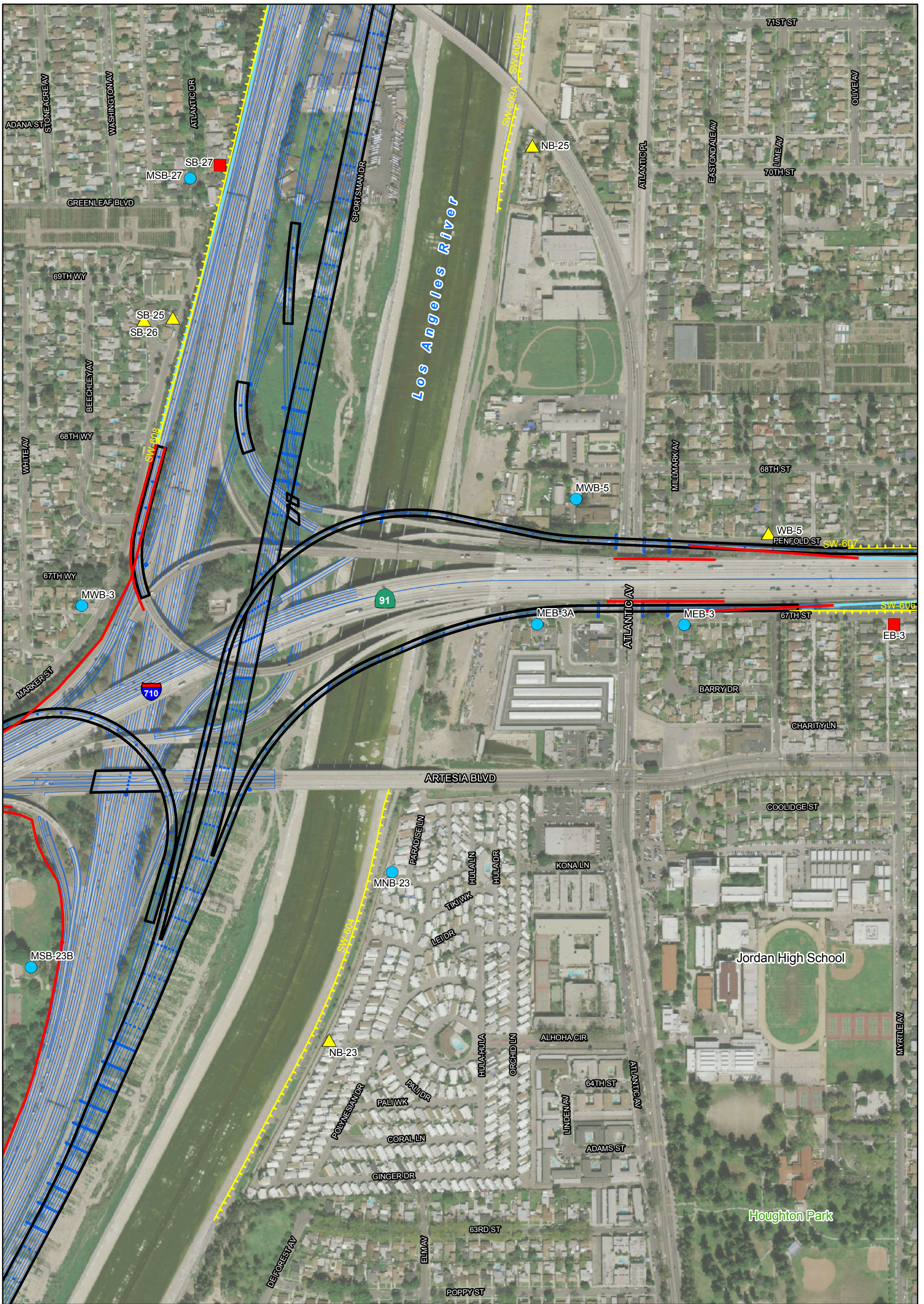


FIGURE 3.14-2
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I-710 Corridor Project EIR/EIS
 Alternatives 6A/B/C - Noise Monitoring,
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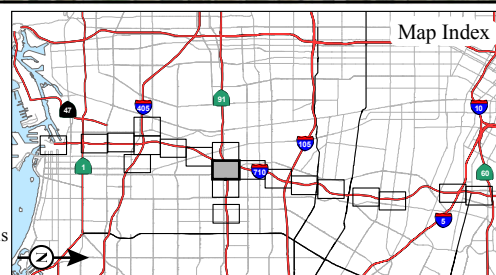


FIGURE 3.14-2
Sheet 9 of 20

I-710 Corridor Project EIR/EIS
**Alternatives 6A/B/C - Noise Monitoring,
 Modeled Sites, and Sound Walls**
 07-LA-710- PM 4.9/24.9
 EA 249900

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LEGEND

- Alternatives 6A/B/C Features
 - Elevated Structures and Columns
 - 24-Hr Noise Site
 - Monitoring Noise Site
 - ▲ Modeled Site
 - Acoustically Feasible Soundwall
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 - Existing Soundwall to be Removed
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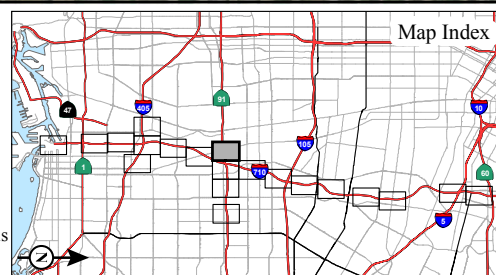
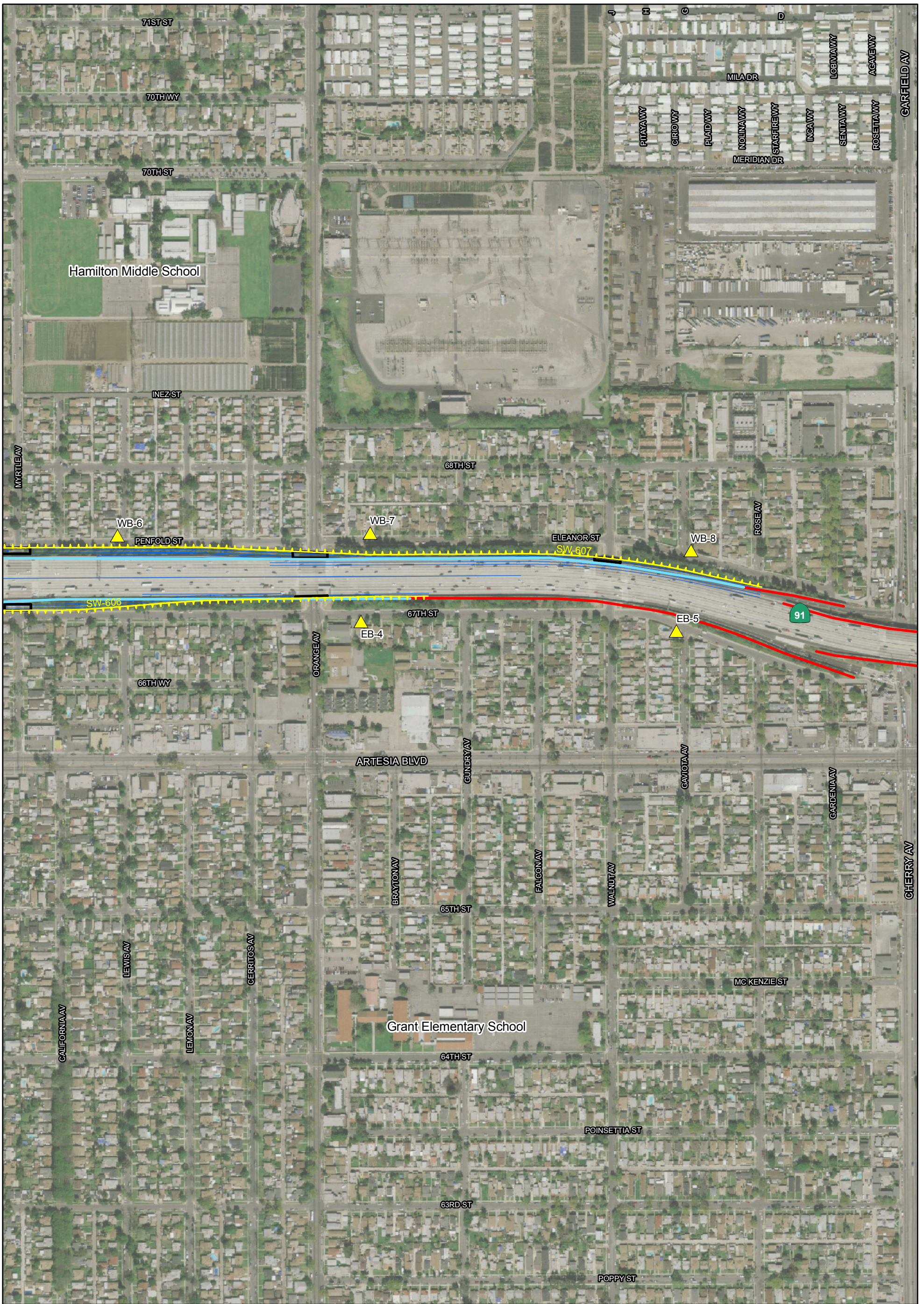


FIGURE 3.14-2
Sheet 10 of 20

I-710 Corridor Project EIR/EIS
Alternatives 6A/B/C - Noise Monitoring, Modeled Sites, and Sound Walls
 07-LA-710- PM 4.9/24.9
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LEGEND

- Alternatives 6A/B/C Features
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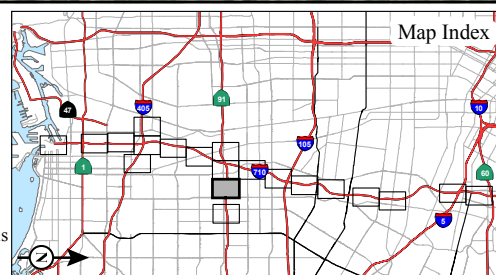
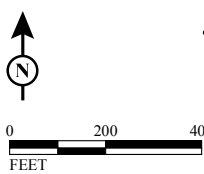
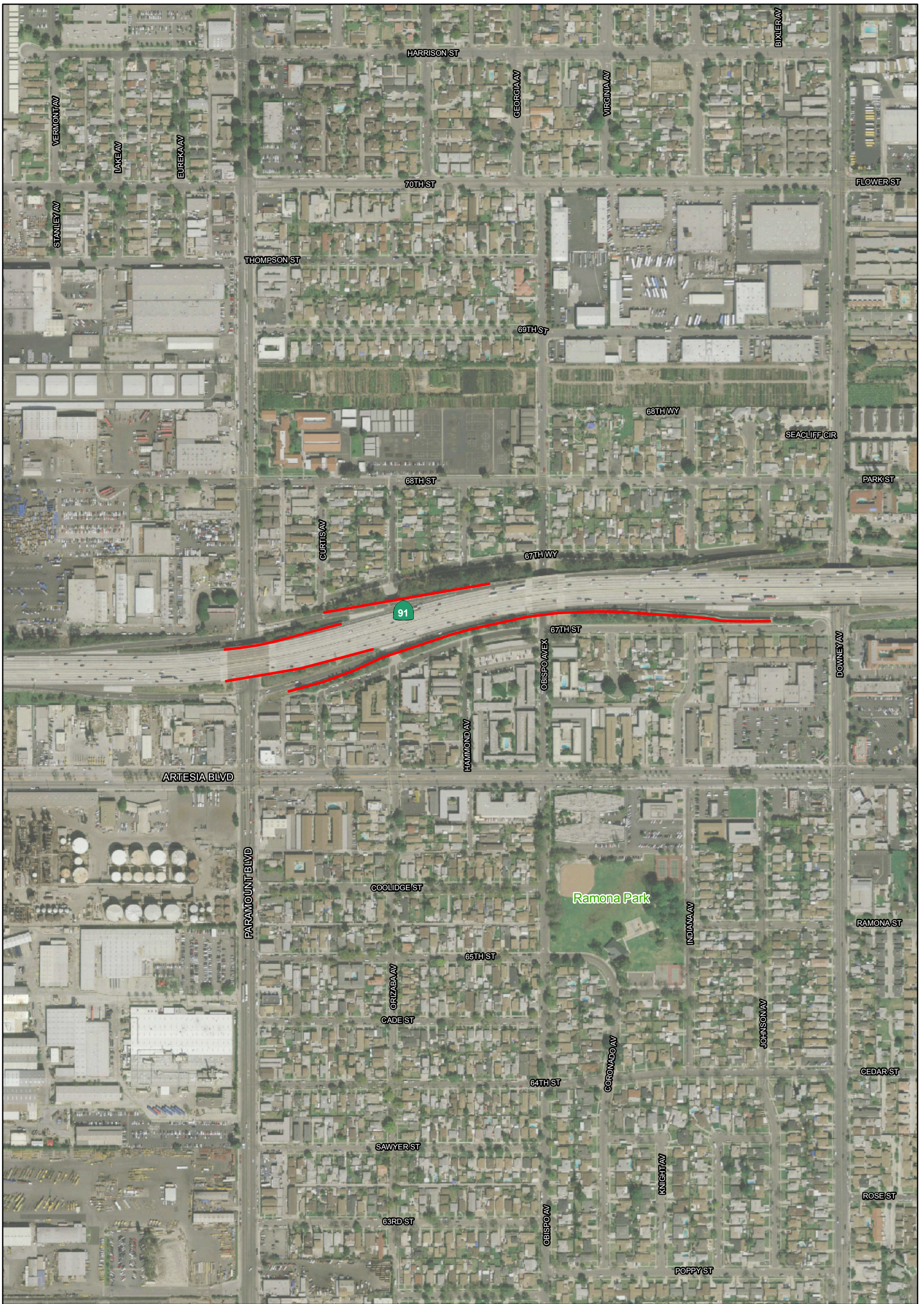


FIGURE 3.14-2
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I-710 Corridor Project EIR/EIS
**Alternatives 6A/B/C - Noise Monitoring,
 Modeled Sites, and Sound Walls**
 07-LA-710- PM 4.9/24.9
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LEGEND

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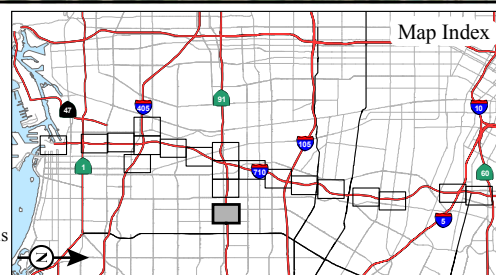


FIGURE 3.14-2
Sheet 12 of 20

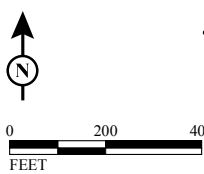
I-710 Corridor Project EIR/EIS
**Alternatives 6A/B/C - Noise Monitoring,
 Modeled Sites, and Sound Walls**
 07-LA-710- PM 4.9/24.9
 EA 249900

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LEGEND

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SOURCE: BING (2009); TBM (2008); URS (5/2011)
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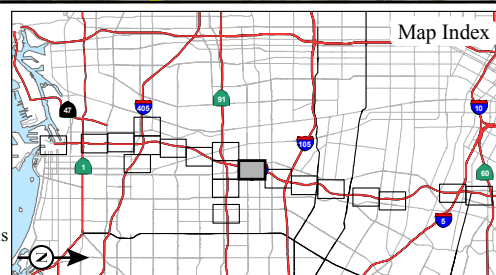


FIGURE 3.14-2
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I-710 Corridor Project EIR/EIS
 Alternatives 6A/B/C - Noise Monitoring,
 Modeled Sites, and Sound Walls
 07-LA-710- PM 4.9/24.9
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LEGEND

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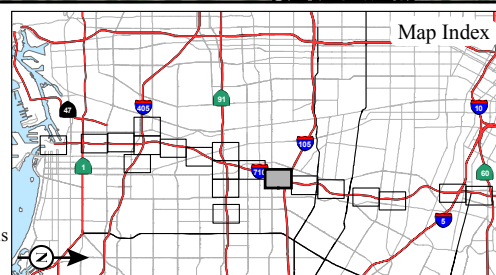
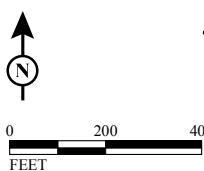


FIGURE 3.14-2
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I-710 Corridor Project EIR/EIS
**Alternatives 6A/B/C - Noise Monitoring,
 Modeled Sites, and Sound Walls**
 07-LA-710- PM 4.9/24.9
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LEGEND

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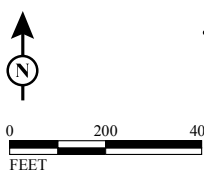
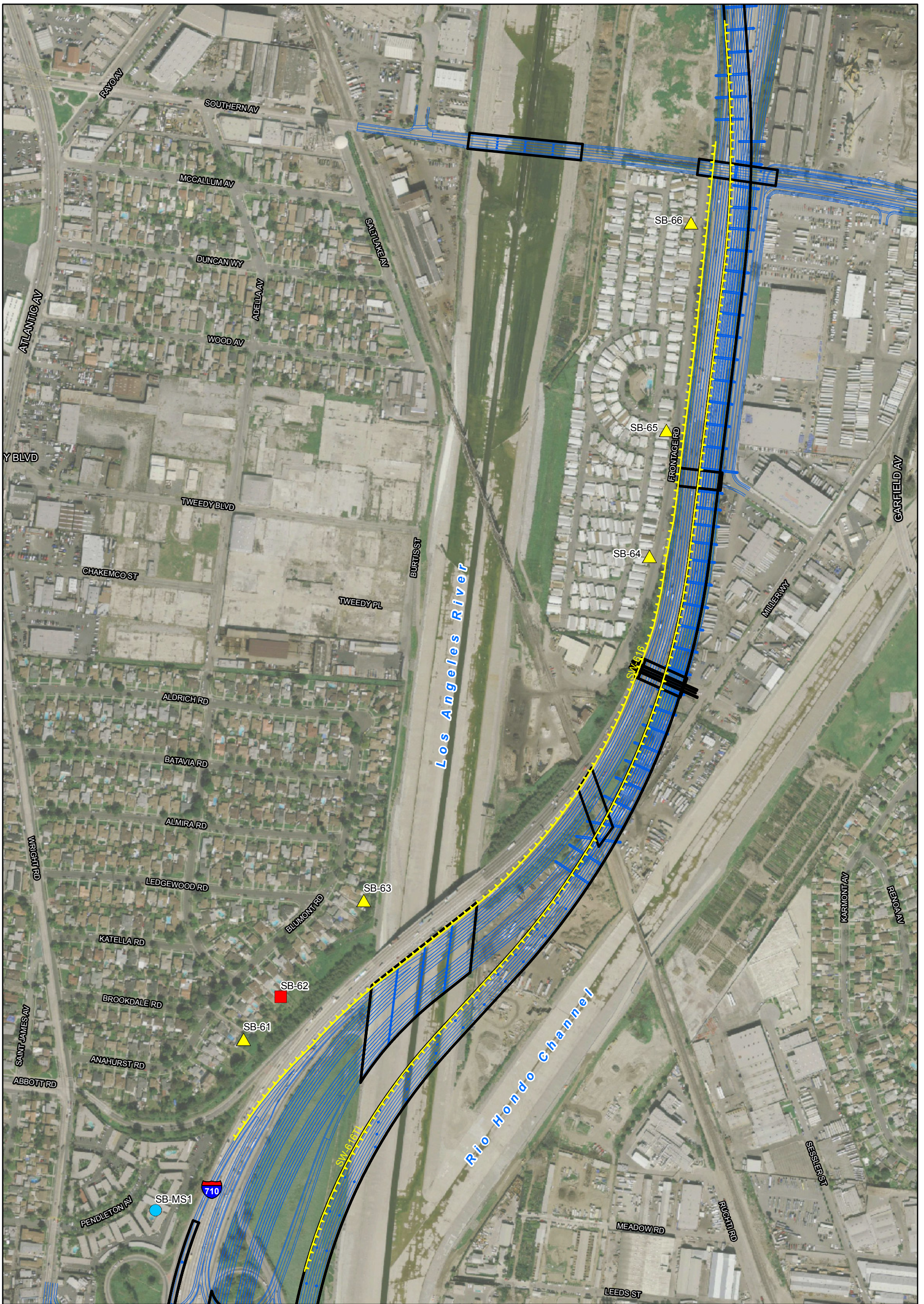


FIGURE 3.14-2
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I-710 Corridor Project EIR/EIS
**Alternatives 6A/B/C - Noise Monitoring,
 Modeled Sites, and Sound Walls**
 07-LA-710- PM 4.9/24.9
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LEGEND

- Alternatives 6A/B/C Features
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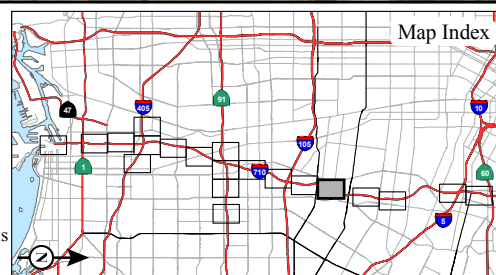
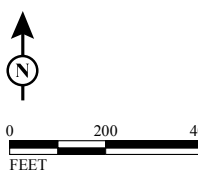
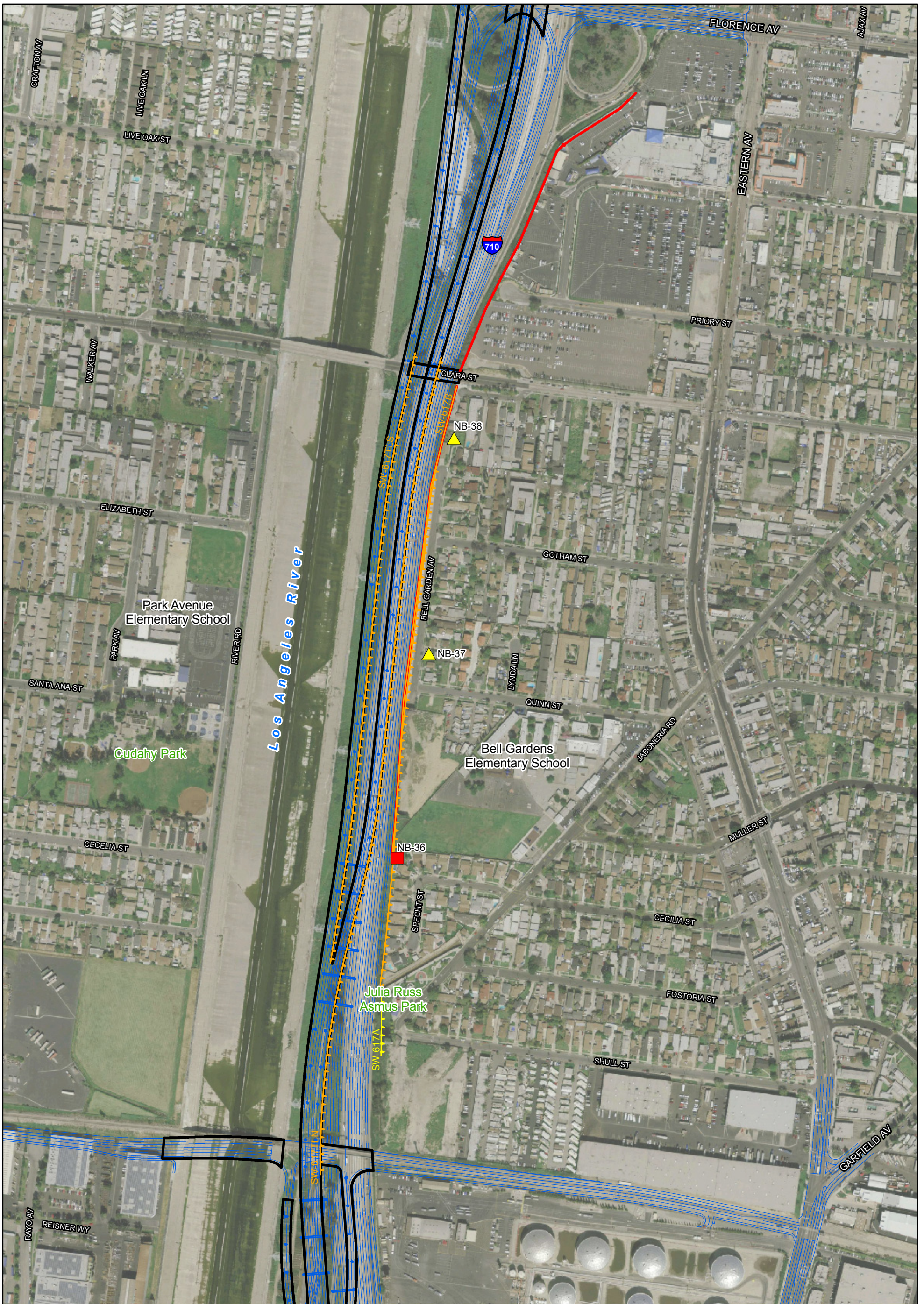


FIGURE 3.14-2
Sheet 16 of 20

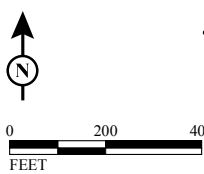
I-710 Corridor Project EIR/EIS
 Alternatives 6A/B/C - Noise Monitoring,
 Modeled Sites, and Sound Walls
 07-LA-710- PM 4.9/24.9
 EA 249900

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LEGEND

- Alternatives 6A/B/C Features
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 - 24-Hr Noise Site
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SOURCE: BING (2009); TBM (2008); URS (5/2011)
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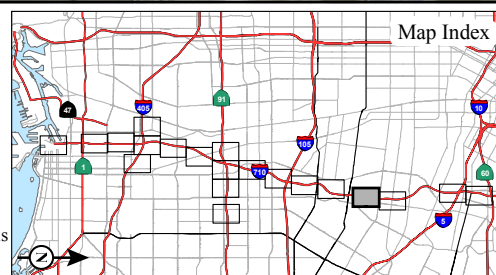


FIGURE 3.14-2
 Sheet 17 of 20

I-710 Corridor Project EIR/EIS
 Alternatives 6A/B/C - Noise Monitoring,
 Modeled Sites, and Sound Walls
 07-LA-710- PM 4.9/24.9
 EA 249900

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LEGEND

- Alternatives 6A/B/C Features
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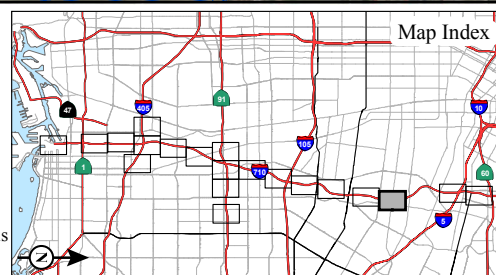
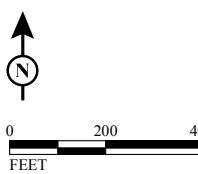
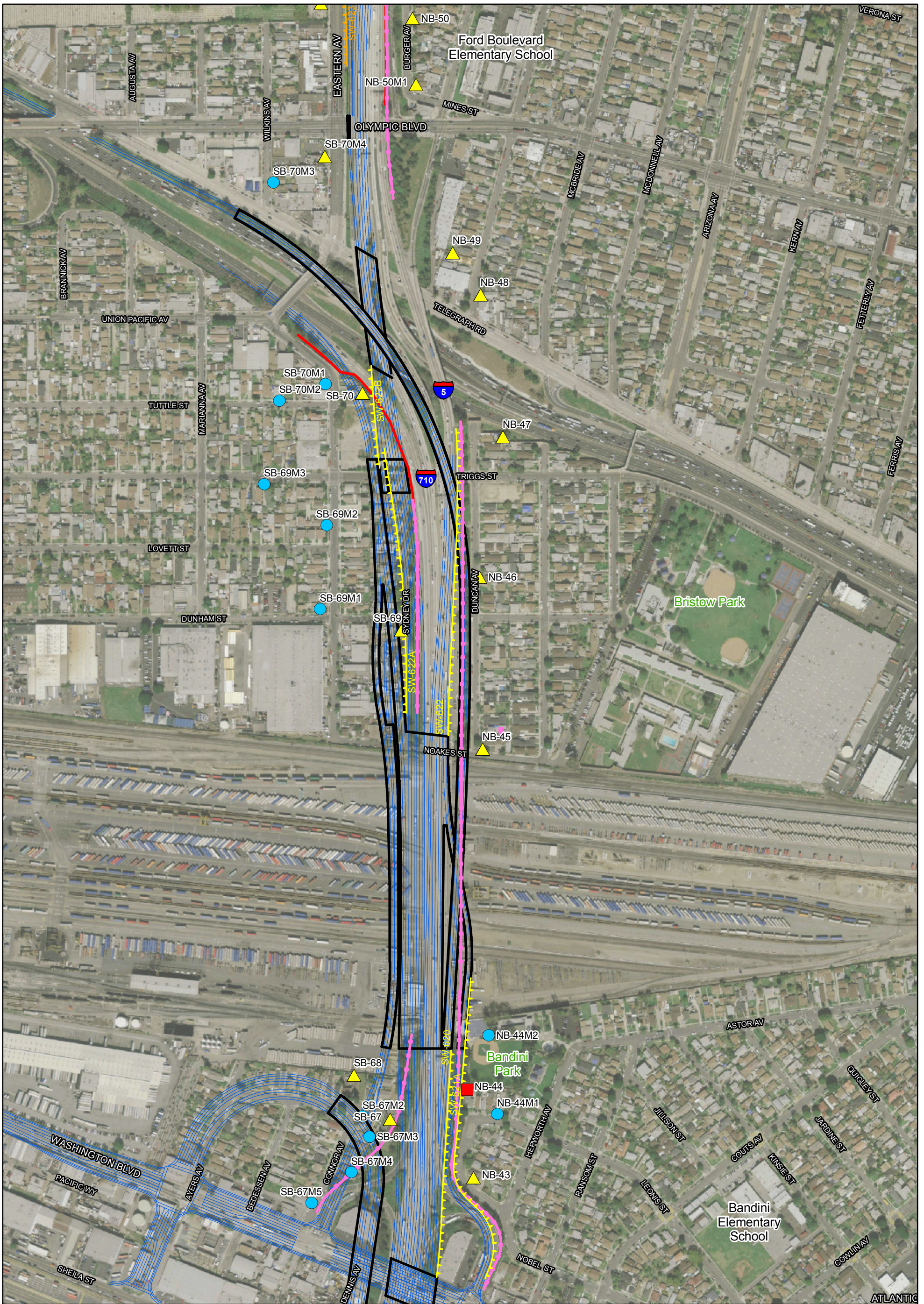


FIGURE 3.14-2
Sheet 18 of 20

I-710 Corridor Project EIR/EIS
**Alternatives 6A/B/C - Noise Monitoring,
 Modeled Sites, and Sound Walls**
 07-LA-710- PM 4.9/24.9
 EA 249900

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LEGEND

- Alternatives 6A/B/C Features
 - Elevated Structures and Columns
 - 24-Hr Noise Site
 - Monitoring Noise Site
 - ▲ Modeled Site
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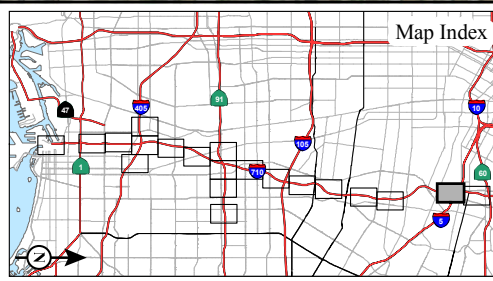
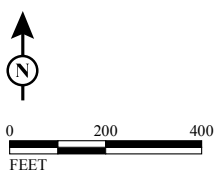
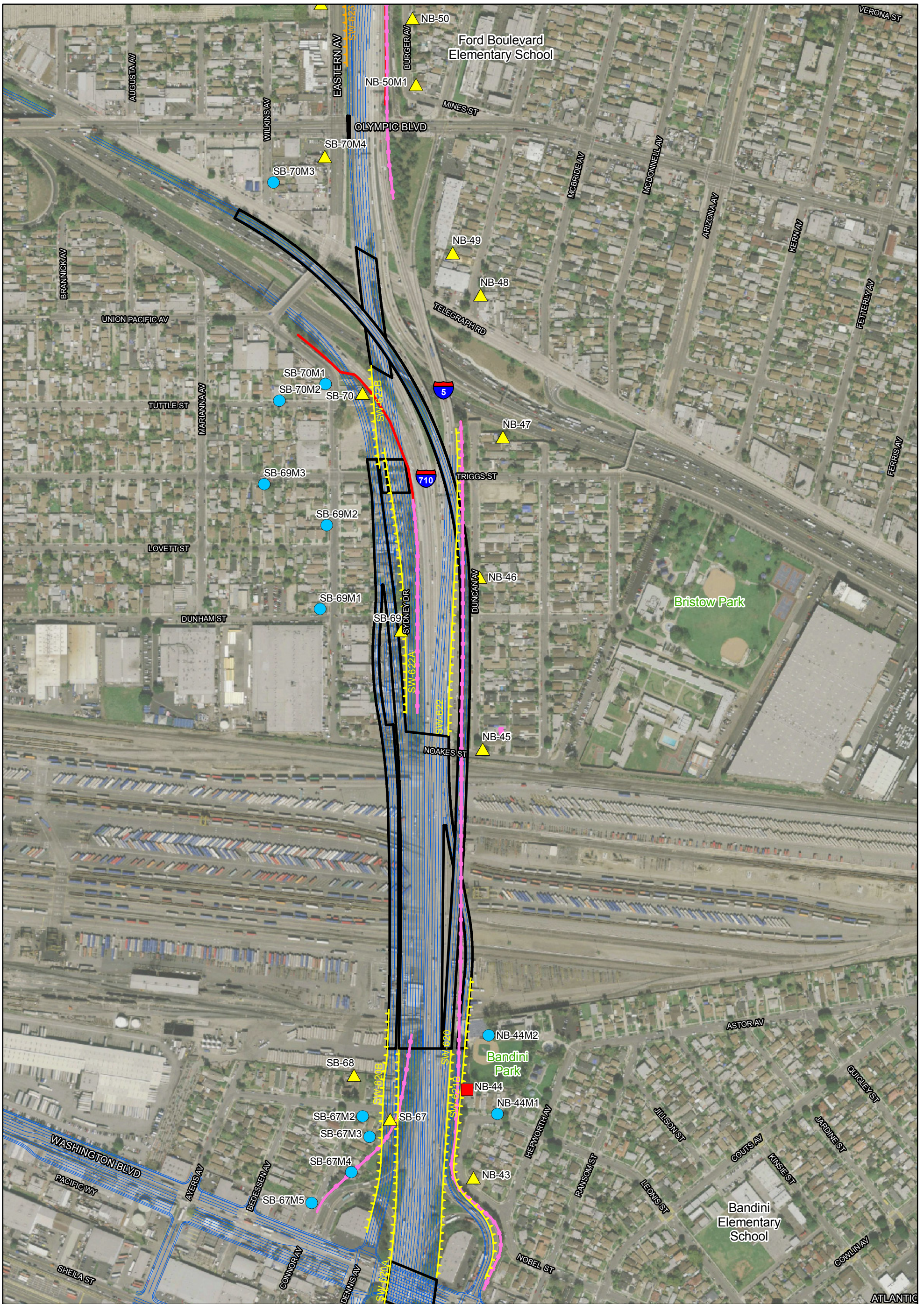


FIGURE 3.14-2
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I-710 Corridor Project EIR/EIS
 Alternatives 6A/B/C Option 1
 Noise Monitoring,
 Modeled Sites, and Sound Walls
 07-LA-710- PM 4.9/24.9
 EA 249900

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LEGEND

- Alternatives 6A/B/C Features
 - Elevated Structures and Columns
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 - Monitoring Noise Site
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 - Acoustically Feasible Soundwall
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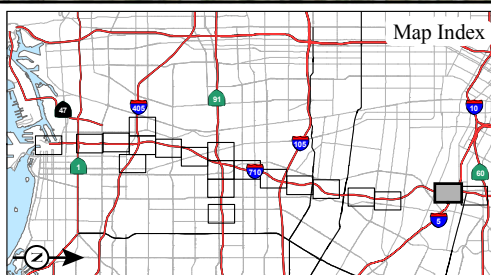
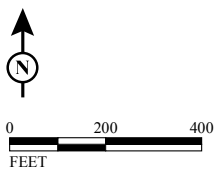
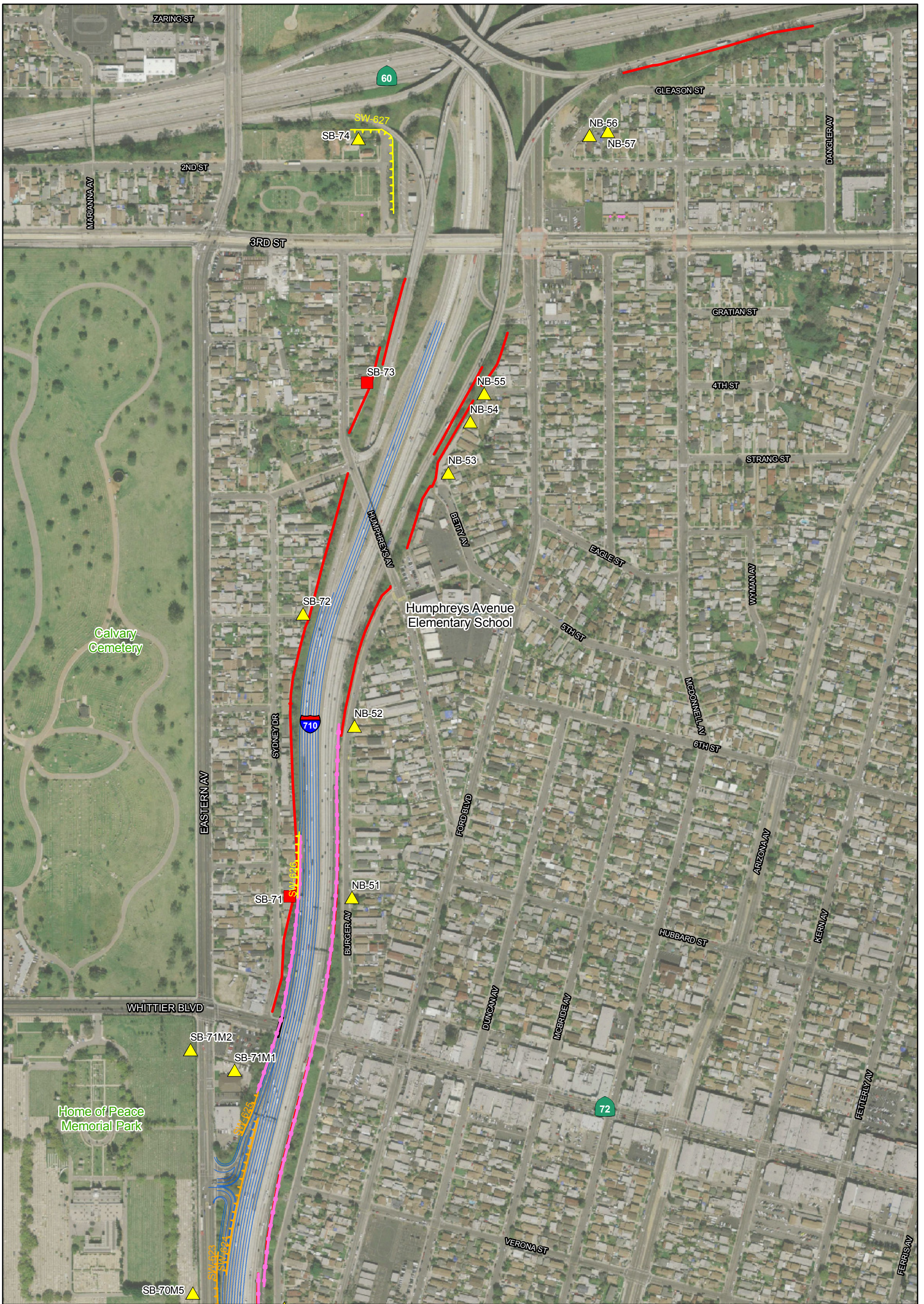


FIGURE 3.14-2
Sheet 19b of 20

I-710 Corridor Project EIR/EIS
Alternatives 6A/B/C Option 2
Noise Monitoring,
Modeled Sites, and Sound Walls
07-LA-710- PM 4.9/24.9
EA 249900

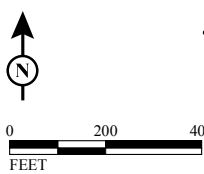


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LEGEND

- Alternatives 6A/B/C Features
 - Elevated Structures and Columns
 - 24-Hr Noise Site
 - Monitoring Noise Site
 - ▲ Modeled Site
 - Acoustically Feasible Soundwall
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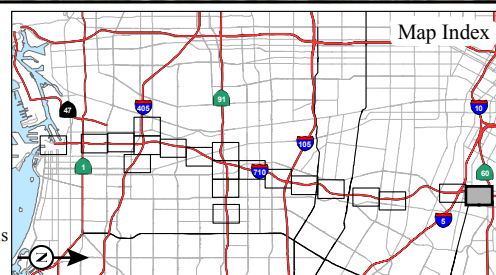


FIGURE 3.14-2
 Sheet 20 of 20

I-710 Corridor Project EIR/EIS
 Alternatives 6A/B/C - Noise Monitoring,
 Modeled Sites, and Sound Walls
 07-LA-710- PM 4.9/24.9
 EA 249900

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