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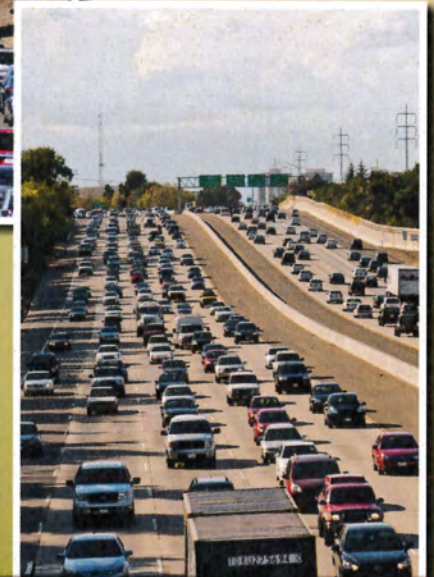
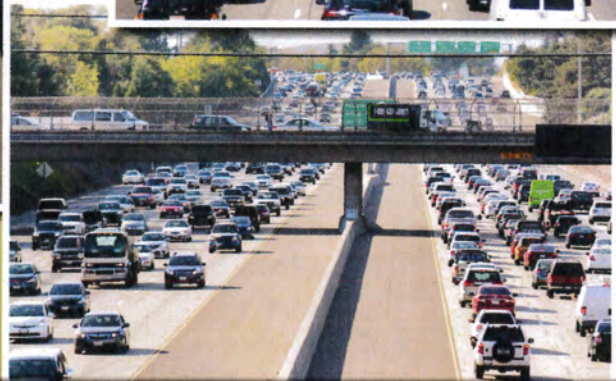
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03-3F360



# Project Report

## US 50 HOV LANES I-5 TO WATT AVE



### PROJECT LOCATION

In Sacramento from I-5 to 0.8 mile east of Watt Avenue



I have reviewed the right of way information contained in this Project Report and the R/W Data Sheet attached hereto, and find the data to be complete, current, and accurate:

**JOHN BALLANTYNE**  
Chief, North Region, Right of Way

Approval  
Recommended:

**NADARAJAH SUTHAHAR**  
Project Manager

Approved By:

**RIHUI ZHANG**  
Acting District Director

Date

2/28 5/31/17

## SECTION 6 - CONSIDERATIONS REQUIRING DISCUSSION

### 6.1 Noise Abatement Decision Report

This section incorporates the Noise Abatement Decision Report (NADR) which:

- Is an evaluation of the reasonableness and feasibility of incorporating noise abatement measures into this project;
- Constitutes the decision on noise abatement measures to be incorporated into the environmental document; and
- Is required for Caltrans to meet the conditions of Title 23 Code of Federal Regulations, Part 772 in accordance with the FHWA noise standards.

The NADR does not present the final decision regarding noise abatement; rather, it presents key information on abatement to be considered throughout the environmental review process, based on the best available information at the time the environmental document is published. The SW alignments shown in Attachment C are subject to change due to funding, geometric constraints, and safety factors such as non-standard sight distance.

The NADR does not address noise barriers or other noise-reducing treatments required as mitigation for significant adverse environmental effects identified under CEQA. For additional noise assessment requirements discussion, reference Caltrans District 3 April 2015, US 50 HOV Lanes Project, Noise Impact Study Report (NSR).

Additional factors that affect the final decision regarding noise abatement is the fact that not all of the proposed Sound walls are acoustically feasible and none of the proposed Sound walls studied meet the reasonable allowance cost requirements set by FHWA. While this section makes recommendations to construct SW, funding from state and/or local agencies will be the final determination to include this work with this project or future projects as a “community enhancement”. The SW estimate shown in Table 6.1 is included in the roadway construction estimate.

#### 6.1.1 Results of Noise Impact Study Report

The NSR for this project was originally prepared on September 2006 and updated in April 2015. The study identified several locations and wall heights ranging from 6 feet to 16 feet where sound walls would meet FHWA abatement criteria that includes acoustic feasibility and reasonable allowance cost. Wall heights that did not meet attenuation requirements did not receive a reasonable cost allowance and are not considered feasible.

However, at some existing SW locations it is proposed to replace the barriers to be consistent with the proposed SW aesthetics and service life. Table 6.1 provides a summary of the economic effectiveness of each SW based on predicted noise reduction and the number of benefited receptors. The NSR summarizes the reasonable cost allowance for each height of each SW. See Attachment N that summarizes the reasonable cost allowances for all SW (barriers). The sound walls are proposed to be masonry block that meet Caltrans standard specifications.

#### 6.1.2 Factors in the Noise Abatement Decision

The Noise Abatement Decision is based on achieving a 7db reduction in noise levels. There are other various factors including field investigations, land use evaluations, and impact analysis that focus on locations with defined outdoor activity areas. Cost estimates were developed for recommended SW heights identified in the NSR (Table 6-1) and compared to the reasonable allowance cost data for the corresponding SW height to determine feasibility. The cost analysis included factors such as:

- foundation types
- clearing & grubbing
- fence and wall removal
- temporary fencing
- temporary construction easements
- drainage modifications
- utility research and conflict mapping
- landscaping and irrigation replacement

Table 6-1 Sound Wall Summary

NSR SW Designation	Project SW Designation	Description	H (ft)	L (ft)	Total Reasonable Allowance	Estimated Construction Cost	Proposed
SW-WB-1	"SW1"	WB 7 <sup>th</sup> St. to 13 <sup>th</sup> St.	8	2,464	\$9,655,000	\$19,125,000	
	"SW2"	WB 13 <sup>th</sup> St. to 16 <sup>th</sup> St.	8	1,112			
	"SW3"	WB 16 <sup>th</sup> St. to 18 <sup>th</sup> St.	8	936			
	"SW4"	WB 18 <sup>th</sup> St. to 26 <sup>th</sup> St.	8	4,276			
SW-WB-2	"SW5A"	WB 50-51 Connector	10	1,090	\$1,775,000	\$2,098,000	✓
	"SW5B"	WB on Elmhurst Viaduct	10	347			
SW-EB-1	"SW6"	EB 9 <sup>th</sup> St. to 13 <sup>th</sup> St.	8	1,710	\$6,105,000	\$18,048,000	
	"SW7"	EB 13 <sup>th</sup> St. to 16 <sup>th</sup> St.	8	1,066			
	"SW8"	EB 16 <sup>th</sup> St. to 18 <sup>th</sup> St.	8	872			
	"SW9"	EB 18 <sup>th</sup> St. to EB50-SB99 connector	8	4,418			
SW-EB-2	"SW10A"	NB99-EB50 connector-Elmhurst Viaduct	10	1,242	\$3,763,000	\$8,791,000	
	"SW10B"	EB Elmhurst Viaduct to Stockton Blvd	10	1,860			
SW-EB-2A	"SW11A"	EB Stockton on-ramp to 39 <sup>th</sup> St	10	1,223	\$355,000	\$987,000	✓
	"SW11B"	39 <sup>th</sup> St Undercrossing	8	135			✓
SW-EB-3 (Existing Barrier I)	"SW11C"	39 <sup>th</sup> St to 41 <sup>st</sup> St	10	1002	\$0	\$1,375,000	✓
	"SW12"	EB 41 <sup>st</sup> St to 45 <sup>th</sup> St	10	1302			✓
SW-EB-4	"SW13"	EB 45 <sup>th</sup> St to 48 <sup>th</sup> St	14	978	\$142,000	\$1,138,000	✓
SW-EB-5	"SW14"	EB 48 <sup>th</sup> St to 51 <sup>st</sup> St	8	1,153	\$497,000	\$1,322,000	✓
SW-EB-6	"SW15"	EB 51 <sup>st</sup> St to 59 <sup>th</sup> St	8-10	2,563	\$1,491,000	\$3,161,000	✓
SW-EB-7A	"SW16"	EB 59 <sup>th</sup> St to 62 <sup>nd</sup> St	12	1,574	\$284,000	\$781,000	✓
SW-EB-7B	"SW16"	EB 62 <sup>nd</sup> St to 65 <sup>th</sup> St	10	1,058	\$0	\$490,000	✓
			Total	32,381	24,067,000	\$57,316,000	

- Notes:
1. Total Reasonable Allowance = 0 designates SW that are not acoustically feasible by reducing noise levels 7dB.
  2. The project SW designation column is required for distinguishing between SW on structure or original ground and unique final design configuration since the NSR provides general location of SW.
  3. Barrier I exists from the east side of the 39<sup>th</sup> St UC to approximately 43<sup>rd</sup> St.
  4. "SW1" through "SW4" and "SW5B" through "SW9" are not recommended nor included in the scope and are shown in Table 6-1 to be consistent with NSR and other scoping documents.

### 6.1.3 Non-acoustical Factors Relating to Feasibility

Sound walls "SW12" through "SW16" are proposed along the right-of-way line to avoid conflicts with future projects. Sound walls "SW11A" through "SW11C" are proposed along the freeway edge of pavement on a concrete barrier and aligned to provide the minimum sight distance allowance pursuant to Caltrans highway design standards.

There are no unusual maintenance or safety issues identified during the field review and observations. Sound walls along the R/W would include connecting the adjacent property side yard fences to the new sound walls. This strategy was included on the last completed phase of the HOV lanes (EA 441611) and the Watt Ave. I/C project (EA 371201) recently completed. Access to the freeway face of the walls is considered adequate from the State side of the R/W. Reviews of utility impacts by SW construction are considered minor with no significant design requirement or inordinate cost of relocation. There are no observed aerial utility conflicts and underground utility crossings can be spanned with piles and pile cap/beam.

Masonry block SW are proposed for “SW11A” through “SW16” locations. Spread footings are the most economical design however, a cast-in-drilled hole (CIDH) concrete pile foundation is required due to the soil conditions. The top 5 ft of soil is loose and composed of sand and cobbles requiring over excavation if spread footings were otherwise used. The CIDH foundation can also be constructed closer to the R/W. The unit prices shown above for the SW estimate are included as a lump sum item for the project cost estimate in Attachment E.

SW	<ul style="list-style-type: none"> <li>•Masonry Block - \$14.50/SF</li> <li>•Concrete - \$550/CY</li> <li>•Piles - \$50/LF</li> <li>•Concrete Barrier - \$155/LF</li> </ul>
Site Preparation	<ul style="list-style-type: none"> <li>•TCE - \$100k-\$200k/parcel</li> <li>•Remove Fence - \$4/LF</li> <li>•Temporary Slatted Fence - \$41/LF</li> <li>•Clear &amp; Grub - \$10,000/Acre</li> </ul>
Contingency	<ul style="list-style-type: none"> <li>•Mobilization - 10%</li> <li>•Contingency - 10%</li> </ul>

### 6.1.4 Recommendations and Decision

It is recommended to construct “SW5A” and “SW11A” through “SW16” sound walls in the project limits as shown in Attachment C. Estimated construction cost is \$8.5 million. This recommendation is based on FHWA noise standards for abatement, continuity with corridor, service life, and public perception. All recommended SW heights and costs are included in the previous Table 6-1. It is noted that none of the SW meet the reasonable allowance cost criteria. The construction cost exceeds this criteria due to the materials, labor, site preparation, and temporary construction easement (R/W) costs.

It is not recommended to construct the remaining SW analyzed in the NSR due to the cost that are in excess of the federal reasonable cost criteria. The total construction costs saved is \$47,741,000. Sound walls “SW1” – “SW9” are acoustically feasible and do not meet the reasonable allowance cost criteria due to the fact the alignments overlap bridges and retaining walls requiring extensive structure modifications. Relocating overhead sign structures are also included in the construction costs.

While sound walls “SW11B”, “SW11C”, “SW12”, and “SW16” are not acoustically feasible, they are however, beneficial to public perception, aesthetic continuity within the corridor, and future traffic and population growth. These walls are aligned outside of the mainline to preclude future “tear out”.

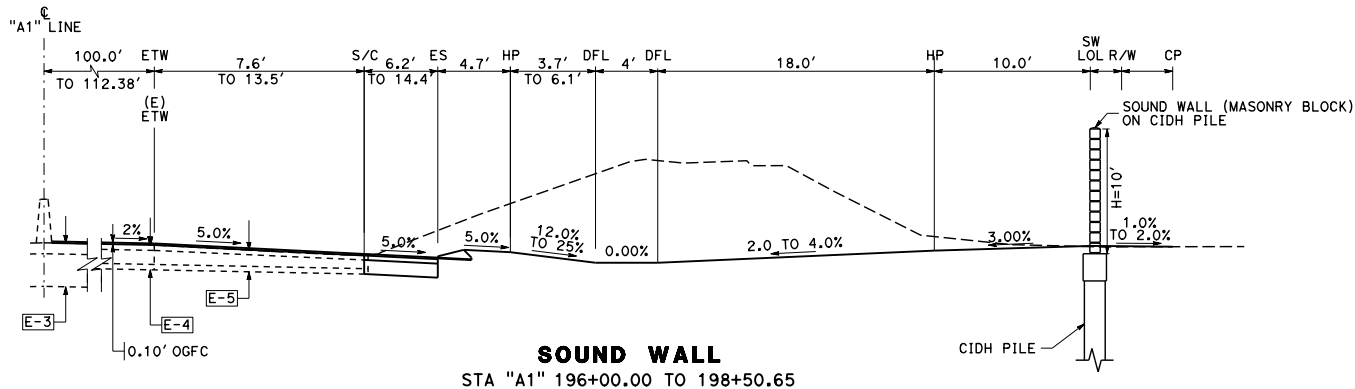
Two existing state-built sound walls overlap the proposed “SW12” and “SW16” alignments and are constructed of a 6 ft x 1,190 ft corrugated metal panel design and a 6 ft x 1,062 ft shotcrete chain link fence. It should be noted that increasing the height for these walls would not significantly reduce noise levels. However, the walls are aging and would need replacing before the proposed sound walls reached their respective end of service life. Conforming to the existing walls is not practical in order to match design and aesthetics.

Although not considered as noise abatement, a RHMA-O wearing course is proposed and part of the scope of work for all traffic lanes within the project limits. Research studies show that the RHMA-O overlay reduces objectionable tire-pavement interaction noise when compared to traditional pavement types (e.g. concrete pavement or dense graded asphalt). The overlay would be omitted if the pavement rehabilitation project were combined with this project.

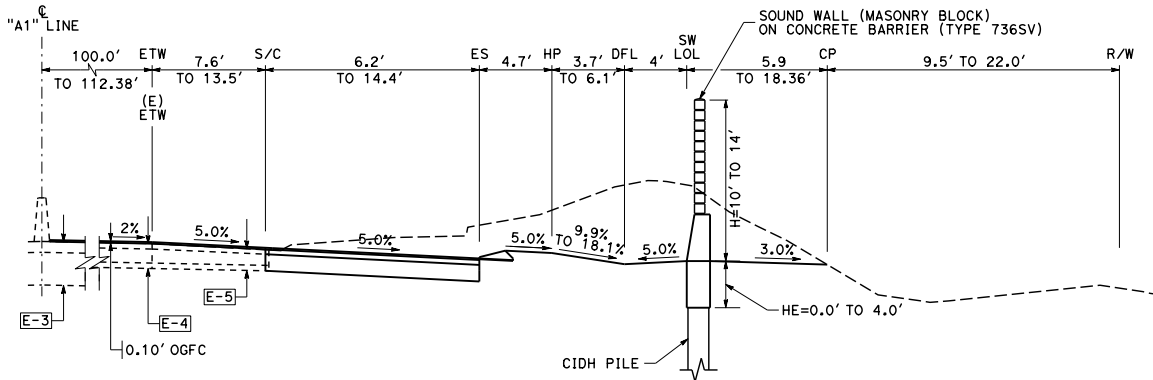


# PROJECT LOCATION

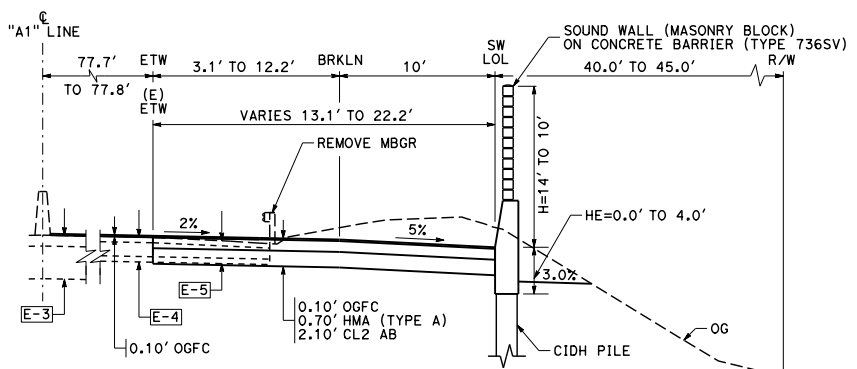
US 50 HOV LANES 1-5 TO WATT AVE • 03-3F3604 • 0312000216



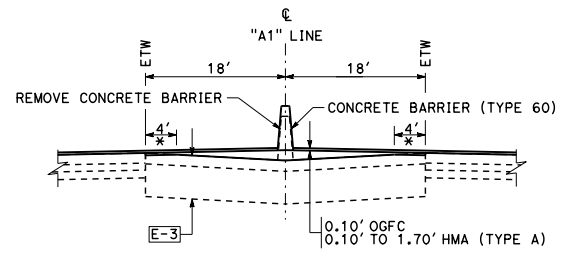
**SOUND WALL**  
STA "A1" 196+00.00 TO 198+50.65



**SOUND WALL**  
STA "A1" 194+94.65 TO 196+00.00

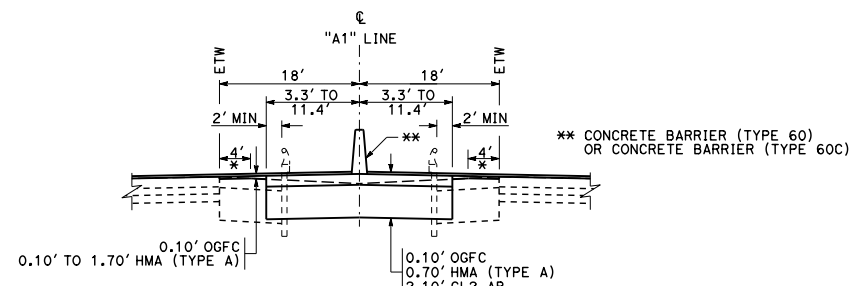


**SOUND WALL**  
STA "A1" 186+60.85 TO 194+94.65

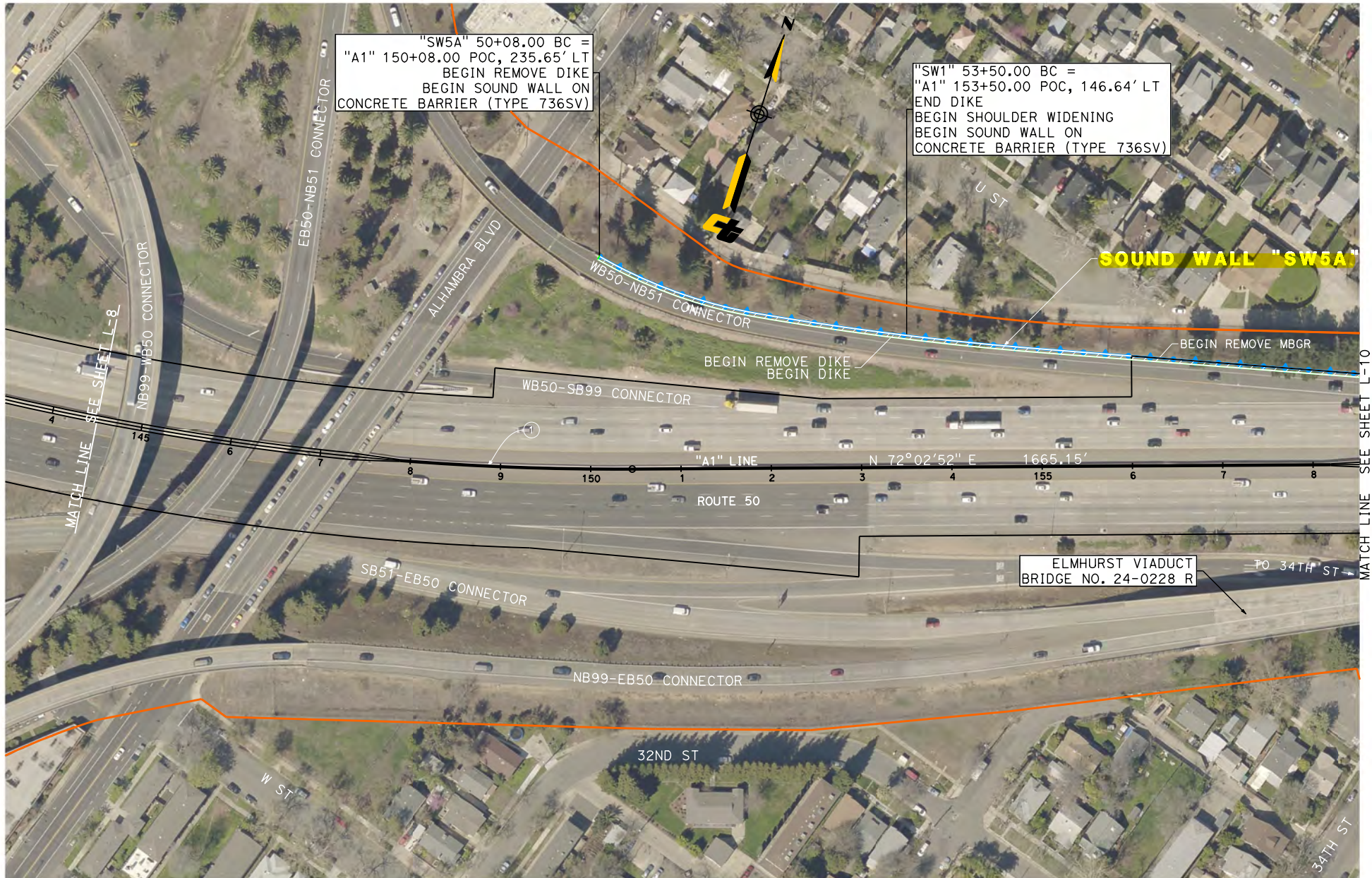


STA "A1" 300+49.47 TO 301+40.00  
STA "A1" 304.50.00 TO 305+03.66  
STA "A1" 308+86.14 TO 309+50.00  
STA "A1" 322+30.00 TO 322+85.04  
STA "A1" 326+15.14 TO 326+70.00

\* LIMITS OF COLD PLANE AC PAVEMENT



STA "A1" 299+81.02 EBA TO 300+49.47  
STA "A1" 305+03.66 TO 305+42.40 BBA  
STA "A1" 308+47.07 EBA TO 308+86.14  
STA "A1" 322+85.04 TO 323+57.26 BBA  
STA "A1" 325+42.62 EBA TO 326+15.14



"SW5A" 50+08.00 BC =  
 "A1" 150+08.00 POC, 235.65' LT  
 BEGIN REMOVE DIKE  
 BEGIN SOUND WALL ON  
 CONCRETE BARRIER (TYPE 736SV)

"SW1" 53+50.00 BC =  
 "A1" 153+50.00 POC, 146.64' LT  
 END DIKE  
 BEGIN SHOULDER WIDENING  
 BEGIN SOUND WALL ON  
 CONCRETE BARRIER (TYPE 736SV)

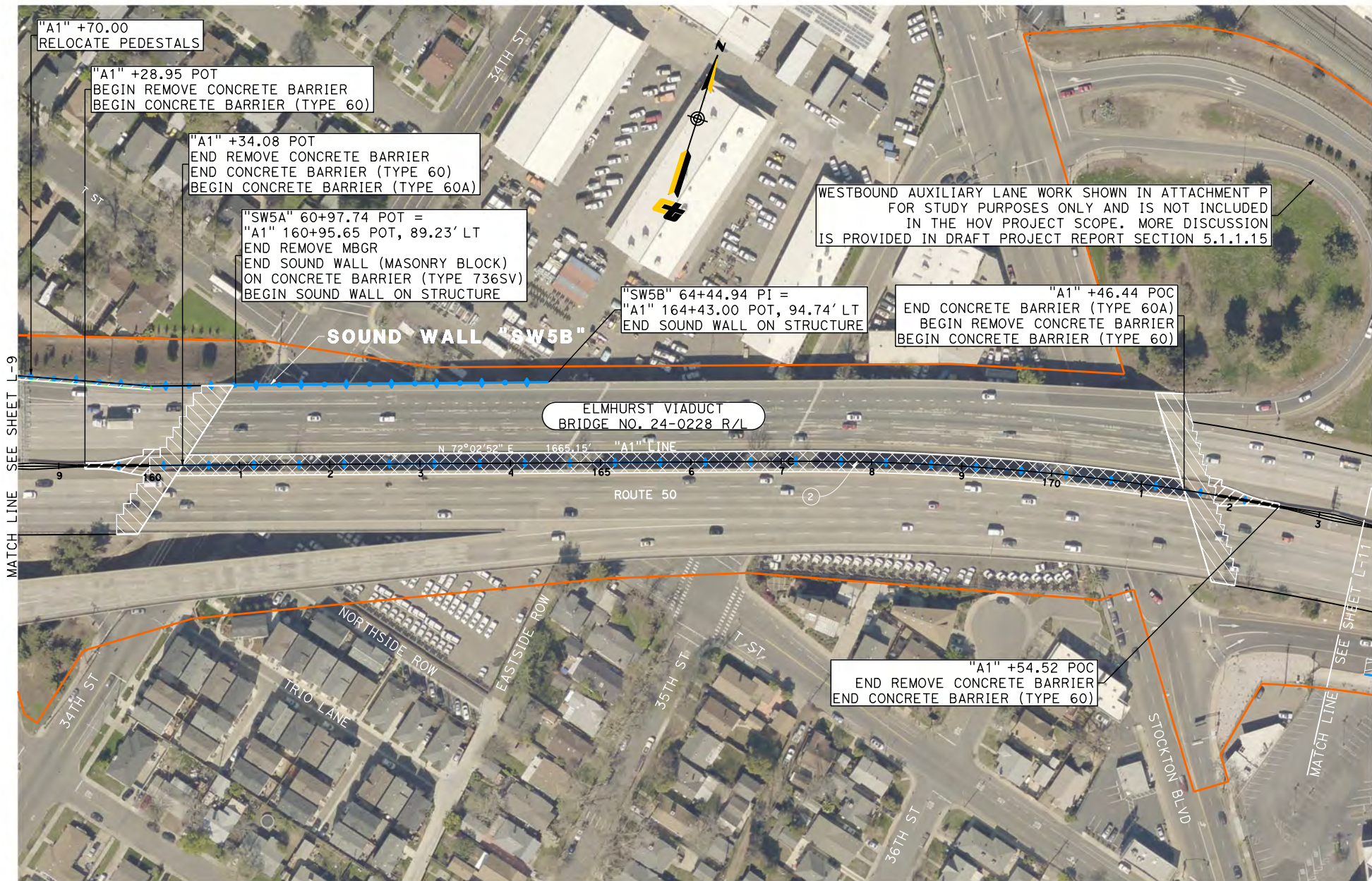
**SOUND WALL "SW5A"**

**CURVE DATA**

No.	⊕	R	Δ	T	L
1		3000'	36°22'10"	985.46'	1904.30'

NOTE:  
 SOUND WALLS SHOWN ON THIS SHEET DO NOT MEET THE REASONABLE  
 ALLOWANCE COST DATA FOR CONSTRUCTION FEASIBILITY.

**LAYOUT**  
 NO SCALE



"A1" +70.00  
RELOCATE PEDESTALS

"A1" +28.95 POT  
BEGIN REMOVE CONCRETE BARRIER  
BEGIN CONCRETE BARRIER (TYPE 60)

"A1" +34.08 POT  
END REMOVE CONCRETE BARRIER  
END CONCRETE BARRIER (TYPE 60)  
BEGIN CONCRETE BARRIER (TYPE 60A)

"SW5A" 60+97.74 POT =  
"A1" 160+95.65 POT, 89.23' LT  
END REMOVE MBGR  
END SOUND WALL (MASONRY BLOCK)  
ON CONCRETE BARRIER (TYPE 736SV)  
BEGIN SOUND WALL ON STRUCTURE

"SW5B" 64+44.94 PI =  
"A1" 164+43.00 POT, 94.74' LT  
END SOUND WALL ON STRUCTURE

WESTBOUND AUXILIARY LANE WORK SHOWN IN ATTACHMENT P FOR STUDY PURPOSES ONLY AND IS NOT INCLUDED IN THE HOV PROJECT SCOPE. MORE DISCUSSION IS PROVIDED IN DRAFT PROJECT REPORT SECTION 5.1.1.15

"A1" +46.44 POC  
END CONCRETE BARRIER (TYPE 60A)  
BEGIN REMOVE CONCRETE BARRIER  
BEGIN CONCRETE BARRIER (TYPE 60)

"A1" +54.52 POC  
END REMOVE CONCRETE BARRIER  
END CONCRETE BARRIER (TYPE 60)

ELMHURST VIADUCT  
BRIDGE NO. 24-0228 R/L

N 72°02'52" E 1665.15' "A1" LINE

ROUTE 50

CURVE DATA

No.	@	R	Δ	T	L
2		2750'	36°54'29"	917.68'	1771.46'

NOTE:  
SOUND WALLS SHOWN ON THIS SHEET DO NOT MEET THE REASONABLE ALLOWANCE COST DATA FOR CONSTRUCTION FEASIBILITY.

LAYOUT  
NO SCALE



Table 2-39. Existing Sound Walls

Wall ID	Location	Construction Material	Height, feet	Condition
G -1	Watt Ave. to Occidental Dr.	Masonry	12 to 14 ft	Good
G -2	Occidental Dr. to Howe Ave.	Masonry	12 to 14 ft	Good
H	43rd St. to 37th St.	Masonry	10 ft	Good
I	39th St. to 43rd St.	Steel on 10 ft high berm	5 to 6 ft	Fair
J	61st St. to 63rd St.	Concrete spray on chain-link fence, on 3 to 12 ft berm	5 to 6 ft	Good
K	Howe Ave. to Marquette	Precast concrete	8 ft	Good
L-1	Marquette Dr. to Occidental Dr.	Masonry	13 to 14 ft	Good
L-2	Occidental Dr. to Watt Ave.	Masonry	12 to 14 ft	Good
Q-1	46th St. to 47th St.	Masonry	10 ft	Good
Q-2	47th St. to 48th St.	Masonry	10 ft	Good
Q-3	48th St. to 51st St.	Masonry	12 ft	Good

**Receivers and Noise Measurement Sites**

There were 49 short-term measurements and 9 long-term measurements taken along the project alignment to document the baseline noise environment. The measurement locations were chosen to accurately represent areas of Category B-E land uses that would potentially benefit from lower future noise levels. The sites were also selected to minimize interference from outside noise sources. Appendix D of the Noise Study Report shows the locations of the field noise measurements and the modeled receivers.

**Existing Noise Levels at Receivers**

The estimated loudest-hour noise levels were based on daytime measurement data, peak-hour traffic data, and trends in hourly noise levels measured at representative 24-hour measurement locations. The results of the long- and short-term field measurements are summarized below.

**Segment 1: Westernmost Project Limit (I-5 I/C) to Alhambra Boulevard**

U.S. 50 is elevated approximately 16 to 33 feet above sensitive receivers located north and south of the highway and is the predominant source of environmental noise at nearby receiving land uses. There are no existing sound walls along the elevated highway structure. However, 1- to 2-foot-high safety barriers are located at the edge of the structure for both the eastbound and westbound directions throughout most of this segment. These barriers, in combination with the edge of the elevated structure, provide partial shielding of traffic noise generated along the highway. Local vehicular traffic along W Street, X Street, and 9<sup>th</sup> Street to 28<sup>th</sup> Street, as well as highway on-ramps and off-ramps, also contribute to the ambient noise environment at nearby sensitive land uses. Two long-term noise measurements and twelve short-term noise measurements were made in this area to quantify existing worst-hour noise levels at Category B receiver locations. Loudest-hour noise levels ranged from 72 to 76 dBA Leq (h) at first-row receivers and from 64 to 69 dBA Leq (h) at second-row receivers. First-row receivers and some second-row receivers have noise levels that approach or exceed the NAC (67 dBA Leq (h)).

**Segment 2: Alhambra Boulevard to 65<sup>th</sup> Street**

Category B-E receivers are located north and south of U.S. 50 and include single- family residences, Faith Bible Church, and the Lighthouse Childcare Center. The majority of receivers in this segment are partially shielded from traffic noise generated along the highway by the edge of the elevated structure or by existing noise barriers ranging from 6 to 12 feet in height (Barriers H, I, J, Q-1, Q-2, and Q-3). The profile of U.S. 50 transitions from above the receivers to below the receivers near 43<sup>rd</sup> Street and to above the receivers again near 52<sup>nd</sup> Street. Residential receivers to the north between Stockton Boulevard and 59<sup>th</sup> Street are also affected by intermittent light rail trains, but are currently shielded by an 8 to 10 foot high sound wall (Barrier Q). Four long-term noise measurements and twenty-one short-term measurements were made at representative

conducted. Table 2-40 shows the vehicle mix. The I&R traffic counts were used to calibrate the traffic model. The reported Caltrans truck percentages were used to calculate Year 2004, Year 2040 No Build, and Year 2040 Build traffic noise levels.

Table 2-40. Vehicle Mix for US 50

Count Location	I & R Counts			2004 Truck Volumes		
	Light-duty	Medium Trucks	Heavy Trucks	Light-duty	Medium Trucks	Heavy Trucks
Watt Avenue	94%	4%	3%	96%	2%	2%
Howe Avenue	96%	2%	2%	96%	2%	2%
Alhambra Boulevard	92%	4%	4%	97%	2%	1%
20 <sup>th</sup> Street	92%	4%	3%	98%	1%	1%

Free-flow traffic speeds observed in the field during the noise monitoring survey were approximately 65 mph for light-duty vehicles and medium-duty trucks and 60 mph for heavy-duty trucks.

**Noise Level Predictions**

Noise levels were predicted within the four receiver segments discussed below. There are no NAC Category C-E land uses in the project area that are considered to have outdoor activity areas with frequent human usage that would benefit from a lower noise level. Consequently, a detailed assessment of traffic noise impacts and abatement is not considered at Category C-E land uses in the project area. Noise levels discussed in this section are based on the adjusted modeled results, using traffic volumes for the a.m. and p.m. peak hours for Year 2004, Year 2030 No Build, and Year 2030 Build, Year 2040 No Build, and Year 2040 Build.

**Segment 1: Westernmost Project Limit (I-5 I/C) to Alhambra Boulevard**

Two long-term measurements and twelve short-term measurements were made within this section, with nine additional modeled receiver locations (MR-1.1 through MR-1.9). There are no existing noise barriers within this segment. The loudest-hour Leq (h) for the Year 2004 condition ranges from 62 to 72 dBA at first-tier residences and from 62 to 73 dBA at second-tier residences. Under Year 2030 and Year 2040 No Build conditions, noise levels at receiver locations are expected to range from 62 to 72 dBA at first-tier residences and from 62 to 73 dBA at second-tier residences.

The Year 2030 and Year 2040 Build condition is anticipated to increase the loudest-hour Leq (h) noise levels in this segment by 0 to 1 decibels, resulting in noise levels of 63 to 72 dBA at first-tier residences and from 62 to 74 dBA at second-tier residences. This increase in noise levels is a result of an increase in traffic volumes. The noise level increase is not enough to be considered a substantial increase. However, most first- and second-tier residences are predicted to experience noise levels that approach or exceed the NAC. Noise abatement in the form of sound barriers on structure was considered throughout this area.

**Segment 2: Alhambra Boulevard to 65<sup>th</sup> Street**

Four long-term measurements and twenty-one short-term measurements were taken within this segment, and there are thirty-three additional modeled receiver locations. There are six existing sound walls within this section of roadway (Barriers H, I, J, Q-1, Q-2, and Q-3).

In unshielded locations, Year 2004 loudest-hour Leq (h) noise levels ranged from 62 to 74 dBA at first-tier residences and from 61 to 68 dBA at second-tier residences. Loudest-hour noise levels ranged from 57 to 65 at first- and second-tier residences under Year 2004 conditions in areas that were shielded from roadway noise by Barrier H, and from 58 to 63 dBA at receivers located behind Barriers Q-1, Q-2, and Q-3. At receivers located behind Barrier I, Year 2004 loudest-hour Leq (h) noise ranged from 65 to 70 dBA at first- and second-tier residences. Year 2004 loudest-hour Leq (h) noise levels ranged from 62 to 68 dBA at first- and second-tier residences with the shielding provided by Barrier J.

Under Year 2030 and Year 2040 No Build conditions, modeled noise levels are expected to vary from about -1 to +1 decibels as compared to the Year 2004. The resulting loudest-hour Leq (h) noise levels would range from 61 to 74 dBA at first- and second-tier residences in unshielded areas, 57 to 65 dBA with the shielding provided by Barrier H, 58 to 64 dBA with the shielding provided by Barriers Q-1, Q-2, and Q-3, 65 to 70 dBA with the shielding provided by Barrier I, and 62 to 68 dBA with the shielding provided by Barrier J.

The Year 2040 Build condition is anticipated to increase the noise levels at modeled locations by 0 to 1 decibel. Resulting loudest-hour Leq (h) noise levels range from 61 to 74 dBA at first- and second-tier residences in unshielded areas, 58 to 65 dBA with the shielding provided by Barrier H, 59 to 64 dBA with the shielding provided by Barriers Q-1, Q-2, and Q-3, 65 to 71 dBA with the shielding provided by Barrier I, and 62 to 69 dBA with the shielding provided by Barrier J.

The noise level increase anticipated under the Year 2040 Build condition is not enough to be considered a substantial increase. However, predicted noise levels approach or exceed the NAC in most first- and second-tier residences that are located in unshielded areas and at first-tier residences located behind Barriers I and J, which are in fair condition.

### **Segment 3: 65<sup>th</sup> Street to Howe Avenue**

One long-term measurement and one short-term measurement were taken within this region, and there are two additional modeled receiver locations. There are no sound walls within this segment. The loudest-hour Leq (h) noise levels under Year 2004 conditions range from 55 to 71 dBA. Under Year 2030 and Year 2040 No Build conditions, noise levels at modeled locations are expected to decrease between 0 and 1 decibel to range from 55 to 70 dBA.

The Year 2030 Build condition will increase the noise levels at modeled locations by 0 to 1 decibels to range from 55 to 71 dBA. This increase in noise levels is a result of the increase in traffic volumes. The noise level increase is not enough to be considered a substantial increase. The church parking areas are not considered to be areas of frequent human use that would benefit from a lowered noise level. The baseball field was analyzed for feasibility and reasonableness; however, it did not meet FHWA criteria. Therefore, no noise abatement is considered for this area.

### **Segment 4: Howe Avenue to Watt Avenue**

Two long-term measurements and fifteen short-term measurements were taken within this region, and there are 21 additional modeled receiver locations. Existing sound walls (Barriers G-1, G-2, K, L-1, and L-2) provided acoustical shielding to all measured and modeled receivers in this segment. The loudest-hour Leq (h) for the Year 2004 conditions ranges from 62 to 72 dBA at first-tier residences and from 59 to 66 dBA at second-tier residences. Under Year 2030 No Build conditions, noise levels at modeled locations are expected to increase by less than 1 decibel to range from 62 to 72 dBA at first-tier residences and from 59 to 66 dBA at second-tier residences.

The Year 2030 and Year 2040 Build condition will increase noise levels at modeled locations by 0 to 1 decibels. Resulting noise levels are anticipated to be 63 to 72 dBA at first-tier residences and 60 to 66 dBA at second-tier residences. This increase in noise levels is a result of the increase in traffic volumes. The noise level increase would not be considered a substantial increase. However, many first-row receivers would continue to approach or exceed the NAC of 67 dBA; therefore, noise abatement, in the form of increasing the existing wall heights in the area, was considered for this region.

### **Avoidance, Minimization, and/or Abatement Measures**

Noise abatement, in the form of sound walls, was assessed for sensitive receptors that approached or exceeded the NAC. Sound wall heights were evaluated in 2 foot increments ranging in height from 6 feet to 16 feet. Replacement sound walls were assessed for noise barriers that were in fair to poor

condition and for those that potentially did not break the line of sight between residents in the area and traffic on U.S. 50. The replacement wall of equal height to the existing wall would not be anticipated to change the noise environment behind the wall, therefore, the insertion loss was calculated based on wall height increases over the existing wall height.

A full assessment of noise impacts and abatement options is included in the Noise Study Report.

### **Segment 1: Westernmost Project Limit (I-5 I/C) to Alhambra Boulevard**

There are currently no barriers in this segment. The predicted Year 2040 Build loudest-hour noise levels within this segment range from 62 to 74 dBA, with 17 Category B receivers approaching or exceeding the NAC of 67 dBA. Caltrans evaluated barriers throughout this segment to mitigate these potential impacts, SWWB1 and SWEB1. The barriers would reduce noise levels by 2 to 11 decibels at 150 affected receivers. A minimum barrier height of 8 ft would break the line of sight between a 3.5 m (11.5 ft)-high truck stack and a 5 ft high receiver in the first row of residences. The reasonable allowance calculated in accordance with the Protocol ranges from \$6,105,000 to \$9,655,000.

As shown in Table 2-41, SW WB1 and SW EB1 met the design noise goal reduction of 7 dBA; but the construction cost exceeds the federal reasonable allowances. Therefore, these barriers are not considered Reasonable to build with regard to cost and they are not eligible for federal funds. However, if these sound walls have public support and local funding then some or all of these sound walls can be constructed.

### **Segment 2: Alhambra Boulevard to 65th Street**

There are currently seven barriers in this segment: Barriers H, I, Q-1, Q-2, Q-3, Q-4, and J. Barriers I and J are in fair condition but may not break the line of sight between receivers, and traffic on U.S. 50 and Barriers H, Q-1, Q-2, Q-3, and Q-4 are in good condition. The predicted Year 2040 Build loudest-hour noise levels within this segment range from 58 to 74 dBA, with 27 Category B receivers approaching or exceeding the NAC of 67 dBA Leq (h).

Caltrans considered seven barriers throughout this segment: SW WB2, SW EB2/2A, SW EB3, SW EB4, SW EB5, SW EB6 and SW EB7/7A. Table 2-41 shows reasonable allowances for all barriers.

**SW WB2** would reduce noise levels by 5 to 9 decibels for up to 25 sensitive receptors. A minimum barrier height of 10 ft would break the line of sight between an 11.5 ft high truck stack and a 5 ft high receiver in the first row of residences. The reasonable allowance calculated in accordance with the Protocol is \$1,775,000.

**SW EB2-2A** would reduce noise levels by 5 to 10 decibels for 58 sensitive receptors. A minimum barrier height of 8 ft would break the line of sight between an 11.5 ft high truck stack and a 5 ft high receiver in the first row of residences. The reasonable allowance calculated in accordance with the Protocol ranges from \$355,000 to \$3,763,000.

**SW EB3:** Raising the existing sound wall height to 16 ft would not provide the required 5-dBA reduction; therefore, this barrier is not considered. Replacing this barrier with a taller barrier was considered. However, under the FHWA protocol, it is not feasible or reasonable to replace SW EB3 with a taller barrier; replacement would require local funding if it becomes available.

**SW EB4** would reduce noise levels by 5 to 7 decibels for 2 sensitive receptors. A minimum barrier height of 8 ft would break the line of sight between an 11.5 ft high truck stack and a 5 ft high receiver in the first row of residences. The reasonable allowance calculated in accordance with the Protocol is \$142,000.

**SW EB5** will reduce noise levels by 6 to 12 decibels for 7 sensitive receptors. A minimum barrier height of 6 ft would break the line of sight between an 11.5 ft high truck stack and a 5 ft high

Table 2-41. Reasonable Allowances for All Barriers

Sound Wall Designation*	Description	H (ft)	L (ft)	Total Reasonable Allowance	Estimated Construction Cost	Meet Reasonable Criteria?**
SW WB1	WB 7 <sup>th</sup> St. to 13 <sup>th</sup> St.	8	2,464	\$9,655,000	\$19,125,000	No
	WB 13 <sup>th</sup> St. to 16 <sup>th</sup> St.	8	1,112			
	WB 16 <sup>th</sup> St. to 18 <sup>th</sup> St.	8	936			
	WB 18 <sup>th</sup> St. to 26 <sup>th</sup> St.	8	4,276			
SW WB2	WB 50-51 Connector	10	1,090	\$1,775,000	\$2,098,000	No
	WB on Elmhurst Viaduct	10	347			
SW EB1A	EB 9 <sup>th</sup> St. to 13 <sup>th</sup> St.	8	1,710	\$6,105,000	\$18,048,000	No
	EB 13 <sup>th</sup> St. to 16 <sup>th</sup> St.	8	1,066			
	EB 16 <sup>th</sup> St. to 18 <sup>th</sup> St.	8	872			
	EB 18 <sup>th</sup> St. to EB50-SB99 connector	8	4,418			
SW EB2	NB99-EB50 connector-Elmhurst Viaduct	10	1,242	\$3,763,000	\$8,791,000	No
	EB Elmhurst Viaduct to Stockton Blvd	10	1,860			
SW EB2A	EB Stockton on-ramp to 39 <sup>th</sup> St	10	1,223	\$355,000	\$987,000	No
	39 <sup>th</sup> St Undercrossing	8	135			
SW EB3 (existing Barrier I) <sup>+</sup>	39 <sup>th</sup> St to 41 <sup>st</sup> St	10	1002	\$0	\$1,375,000	No
	EB 41 <sup>st</sup> St to 45 <sup>th</sup> St	10	1302			
SW EB4	EB 45 <sup>th</sup> St to 48 <sup>th</sup> St	10	978	\$142,000	\$1,138,000	No
SW EB5	EB 48 <sup>th</sup> St to 51 <sup>st</sup> St	10	1,153	\$497,000	\$1,322,000	No
SW EB6	EB 51 <sup>st</sup> St to 59 <sup>th</sup> St	8-10	2,563	\$1,491,000	\$3,161,000	No
SW EB7A	EB 59 <sup>th</sup> St to 62 <sup>nd</sup> St	12	1,574	\$284,000	\$781,000	No
SW EB7B	EB 62 <sup>nd</sup> St to 65 <sup>th</sup> St	10	1,058	\$0	\$490,000	No
Total			32,381	\$24,067,000	\$57,616,000	

Notes: \*The project sound wall designation column is required for distinguishing between sound wall on structure or original ground.

\*\*Even though these sound walls are not eligible for federal re-imbusement, these sound walls have support from the adjacent community and if local funding is identified, some or all of these sound walls may be constructed.

+Barrier I extends from the east side of the 39<sup>th</sup> Street undercrossing to approximately 43<sup>rd</sup> Street.

### Construction Noise Impact

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14.8-02. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise.

### CEQA Considerations

When determining whether a noise impact is significant under CEQA, comparison is made between the baseline noise level and the build noise level. The CEQA noise analysis is completely independent of the NEPA-23 CFR 772 analysis discussed above, which is centered on noise abatement criteria. Under CEQA, the assessment entails looking at the setting of the noise impact and then how large or perceptible any noise increase would be in the given area. Key considerations include: the uniqueness of the setting, the sensitive nature of the noise receptors, the magnitude of the noise increase, the number of residences affected and the absolute noise level.

guardrail posts and other treated wood removed will be disposed consistent with Caltrans Standard Special Provision 14-11.09 (Treated Wood Waste). The quantity will be determined during design.

- **Asbestos Containing Material (ACM):**  
ACM will be avoided to the extent practicable. Any ACM on bridges requiring removal will be removed and disposed by a licensed and certified asbestos abatement contractor implementing an Asbestos Compliance Plan to prevent or minimize exposure to asbestos. Non-Standard Special Provisions addressing ACM will be included in the project specifications.
- **Aerial Deposited Lead (ADL):**  
The quantity of ADL soil requiring special handling will be minimized during design by identifying and restricting special handling areas to those above regulatory limits. Any ADL soil requiring removal will be managed pursuant to Standard Special Provision 7-1.02K(6)(j)(iii) when non-hazardous or SSP 14-11.03 when hazardous.
- **Yellow Traffic Stripes**  
Grindings (which consist of the roadway material and the yellow color traffic stripes) will be removed and disposed of in accordance with Caltrans Standard Special Provision 15-1.03B (Residue Containing High Lead Concentration Paints). Non-hazardous levels of lead are known to exist in the white traffic striping. As such, these grindings shall be removed and disposed of in accordance with the same specification.

## Air Quality

Project alternatives would comply with the requirements of Caltrans requirements and SMAQMD rules and Best Management Practices (BMPs), which would further reduce emissions during construction activities. The project would implement the following practices during construction:

- Construction contractors would comply with Caltrans Standard Specification Provisions which uses newer/retrofit engines for construction equipment;
- Comply with District's Rule 403 for fugitive dust emissions;
- Prohibit truck idling in excess of 5 minutes, whenever practical;
- Use only well-maintained equipment;
- Utilize proper planning to reduce rework and multiple handling of earth materials.

## Noise

- Noise abatement, in the form of sound walls, may be constructed at the following locations:

Westernmost Project Limit (I-5 I/C) to Alhambra Boulevard

**SWWB1 and SWEB1** would reduce noise levels by 2 to 11 decibels at 150 affected receivers.

Alhambra Boulevard to 65th Street:

**SWWB2** would reduce noise levels by 5 to 9 decibels for up to 25 sensitive receptors.

**SWEB2-2A** would reduce noise levels by 5 to 10 decibels for 58 sensitive receptors.

**SWEB3:** Raising the existing sound wall height to 16 ft would not provide the required 5-dBA reduction; therefore, this barrier is not considered. However, replacing this barrier with a taller barrier is being considered depending on funding and final project design.

**SWEB4** would reduce noise levels by 5 to 7 decibels for 2 sensitive receptors.

**SWEB5** will reduce noise levels by 6 to 12 decibels for 7 sensitive receptors.

**SWEB6** would reduce noise levels by 5 to 9 decibels for 26 sensitive receptors.

**SWEB7A-7B** would reduce noise levels by 5 to 7 decibels for 4 sensitive receptors.

The reasonable allowance for all of these sound walls was less than the construction costs; these sound walls are not eligible for federal re-imbusement. However, these sound walls have support from the adjacent community. If local funding is identified, some or all of these sound walls can be constructed.

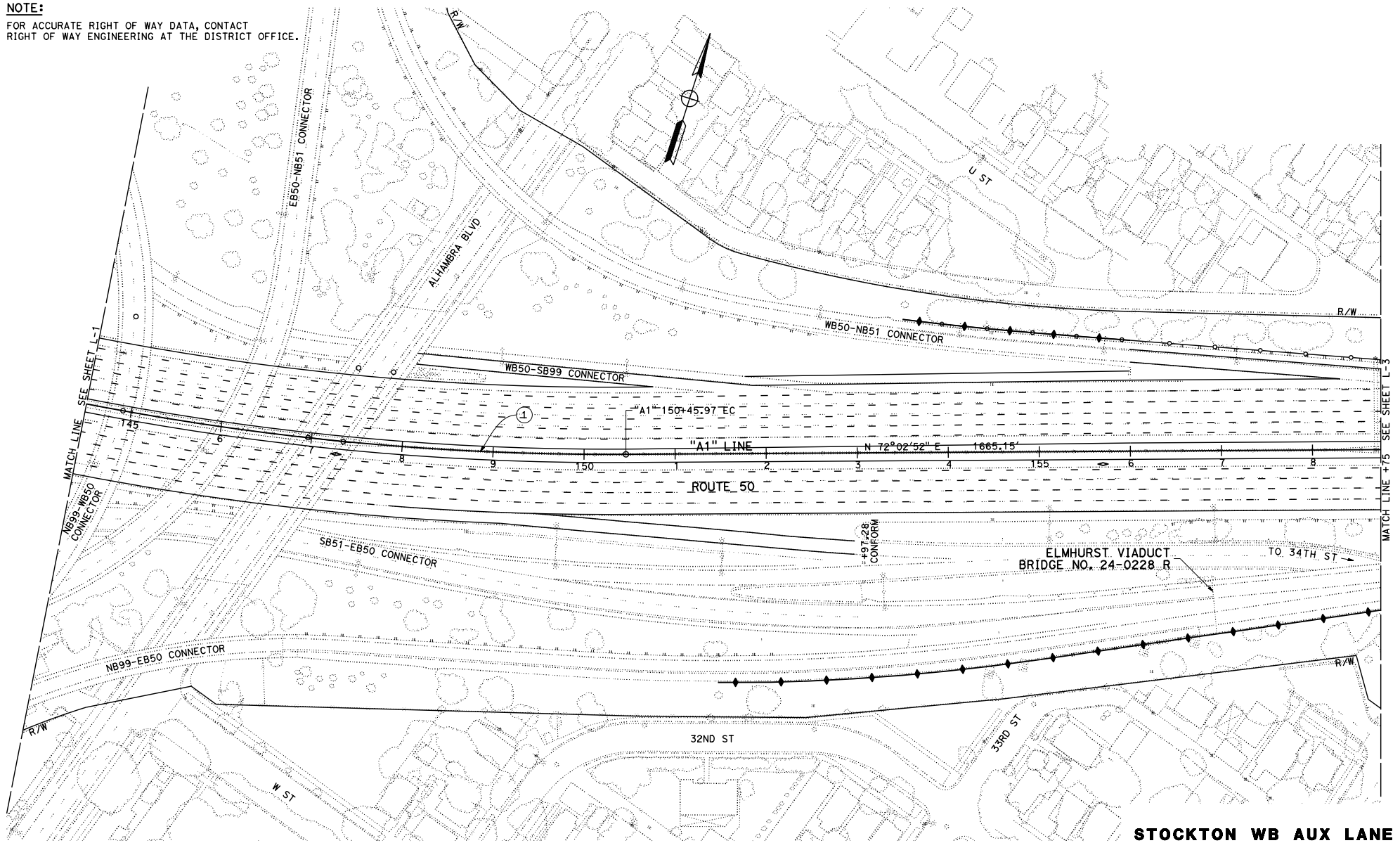
- No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14.8-02. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise.

## **Biological Resources**

- The contractor will install and maintain exclusionary devices for birds and bats in the joints and weep holes of all 11 structures [Elmhurst Viaduct, Brighton Overhead, Folsom Blvd. Undercrossing, and State College Undercrossing, Southside Park, 9th Street, 10th Street, Riverside Blvd., 15th-16th Streets, 18th Street- 24th Streets (Camellia City Viaduct) and 26th Street].
- If any work is anticipated on structures suitable for bird nesting or bat roosting that occurs between February 1<sup>st</sup> and August 31<sup>st</sup>, the construction crews shall take such measures as necessary to prevent bird nesting or bat roosting on portions of the structures that will cause a conflict between performing necessary work and nesting birds or roosting bats. Prior to February 1<sup>st</sup>, existing nests shall be removed and exclusionary devices such as netting or one-way doors shall be used to prevent migratory species from occupying said structures.
- Daily scraping, between February 1<sup>st</sup> and September 1<sup>st</sup>, of partially completed bird nests on structures is permitted to discourage nesting. If new nests are built or existing nests become occupied, then any work that would interfere with or discourage birds from returning to their nests will not be permitted. If day roosting bats are found during biological surveys, Caltrans shall consult with CDFW to and implement CDFW recommended measures to comply with provisions of the Fish and Game Code of California.

**NOTE:**

FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



**CURVE DATA**

No.	⊕	R	Δ	T	L
1		3000'	36°22'10"	985.46'	1904.30'

**STOCKTON WB AUX LANE  
ALTERNATIVE 1  
ATTACHMENT E  
LAYOUT**

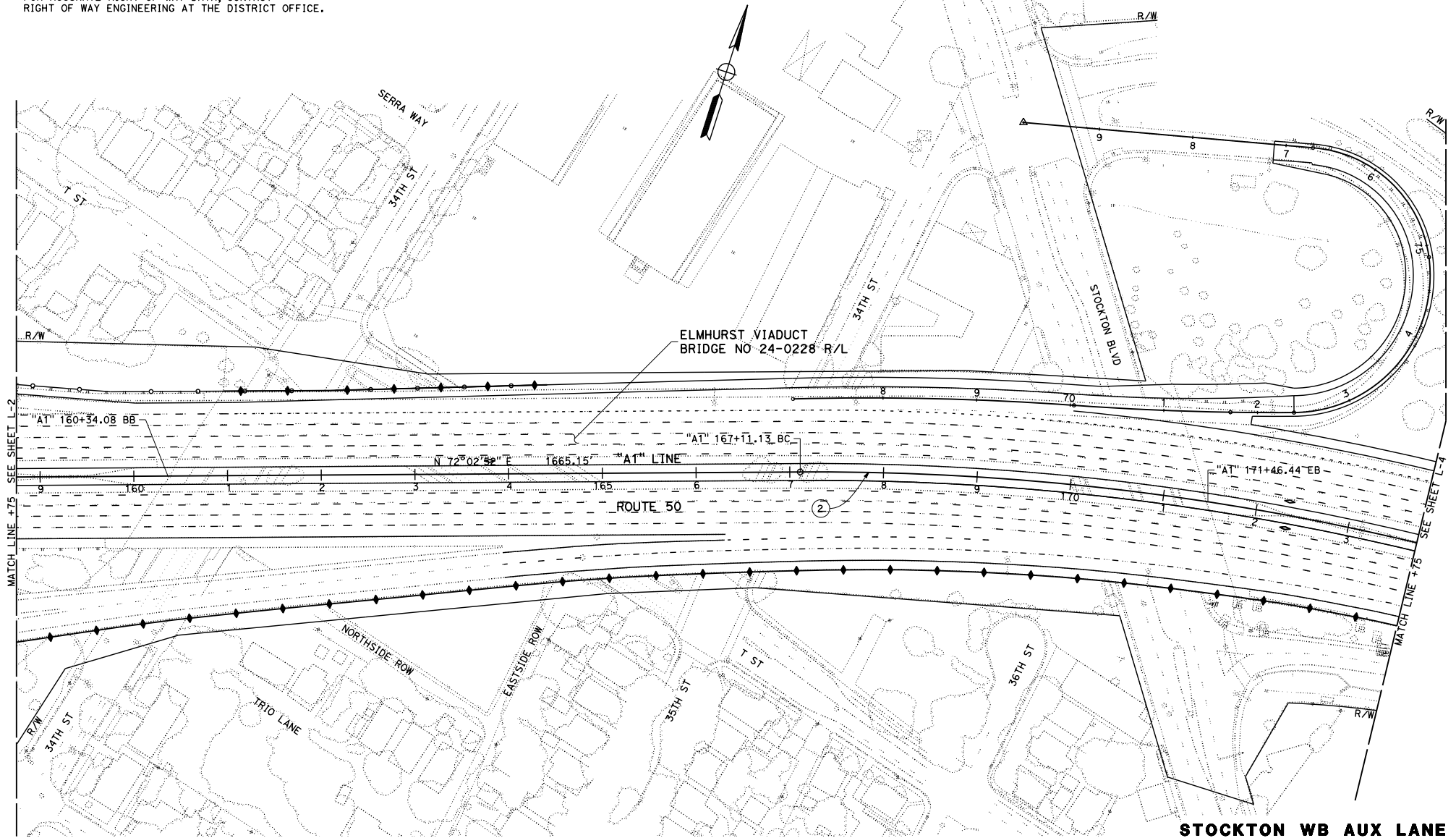
SCALE: 1" = 50'

**L-2**



**NOTE:**

FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



**CURVE DATA**

No.	⊕	R	Δ	T	L
2		2750'	36°54'29"	917.68'	1771.46'

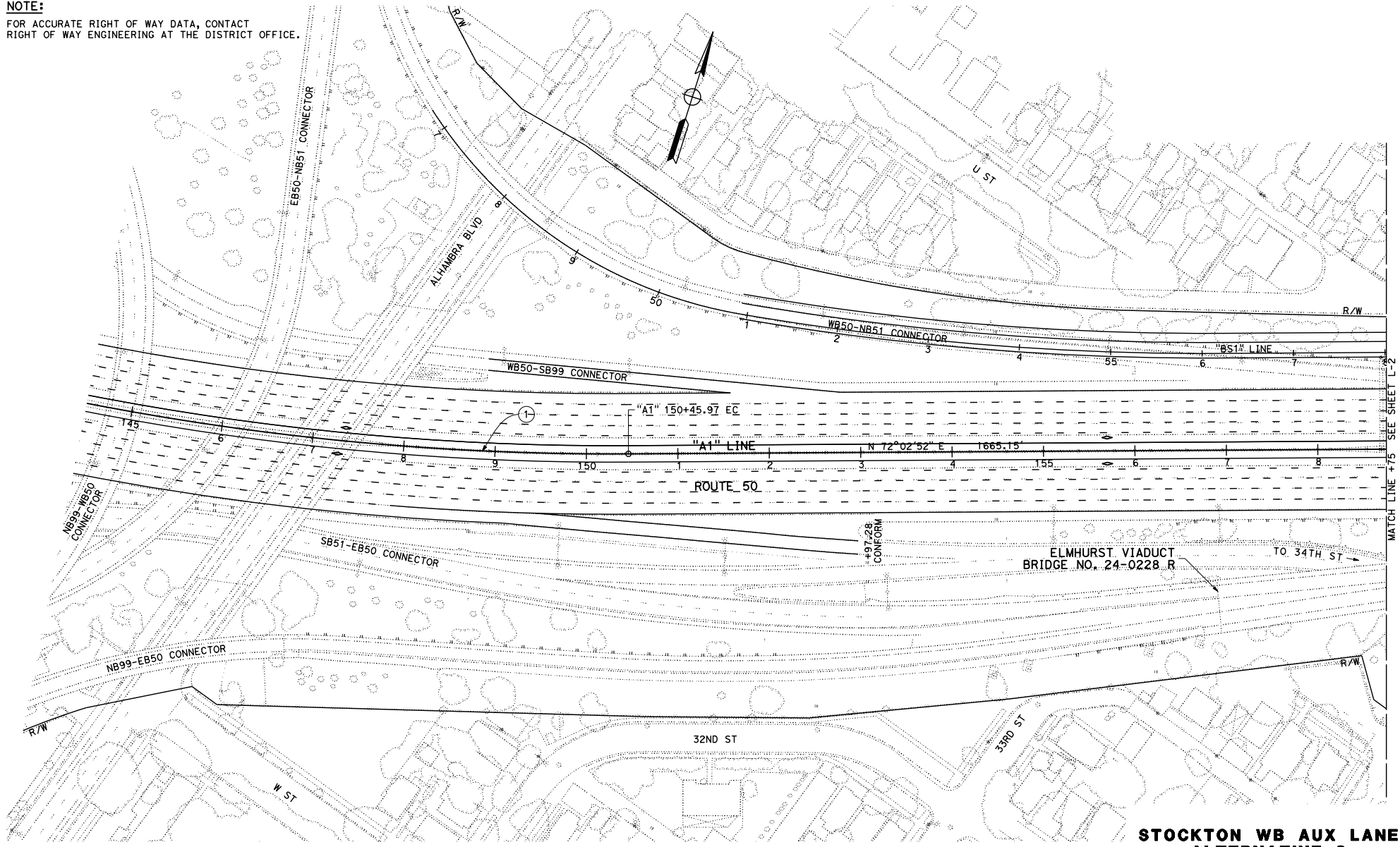
**STOCKTON WB AUX LANE  
ALTERNATIVE 1  
ATTACHMENT E  
LAYOUT**

SCALE: 1" = 50'

**L-3**

**NOTE:**

FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



**CURVE DATA**

No.	⊕	R	Δ	T	L
1		3000'	36°22'10"	985.46'	1904.30'

**STOCKTON WB AUX LANE  
ALTERNATIVE 2  
ATTACHMENT F  
LAYOUT**

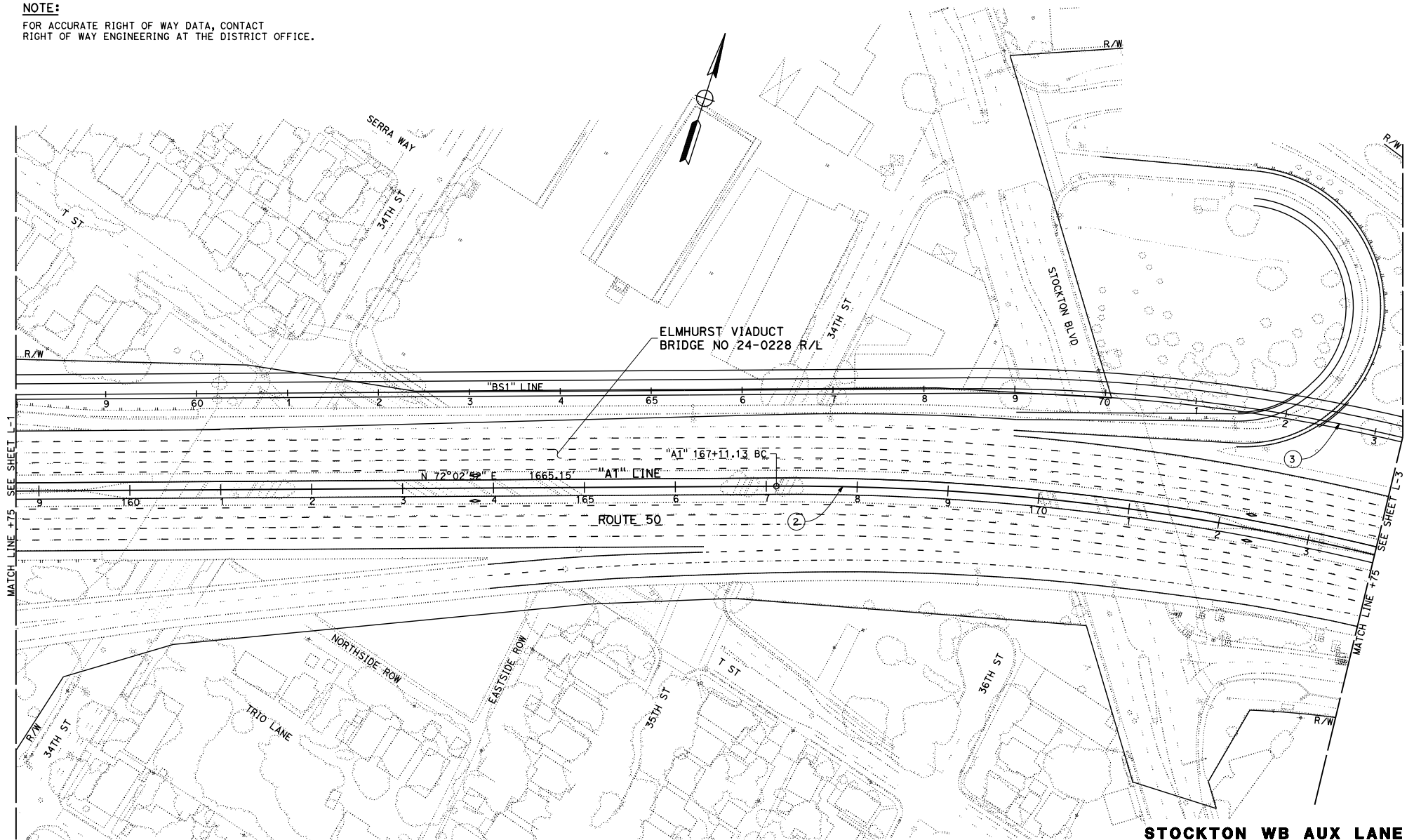
SCALE: 1" = 50'

**L-1**

Attachment Q

**NOTE:**

FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



**CURVE DATA**

No. (+)	R	Δ	T	L
2	2750'	36°54'29"	917.68'	1771.46'
3	2000'	36°54'29"	667.41'	1288.33'

**STOCKTON WB AUX LANE  
ALTERNATIVE 2  
ATTACHMENT F**

**LAYOUT**

SCALE: 1" = 50'

**L-2**

# Preferred Bicycle Network

## Future Bike Classification

- Bike Path (Class I)
- Bike Lane (Class II)
- Bike Route (Class III)
- Separated Bikeway (Class IV)
- Buffered Bike Lane (Class II Enhanced)

## Existing Bike Classification

- Bike Path (Class I)
- Bike Lane (Class II)
- Bike Route (Class III)

