



Caltrans

**Preliminary Noise Abatement
Decision Report (NADR)**

Volume 2 of 2

**Interstate 5 North Coast Corridor
Project**

June 2007

**Prepared for:
Caltrans – District 11**

**Prepared by:
Dokken Engineering**



Segment 11

Noise Barrier S680

General

Type: Sound wall

I-5 Station limits: 677+90 to 684+15

Receptor sites: R11.22 through R11.25

Severely Impacted Receptors: None

Height: 2.4 meters (8 feet), 3.0 meters (10 feet), 4.3 meters (14 feet), and 4.9 meters (16 feet)

Location: Environmental Segment 11; see exhibit

Benefited Units: 30 multi-family residences, one recreational facility (12 frontage units)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 68 to 74 dBA

Compared to existing (year 2005): Two dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance:	\$1,596,000
Estimated Total Cost without Easements:	\$1,588,161
Estimated Total Cost with Construction Easements only:	\$1,886,961
Estimated Total Cost with all Easements:	\$2,224,864

Reasonable Cost Allowance/Benefited Unit:	\$38,000
Estimated Cost/Benefited Unit without Easements:	\$37,813
Estimated Cost/Benefited Unit with Construction Easements only:	\$44,928
Estimated Cost/Benefited Unit with all Easements:	\$52,973

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 11, Sheets 30 and 31, of this NADR, noise barrier S680 would be located on private property and on Caltrans right-of-way along the northbound side of I-5, just north of Encinitas Boulevard. This area is represented by receiver sites R11.22 through R11.25. The noise barrier would extend for approximately 664 meters (2,178 feet) and would replace an existing 2.7 meter (9 foot) property wall. The height of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 2.4 meters (8 feet), 3.0 meters (10 feet), 4.3 meters (14 feet), and 4.9 meters (16 feet). The wall would benefit 30 multi-family residences and one recreational facility and is considered feasible. The estimated construction cost of S680 without easements would be less than the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 18%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 39% above the reasonable allowance.

Noise Abatement Decision

Construction of S680 may be recommended if negotiation with the property owners would result in estimated costs that do not exceed the reasonable allowance. This may be accomplished if the property owners are willing to donate easements by signing a waiver of just compensation. If the total cost cannot be reduced to less than or equal to the reasonable allowance, construction is not recommended.

Noise Barrier S686a

General

Type: Sound wall

I-5 Station limits: 685+29 to 685+88

Receptor sites: R11.27

Severely Impacted Receptors: R11.27

Height: 2.4 meters (8 feet)

Location: Environmental Segment 11; see exhibit

Benefited Units: One multi-residential outdoor use area (two frontage units)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 77 dBA

Compared to existing (year 2005): Seven dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$84,000

Estimated Total Cost without Easements: \$198,218

Estimated Total Cost with Construction Easements only: \$247,718

Estimated Total Cost with all Easements: \$300,628

Reasonable Cost Allowance/Benefited Unit: \$42,000

Estimated Cost/Benefited Unit without Easements: \$99,109

Estimated Cost/Benefited Unit with Construction Easements only: \$123,859

Estimated Cost/Benefited Unit with all Easements: \$150,314

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 11, Sheet 31, of this NADR, noise barrier S686a would be located on private property north of Encinitas Boulevard. This area is represented by receiver site R11.27. The noise barrier would extend for approximately 110 meters (361 feet). The height of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would be 2.4 meters (8 feet). The wall would benefit one multi-residential outdoor use area and is considered feasible. The estimated cost of S686a, when all easements are assumed eliminated, would be 136% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 195%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 258% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S686a is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S686a. However, there exists a severely impacted receptor that must be abated for. S686a is preliminarily recommended in order to abate for the severely impacted receptor, R11.27.

Noise Barrier S686 b/c

General

Type: Sound wall

I-5 Station limits: 684+90 to 685+82/685+88 to 686+28

Receptor sites: R11.26/R11.28

Severely Impacted Receptors: None

Height: 3.0 meters (10 feet)

Location: Environmental Segment 11; see exhibit

Benefited Units: Eight single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 72 dBA

Compared to existing (year 2005): Five to six dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: Yes

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance:	\$320,000
Estimated Total Cost without Easements:	\$323,710
Estimated Total Cost with Construction Easements only:	\$393,010
Estimated Total Cost with all Easements:	\$478,480

Reasonable Cost Allowance/Benefited Unit:	\$40,000
Estimated Cost/Benefited Unit without Easements:	\$40,464
Estimated Cost/Benefited Unit with Construction Easements only:	\$49,126
Estimated Cost/Benefited Unit with all Easements:	\$59,810

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 11, Sheet 31, of this NADR, noise barrier S686b/c would be located on private property north of Encinitas Boulevard. This area is represented by receiver sites R11.26 and R11.28. The noise barriers would extend for approximately 154 meters (505 feet). The height of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would be 3.0 meters (10 feet). The wall would benefit eight single-family residences and is considered feasible. The estimated cost of S686b/c, when all easements are assumed eliminated, would be one percent above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 23%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 50% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S686b/c is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S686b/c. Construction of noise barrier S686b/c is not recommended.

Noise Barrier S688

General

Type: Sound wall

I-5 Station limits: 686+94 to 687+48

Receptor sites: R11.29

Severely Impacted Receptors: R11.29

Height: 4.9 meters (16 feet)

Location: Environmental Segment 11; see exhibit

Benefited Units: One single-family residence

Predicted Noise Levels if Project Built without Abatement

Year 2030: 75 dBA

Compared to existing (year 2005): Six dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance:	\$50,000
Estimated Total Cost without Easements:	\$266,090
Estimated Total Cost with Construction Easements only:	\$303,890
Estimated Total Cost with all Easements:	\$375,374

Reasonable Cost Allowance/Benefited Unit:	\$50,000
Estimated Cost/Benefited Unit without Easements:	\$266,090
Estimated Cost/Benefited Unit with Construction Easements only:	\$303,890
Estimated Cost/Benefited Unit with all Easements:	\$375,374

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 11, Sheet 31, of this NADR, noise barrier S688 would be located on private property on the northbound side of I-5, north of Encinitas Boulevard. This area is represented by receiver site R11.29. The noise barrier would extend for approximately 84 meters (276 feet). The heights of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 4.9 meters (16 feet). The wall would benefit one single-family residence and is considered feasible. The estimated cost of S688, when all easements are assumed eliminated, would be 432% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 508%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 651% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S688 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S688. However, there exists a severely impacted receptor that must be abated for. S688 is preliminarily recommended in order to abate for the severely impacted receptor, R11.29.

Noise Barrier S689

General

Type: Sound wall

I-5 Station limits: 683+25 to 696+20

Receptor sites: R11.5A through R11.20

Severely Impacted Receptors: R11.5A, R11.6, R11.7, R11.9, R11.11, R11.13, R11.14,
R 11.16, R11.17, R11.18

Height: 3.7 meters (12 feet) to 4.9 meters (16 feet)

Location: Environmental Segment 11; see exhibit

Benefited Units: 26 single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 72 to 81 dBA

Compared to existing (year 2005): One to four dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$1,456,000

Estimated Total Cost without Easements: \$1,925,027

Estimated Total Cost with Construction Easements only: \$1,940,777

Estimated Total Cost with all Easements: \$1,966,677

Reasonable Cost Allowance/Benefited Unit: \$56,000

Estimated Cost/Benefited Unit without Easements: \$74,040

Estimated Cost/Benefited Unit with Construction Easements only: \$74,645

Estimated Cost/Benefited Unit with all Easements: \$75,641

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 11, Sheets 31, 32, and 33, of this NADR, noise barrier S689 would be located on Caltrans right-of-way and along the shoulder of the southbound side of I-5, just south of Leucadia Boulevard. This area is represented by receiver sites R11.5A through R11.20. The noise barrier would extend for approximately 1,298 meters (4,259 feet) and would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would be 3.7 meters (12 feet) to 4.9 meters (16 feet). The wall would benefit 26 single-family residences and is considered feasible. The estimated cost of S689, when all easements are assumed eliminated, would be 32% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 33%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 35% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S689 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S689. However, there exist severely impacted receptors that must be abated for. The Project Engineer will coordinate individual abatement with property owners represented by the severely impacted receptors, R11.5A, R11.6, R11.7, R11.9, R11.11, R11.13, R11.14, R 11.16, R11.17, and R11.18. However if agreements cannot be reached regarding the individual abatement, the wall will be preliminarily recommended as proposed.

Noise Barrier S692

General

Type: Sound wall

I-5 Station limits: 690+10 to 695+45

Receptor sites: R11.31 through R11.36

Severely Impacted Receptors: R11.31, R11.32, R11.34, R11.35

Height: 3.7 meters (12 feet) to 4.3 meters (14 feet)

Location: Environmental Segment 11; see exhibit

Benefited Units: Ten single-family residences, one park (six frontage units)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 70 to 78 dBA

Compared to existing (year 2005): Three to six dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$864,000

Estimated Total Cost without Easements: \$1,008,935

Estimated Total Cost with Construction Easements only: \$1,135,835

Estimated Total Cost with all Easements: \$1,331,713

Reasonable Cost Allowance/Benefited Unit: \$54,000

Estimated Cost/Benefited Unit without Easements: \$63,058

Estimated Cost/Benefited Unit with Construction Easements only: \$70,990

Estimated Cost/Benefited Unit with all Easements: \$83,232

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 11, Sheet 39, of this NADR, noise barrier S692 would be located on Caltrans right-of-way and along the shoulder of the northbound side of I-5, south of Leucadia Boulevard. This area is represented by receiver sites R11.31 through R11.36. The noise barrier would extend for approximately 542 meters (1,778 feet) and would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 3.7 meters (12 feet) to 4.3 meters (14 feet). The wall would benefit ten single-family residences and one park and is considered feasible. The estimated cost of S692 when all easements are assumed eliminated, would be 17% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 31%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 54% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S692 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S692. However, there exist severely impacted receptors that must be abated for. S692 is preliminarily recommended in order to abate for the severely impacted receptors, R11.31, R11.32, R11.34, and R11.35.

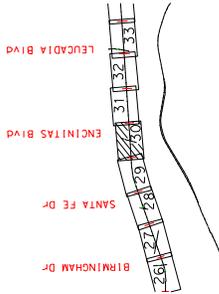
SEGMENT 11 - COST ANALYSIS

Sound Wall	# of Benefitted Residences	WALL CHARACTERISTICS			QUANTITIES					EASEMENTS			
		Length of Sound Wall (m)	Length of Sound Wall on Retaining Wall (m)	Length of Sound Wall Not on Retaining Wall (m)	Excavation Depth (m)	Excavation Width (m)	Excavation and Backfill (cu m)	Demolition of wood fence (m)	Demolition of existing sound walls/property walls (sq m)	Minor Concrete Sound Wall (sq m)	Temporary Construction Easements (sq m)	Footing Easements (sq m)	Total Easements (sq m)
11.S880	42	4.3	189	0	1.22	2.8	536	0	455.3	203	597	268	718
11.S880a	8	3.0	175	0	1.22	2.1	448	0	0	158	525	131	656
11.S880b	8	3.0	175	0	1.22	2.1	448	0	0	158	525	131	656
11.S880c	8	3.0	175	0	1.22	2.1	448	0	0	158	525	131	656
11.S889	26	4.3	178	0	1.22	2.6	1,160	0	0	44	105	70	175
11.S889a	4	3.7	340	0	1.22	2.4	891	0	0	255	519	311	830
11.S889b	8	3.7	340	0	1.22	2.4	891	0	0	255	519	311	830
11.S892	16	3.7	93	0	1.22	2.4	0	0	0	0	0	0	0

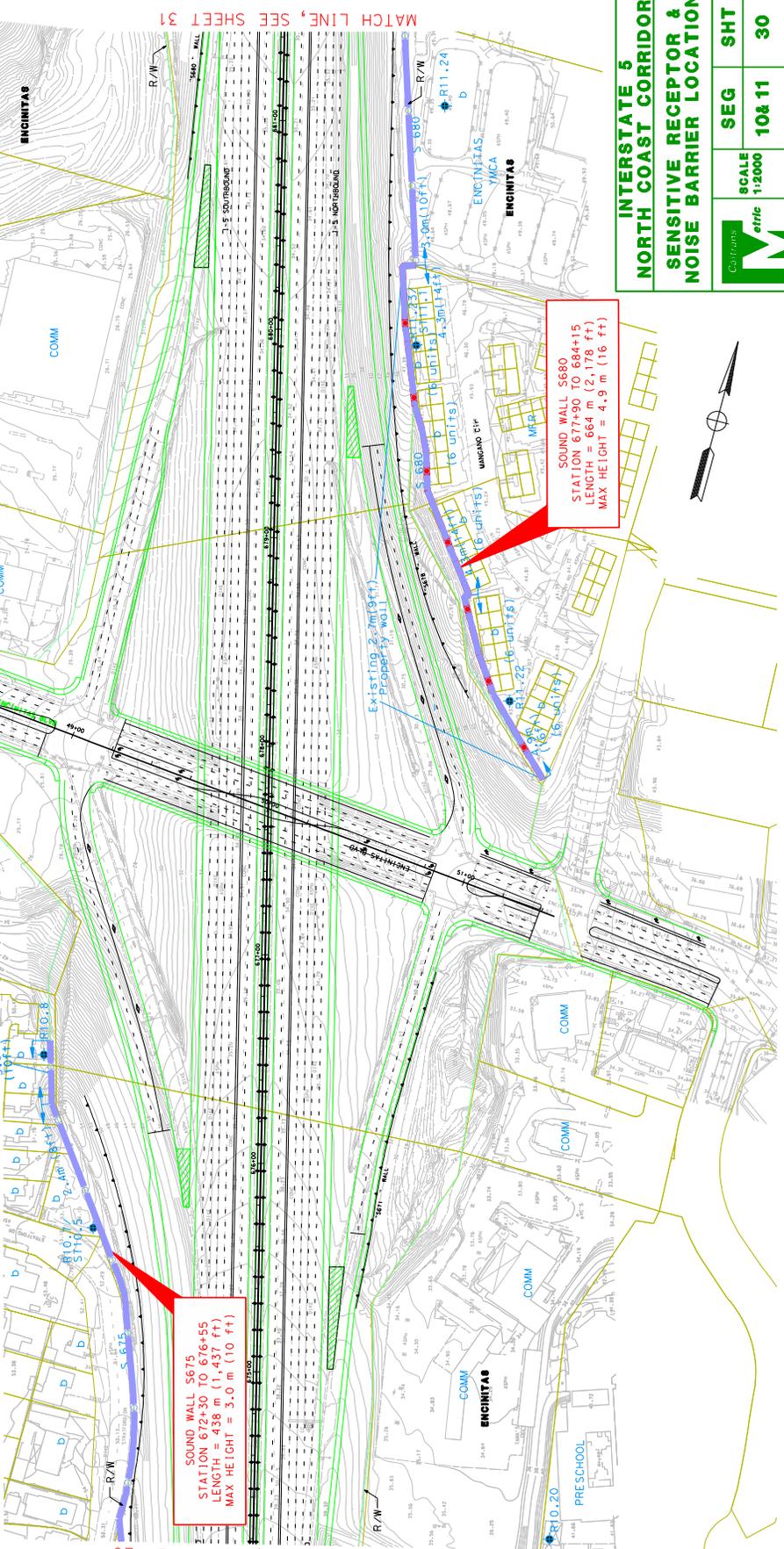
Sound Wall	# of Benefitted Residences	CONSTRUCTION COSTS				ADDITIONAL COSTS			EASEMENT COSTS			
		Sound Wall Masonry Cost (\$/210sq m)	Minor Concrete Sound Wall Cost (\$/700cu m)	Excavation and Backfill Cost (\$/100cu m)	Demolition Cost - wood fence (\$/20m)	Demolition Cost - sound wall (\$/40cu m)	Clearing & Grubbing (8% of Wall Cost)	Landscaping Cost (10% of Wall Cost)	Traffic Control Cost (5% of Wall Cost)	SWPPP Cost (6% of Wall Cost)	Construction Easements (\$/50sq m)	Footing Easements (\$/70sq m)
11.S880	42	\$1,151,190	\$84,656	\$34,672	\$0	\$10,984	\$25,311	\$12,656	\$12,656	\$44,100	\$53,388	\$127,488
11.S880a	8	\$173,901	\$12,957	\$4,967	\$0	\$1,632	\$3,772	\$1,936	\$1,936	\$7,650	\$9,180	\$17,830
11.S880b	8	\$173,901	\$12,957	\$4,967	\$0	\$1,632	\$3,772	\$1,936	\$1,936	\$7,650	\$9,180	\$17,830
11.S880c	8	\$173,901	\$12,957	\$4,967	\$0	\$1,632	\$3,772	\$1,936	\$1,936	\$7,650	\$9,180	\$17,830
11.S889	26	\$203,852	\$31,980	\$11,736	\$0	\$4,048	\$11,736	\$5,823	\$28,411	\$15,750	\$25,900	\$41,650
11.S889a	4	\$277,389	\$176,416	\$69,101	\$0	\$29,148	\$36,435	\$18,217	\$18,217	\$7,650	\$11,521	\$193,068
11.S889b	8	\$192,573	\$91,896	\$34,702	\$0	\$19,134	\$23,917	\$11,959	\$11,959	\$43,650	\$60,660	\$129,710
11.S892	16	\$75,874	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Sound Wall	# of Benefitted Residences	TOTAL COSTS			COST PER BENEFITTED RESIDENCE			COST ALLOWANCE			REASONABLENESS		
		Estimated Total Cost (w/ Construction Easement Only)	Estimated Total Cost (w/ Construction Easement Only)	Estimated Total Cost (w/ Construction Easement Only)	Estimated Cost Per Benefitted Residence (w/ Easement Only)	Estimated Cost Per Benefitted Residence (w/ Easement Only)	Estimated Cost Per Benefitted Residence (w/ Easement Only)	Reasonable Allowance Per Residence	Reasonable Total Allowance	Reasonable w/ Easements	Reasonable w/ Construction Easements Only	Reasonable w/ all easements	
11.S880	42	\$1,588,161	\$1,622,817	\$1,657,473	\$37,813	\$38,638	\$39,463	\$4,500	\$1,455,000	YES	NO	NO	
11.S880a	8	\$227,802	\$230,858	\$233,814	\$28,475	\$28,857	\$29,239	\$562.5	\$1,455,000	NO	NO	NO	
11.S880b	8	\$227,802	\$230,858	\$233,814	\$28,475	\$28,857	\$29,239	\$562.5	\$1,455,000	NO	NO	NO	
11.S880c	8	\$227,802	\$230,858	\$233,814	\$28,475	\$28,857	\$29,239	\$562.5	\$1,455,000	NO	NO	NO	
11.S889	26	\$266,900	\$266,900	\$266,900	\$10,265	\$10,265	\$10,265	\$50,000	\$50,000	NO	NO	NO	
11.S889a	4	\$1,090,037	\$1,090,037	\$1,090,037	\$272,509	\$272,509	\$272,509	\$12,500	\$1,455,000	NO	NO	NO	
11.S889b	8	\$1,309,417	\$1,309,417	\$1,309,417	\$163,714	\$163,714	\$163,714	\$19,438	\$1,455,000	NO	NO	NO	
11.S889c	8	\$1,309,417	\$1,309,417	\$1,309,417	\$163,714	\$163,714	\$163,714	\$19,438	\$1,455,000	NO	NO	NO	
11.S892	16	\$75,874	\$75,874	\$75,874	\$4,742	\$4,742	\$4,742	\$47,500	\$864,000	NO	NO	NO	

PARTIAL KEY MAP



- ### LEGEND
- X R/W
 - Approx PARCEL LINES
 - PROPOSED RET WALL
 - STUDY SOUNDWALL (RECOMMENDED)
 - STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
 - STUDY SOUNDWALL (NOT RECOMMENDED)
 - EXISTING SOUNDWALL
 - PROPOSED CONCRETE BARRIER
 - SENSITIVE RECEPTOR SITE
 - SEVERELY IMPACTED (S1) RECEPTOR SITE
 - BENEFITED UNIT
 - D HOTEL/MOTEL
 - HM SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
 - COMM COMMERCIAL
 - REC RECREATIONAL



SOUND WALL S675
STATION 672+30 TO 676+55
LENGTH = 438 m (1,437 ft)
MAX HEIGHT = 3.0 m (10 ft)

SOUND WALL S680
STATION 677+90 TO 684+15
LENGTH = 664 m (2,178 ft)
MAX HEIGHT = 4.9 m (16 ft)

INTERSTATE 5 NORTH COAST CORRIDOR SENSITIVE RECEPTOR & NOISE BARRIER LOCATION

	SCALE	SEG	SHT
	1:2000	10&11	30



MATCH LINE, SEE SHEET 31

MATCH LINE, SEE SHEET 29

Segment 12

Noise Barrier S702

General

Type: Sound wall

I-5 Station limits: 700+95 to 702+70

Receptor sites: R12.34

Severely Impacted Receptors: None

Height: 4.9 meters (16 feet)

Location: Environmental Segment 12; see exhibit

Benefited Units: One single-family residence

Predicted Noise Levels if Project Built without Abatement

Year 2030: 74 dBA

Compared to existing (year 2005): Six dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$48,000

Estimated Total Cost without Easements: \$189,079

Estimated Total Cost with Construction Easements only: \$189,079

Estimated Total Cost with all Easements: \$189,079

Reasonable Cost Allowance/Benefited Unit: \$48,000

Estimated Cost/Benefited Unit without Easements: \$189,079

Estimated Cost/Benefited Unit with Construction Easements only: \$189,079

Estimated Cost/Benefited Unit with all Easements: \$189,079

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 12, Sheet 33, of this NADR, noise barrier S702 would be located on Caltrans right-of-way along the northbound side of I-5, north of Leucadia Boulevard. This area is represented by receiver site R12.34. The noise barrier would extend for approximately 175 meters (574 feet) and would be founded on a proposed retaining wall. . The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 4.9 meters (16 feet). The wall would benefit one single-family residence and is considered feasible. There are no apparent easements that need to be acquired in order to construct S702. The estimated cost of S702 would be 294% above the cost allowance and so is not considered reasonable.

Noise Abatement Decision

Construction of noise barrier S702 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S702. No severely impacted receptors exist for this wall that need to be abated for. Construction of noise barrier S702 is not recommended.

Noise Barrier S706

General

Type: Sound wall

I-5 Station limits: 705+00 to 707+70

Receptor sites: R12.39

Severely Impacted Receptors: None

Height: 4.9 meters (16 feet)

Location: Environmental Segment 12; see exhibit

Benefited Units: One single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 71 dBA

Compared to existing (year 2005): Three dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: Yes

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$48,000

Estimated Total Cost without Easements: \$292,802

Estimated Total Cost with Construction Easements only: \$292,802

Estimated Total Cost with all Easements: \$292,802

Reasonable Cost Allowance/Benefited Unit: \$48,000

Estimated Cost/Benefited Unit without Easements: \$292,802

Estimated Cost/Benefited Unit with Construction Easements only: \$292,802

Estimated Cost/Benefited Unit with all Easements: \$292,802

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 12, Sheet 34, of this NADR, noise barrier S706 would be located on Caltrans right-of-way along the northbound side of I-5, north of Leucadia Boulevard. This area is represented by receiver site R12.39. The noise barrier would extend for approximately 271 meters (889 feet) and would be founded on a proposed retaining wall. The height of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would be 4.9 meters (16 feet). The wall would benefit one single-family residence and is considered feasible. There are no apparent easements that need to be acquired in order to construct S706. The estimated cost of S706 would be 510% above the cost allowance and so is not considered reasonable.

Noise Abatement Decision

Construction of noise barrier S706 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S706. No severely impacted receptors exist for this wall that need to be abated for. Construction of noise barrier S706 is not recommended.

Noise Barrier S709

General

Type: Sound wall

I-5 Station limits: 700+20 to 716+80

Receptor sites: R12.5, R12.14, R12.14A, R12.16, R12.16A, R12.17, R12.19, R12.22, R12.24, R12.26A

Severely Impacted Receptors: R12.5, R12.14, R12.16, R12.19

Height: 4.3 meters (14 feet) and 4.9 meters (16 feet)

Location: Environmental Segment 12; see exhibit

Benefited Units: 14 single family residences and 11 multi-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 69 to 78 dBA

Compared to existing (year 2005): Three to four dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance:	\$1,050,000
Estimated Total Cost without Easements:	\$4,686,290
Estimated Total Cost with Construction Easements only:	\$4,686,290
Estimated Total Cost with all Easements:	\$4,686,290

Reasonable Cost Allowance/Benefited Unit:	\$42,000
Estimated Cost/Benefited Unit without Easements:	\$187,452
Estimated Cost/Benefited Unit with Construction Easements only:	\$187,452
Estimated Cost/Benefited Unit with all Easements:	\$187,452

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 12, Sheets 33, 34, and 35, of this NADR, noise barrier S709 would be located on Caltrans right-of-way and along the shoulder of the southbound side of I-5, just south of La Costa Avenue. This area is represented by receiver sites R12.5, R12.14, R12.14A, R12.16, R12.16A, R12.17, R12.19, R12.22, R12.24, and R12.26A. The noise barrier would extend for approximately 1,665 meters (5,463 feet) and would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would be 4.3 meters (14 feet) and 4.9 meters (16 feet). The wall would benefit 14 single family residences and 11 multi-family residences and is considered feasible. There are no apparent easements that need to be acquired in order to construct S709. The estimated cost of S709 would be 346% above the reasonable allowance and so is not considered reasonable.

Noise Abatement Decision

Construction of noise barrier S709 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S709. However, there exist severely impacted receptors that must be abated for. It is recommended that S709 not be constructed as proposed, with the stipulation that the severely impacted receptors, R12.5, R12.14, R12.16, and R12.19 receive individual abatement.

Noise Barrier S719

General

Type: Sound wall

I-5 Station limits: 717+67 to 718+78

Receptor sites: R12.29

Severely Impacted Receptors: None

Height: 2.4 meters (8 feet)

Location: Environmental Segment 12; see exhibit

Benefited Units: One single-family residence

Predicted Noise Levels if Project Built without Abatement

Year 2030: 74 dBA

Compared to existing (year 2005): Two dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance:	\$36,000
Estimated Total Cost without Easements:	\$199,155
Estimated Total Cost with Construction Easements only:	\$248,889
Estimated Total Cost with all Easements:	\$275,469

Reasonable Cost Allowance/Benefited Unit:	\$36,000
Estimated Cost/Benefited Unit without Easements:	\$199,155
Estimated Cost/Benefited Unit with Construction Easements only:	\$248,889
Estimated Cost/Benefited Unit with all Easements:	\$275,469

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 12, Sheet 36, of this NADR, noise barrier S719 would be located on private property and Caltrans right-of-way along the southbound side of I-5, just south of La Costa Avenue. This area is represented by receiver site R12.29. The noise barrier would extend for approximately 111 meters (364 feet). The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 2.4 meters (8 feet). The wall would benefit one single-family residence and is considered feasible. The estimated cost of S719, when all easements are assumed eliminated, would be 453% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 591%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 665% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S719 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S719. No severely impacted receptors exist for this wall that need to be abated for. Construction of noise barrier S719 is not recommended.

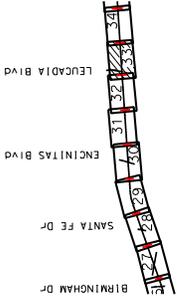
SEGMENT 12 - COST ANALYSIS

Sound Wall	# of Benefited Residences	WALL CHARACTERISTICS				QUANTITIES					EASEMENTS			
		Height (m)	Length of Sound Wall (m)	Length of Sound Wall on Retaining Wall (m)	Length of Sound Wall Not on Retaining Wall (m)	Excavation Depth (m)	Excavation Width (m)	Excavation and Backfill (cu m)	Demolition of wood fence (m)	Demolition of existing sound walls/property walls (cu m)	Minor Concrete Sound Wall (cu m)	Temporary Construction Easements (sq m)	Footling Easements (sq m)	Total Easements (sq m)
12.S702	1	4.3	175	175	0	1.22	2.9	0	0	0	0	0	0	0
12.S706	1	4.9	271	271	0	1.22	2.9	0	0	0	0	0	0	0
12.S709	25	4.3	561	158	423	1.22	2.6	1,342	0	0	508	0	0	0
		4.9	1,084	0	1,084	1.22	2.9	3,835	0	0	1,496	0	0	0
12.S719	1	2.4	111	0	111	1.22	1.9	256	0	0	86	332	72	403

Sound Wall	# of Benefited Residences	CONSTRUCTION COSTS					ADDITIONAL COSTS				EASEMENT COSTS		
		Sound Masonry Cost (\$210/sq m)	Minor Concrete Sound Wall Cost (\$700/cu m)	Excavation and Backfill Cost (\$100/cu m)	Demolition Cost - wood fence (\$20/m)	Demolition Cost - sound wall/property wall (\$40/cu m)	Clearing & Grubbing (8% of Wall Cost)	Landscaping Cost (10% of Wall Cost)	Traffic Control Cost (5% of Wall Cost)	SWPPP Cost (5% of Wall Cost)	Construction Easements (\$150/sq m)	Footling Easements (\$370/sq m)	Total Easements
12.S702	1	\$189,079	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12.S706	1	\$292,802	\$0	\$0	\$0	\$0	\$75,745	\$37,872	\$37,872	\$0	\$0	\$0	\$0
12.S709	25	\$1,292,020	\$1,047,144	\$383,519	\$0	\$214,615	\$268,268	\$134,134	\$134,134	\$0	\$0	\$0	\$0
12.S719	1	\$69,628	\$60,344	\$25,619	\$0	\$12,447	\$15,659	\$7,760	\$7,760	\$49,734	\$26,560	\$76,314	

Sound Wall	# of Benefited Residences	TOTAL COSTS			COST PER BENEFITTED RESIDENCE			COST ALLOWANCE			REASONABLENESS		
		Estimated Total Cost (w/o Easements)	Estimated Total Cost (w/ Construction Easement Only)	Estimated Total Cost w/ Easements	Estimated Cost/Residence (w/o Easements)	Estimated Cost/Residence (w/ Construction Easement Only)	Estimated Cost Per Benefitted Residence w/ Easements	Reasonable Allowance Per Residence	Reasonable Total Allowance	Reasonable w/o Easements	Reasonable w/ Construction Easements Only	Reasonable w/ all easements	
12.S702	1	\$189,079	\$189,079	\$189,079	\$189,079	\$189,079	\$189,079	\$48,000	\$48,000	NO	NO	NO	
12.S706	1	\$292,802	\$292,802	\$292,802	\$292,802	\$292,802	\$292,802	\$48,000	\$48,000	NO	NO	NO	
12.S709	25	\$4,686,290	\$4,686,290	\$4,686,290	\$187,452	\$187,452	\$187,452	\$42,000	\$1,050,000	NO	NO	NO	
12.S719	1	\$199,155	\$248,889	\$275,469	\$199,155	\$248,889	\$275,469	\$36,000	\$36,000	NO	NO	NO	

PARTIAL KEY MAP



LEGEND

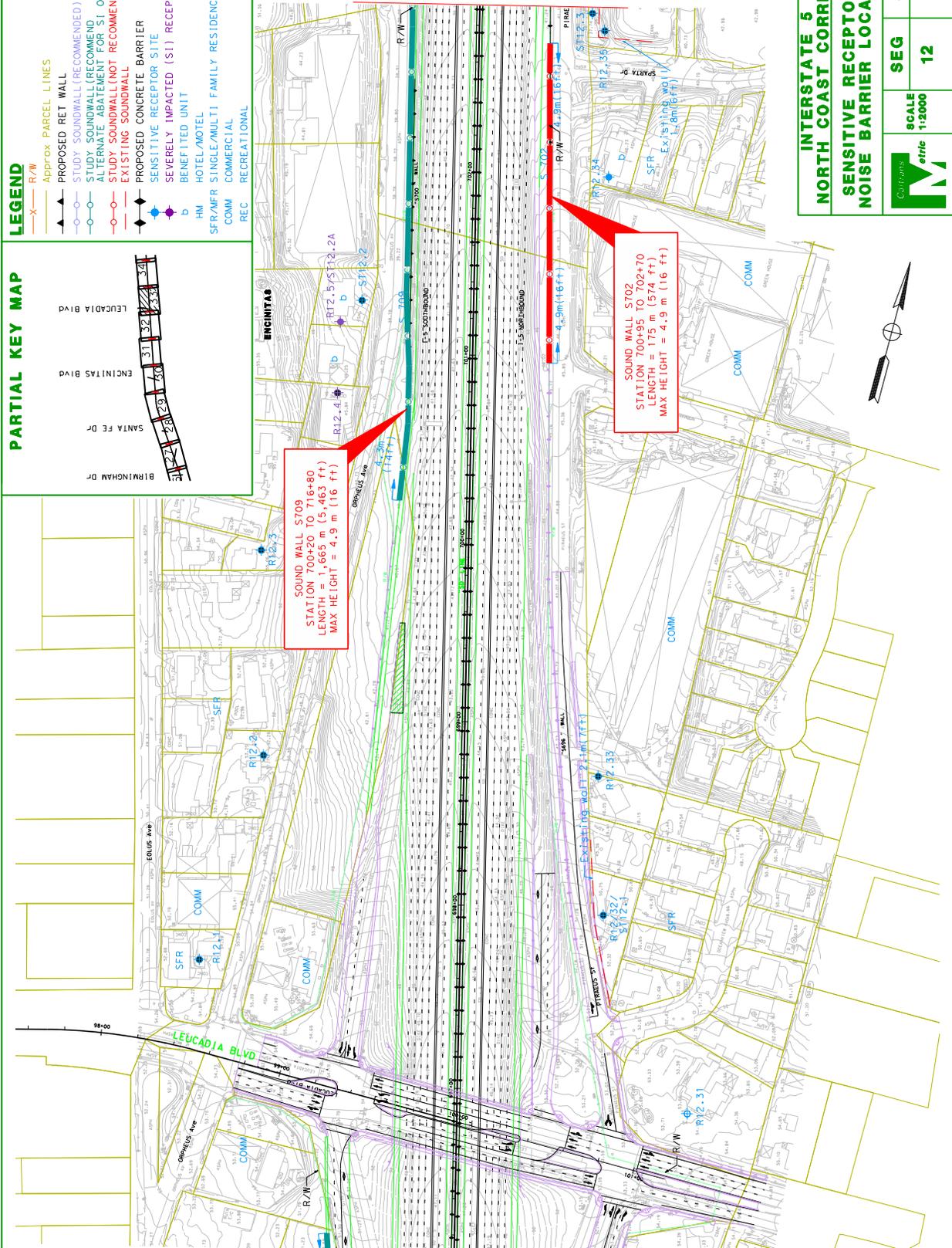
- X- R/W
- - - Approx PARCEL LINES
- - - PROPOSED RET WALL
- - - STUDY SOUNDWALL (RECOMMENDED)
- - - STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR SI ONLY)
- - - STUDY SOUNDWALL (NOT RECOMMENDED)
- - - EXISTING SOUNDWALL
- - - PROPOSED CONCRETE BARRIER
- - - SENSITIVE RECEPTOR SITE
- - - SEVERELY IMPACTED (SI) RECEPTOR SITE
- - - BENEFITED UNIT
- - - HOTEL/MOTEL
- - - SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- - - COMM COMMERCIAL
- - - REC RECREATIONAL

MATCH LINE, SEE SHEET 32

SOUND WALL S709
STATION 700+20 TO 716+80
LENGTH = 1,665 m (5,463 ft)
MAX HEIGHT = 4.9 m (16 ft)

SOUND WALL S702
STATION 700+95 TO 702+70
LENGTH = 175 m (574 ft)
MAX HEIGHT = 4.9 m (16 ft)

MATCH LINE, SEE SHEET 34



**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

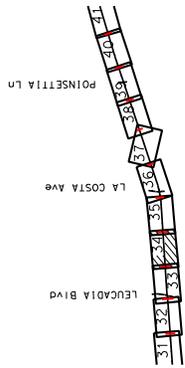


SCALE
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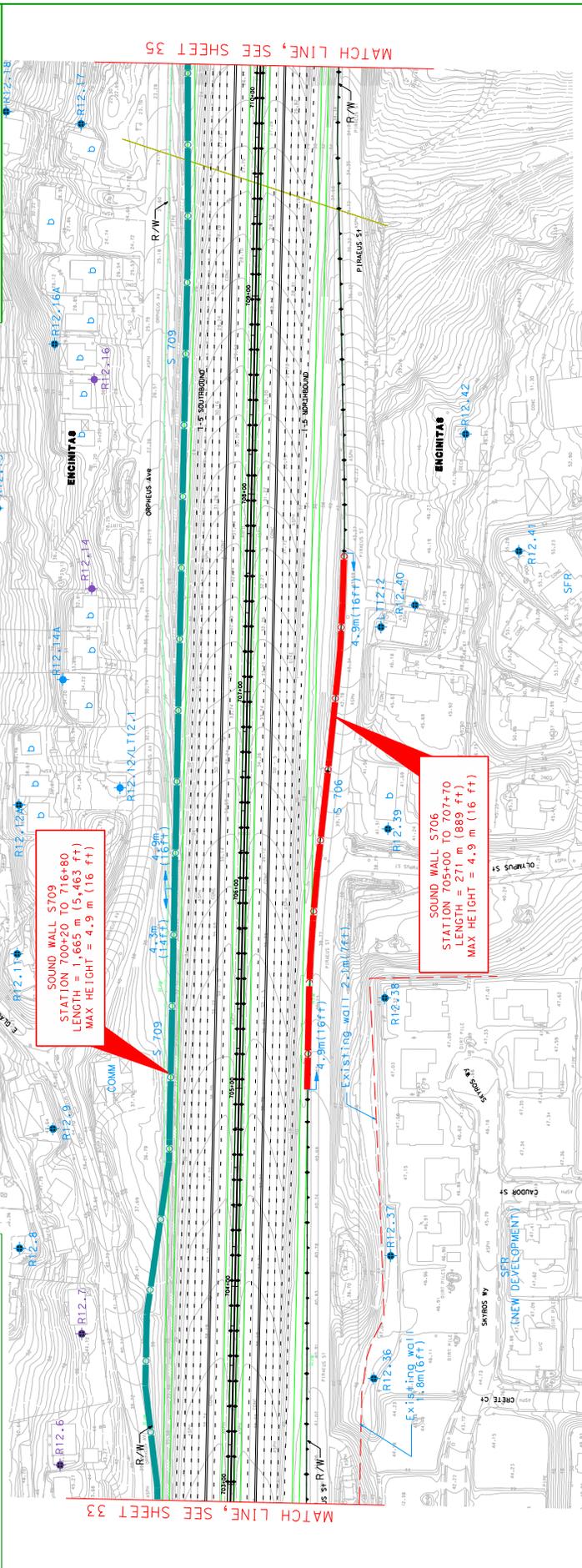
SEG	SHT
12	33



PARTIAL KEY MAP



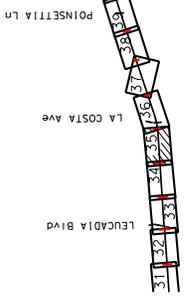
- LEGEND**
- X- R/W
 - Approx PARCEL LINES
 - PROPOSED RET WALL
 - STUDY SOUNDWALL (RECOMMENDED)
 - STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
 - EXISTING SOUNDWALL
 - PROPOSED CONCRETE BARRIER
 - SENSITIVE RECEPTOR SITE
 - SEVERELY IMPACTED (S1) RECEPTOR SITE
 - BENEFITED UNIT
 - HM HOTEL/MOTEL
 - SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
 - COMM COMMERCIAL
 - REC RECREATIONAL



	SCALE	SEG	SHT
	1:2000	12	34

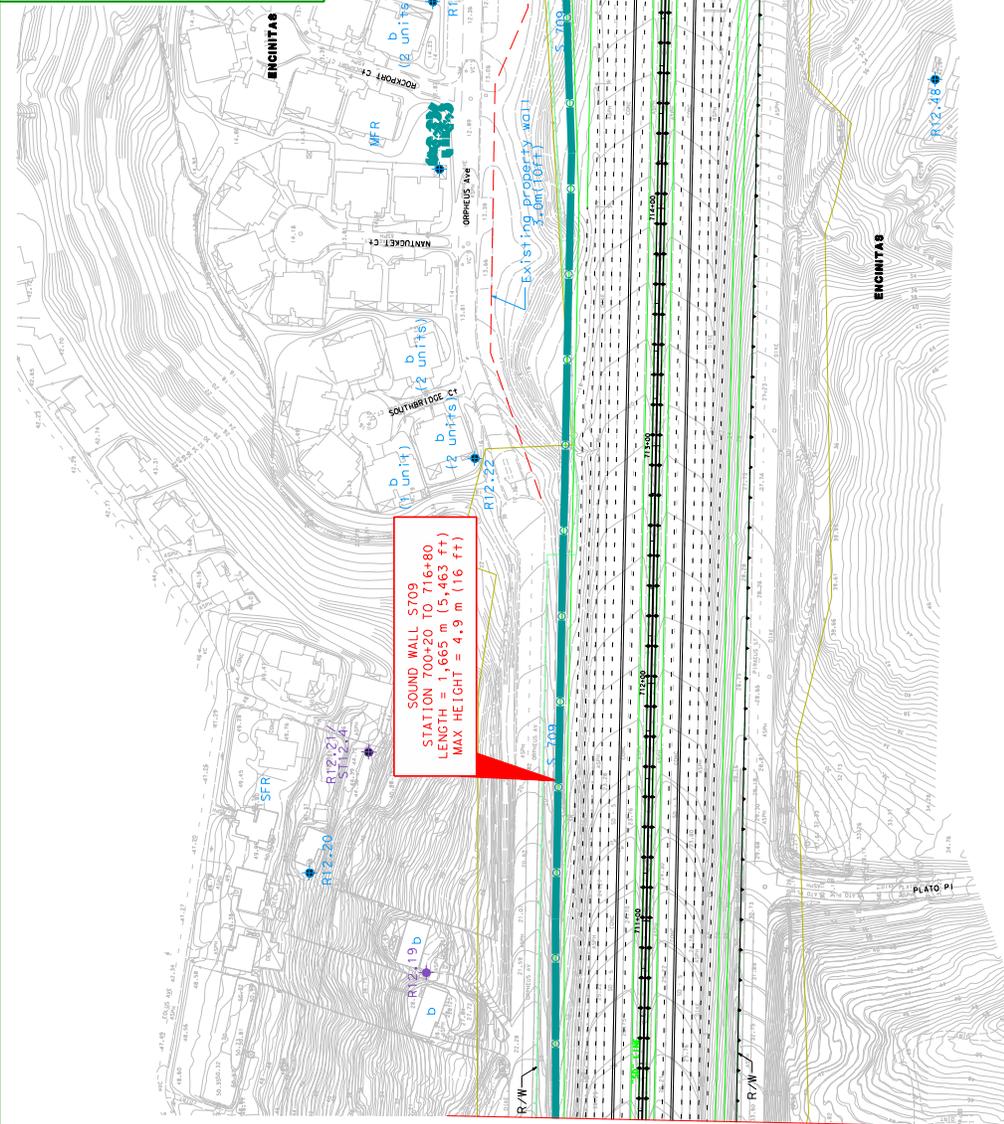


PARTIAL KEY MAP



LEGEND

- X R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (S1) RECEPTOR SITE
- BENEFITED UNIT
- HM HOTEL/MOTEL
- SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL



SOUND WALL ST09
 STATION 700+20 TO 716+80
 LENGTH = 1,665 m (5,463 ft)
 MAX HEIGHT = 4.9 m (16 ft)

MATCH LINE, SEE SHEET 36

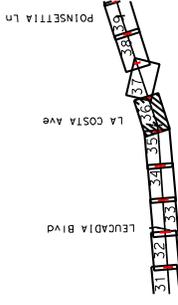
MATCH LINE, SEE SHEET 34

**INTERSTATE 5
 NORTH COAST CORRIDOR
 SENSITIVE RECEPTOR &
 NOISE BARRIER LOCATION**

	SCALE	SHT
	1:2000	12 35



PARTIAL KEY MAP



LEGEND

- X R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (S1) RECEPTOR SITE
- BENEFITED UNIT
- HM HOTEL/MOTEL
- SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL

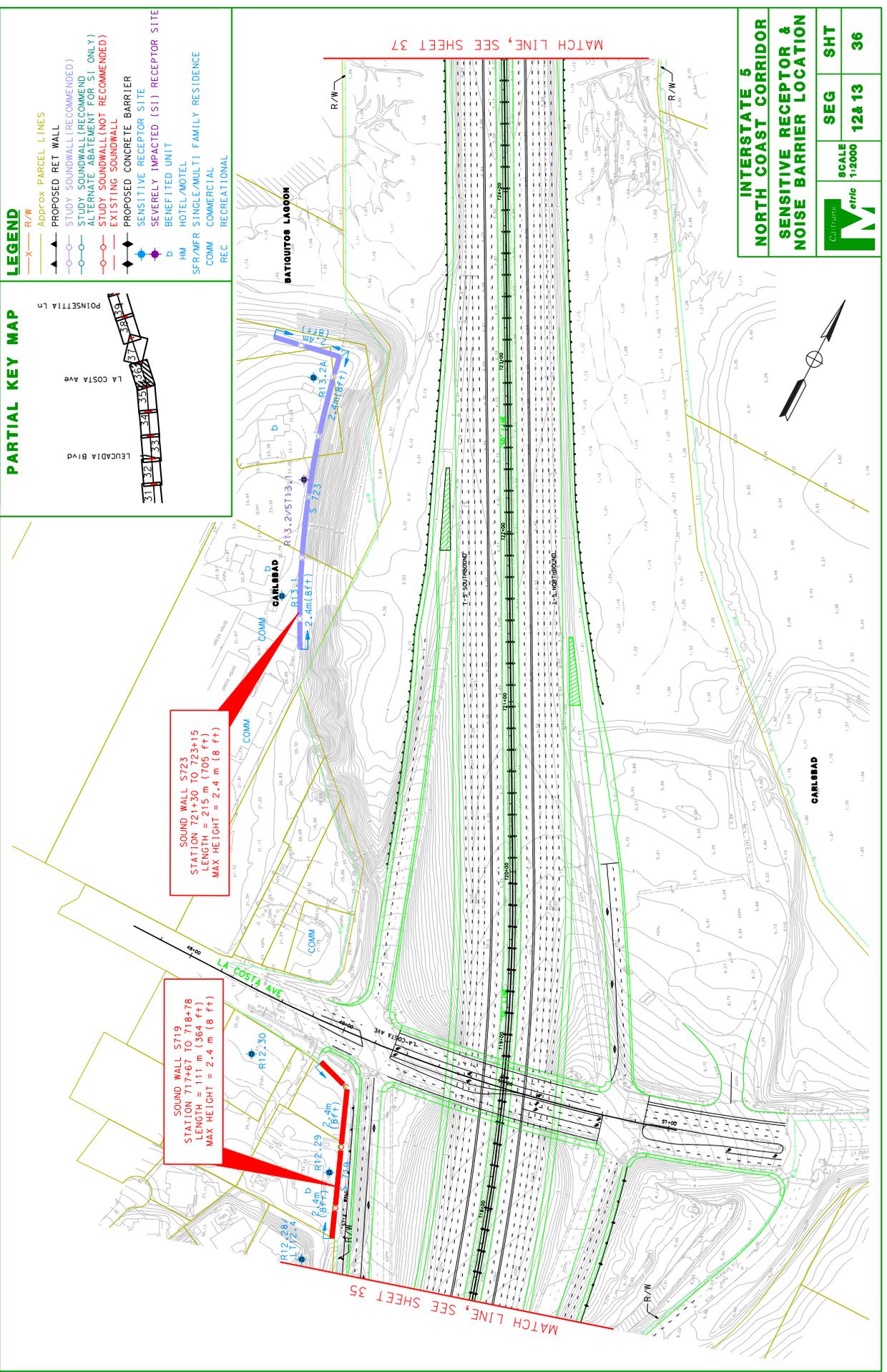
**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**



SCALE
1:2000

SEG
12 & 13

SHT
36



SOUND WALL S779
STATION 717+67 TO 718+78
LENGTH = 111 m (364 ft)
MAX HEIGHT = 2.4 m (8 ft)

SOUND WALL S723
STATION 721+30 TO 723+15
LENGTH = 215 m (705 ft)
MAX HEIGHT = 2.4 m (8 ft)

MATCH LINE, SEE SHEET 35

MATCH LINE, SEE SHEET 37

Segment 13

Noise Barrier S723

General

Type: Sound wall

I-5 Station limits: 721+30 to 723+15

Receptor sites: R13.1 through R13.2 and R13.2A

Severely Impacted Receptors: R13.2

Height: 2.4 meters (8 feet)

Location: Environmental Segment 13; see exhibit

Benefited Units: Two single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 74 to 77dBA

Compared to existing (year 2005): One to two dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance:	\$100,000
Estimated Total Cost without Easements:	\$387,427
Estimated Total Cost with Construction Easements only:	\$484,177
Estimated Total Cost with all Easements:	\$587,592

Reasonable Cost Allowance/Benefited Unit:	\$50,000
Estimated Cost/Benefited Unit without Easements:	\$193,713
Estimated Cost/Benefited Unit with Construction Easements only:	\$242,088
Estimated Cost/Benefited Unit with all Easements:	\$293,796

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 13, Sheet 36, of this NADR, noise barrier S723 would be located on private property along the southbound side of I-5, just north of La Costa Avenue. This area is represented by receiver sites R13.1 through R13.2 and R13.2A. The noise barrier would extend for approximately 215 meters (705 feet). The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 2.4 meters (8 feet). The wall would benefit two single-family residences and is considered feasible. The estimated cost of S723, when all easements are assumed eliminated, would be 287% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 384%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 488% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S723 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S723. However, there exists a severely impacted receptor that must be abated for. There also exists a potential prehistoric cultural site in the area of S723. It is recommended that S723 not be constructed as proposed, with the stipulation that the severely impacted receptor, R13.2, receive individual abatement, pending further investigation of the cultural site.

Noise Barrier S729

General

Type: Sound wall

I-5 Station limits: 728+80 to 730+05

Receptor sites: R13.3 through R13.5

Severely Impacted Receptors: None

Height: 3.0 meters (10 feet) and 3.7 meters (12 feet)

Location: Environmental Segment 13; see exhibit

Benefited Units: 12 single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 67 to 70 dBA

Compared to existing (year 2005): Four dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: Yes

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$456,000

Estimated Total Cost without Easements: \$405,296

Estimated Total Cost with Construction Easements only: \$488,294

Estimated Total Cost with all Easements: \$592,139

Reasonable Cost Allowance/Benefited Unit: \$38,000

Estimated Cost/Benefited Unit without Easements: \$33,775

Estimated Cost/Benefited Unit with Construction Easements only: \$40,691

Estimated Cost/Benefited Unit with all Easements: \$49,345

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 13, Sheet 37, of this NADR, noise barrier S729 would be located on private property along the southbound side of I-5, north of Batiquitos Lagoon. This area is represented by receiver sites R13.3 through R13.5. The noise barrier would extend for approximately 184 meters (604 feet). The heights of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 3.0 meters (10 feet) and 3.7 meters (12 feet). The wall would benefit 12 single-family residences and is considered feasible. The estimated construction cost of S729 without easements would be less than the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by seven percent. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 30% above the reasonable allowance.

Noise Abatement Decision

Construction of S729 may be recommended if negotiation with the property owners would result in estimated costs that do not exceed the reasonable allowance. This may be accomplished if the property owners are willing to donate easements by signing a waiver of just compensation. If the total cost cannot be reduced to less than or equal to the reasonable allowance, construction of S729 is not recommended.

Noise Barrier S730

General

Type: Sound wall

I-5 Station limits: 729+70 to 731+60

Receptor sites: R13.18 through R13.20A, and R13.20

Severely Impacted Receptors: None

Height: 3.0 meters (10 feet)

Location: Environmental Segment 13; see exhibit

Benefited Units: Eight single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 66 to 69 dBA

Compared to existing (year 2005): One to two dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: Yes

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$288,000

Estimated Total Cost without Easements: \$531,810

Estimated Total Cost with Construction Easements only: \$645,660

Estimated Total Cost with all Easements: \$786,075

Reasonable Cost Allowance/Benefited Unit: \$36,000

Estimated Cost/Benefited Unit without Easements: \$66,476

Estimated Cost/Benefited Unit with Construction Easements only: \$80,708

Estimated Cost/Benefited Unit with all Easements: \$98,259

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 13, Sheet 37, of this NADR, noise barrier S730 would be located on private property along the northbound side of I-5, north of Batiquitos Lagoon. This area is represented by receiver sites R13.18 through R13.2A, and R13.20. The noise barrier would extend for approximately 253 meters (830 feet). The height of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 3.0 meters (10 feet). The wall would benefit eight single-family residences. The estimated cost of S730, when all easements are assumed eliminated, would be 85% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 124%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 173% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S730 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S730. There do not exist any severely impacted receptors that need to be abated for. Construction of S730 is not recommended.

Noise Barrier S736

General

Type: Sound wall

I-5 Station limits: 732+45 to 740+50

Receptor sites: R13.21 through R13.26

Severely Impacted Receptors: R13.24, R13.24A

Height: 2.4 meters (8 feet) to 3.7 meters (12 feet)

Location: Environmental Segment 13; see exhibit

Benefited Units: 32 single-family residences, 46 multi-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 68 to 76 dBA

Compared to existing (year 2005): Three to five dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$3,276,000

Estimated Total Cost without Easements: \$1,865,855

Estimated Total Cost with Construction Easements only: \$2,264,874

Estimated Total Cost with all Easements: \$2,755,354

Reasonable Cost Allowance/Benefited Unit: \$42,000

Estimated Cost/Benefited Unit without Easements: \$23,921

Estimated Cost/Benefited Unit with Construction Easements only: \$29,037

Estimated Cost/Benefited Unit with all Easements: \$35,325

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 13, Sheets 37 and 38, of this NADR, noise barrier S736 would be located on private property along the northbound side of I-5, south of Poinsettia Lane. This area is represented by receiver sites R13.21 through R13.26. The noise barrier would extend for approximately 887 meters (2,910 feet). The height of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 2.4 meters (8 feet) to 3.7meters (12 feet). The wall would benefit 32 single-family residences and 46 multi-family residences and is considered feasible. The estimated construction cost of S736 with all easements would be less than the reasonable cost allowance and so is considered reasonable.

Noise Abatement Decision

Construction of noise barrier S736 with all easements would be feasible and reasonable and is preliminarily recommended.

Noise Barrier S737

General

Type: Sound wall

I-5 Station limits: 736+30 to 740+72

Receptor sites: R13.13 through R13.16

Severely Impacted Receptors: None

Height: 4.3 meters (14 feet)

Location: Environmental Segment 13; see exhibit

Benefited Units: 17 mobile homes

Predicted Noise Levels if Project Built without Abatement

Year 2030: 68 to 72 dBA

Compared to existing (year 2005): Four to five dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: Yes

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$850,000

Estimated Total Cost without Easements: \$1,068,954

Estimated Total Cost with Construction Easements only: \$1,189,554

Estimated Total Cost with all Easements: \$1,288,714

Reasonable Cost Allowance/Benefited Unit: \$50,000

Estimated Cost/Benefited Unit without Easements: \$62,880

Estimated Cost/Benefited Unit with Construction Easements only: \$69,974

Estimated Cost/Benefited Unit with all Easements: \$75,807

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 13, Sheets 38 and 39, of this NADR, noise barrier S737 would be located on Caltrans right-of-way along the southbound side of I-5, just south of Poinsettia Lane. This area is represented by receiver sites R13.13 through R13.16. The noise barrier would extend for approximately 444 meters (1,457 feet) and would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would be 4.3 meters (14 feet). The wall would benefit 17 mobile homes and is considered feasible. The estimated cost of S737, when all easements are assumed eliminated, would be 26% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 40%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 52% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S737 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S737. No severely impacted receptors exist for this wall that need to be abated for. Construction of noise barrier S737 is not recommended.

SEGMENT 13 - COST ANALYSIS

Sound Wall	# of Benefitted Residences	WALL CHARACTERISTICS				QUANTITIES				EASEMENTS				
		Height (m)	Length of Sound Wall (m)	Length of Sound Wall on Retaining Wall (m)	Length of Sound Wall Net on Retaining Wall (m)	Excavation Depth (m)	Excavation Width (m)	Excavation and Backfill (cu.m)	Demolition of wood fence (m)	Demolition of existing sound walls/property walls (cu.m)	Minor Concrete Sound Wall (cu.m)	Temporary Construction Easements (sq.m)	Footing Easements (sq.m)	Total Easements (sq.m)
13.S723	2	2.4	215	0	215	1.22	1.9	138	0	0	168	230	230	230
		3.7	63	0	63	1.22	2.4	185	0	0	185	114	114	304
13.S729		3.0 to 0	11	0	11	1.22	2.1	285	0	0	100	333	167	500
	12		10	0	10	1.22	1.6	20	0	0	6	30	0	30
13.S720	8	3.0	253	0	253	1.22	2.1	648	0	0	228	380	380	1,139
		3.7	66	0	66	1.22	2.4	197	0	0	63	197	115	319
		3.0	57	0	57	1.22	2.1	146	0	0	171	171	171	257
13.S736		2.4	490	0	490	1.22	1.9	1,136	0	0	382	1,470	637	2,107
		3.7	248	0	248	1.22	2.4	726	0	446	268	744	446	1,190
		3.0	28	0	28	1.22	2.1	71	0	50	25	84	42	125
13.S737	17	4.3	444	63	381	1.22	2.6	1,209	0	0	457	804	268	1,072

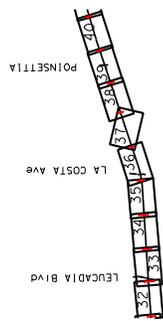
Sound Wall	# of Benefitted Residences	CONSTRUCTION COSTS				ADDITIONAL COSTS				EASEMENT COSTS			
		Sound Wall Masonry Cost (\$210/sq m)	Minor Concrete Sound Wall Cost (\$700/cu m)	Excavation and Backfill Cost (\$100/cu m)	Demolition Cost - wood fence (\$20/m)	Demolition Cost - sound wall/property wall (\$40/cu m)	Clearing & Grubbing (8% of Wall Cost)	Landscaping Cost (10% of Wall Cost)	Traffic Control Cost (5% of Wall Cost)	SWPPP Cost (5% of Wall Cost)	Construction Easements (\$150/sq m)	Footing Easements (\$370/sq m)	Total Easements
13.S723	2	\$135,450	\$17,390	\$49,837	\$0	\$0	\$24,214	\$30,268	\$15,134	\$96,760	\$103,415	\$200,165	
		\$57,186	\$47,685	\$16,546	\$0	\$0	\$3,680	\$12,363	\$6,161	\$42,503	\$42,164	\$70,687	
		\$53,982	\$69,993	\$28,464	\$0	\$0	\$14,596	\$16,245	\$9,122	\$49,995	\$81,061	\$111,636	
		\$4,410	\$4,200	\$1,952	\$0	\$0	\$845	\$1,056	\$528	\$4,500	\$0	\$4,500	
13.S730	12	\$191,268	\$158,390	\$64,819	\$0	\$0	\$33,238	\$41,548	\$20,774	\$113,850	\$140,415	\$254,285	
		\$57,932	\$46,384	\$18,739	\$0	\$0	\$12,492	\$6,246	\$6,246	\$28,800	\$42,624	\$71,424	
		\$43,082	\$35,910	\$14,603	\$0	\$0	\$7,468	\$9,361	\$4,680	\$25,650	\$31,635	\$57,285	
13.S736		\$305,700	\$207,540	\$13,582	\$0	\$0	\$55,166	\$68,982	\$34,491	\$220,900	\$235,690	\$456,190	
		\$225,809	\$167,575	\$7,370	\$0	\$17,845	\$40,126	\$30,160	\$25,080	\$25,080	\$11,553	\$27,080	
		\$21,002	\$17,552	\$7,138	\$0	\$2,006	\$3,921	\$4,776	\$2,388	\$12,537	\$15,462	\$27,999	
13.S737	17	\$420,979	\$320,040	\$120,853	\$0	\$0	\$69,166	\$73,958	\$36,979	\$120,600	\$89,160	\$219,760	

Sound Wall	# of Benefitted Residences	TOTAL COSTS				COST PER BENEFITTED RESIDENCE				COST ALLOWANCE				REASONABLENESS			
		Estimated Total Cost (w/o Easements)	Estimated Total Construction Cost (w/ Easement Only)	Estimated Total Cost w/ Easements	Estimated Total Cost (w/ Construction Easements)	Estimated Cost/Benefitted Residences (w/ Construction Easement Only)	Estimated Cost Per Benefitted Residence w/ Easements	Reasonable Allowance Per Residence	Reasonable Total Allowance	Reasonable w/o Easements	Reasonable w/ Construction Easements Only	Reasonable w/ all easements					
13.S723	2	\$387,427	\$484,177	\$587,582	\$193,713	\$242,088	\$293,796	\$50,000	\$100,000	NO	NO	NO	NO				
		\$158,243	\$166,746	\$228,930													
		\$233,554	\$263,529	\$345,189													
13.S729		\$13,519	\$16,019	\$16,019													
13.S730	8	\$405,296	\$482,284	\$592,139	\$33,775	\$40,691	\$49,345	\$38,000	\$456,000	YES	NO	NO	NO				
		\$551,810	\$645,650	\$786,075	\$66,476	\$80,708	\$98,239	\$36,000	\$288,000	NO	NO	NO	NO				
		\$159,891	\$168,691	\$231,315													
		\$119,815	\$145,465	\$177,100													
13.S736		\$862,972	\$1,034,472	\$1,339,162													
		\$642,047	\$753,579	\$916,647													
		\$611,307	\$733,667	\$893,129													
13.S737	17	\$1,068,954	\$1,284,874	\$1,865,954	\$23,921	\$29,037	\$35,325	\$42,000	\$3,276,000	YES	YES	YES	YES				
		\$1,068,954	\$1,189,854	\$1,288,714	\$62,680	\$69,974	\$75,907	\$50,000	\$850,000	NO	NO	NO	NO				

LEGEND

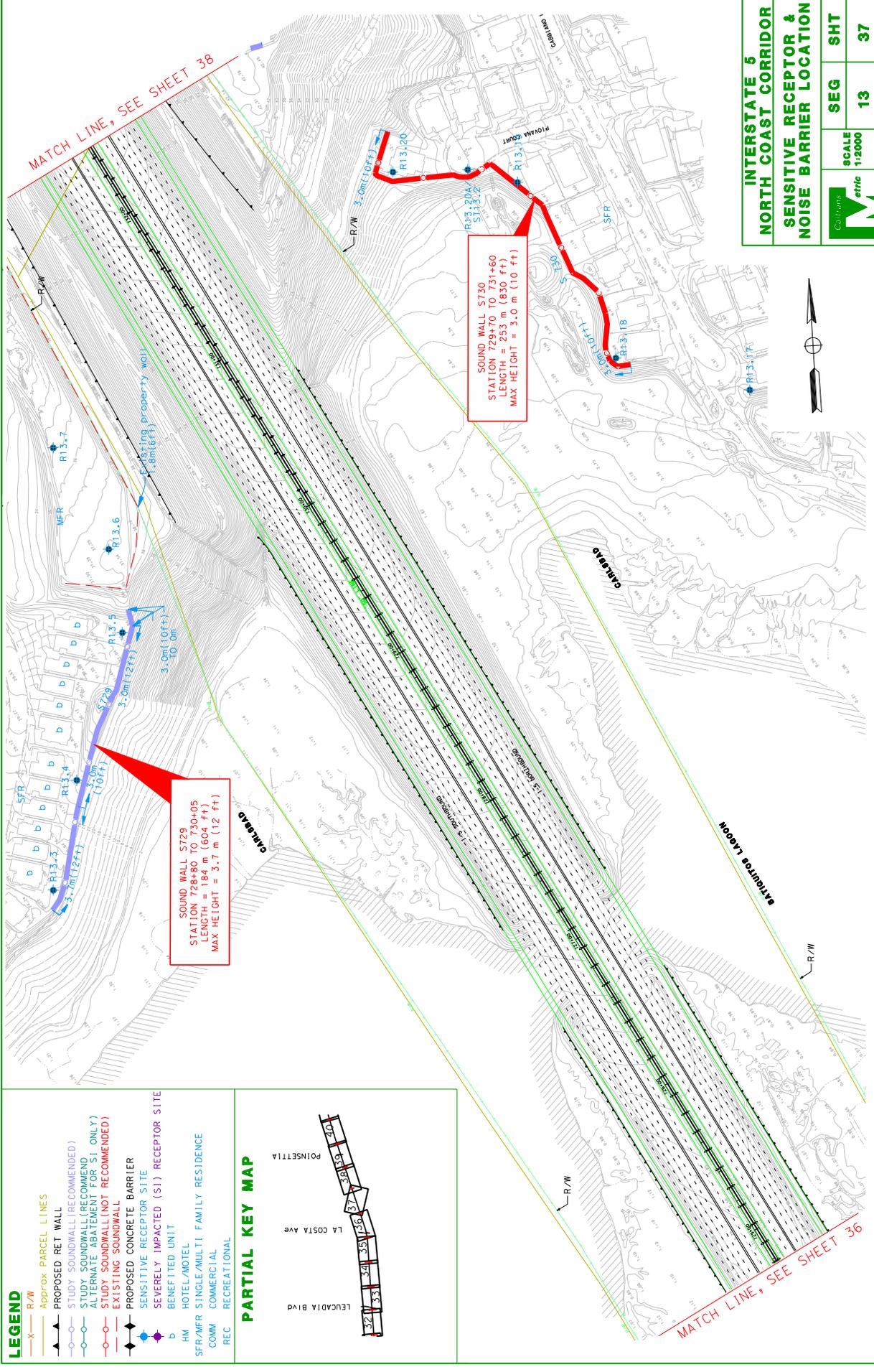
- X R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- STUDY SOUNDWALL (NOT RECOMMENDED)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (S1) RECEPTOR SITE
- b BENEFITTED UNIT
- HM HOTEL/MOTEL
- SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL

PARTIAL KEY MAP



**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

	SCALE	SHT
	1:2000	37
	SEG	
	13	



MATCH LINE, SEE SHEET 38

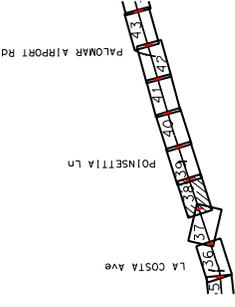
MATCH LINE, SEE SHEET 36

SOUND WALL ST30
STATION 729+70 TO 731+60
LENGTH = 253 m (830 ft)
MAX HEIGHT = 3.0 m (10 ft)

SOUND WALL ST29
STATION 728+80 TO 730+05
LENGTH = 184 m (604 ft)
MAX HEIGHT = 3.7 m (12 ft)

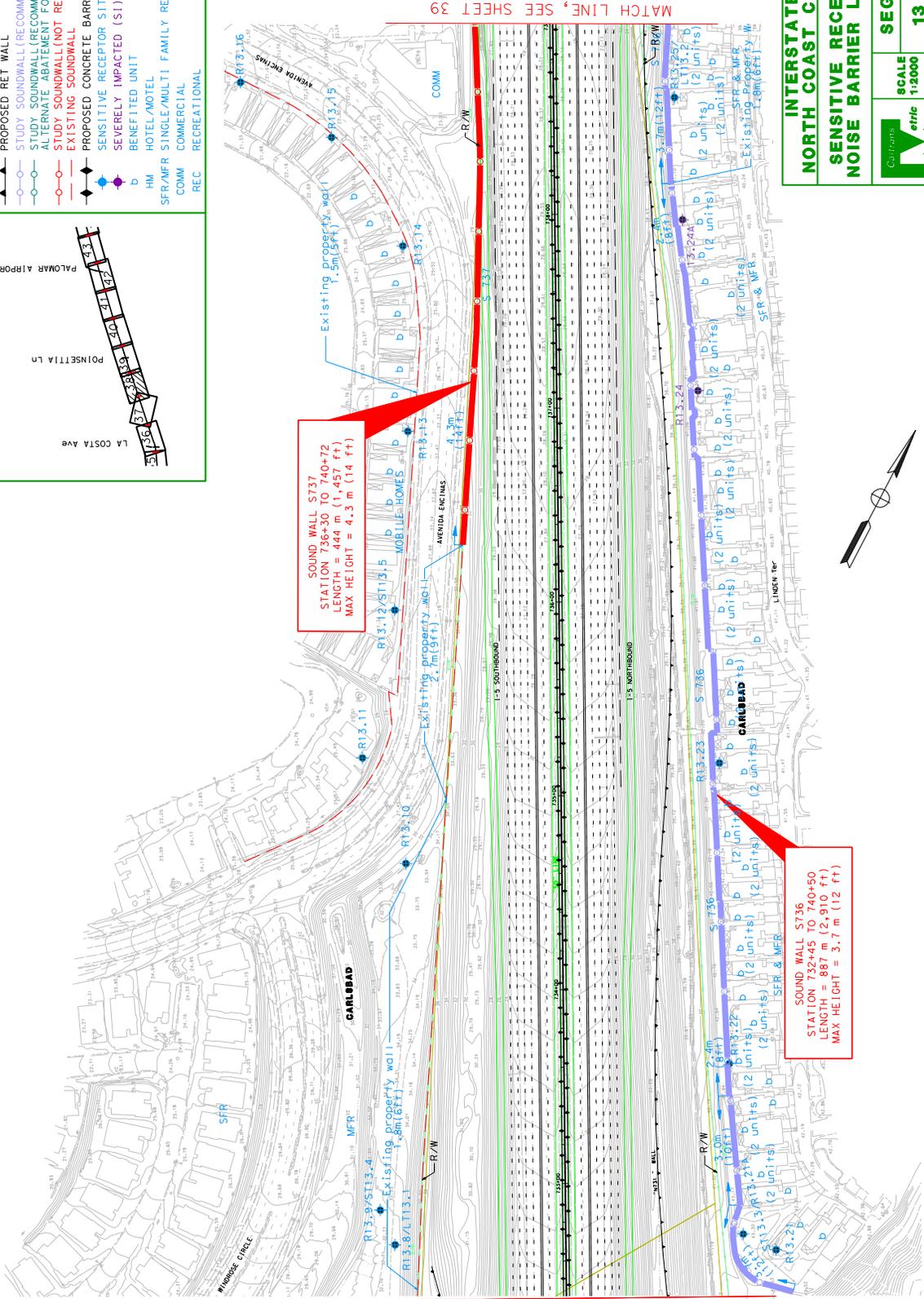


PARTIAL KEY MAP



LEGEND

- X- R/W
- - - Approx PARCEL LINES
- - - PROPOSED RET WALL
- - - STUDY SOUNDWALL (RECOMMENDED)
- - - STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- - - EXISTING SOUNDWALL
- - - EXISTING CONCRETE BARRIER
- - - SENSITIVE RECEPTOR SITE
- - - SEVERELY IMPACTED (S1) RECEPTOR SITE
- - - BENEFITED UNIT
- - - HM HOTEL/MOTEL
- - - SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- - - COMM COMMERCIAL
- - - REC RECREATIONAL



SOUND WALL S737
 STATION 736+30 TO 740+72
 LENGTH = 444 m (1,457 ft)
 MAX HEIGHT = 4.3 m (14 ft)

SOUND WALL S736
 STATION 732+45 TO 740+50
 LENGTH = 887 m (2,910 ft)
 MAX HEIGHT = 3.7 m (12 ft)

MATCH LINE, SEE SHEET 39

MATCH LINE, SEE SHEET 37

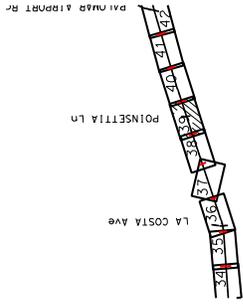
**INTERSTATE 5
 NORTH COAST CORRIDOR
 SENSITIVE RECEPTOR &
 NOISE BARRIER LOCATION**



SCALE
 1:2000

SEG	13	SHT	38
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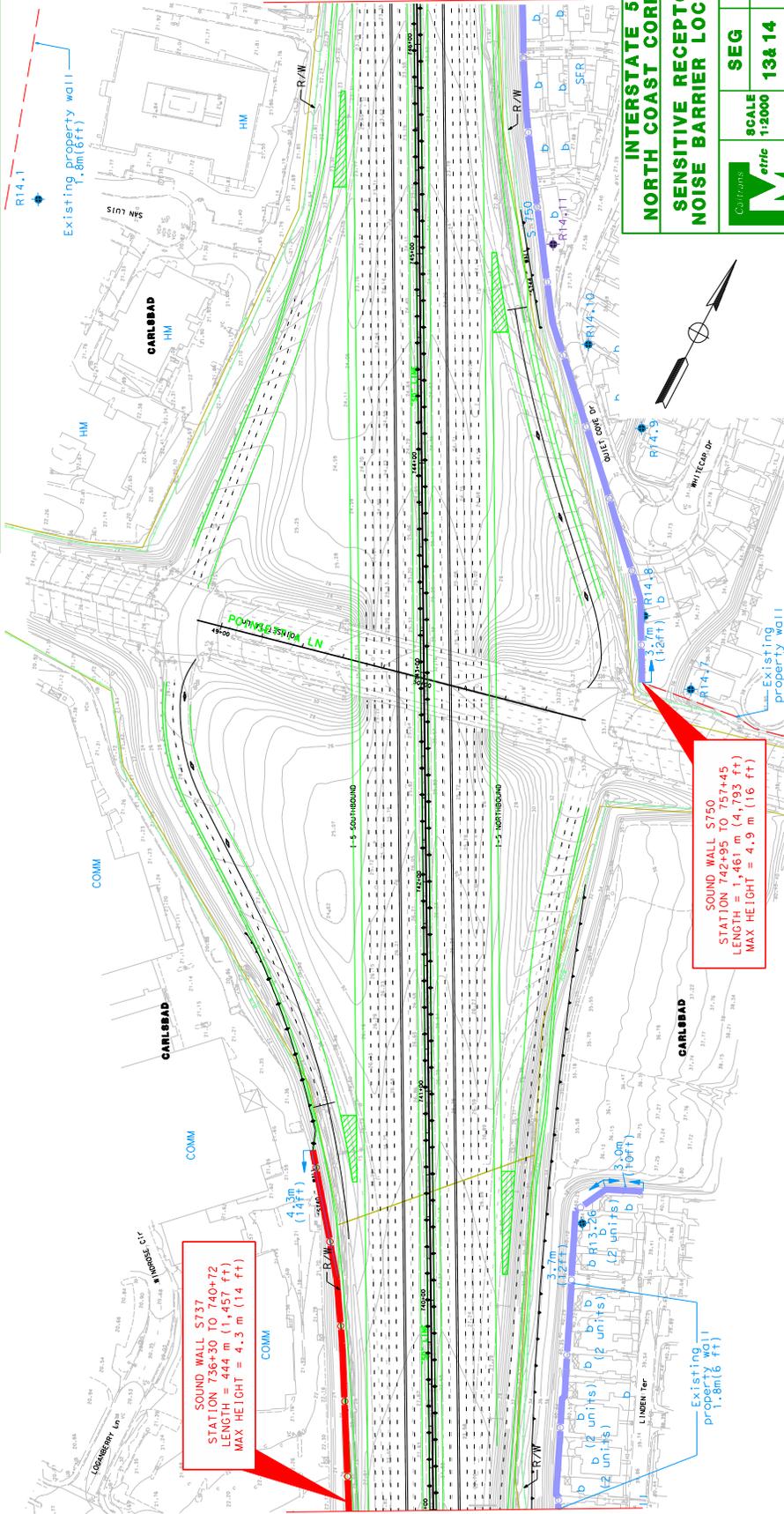
PARTIAL KEY MAP



LEGEND

- X R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR SI ONLY)
- STUDY SOUNDWALL (NOT RECOMMENDED)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (SI) RECEPTOR SITE
- BENEFITED UNIT
- b HOTEL/MOTEL
- HM SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL

MATCH LINE, SEE SHEET 40



SOUND WALL S737
 STATION 7364+30 TO 7400+72
 LENGTH = 444 m (1,457 ft)
 MAX HEIGHT = 4.3 m (14 ft)

SOUND WALL S750
 STATION 742+95 TO 757+45
 LENGTH = 1,461 m (4,793 ft)
 MAX HEIGHT = 4.9 m (16 ft)

MATCH LINE, SEE SHEET 38

**INTERSTATE 5
 NORTH COAST CORRIDOR
 SENSITIVE RECEPTOR &
 NOISE BARRIER LOCATION**

SCALE	SEG	SHT
1:2000	13 & 14	39



Segment 14

Noise Barrier S750

General

Type: Sound wall

I-5 Station limits: 742+95 to 757+45

Receptor sites: R14.8, R14.10 through R14.28

Severely Impacted Receptors: R14.11, R14.12, R14.14, R14.17, R14.19, R14.21, R14.23,
R14.25, R14.26, R14.28

Height: 3.7 meters (12 feet) to 4.9 meters (16 feet)

Location: Environmental Segment 14; see exhibit

Benefited Units: 36 single-family residences, 56 multi-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 71 to 78 dBA

Compared to existing (year 2005): Two to four dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$4,784,000

Estimated Total Cost without Easements: \$4,139,922

Estimated Total Cost with Construction Easements only: \$4,666,872

Estimated Total Cost with all Easements: \$5,293,948

Reasonable Cost Allowance/Benefited Unit: \$52,000

Estimated Cost/Benefited Unit without Easements: \$44,999

Estimated Cost/Benefited Unit with Construction Easements only: \$50,727

Estimated Cost/Benefited Unit with all Easements: \$57,543

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	No

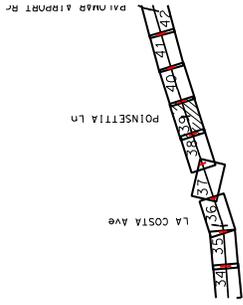
Discussion

As shown in Segment 14, Sheets 39, 40, and 41, of this NADR, noise barrier S750 would be located on private property and Caltrans right-of-way along the northbound side of I-5, just north of Poinsettia Lane. This area is represented by receiver sites R14.8, and R14.10 through R14.28. The noise barrier would extend for approximately 1,461 meters (4,793 feet). The heights of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 3.7 meters (12 feet) to 4.9 meters (16 feet). The wall would benefit 36 single-family residences and 56 multi-family residences and is considered feasible. The estimated construction cost of S750, without easements would be less than the reasonable allowance. The estimated cost of the wall with all easements included would be 11% above the reasonable allowance.

Noise Abatement Decision

Construction of S750 is feasible and reasonable when easement costs are waived. S750 is preliminarily recommended in order to abate for the severely impacted receptors, R14.11, R14.12, R14.14, R14.17, R14.19, R14.21, R14.23, R14.25, R14.26, and R14.2

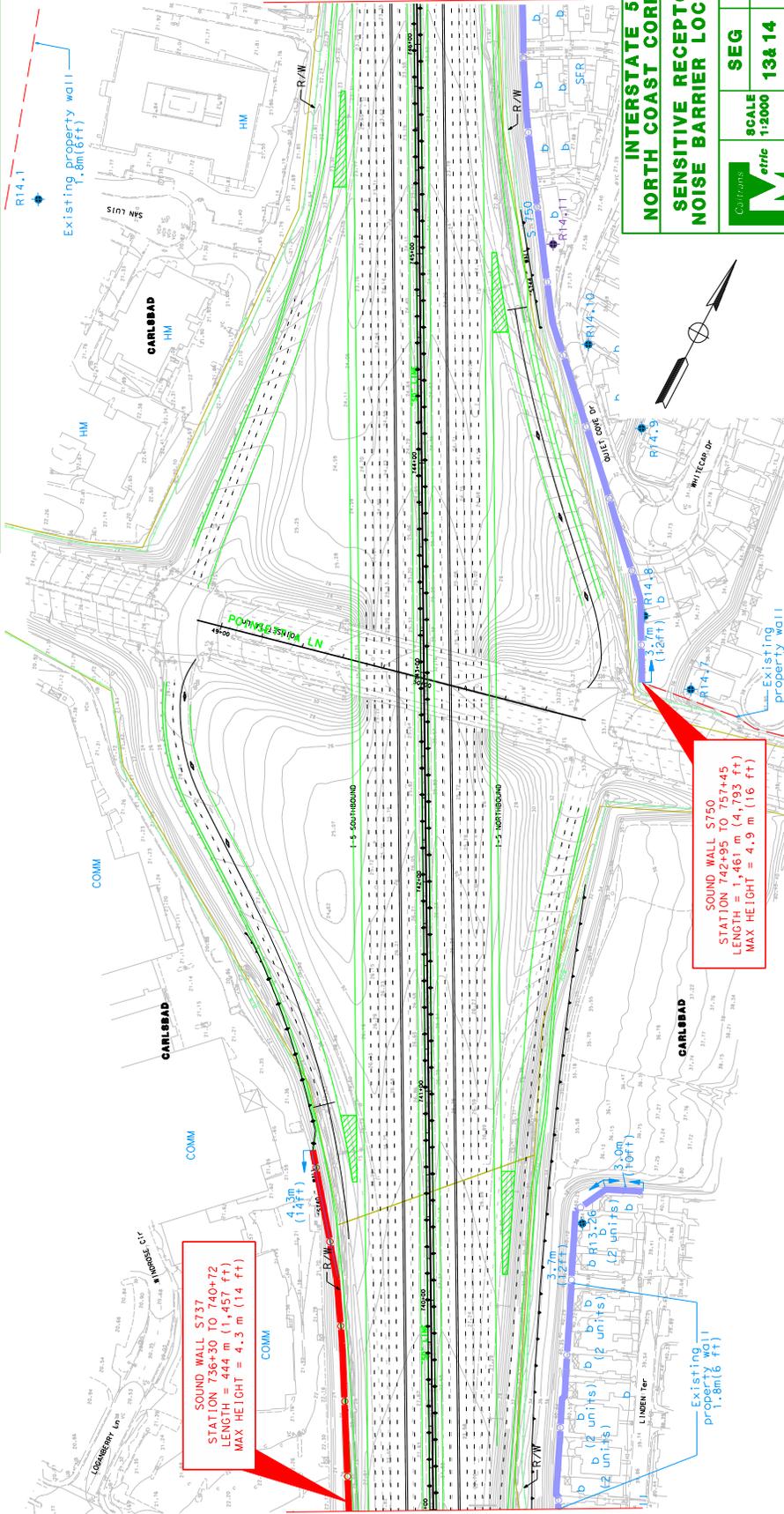
PARTIAL KEY MAP



LEGEND

- X- R/W
- - - Approx. PARCEL LINES
- - - PROPOSED RET WALL
- - - STUDY SOUNDWALL (RECOMMENDED)
- - - STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR SI ONLY)
- - - STUDY SOUNDWALL (NOT RECOMMENDED)
- - - EXISTING SOUNDWALL
- - - PROPOSED CONCRETE BARRIER
- - - SENSITIVE RECEPTOR SITE
- - - SEVERELY IMPACTED (SI) RECEPTOR SITE
- - - BENEFITED UNIT
- - - HOTEL/MOTEL
- - - SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- - - COMM COMMERCIAL
- - - REC RECREATIONAL

MATCH LINE, SEE SHEET 40



SOUND WALL S737
STATION 7364+30 TO 7400+72
LENGTH = 444 m (1,457 ft)
MAX HEIGHT = 4.3 m (14 ft)

SOUND WALL S750
STATION 742+95 TO 757+45
LENGTH = 1,461 m (4,793 ft)
MAX HEIGHT = 4.9 m (16 ft)

**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

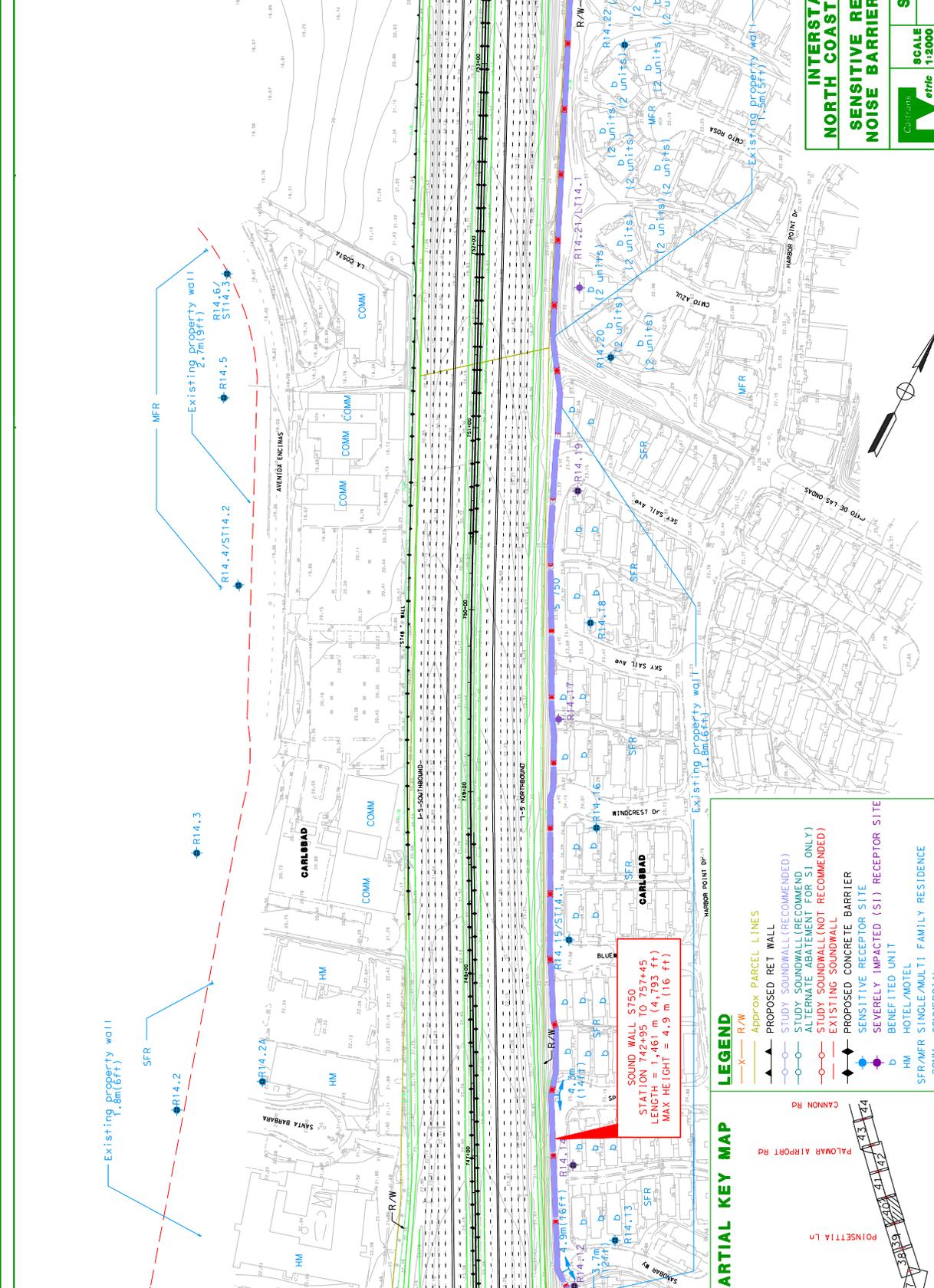


SCALE
1:2000

SEG
13 & 14

SHT
39

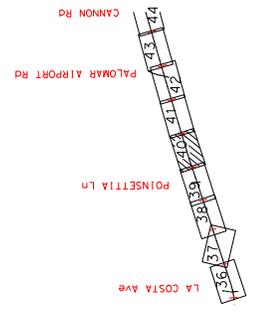
MATCH LINE, SEE SHEET 38



MATCH LINE, SEE SHEET 39

MATCH LINE, SEE SHEET 41

PARTIAL KEY MAP

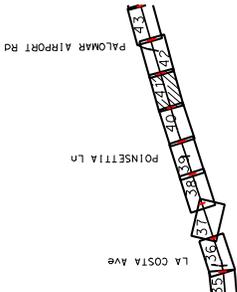


- LEGEND**
- X R/W
 - Approx PARCEL LINES
 - PROPOSED RET WALL
 - STUDY SOUNDWALL (RECOMMENDED)
 - STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
 - STUDY SOUNDWALL (NOT RECOMMENDED)
 - EXISTING SOUNDWALL
 - PROPOSED CONCRETE BARRIER
 - SENSITIVE RECEPTOR SITE
 - SEVERELY IMPACTED (S1) RECEPTOR SITE
 - BENEFITED UNIT
 - HM HOTEL/MOTEL
 - SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
 - COMM COMMERCIAL
 - REC RECREATIONAL

**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

	SCALE	SHT
	1:2000	40
	SEG	14

PARTIAL KEY MAP



LEGEND

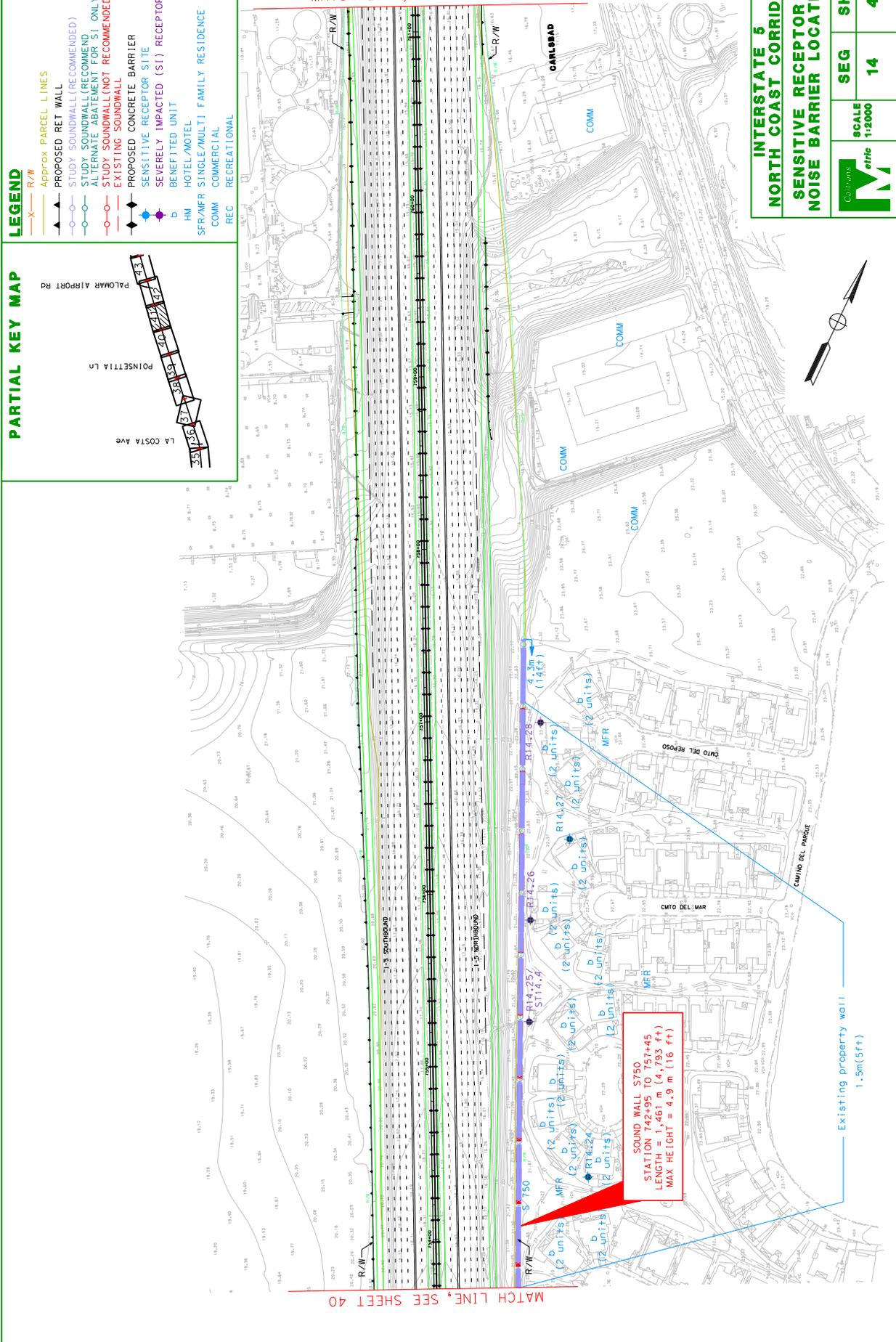
- X- R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (S1) RECEPTOR SITE
- b HOTEL/MOTEL
- HM SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL

MATCH LINE, SEE SHEET 42

MATCH LINE, SEE SHEET 40

**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

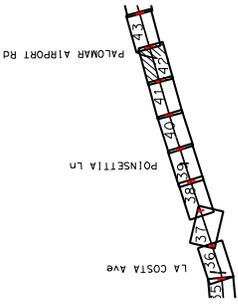
	SCALE	SHT
	1:2000	41



SOUND WALL S750
STATION 742+95 TO 757+45
LENGTH = 1,461 m (4,793 ft)
MAX HEIGHT = 4.9 m (16 ft)

Existing property wall
1.5m(5ft)

PARTIAL KEY MAP

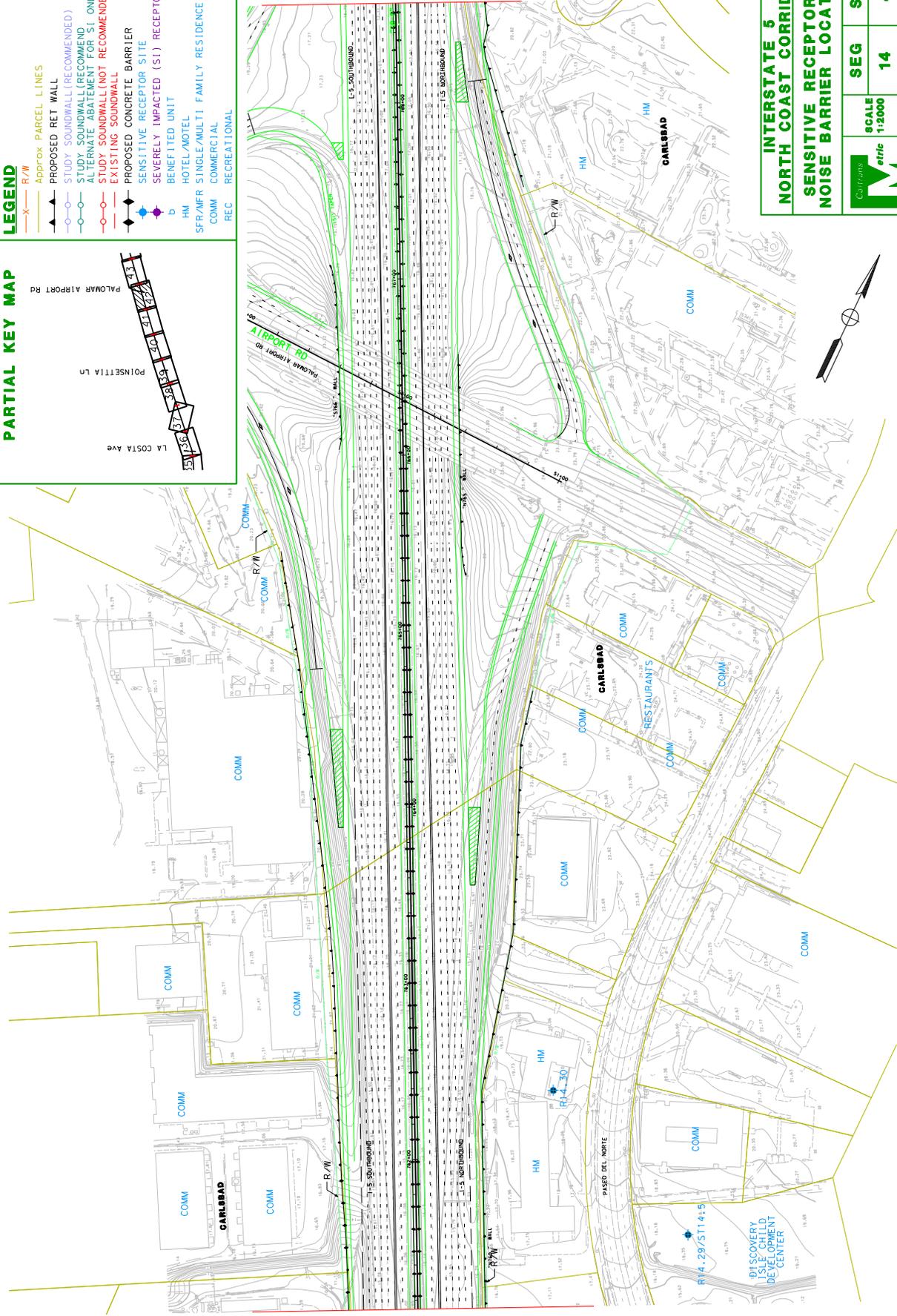


LEGEND

- X- R/W
- - - Approx PARCEL LINES
- - - PROPOSED RET WALL
- - - STUDY SOUNDWALL (RECOMMENDED)
- - - STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR SI ONLY)
- - - EXISTING SOUNDWALL
- - - PROPOSED CONCRETE BARRIER
- - - SENSITIVE RECEPTOR SITE
- - - SEVERELY IMPACTED (SI) RECEPTOR SITE
- - - BENEFITED UNIT
- - - HOTEL/MOTEL
- - - SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- - - COMM COMMERCIAL
- - - REC RECREATIONAL

MATCH LINE, SEE SHEET 43

MATCH LINE, SEE SHEET 41



**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

	SCALE	SHT
	1:2000	42
SEG	14	



Segment 15

Noise Barrier S783

General

Type: Sound wall

I-5 Station limits: 782+75 to 782+95

Receptor sites: R15.1

Severely Impacted Receptors: None

Height: 4.3 meters (14 feet)

Location: Environmental Segment 15; see exhibit

Benefited Units: One hotel

Predicted Noise Levels if Project Built without Abatement

Year 2030: 73 dBA

Compared to existing (year 2005): Two dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$36,000

Estimated Total Cost without Easements: \$211,380

Estimated Total Cost with Construction Easements only: \$244,230

Estimated Total Cost with all Easements: \$298,250

Reasonable Cost Allowance/Benefited Unit: \$36,000

Estimated Cost/Benefited Unit without Easements: \$211,380

Estimated Cost/Benefited Unit with Construction Easements only: \$244,230

Estimated Cost/Benefited Unit with all Easements: \$298,250

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 16, Sheet 45 of this NADR, noise barrier S783 would be located on the private property along the southbound side of I-5, just north of Cannon Road. This area is represented by receiver site R15.1. The noise barrier would extend for approximately 73 meters (240 feet) and would replace an existing 1.9 meter (6 foot) privacy wall. The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 4.3 meters (14 feet). The wall would benefit one hotel and is considered feasible. The estimated cost of S783, when all easements are assumed eliminated, would be 487% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 578%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 728% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S783 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S783. No severely impacted receptors exist for this wall that need to be abated for. Construction of noise barrier S783 is not recommended

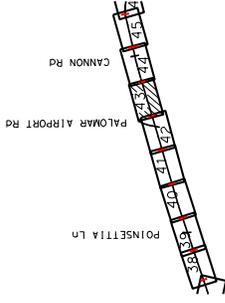
SEGMENT 15 - COST ANALYSIS

Sound Wall	# of Benefited Residences	WALL CHARACTERISTICS				QUANTITIES				EASEMENTS				
		Height (m)	Length of Sound Wall (m)	Length of Sound Wall on Retaining Wall (m)	Length of Sound Wall Not on Retaining Wall (m)	Excavation Depth (m)	Excavation Width (m)	Excavation and Backfill (cu m)	Demolition of wood fence (m)	Demolition of existing sound walls/property walls (cu m)	Minor Concrete Sound Wall (cu m)	Temporary Construction Easements (sq m)	Footing Easements (sq m)	Total Easements (sq m)
15.S.783	1	4.3	4	73	0	73	1.22	2.6	232	0	139	88	219	146

Sound Wall	# of Benefited Residences	CONSTRUCTION COSTS				ADDITIONAL COSTS				EASEMENT COSTS			
		Sound Wall Masonry Cost (\$210/sq m)	Minor Concrete Sound Wall Cost (\$700/cu m)	Excavation and Backfill Cost (\$100/cu m)	Demolition Cost - wood fence (\$20/m)	Demolition Cost - sound wall/property wall (\$40/cu m)	Cleaning & Grubbing (8% of Wall Cost)	Landscaping Cost (10% of Wall Cost)	Traffic Control Cost (5% of Wall Cost)	SWPPP Cost (5% of Wall Cost)	Construction Easements (\$150/sq m)	Footing Easements (\$370/sq m)	Total Easements
15.S.783	1	\$75,117	\$61,320	\$23,156	\$0	\$5,548	\$13,211	\$16,514	\$8,257	\$8,257	\$32,860	\$54,020	\$86,870

Sound Wall	# of Benefited Residences	TOTAL COSTS				COST PER BENEFITTED RESIDENCE				REASONABLENESS			
		Estimated Total Cost (w/o)	Estimated Total Cost (w/)	Estimated Total Cost w/	Estimated Cost/Benefitted	Estimated Cost Per Benefitted	Reasonable Allowance Per	Reasonable Total Allowance	Reasonable w/o Easements	Reasonable w/ Construction	Reasonable w/ easements	NO	NO
15.S.783	1	\$211,380	\$244,230	\$298,250	\$211,380	\$298,250	\$36,000	\$36,000	NO	NO	NO	NO	NO

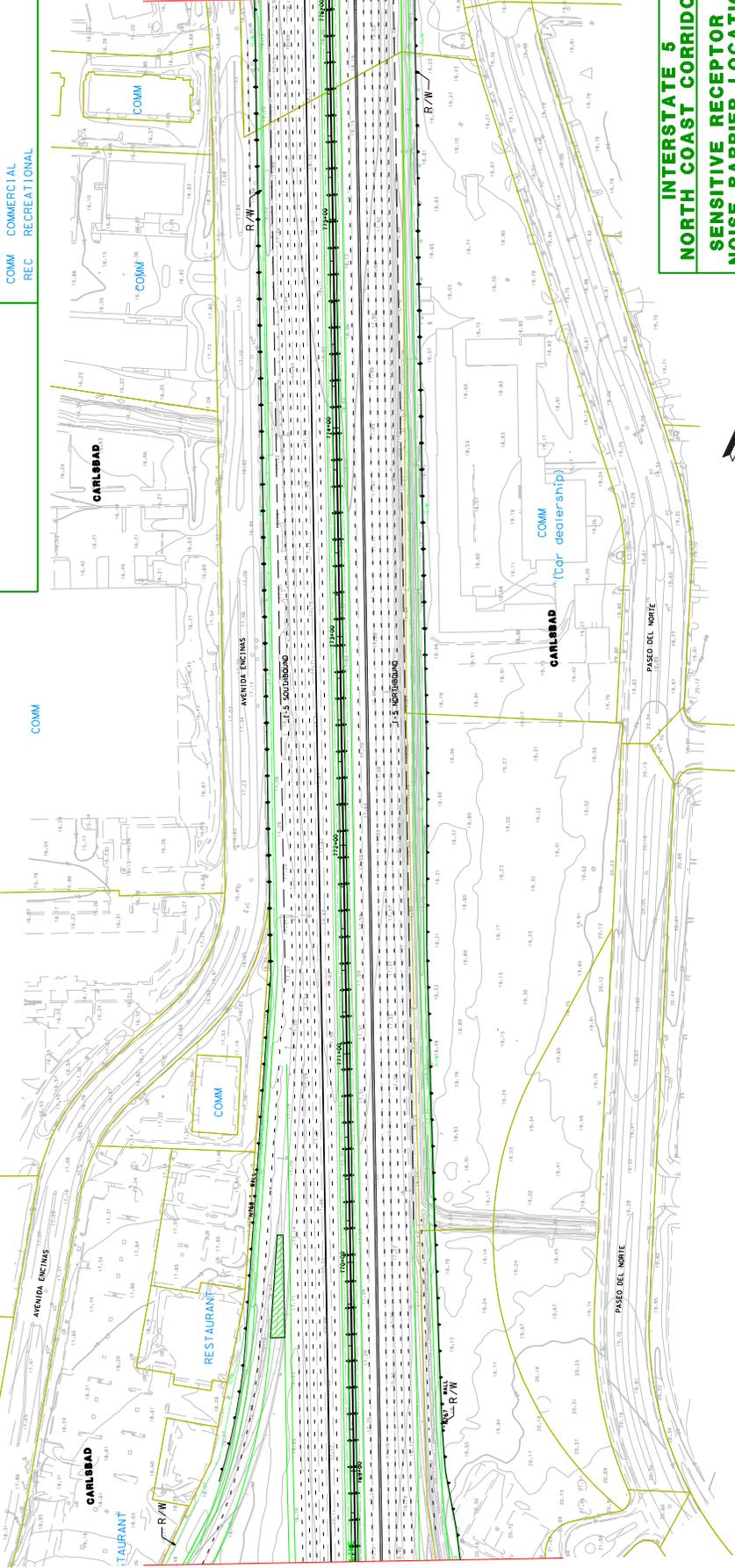
PARTIAL KEY MAP



LEGEND

- X- R/W
- - - Approx PARCEL LINES
- ▲- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (S1) RECEPTOR SITE
- b- BENEFITED UNIT
- HM- HOTEL/MOTEL
- SFR/MFR- SINGLE/MULTI FAMILY RESIDENCE
- COMM- COMMERCIAL
- REC- RECREATIONAL

MATCH LINE, SEE SHEET 44



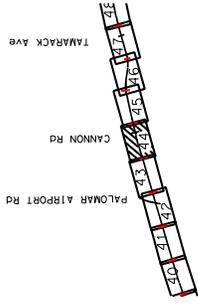
**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

	SCALE	SHT
	1:2000	43
	SEG	15



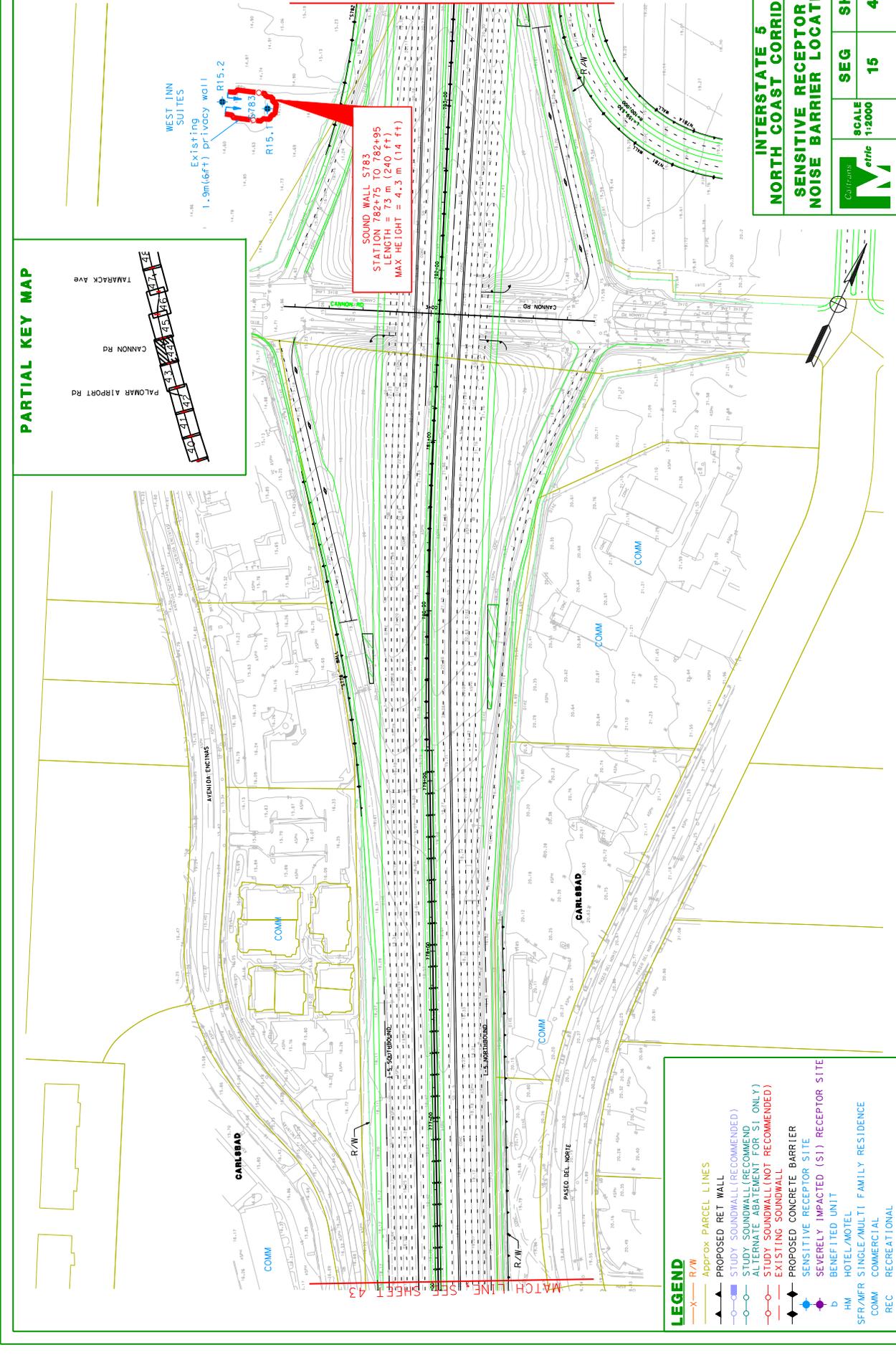
MATCH LINE, SEE SHEET 42

PARTIAL KEY MAP



MATCH LINE, SEE SHEET 45

MATCH LINE, SEE SHEET 43



**SOUND WALL 5783
STATION 782+75 TO 782+95
LENGTH = 75 m (240 ft)
MAX HEIGHT = 4.3 m (14 ft)**

WEST INN SUITES
Existing 1.9m(6ft) privacy wall
R15.1
R15.2

LEGEND

- X R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR SI ONLY)
- STUDY SOUNDWALL (NOT RECOMMENDED)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SEVERELY IMPACTED (SI) RECEPTOR SITE
- BENEFITTED UNIT
- HM HOTEL/MOTEL
- SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL

**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

	SCALE	SHT
	1:2000	44
	SEG	15

Segment 16

Noise Barrier S796

General

Type: Sound wall

I-5 Station limits: 796+00 to 798+22

Receptor sites: R16.1 through R16.2

Severely Impacted Receptors: None

Height: 4.3 meters (14 feet)

Location: Environmental Segment 16; see exhibit

Benefited Units: One single-family residence, one recreational area (three frontage units)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 71 to 72 dBA

Compared to existing (year 2005): Three to five dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: Yes

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$200,000

Estimated Total Cost without Easements: \$352,956

Estimated Total Cost with Construction Easements only: \$352,956

Estimated Total Cost with all Easements: \$352,956

Reasonable Cost Allowance/Benefited Unit: \$50,000

Estimated Cost/Benefited Unit without Easements: \$88,239

Estimated Cost/Benefited Unit with Construction Easements only: \$88,239

Estimated Cost/Benefited Unit with all Easements: \$88,239

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 16, Sheets 46 and 47, of this NADR, noise barrier S796 would be located on the shoulder along the northbound side of I-5, just north of Agua Hedionda Lagoon. This area is represented by receiver sites R16.1 through R16.2. The noise barrier would extend for approximately 236 meters (774 feet) and would be partially founded on a proposed retaining wall. The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 4.3 meters (14 feet). The wall would benefit one single-family residence and one recreational area and is considered feasible. There are no apparent easements that need to be acquired in order to construct S796. The estimated cost of S796 would be 76% above the cost allowance and so is not considered reasonable.

Noise Abatement Decision

Construction of noise barrier S796 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S796. No severely impacted receptors exist for this wall that need to be abated for. Construction of noise barrier S796 is not recommended.

Noise Barrier S798

General

Type: Sound wall

I-5 Station limits: 798+00 to 800+00

Receptor sites: R16.3, R16.3A, and R16.4A

Severely Impacted Receptors: R16.3, R16.4A

Height: 4.9 meters (16 feet) and 2.4 meters (8 feet)

Location: Environmental Segment 16; see exhibit

Benefited Units: Two single-family residences and 11 multi-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 73 to 81 dBA

Compared to existing (year 2005): One to three dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$702,000

Estimated Total Cost without Easements: \$410,437

Estimated Total Cost with Construction Easements only: \$501,337

Estimated Total Cost with all Easements: \$556,208

Reasonable Cost Allowance/Benefited Unit: \$54,000

Estimated Cost/Benefited Unit without Easements: \$31,572

Estimated Cost/Benefited Unit with Construction Easements only: \$38,564

Estimated Cost/Benefited Unit with all Easements: \$42,785

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 16, Sheet 47, of this NADR, noise barrier S798 would be located on Caltrans right-of-way along the northbound side of I-5, just south of Chinquapin Avenue. This area is represented by receiver sites R16.3, R16.3A, and R16.4A. The noise barrier would extend for approximately 202 meters (663 feet). The heights of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 4.9 meters (16 feet) and 2.4 meters (8 feet). The wall would benefit two single-family residences and 11 multi-family residences and is considered feasible. The estimated construction cost of S798 with all easements would be less than the reasonable cost allowance and so is considered reasonable.

Noise Abatement Decision

Construction of noise barrier S798 with all easements would be feasible and reasonable. S798 abates for severely impacted receptors, R16.3 and R16.4A, and is preliminarily recommended.

Noise Barrier S799

General

Type: Sound wall

I-5 Station limits: 797+00 to 799+95

Receptor sites: R16.14, R16.17, and R16.19

Severely Impacted Receptors: R16.14, R16.17

Height: 2.4 meters (8 feet) and 3.0 meters (10 feet)

Location: Environmental Segment 16; see exhibit

Benefited Units: Nine multi-family residences, one recreational area (one frontage unit)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 71 to 75 dBA

Compared to existing (year 2005): Two to three dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$480,000

Estimated Total Cost without Easements: \$862,754

Estimated Total Cost with Construction Easements only: \$1,054,004

Estimated Total Cost with all Easements: \$1,261,796

Reasonable Cost Allowance/Benefited Unit: \$48,000

Estimated Cost/Benefited Unit without Easements: \$86,275

Estimated Cost/Benefited Unit with Construction Easements only: \$105,400

Estimated Cost/Benefited Unit with all Easements: \$126,180

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 16, Sheets 46 and 47, of this NADR, noise barrier S799 would be located on private property and Caltrans right-of-way along the southbound side of I-5, just south of Chinquapin Avenue. This area is represented by receiver sites R16.14, R16.17, and R16.19. The noise barrier would extend for approximately 425 meters (1,394 feet). The heights of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 2.4 meters (8 feet) and 3.0 meters (10 feet). The wall would benefit nine multi-family residences and one recreational area and is considered feasible. The estimated cost of S799, when all easements are assumed eliminated, would be 80% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 120%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 163% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S799 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S799. However, there exist severely impacted receptors that must be abated for. It is recommended that S799 not be constructed as proposed, with the stipulation that the severely impacted receptors, R16.14 and R16.17, receive individual abatement.

Noise Barrier S801

General

Type: Sound wall

I-5 Station limits: 800+10 to 802+30

Receptor sites: R16.8 through R16.10, R16.13

Severely Impacted Receptors: R16.10, R16.13

Height: 2.4 meters (8 feet) and 3.0 meters (10 feet)

Location: Environmental Segment 16; see exhibit

Benefited Units: Three single-family residences, 13 multi-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 72 to 78 dBA

Compared to existing (year 2005): Four dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$672,000

Estimated Total Cost without Easements: \$246,451

Estimated Total Cost with Construction Easements only: \$284,260

Estimated Total Cost with all Easements: \$330,891

Reasonable Cost Allowance/Benefited Unit: \$42,000

Estimated Cost/Benefited Unit without Easements: \$15,403

Estimated Cost/Benefited Unit with Construction Easements only: \$17,766

Estimated Cost/Benefited Unit with all Easements: \$20,681

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 16, Sheet 47, of this NADR, noise barrier S801 would be located on Caltrans right-of-way along the southbound side of I-5, just south of Tamarack Avenue. This area is represented by receiver sites R16.8 through R16.10, and R16.13. The noise barrier would extend for approximately 226 meters (741 feet) and would replace an existing 1.8 meter (6 foot) sound wall and would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 2.4 meters (8 feet) and 3.0 meters (10 feet). The wall would benefit three single-family residences and 13 multi-family residences and is considered feasible. The estimated construction cost of S801 with all easements would be less than the reasonable cost allowance and so is considered reasonable.

Noise Abatement Decision

Construction of noise barrier S801 with all easements would be feasible and reasonable. S801 abates for severely impacted receptors, R16.10 and R16.13, and is preliminarily recommended.

Noise Barrier S802

General

Type: Sound wall

I-5 Station limits: 800+10 to 801+75

Receptor sites: R16.6 through R16.7

Severely Impacted Receptors: R16.6 and R16.7

Height: 2.4 meters (8 feet)

Location: Environmental Segment 16; see exhibit

Benefited Units: 22 multi-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 79 dBA

Compared to existing (year 2005): Four dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$1,188,000

Estimated Total Cost without Easements: \$349,339

Estimated Total Cost with Construction Easements only: \$423,139

Estimated Total Cost with all Easements: \$468,649

Reasonable Cost Allowance/Benefited Unit: \$54,000

Estimated Cost/Benefited Unit without Easements: \$15,879

Estimated Cost/Benefited Unit with Construction Easements only: \$19,234

Estimated Cost/Benefited Unit with all Easements: \$21,302

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 16, Sheet 47, of this NADR, noise barrier S802 would be located on Caltrans right-of-way along the northbound side of I-5, just south of Tamarack Avenue. This area is represented by receiver sites R16.6 through R16.7. The noise barrier would extend for approximately 164 meters (538 feet). The height of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 2.4 meters (8 feet). The wall would benefit 22 multi-family residences and is considered feasible. The estimated construction cost of S802 with all easements would be less than the reasonable cost allowance and so is considered reasonable.

Noise Abatement Decision

Construction of noise barrier S802 with all easements would be feasible and reasonable. S802 abates for severely impacted receptors, R16.6 and R16.7, and is preliminarily recommended.

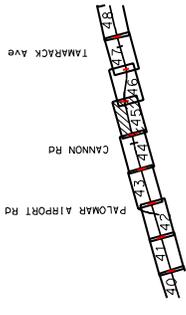
SEGMENT 16 - COST ANALYSIS

Sound Wall	# of Benefitted Residences	WALL CHARACTERISTICS					QUANTITIES					EASEMENTS				
		Height (m)	Length of Sound Wall (m)	Length of Sound Wall on Retaining Wall (m)	Length of Sound Wall Not on Retaining Wall (m)	Excavation Depth (m)	Excavation Width (m)	Excavation and Backfill (cu.m)	Demolition of wood fence (m)	Demolition of existing sound walls/property walls (cu.m)	Minor Concrete Sound Wall (cu.m)	Temporary Construction Easements (sq.m)	Footing Easements (sq.m)	Total Easements (sq.m)		
16.S796	4	4.3	236	152	84	1.22	2.6	286	0	101	0	0	0	0		
16.S798	13	4.9	34	0	34	1.22	2.9	120	0	47	102	39	141	141		
16.S798	13	2.4	168	0	168	1.22	1.9	389	0	131	504	109	613	613		
16.S799	10	2.4	102	0	102	1.22	1.9	236	0	80	306	133	439	439		
16.S801	10	3.0	118	118	0	1.22	1.9	0	0	0	0	0	0	0		
16.S801	16	3.0	108	24	84	1.22	2.1	215	0	76	252	126	378	378		
16.S802	22	2.4	164	0	164	1.22	2.1	420	180	148	482	123	615	615		

Sound Wall	# of Benefitted Residences	CONSTRUCTION COSTS					ADDITIONAL COSTS					EASEMENT COSTS				
		Sound Wall Masonry Cost (\$210/sq m)	Minor Concrete Sound Wall Cost (\$700/cu m)	Excavation and Backfill Cost (\$100/cu m)	Demolition Cost - wood fence (\$20/m)	Demolition Cost - sound wall/property wall (\$40/cu m)	Clearing & Grubbing (8% of Wall Cost)	Landscaping Cost (10% of Wall Cost)	Traffic Control Cost (5% of Wall Cost)	SWPPP Cost (5% of Wall Cost)	Construction Easements (\$150/sq m)	Footing Easements (\$370/sq m)	Construction Easements (\$150/sq m)	Footing Easements (\$370/sq m)	Total Easements	
16.S796	4	\$223,763	\$70,560	\$26,645	\$0	\$9,139	\$11,424	\$5,712	\$5,712	\$0	\$0	\$0	\$0	\$0		
16.S798	13	\$39,270	\$32,844	\$12,029	\$0	\$6,731	\$8,414	\$4,207	\$4,207	\$15,300	\$29,767	\$14,467	\$29,767	\$29,767		
16.S799	10	\$105,840	\$91,728	\$38,942	\$0	\$18,921	\$23,651	\$11,826	\$11,826	\$75,600	\$40,404	\$40,404	\$40,404	\$116,004		
16.S801	16	\$64,260	\$55,692	\$23,644	\$0	\$11,488	\$14,360	\$7,180	\$7,180	\$45,900	\$94,962	\$49,062	\$94,962	\$94,962		
16.S801	16	\$244,188	\$203,490	\$62,753	\$0	\$42,434	\$53,043	\$26,522	\$26,522	\$145,350	\$304,080	\$156,730	\$304,080	\$304,080		
16.S802	22	\$62,446	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
16.S802	22	\$71,455	\$52,933	\$21,526	\$0	\$9,402	\$11,753	\$5,876	\$5,876	\$37,809	\$84,440	\$46,631	\$84,440	\$84,440		
16.S802	22	\$123,984	\$103,320	\$42,017	\$3,600	\$21,834	\$27,282	\$13,646	\$13,646	\$73,800	\$119,310	\$45,510	\$119,310	\$119,310		

Sound Wall	# of Benefitted Residences	TOTAL COSTS					COST PER BENEFITTED RESIDENCE					COST ALLOWANCE					REASONABLENESS				
		Estimated Total Cost (w/o Easements)	Estimated Total Construction Easement Only)	Estimated Total Cost (w/ Construction Easement Only)	Estimated Cost/Benefitted Residence (w/o Easements)	Estimated Cost/Benefitted Residence (w/ Construction Easement Only)	Estimated Cost Per Benefitted Residence w/ Easements	Reasonable Allowance Per Residence	Reasonable Total Allowance	Reasonable w/o Easements	Reasonable w/ Construction Easements Only	Reasonable w/ all easements									
16.S796	4	\$352,956	\$352,956	\$705,912	\$88,239	\$88,239	\$50,000	\$200,000	NO	NO	NO										
16.S798	13	\$107,703	\$123,003	\$230,706	\$31,572	\$38,564	\$54,000	\$702,000	YES	YES	YES										
16.S799	10	\$410,437	\$556,208	\$966,645	\$88,275	\$126,180	\$48,000	\$480,000	NO	NO	NO										
16.S801	16	\$678,951	\$924,301	\$1,603,252	\$15,403	\$17,766	\$42,000	\$672,000	YES	YES	YES										
16.S802	22	\$62,446	\$62,446	\$124,892	\$15,879	\$19,234	\$54,000	\$1,188,000	YES	YES	YES										

PARTIAL KEY MAP



LEGEND

- X- R/W
- - - Approx PARCEL LINES
- ▲ PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (S1) RECEPTOR SITE
- BENEFITED UNIT
- HM HOTEL/MOTEL
- SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL



**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

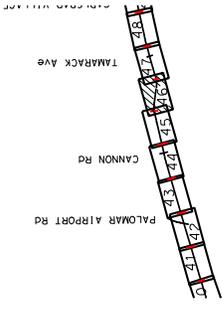


SCALE
1:2000

SEG	SHT
16	45

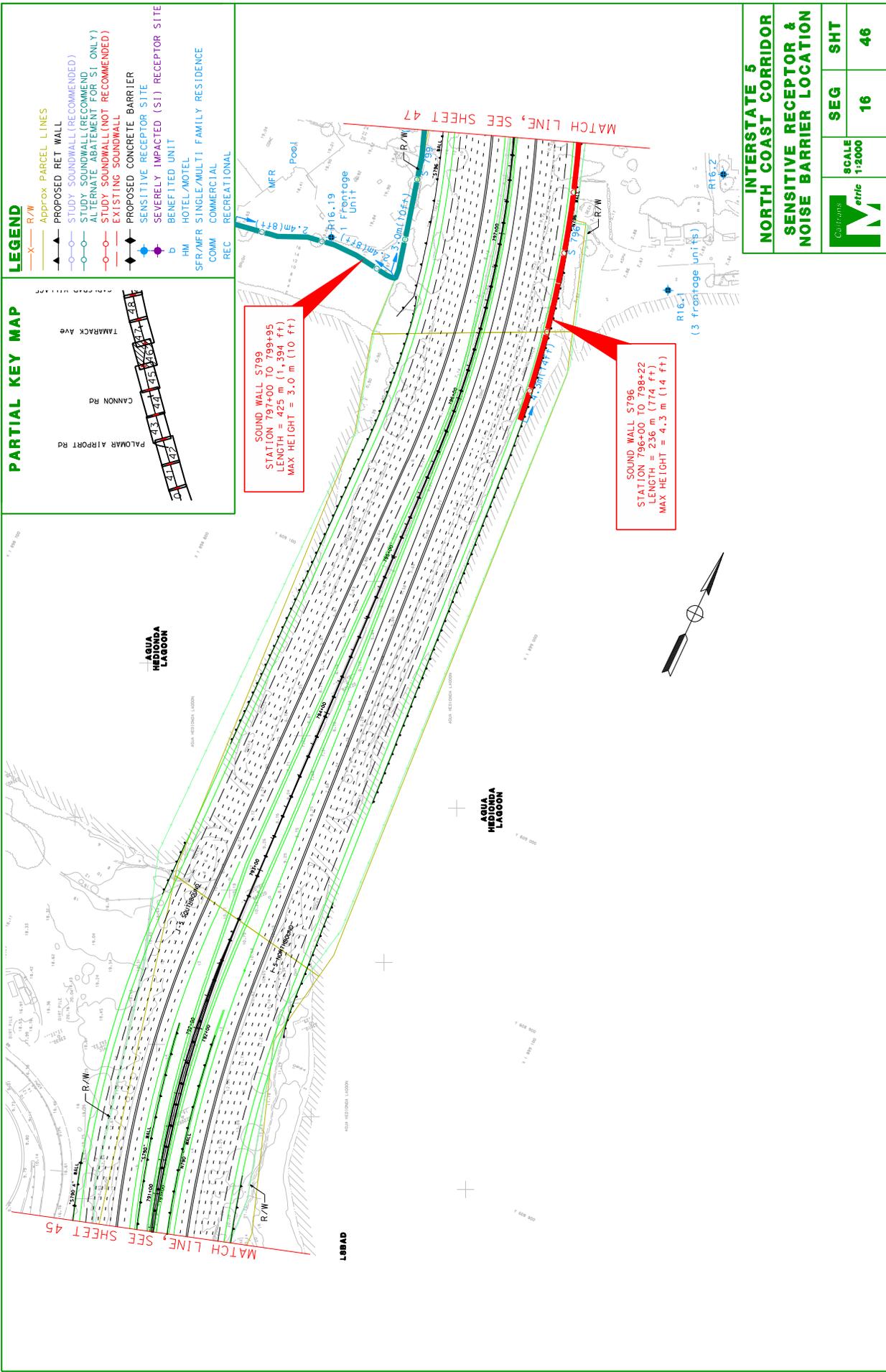


PARTIAL KEY MAP



LEGEND

- X R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- STUDY SOUNDWALL (NOT RECOMMENDED)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (S1) RECEPTOR SITE
- BENEFITED UNIT
- HM HOTEL/MOTEL
- SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL



SOUND WALL S799
 STATION 797+00 TO 799+95
 LENGTH = 425 m (1,394 ft)
 MAX HEIGHT = 3.0 m (10 ft)

SOUND WALL S796
 STATION 796+00 TO 798+22
 LENGTH = 236 m (774 ft)
 MAX HEIGHT = 4.3 m (14 ft)

**INTERSTATE 5
 NORTH COAST CORRIDOR
 SENSITIVE RECEPTOR &
 NOISE BARRIER LOCATION**

	SCALE	SEG	SHT
	1:2000	16	46

Segment 17

Noise Barrier S810

General

Type: Sound wall

I-5 Station limits: 803+35 to 815+00

Receptor sites: R17.1A through R17.2, and R17.4 through R17.15

Severely Impacted Receptors: R17.1, R17.2, R17.7, R17.8, R17.10, and R17.13

Height: 3.0 meters (10 feet) to 4.9 meters (16 feet)

Location: Environmental Segment 17; see exhibit

Benefited Units: Ten single-family residences, 16 multi-family residences (two hotel pools),
one church, one daycare, school and park (13 frontage units)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 68 to 78 dBA

Compared to existing (year 2005): Two to seven dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: Is at the NAC

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance:	\$2,214,000
Estimated Total Cost without Easements:	\$1,178,176
Estimated Total Cost with Construction Easements only:	\$1,178,176
Estimated Total Cost with all Easements:	\$1,178,176

Reasonable Cost Allowance/Benefited Unit:	\$54,000
Estimated Cost/Benefited Unit without Easements:	\$28,736
Estimated Cost/Benefited Unit with Construction Easements only:	\$28,736
Estimated Cost/Benefited Unit with all Easements:	\$28,736

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 17, Sheets 47, 48, and 49, of this NADR, noise barrier S810 would be located on Caltrans right-of-way and the shoulder of the northbound side of I-5, just north of Tamarack Avenue. This area is represented by receiver sites R17.1A through R17.2, and R17.4 through R17.15. The noise barrier would extend for approximately 1,167 meters (3,829 feet) and would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would be 3.0 meters (10 feet) to 4.9 meters (16 feet). The wall would benefit ten single-family residences, 16 multi-family residences (Two hotel pools), one church, one daycare, school and park and is considered feasible. There are no apparent easements that need to be acquired in order to construct S810. The estimated construction cost of S810 with all easements would be less than the cost allowance and so is considered reasonable.

Noise Abatement Decision

Construction of noise barrier S810 with all easements would be feasible and reasonable. S810 abates for severely impacted receptors, R17.1, R17.2, R17.7, R17.8, R17.10, and R17.13, and is preliminarily recommended.

Noise Barrier S811

General

Type: Sound wall

I-5 Station limits: 803+00 to 815+00

Receptor sites: R17.17 through R17.20, and R17.22 through R17.34

Severely Impacted Receptors: R17.28 through R17.30, R17.32 through R17.34

Height: 2.4 meters (8 feet) through 3.7 meters (12 feet), and 4.9 meters (16 feet)

Location: Environmental Segment 17; see exhibit

Benefited Units: 28 single-family residences and 116 multi-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 66 to 77 dBA

Compared to existing (year 2005): Negative one to five dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: Is at the NAC

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$7,776,000

Estimated Total Cost without Easements: \$1,181,326

Estimated Total Cost with Construction Easements only: \$1,181,326

Estimated Total Cost with all Easements: \$1,181,326

Reasonable Cost Allowance/Benefited Unit: \$54,000

Estimated Cost/Benefited Unit without Easements: \$8,204

Estimated Cost/Benefited Unit with Construction Easements only: \$8,204

Estimated Cost/Benefited Unit with all Easements: \$8,204

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 17, Sheets 47, 48, and 49, of this NADR, noise barrier S811 would be located on Caltrans right-of-way along the southbound side of I-5, just north of Tamarack Avenue. This area is represented by receiver sites R17.17 through R17.20, and R17.22 through R17.34. The noise barrier would extend for approximately 1,200 meters (3,937 feet) and would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 2.4 meters (8 feet) through 3.7 meters (12 feet), and 4.9 meters (16 feet). The wall would benefit 28 single-family residences and 116 multi-family residences and is considered feasible. The estimated construction cost of S811 with all easements would be less than the reasonable cost allowance and so is considered reasonable.

Noise Abatement Decision

Construction of noise barrier S811 with all easements would be feasible and reasonable. The District Landscape Architect has indicated that this sound wall would cause a visual impact. Therefore, the PDT decided to minimize this possible visual impact by recommending lowering the entire wall to 10 feet. S811, at a height of 10 feet, is preliminarily recommended.

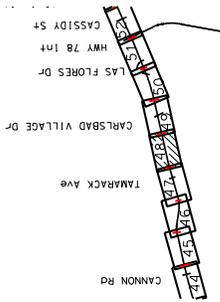
SEGMENT 17 - COST ANALYSIS

Sound Wall	# of Benefitted Residences	WALL CHARACTERISTICS				QUANTITIES				EASEMENTS				
		Height (m)	Length of Sound Wall (m)	Length of Sound Wall on Retaining Wall (m)	Length of Sound Wall Not on Retaining Wall (m)	Excavation Depth (m)	Excavation Width (m)	Excavation and Backfill (cu.m)	Demolition of wood fence (m)	Demolition of existing sound walls/property walls (sq.m)	Minor Concrete Sound Wall (cu.m)	Temporary Construction Easements (sq.m)	Footing Easements (sq.m)	Total Easements (sq.m)
17.S810		3.0	116	0	116	1.22	2.1	0	0	0	0	0	0	0
		3.0	104.9	0	104.9	1.22	2.4	0	0	0	0	0	0	0
		4.9	108	10	98	1.22	2.9	35	0	0	14	0	0	0
		4.3	95	26	69	1.22	2.6	219	0	0	83	0	0	0
		3.7	614	578	36	1.22	2.4	105	0	0	39	0	0	0
		4.3	191	0	191	1.22	2.6	0	0	0	0	0	0	0
		3.7	302	152	150	1.22	2.4	439	0	0	162	0	0	0
		2.0	153	0	153	1.22	2.9	0	0	0	0	0	0	0
		2.0	212	0	212	1.22	2.6	44	0	0	12	0	0	0
		3.7	439	58	381	1.22	2.6	0	0	0	17	0	0	0
17.S811		4.3	230	230	0	1.22	2.9	0	0	0	0	0	0	0
		3.0	189	0	189	1.22	2.1	0	0	0	0	0	0	0
		3.0	189	0	189	1.22	2.1	0	0	0	0	0	0	0
		3.0	189	0	189	1.22	2.1	0	0	0	0	0	0	0
		3.0	189	0	189	1.22	2.1	0	0	0	0	0	0	0
		3.0	189	0	189	1.22	2.1	0	0	0	0	0	0	0
		3.0	189	0	189	1.22	2.1	0	0	0	0	0	0	0
		3.0	189	0	189	1.22	2.1	0	0	0	0	0	0	0
		3.0	189	0	189	1.22	2.1	0	0	0	0	0	0	0
		3.0	189	0	189	1.22	2.1	0	0	0	0	0	0	0

Sound Wall	# of Benefitted Residences	CONSTRUCTION COSTS				ADDITIONAL COSTS				EASEMENT COSTS			
		Sound Wall Masonry Cost (\$210/sq.m)	Minor Concrete Sound Wall Cost (\$700/cu.m)	Excavation and Backfill Cost (\$100/cu.m)	Demolition Cost - wood fence (\$20/m)	Demolition Cost - sound wall/property wall (\$40/cu.m)	Cleaning & Grubbing (8% of Wall Cost)	Landscaping Cost (10% of Wall Cost)	Traffic Control Cost (5% of Wall Cost)	SWPPP Cost (5% of Wall Cost)	Construction Easements (\$150/sq.m)	Footing Easements (\$370/sq.m)	Total Easements
17.S810		\$76,734	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		\$35,082	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		\$116,689	\$3,538	\$0	\$0	\$0	\$962	\$1,203	\$601	\$601	\$0	\$0	\$0
		\$90,074	\$7,960	\$21,887	\$0	\$0	\$9,873	\$12,342	\$6,171	\$6,171	\$0	\$0	\$0
		\$90,832	\$7,216	\$10,541	\$0	\$0	\$2,527	\$3,158	\$1,579	\$1,579	\$0	\$0	\$0
		\$181,097	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		\$245,387	\$113,400	\$43,920	\$0	\$0	\$16,041	\$20,052	\$10,026	\$10,026	\$0	\$0	\$0
		\$7,912	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		\$3,341	\$1,760	\$0	\$0	\$0	\$74	\$0	\$0	\$0	\$0	\$0	\$0
		\$248,504	\$0	\$0	\$0	\$0	\$13,14	\$1642	\$261	\$0	\$0	\$0	\$0
\$131,639	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		

Sound Wall	# of Benefitted Residences	TOTAL COSTS				COST PER BENEFITTED RESIDENCE				COST ALLOWANCE				REASONABLENESS	
		Estimated Total Cost (w/o Easements)	Estimated Total Cost (w/ Construction Easement Only)	Estimated Total Cost w/ Easements	Estimated Cost/Benefitted Residence (w/o Easements)	Estimated Cost/Benefitted Residence (w/ Construction Easement Only)	Estimated Cost Per Benefitted Residence w/ Easements	Reasonable Allowance Per Residence	Reasonable Total Allowance	Reasonable w/o Easements	Reasonable w/ Construction Easements Only	Reasonable w/ all easements			
17.S810		\$76,734	\$117,876	\$194,610	\$28,736	\$28,736	\$28,736	\$54,000	\$2,214,000	YES	YES	YES			
		\$35,082	\$36,082	\$71,164	\$35,082	\$35,082	\$35,082	\$35,082	\$35,082						
		\$133,254	\$133,254	\$266,508	\$133,254	\$133,254	\$133,254	\$133,254	\$133,254						
		\$204,478	\$204,478	\$408,956	\$204,478	\$204,478	\$204,478	\$204,478	\$204,478						
		\$547,532	\$547,532	\$1,095,064	\$547,532	\$547,532	\$547,532	\$547,532	\$547,532						
		\$181,097	\$181,097	\$362,194	\$181,097	\$181,097	\$181,097	\$181,097	\$181,097						
		\$1,178,176	\$1,178,176	\$2,356,352	\$28,736	\$28,736	\$28,736	\$54,000	\$2,214,000	YES	YES	YES			
		\$459,851	\$459,851	\$919,702	\$459,851	\$459,851	\$459,851	\$459,851	\$459,851						
		\$97,902	\$97,902	\$195,804	\$97,902	\$97,902	\$97,902	\$97,902	\$97,902						
		\$194,364	\$194,364	\$388,728	\$194,364	\$194,364	\$194,364	\$194,364	\$194,364						
\$248,504	\$248,504	\$497,008	\$248,504	\$248,504	\$248,504	\$248,504	\$248,504								
\$131,639	\$131,639	\$263,278	\$131,639	\$131,639	\$131,639	\$131,639	\$131,639								
\$1,181,326	\$1,181,326	\$2,362,652	\$8,204	\$8,204	\$8,204	\$54,000	\$7,776,000	YES	YES	YES					

PARTIAL KEY MAP



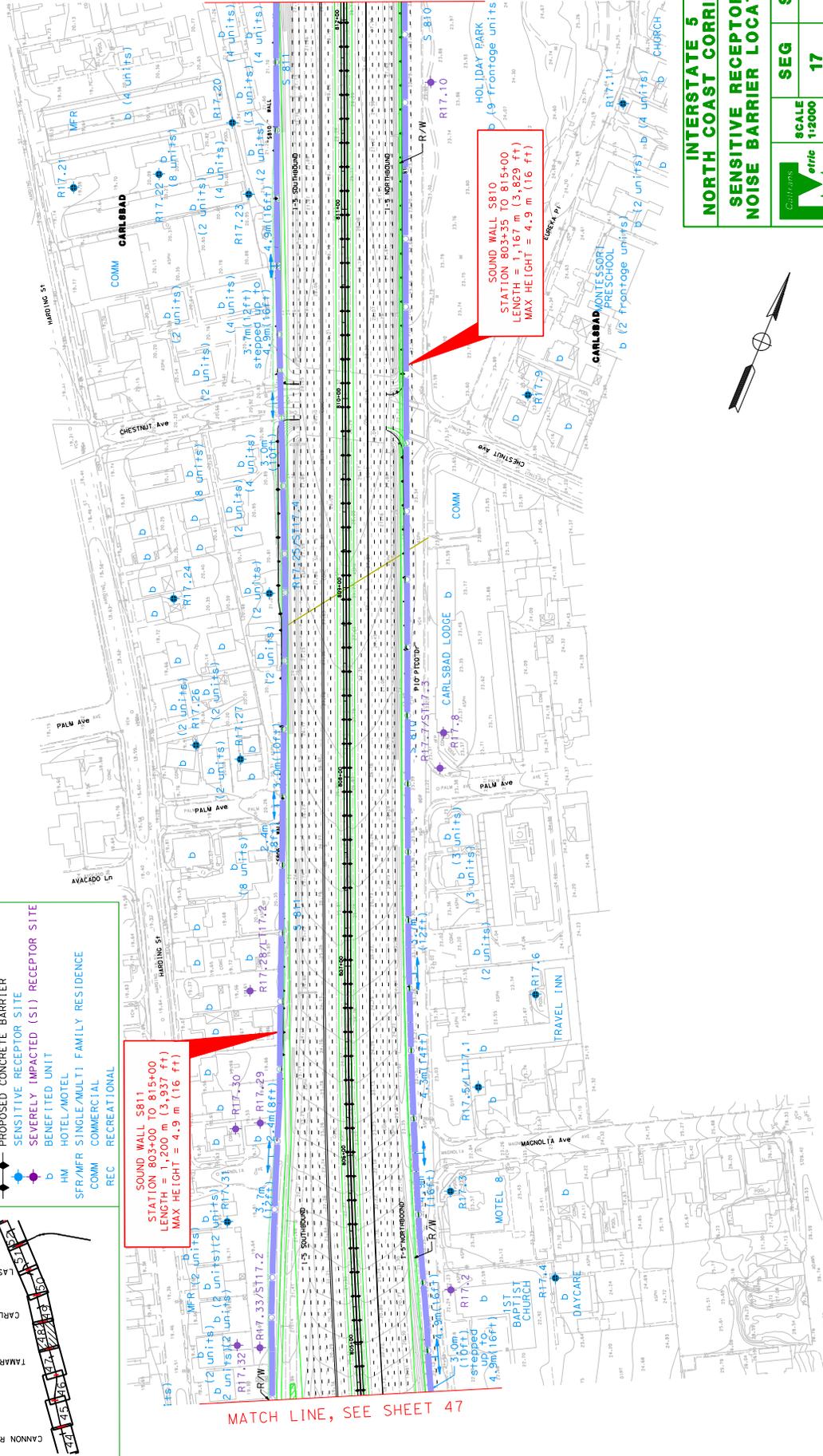
- LEGEND**
- X- R/W
 - Approx. PARCEL LINES
 - PROPOSED RET WALL
 - STUDY SOUNDWALL (RECOMMENDED)
 - STUDY SOUNDWALL (ALTERNATE ABATEMENT FOR SI ONLY)
 - STUDY SOUNDWALL (NOT RECOMMENDED)
 - EXISTING SOUNDWALL
 - PROPOSED CONCRETE BARRIER
 - SENSITIVE RECEPTOR SITE
 - SEVERELY IMPACTED (SI) RECEPTOR SITE
 - BENEFITED UNIT
 - HM HOTEL/MOTEL
 - SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
 - COMM COMMERCIAL
 - REC RECREATIONAL

SOUND WALL S811
 STATION 803+00 TO 815+00
 LENGTH = 1,200 m (3,937 ft)
 MAX HEIGHT = 4.9 m (16 ft)

SOUND WALL S810
 STATION 803+35 TO 815+00
 LENGTH = 1,016.7 m (3,329 ft)
 MAX HEIGHT = 4.9 m (16 ft)

MATCH LINE, SEE SHEET 47

MATCH LINE, SEE SHEET 49



**INTERSTATE 5
 NORTH COAST CORRIDOR
 SENSITIVE RECEPTOR &
 NOISE BARRIER LOCATION**

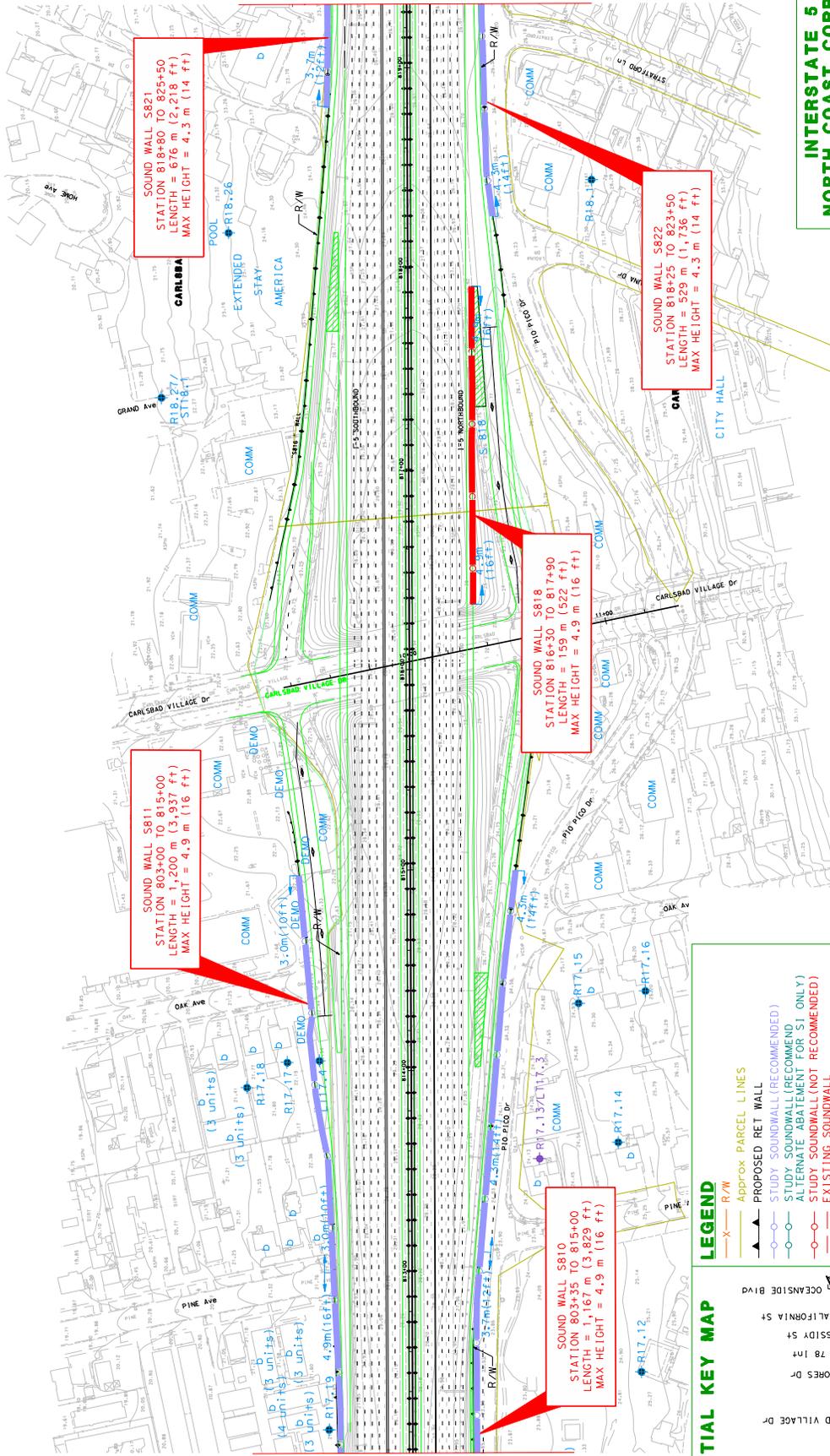


SCALE
 1:2000

SEG
 17

SHT
 48

MATCH LINE, SEE SHEET 50



SOUND WALL S821
STATION 818+50 TO 825+50
LENGTH = 676 m (2,218 ft)
MAX HEIGHT = 4.3 m (14 ft)

SOUND WALL S822
STATION 818+25 TO 823+50
LENGTH = 529 m (1,736 ft)
MAX HEIGHT = 4.3 m (14 ft)

SOUND WALL S818
STATION 816+30 TO 817+90
LENGTH = 159 m (522 ft)
MAX HEIGHT = 4.9 m (16 ft)

SOUND WALL S811
STATION 803+00 TO 815+00
LENGTH = 1,200 m (3,937 ft)
MAX HEIGHT = 4.9 m (16 ft)

SOUND WALL S810
STATION 803+35 TO 815+00
LENGTH = 1,167 m (3,829 ft)
MAX HEIGHT = 4.9 m (16 ft)

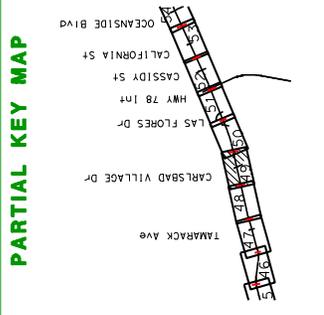
**INTERSTATE 5
NORTH COAST CORRIDOR**

**SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

SCALE 1:2000

SEG	SHT
17 & 18	49

- LEGEND**
- X- R/W
 - - - - - APPROX PARCEL LINES
 - ▲- PROPOSED RET WALL
 - STUDY SOUNDWALL (RECOMMENDED)
 - STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
 - STUDY SOUNDWALL (NOT RECOMMENDED)
 - EXISTING SOUNDWALL
 - ▲- PROPOSED CONCRETE BARRIER
 - SENSITIVE RECEPTOR SITE
 - SEVERELY IMPACTED (S1) RECEPTOR SITE
 - b- BENEFITED UNIT
 - HM- HOTEL/MOTEL
 - SFR/MFR- SINGLE/MULTI FAMILY RESIDENCE
 - COMM- COMMERCIAL
 - REC- RECREATIONAL



MATCH LINE, SEE SHEET 48

Segment 18

Noise Barrier S818

General

Type: Sound wall

I-5 Station limits: 816+30 to 817+90

Receptor sites: R18.1

Severely Impacted Receptors: None

Height: 4.9 meters (16 feet)

Location: Environmental Segment 18; see exhibit

Benefited Units: One single-family residence

Predicted Noise Levels if Project Built without Abatement

Year 2030: 73 dBA

Compared to existing (year 2005): Seven dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$48,000

Estimated Total Cost without Easements: \$503,671

Estimated Total Cost with Construction Easements only: \$503,671

Estimated Total Cost with all Easements: \$503,671

Reasonable Cost Allowance/Benefited Unit: \$48,000

Estimated Cost/Benefited Unit without Easements: \$503,671

Estimated Cost/Benefited Unit with Construction Easements only: \$503,671

Estimated Cost/Benefited Unit with all Easements: \$503,671

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 18, Sheets 49 and 50, of this NADR, noise barrier S818 would be located on Caltrans right-of-way on the northbound side of I-5, just north of Carlsbad Village Drive. This area is represented by receiver site R18.1. The noise barrier would extend for approximately 159 meters (522 feet). The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 4.9 meters (16 feet). The wall would benefit one single-family residences and is considered feasible. There are no apparent easements that need to be acquired in order to construct S818. The estimated cost of S818 would be 949% above the cost allowance and so is not considered reasonable.

Noise Abatement Decision

Construction of noise barrier S818 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S818. No severely impacted receptors exist for this wall that need to be abated for. Construction of noise barrier S818 is not recommended.

Noise Barrier S821

General

Type: Sound wall

I-5 Station limits: 818+80 to 825+50

Receptor sites: R18.15 through R18.20, R18.22, R18.24, and R18.25

Severely Impacted Receptors: R18.17, R18.18, R18.20, R18.22, R18.24, and R18.25

Height: 3.7 meters (12 feet) to 4.3 meters (14 feet)

Location: Environmental Segment 18; see exhibit

Benefited Units: 17 single-family residences and 34 multi-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 65 to 83 dBA

Compared to existing (year 2005): Four to 12 dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$2,550,000

Estimated Total Cost without Easements: \$753,809

Estimated Total Cost with Construction Easements only: \$887,459

Estimated Total Cost with all Easements: \$989,690

Reasonable Cost Allowance/Benefited Unit: \$50,000

Estimated Cost/Benefited Unit without Easements: \$14,781

Estimated Cost/Benefited Unit with Construction Easements only: \$17,401

Estimated Cost/Benefited Unit with all Easements: \$19,406

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 18, Sheets 49 and 50, of this NADR, noise barrier S821 would be located on Caltrans right-of-way along the shoulder of the southbound side of I-5, between Carlsbad Village Drive and Las Flores Drive. This area is represented by receiver sites R18.15 through R18.20, R18.22, R18.24, and R18.25. The noise barrier would extend for approximately 676 meters (2,218 feet) and would replace an existing 2.4 meter (8 foot) sound wall which would be partially demolished for the widening of the highway. The new sound wall would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 3.7 meters (12 feet) to 4.3 meters (14 feet). The wall would benefit 17 single-family residences and 34 multi-family residences and is considered feasible. The estimated construction cost of S821 with all easements would be less than the reasonable cost allowance and so is considered reasonable.

Noise Abatement Decision

Construction of noise barrier S821 with all easements would be feasible and reasonable. S821 abates for severely impacted receptors, R18.17, R18.18, R18.20, R18.22, R18.24, and R18.25, and is preliminarily recommended.

Noise Barrier S822

General

Type: Sound wall

I-5 Station limits: 817+80 to 824+55

Receptor sites: R18.1A through R18.3, R18.5, and R18.7

Severely Impacted Receptors: 18.1A, R18.2, R18.2A, and R18.3

Height: 4.9 meters (16 feet) to 4.3 meters (14 feet)

Location: Environmental Segment 18; see exhibit

Benefited Units: 14 single-family residences, one park (five frontage units)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 72 to 79 dBA

Compared to existing (year 2005): Seven to eight dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$1,064,000

Estimated Total Cost without Easements: \$1,100,582

Estimated Total Cost with Construction Easements only: \$1,100,582

Estimated Total Cost with all Easements: \$1,100,582

Reasonable Cost Allowance/Benefited Unit: \$56,000

Estimated Cost/Benefited Unit without Easements: \$57,925

Estimated Cost/Benefited Unit with Construction Easements only: \$57,925

Estimated Cost/Benefited Unit with all Easements: \$57,925

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 18, Sheets 49 and 50, of this NADR, noise barrier S822 would be located on Caltrans right-of-way and along the shoulder of the northbound side of I-5, between Carlsbad Village Drive and Las Flores Drive. This area is represented by receiver sites R18.1A through R18.3, R18.5, and R18.7. The noise barrier would extend for approximately 674 meters (2,211 feet) and would be partially founded on a proposed retaining wall. The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 4.9 meters (16 feet) to 4.3 meters (14 feet). The wall would benefit 14 single-family residences and one park and is considered feasible. There are no apparent easements that need to be acquired in order to construct S822. The estimated cost of S822 would be three percent above the reasonable allowance and so is not considered reasonable.

Noise Abatement Decision

Construction of noise barrier S822 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S822. However, there exist severely impacted receptors that must be abated for. S822 is preliminarily recommended in order to abate for the severely impacted receptors, 18.1A, R18.2, R18.2A, and R18.3.

Noise Barrier S826

General

Type: Sound wall

I-5 Station limits: 824+75 to 826+05

Receptor sites: R18.7A

Severely Impacted Receptors: R18.7A

Height: 3.0 meters (10 feet)

Location: Environmental Segment 18; see exhibit

Benefited Units: One single-family residence

Predicted Noise Levels if Project Built without Abatement

Year 2030: 75 dBA

Compared to existing (year 2005): Seven dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance:	\$50,000
Estimated Total Cost without Easements:	\$277,466
Estimated Total Cost with Construction Easements only:	\$336,866
Estimated Total Cost with all Easements:	\$373,496

Reasonable Cost Allowance/Benefited Unit:	\$50,000
Estimated Cost/Benefited Unit without Easements:	\$277,466
Estimated Cost/Benefited Unit with Construction Easements only:	\$336,866
Estimated Cost/Benefited Unit with all Easements:	\$373,496

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 18, Sheet 50, of this NADR, noise barrier S826 would be located on Caltrans right-of-way along the northbound side of I-5, just north of Las Flores Drive. This area is represented by receiver site R18.7A. The noise barrier would extend for approximately 132 meters (433 feet). The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 3.0 meters (10 feet). The wall would benefit one single-family residence and is considered feasible. The estimated cost of S826, when all easements are assumed eliminated, would be 455% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 574%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 647% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S826 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S826. However, there exists a severely impacted receptor that must be abated for. S826 is preliminarily recommended in order to abate for the severely impacted receptor, R18.7A.

Noise Barrier S827

General

Type: Sound wall

I-5 Station limits: 825+82 to 827+60

Receptor sites: R18.11 through R18.13

Severely Impacted Receptors: R18.11

Height: 4.9 meters (16 feet)

Location: Environmental Segment 18; see exhibit

Benefited Units: Three single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 71 to 76 dBA

Compared to existing (year 2005): Four to eight dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: Yes

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$168,000

Estimated Total Cost without Easements: \$567,745

Estimated Total Cost with Construction Easements only: \$647,845

Estimated Total Cost with all Easements: \$723,584

Reasonable Cost Allowance/Benefited Unit: \$56,000

Estimated Cost/Benefited Unit without Easements: \$189,248

Estimated Cost/Benefited Unit with Construction Easements only: \$215,948

Estimated Cost/Benefited Unit with all Easements: \$241,195

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 18, Sheets 50 and 51, of this NADR, noise barrier S827 would be located on Caltrans right-of-way along the southbound side of I-5, just north of Las Flores Drive. This area is represented by receiver sites R18.11 through R18.13. The noise barrier would extend for approximately 178 meters (584 feet) and would partially replace an existing 2.3 meter (7.5 foot) wooden fence. The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 4.9 meters (16 feet). The wall would benefit three single-family residences and is considered feasible. The estimated cost of S827, when all easements are assumed eliminated, would be 238% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 286%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 331% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S827 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S827. However, there exists a severely impacted receptor that must be abated for. S827 is preliminarily recommended in order to abate for the severely impacted receptor, R18.11.

Noise Barrier S829

General

Type: Sound wall

I-5 Station limits: 827+75 to 828+40

Receptor sites: R18.10

Severely Impacted Receptors: None

Height: 4.9 meters (16 feet)

Location: Environmental Segment 18; see exhibit

Benefited Units: One single-family residence

Predicted Noise Levels if Project Built without Abatement

Year 2030: 73 dBA

Compared to existing (year 2005): Two dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$46,000

Estimated Total Cost without Easements: \$228,078

Estimated Total Cost with Construction Easements only: \$260,478

Estimated Total Cost with all Easements: \$291,114

Reasonable Cost Allowance/Benefited Unit: \$46,000

Estimated Cost/Benefited Unit without Easements: \$228,078

Estimated Cost/Benefited Unit with Construction Easements only: \$260,478

Estimated Cost/Benefited Unit with all Easements: \$291,114

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 18, Sheet 51, of this NADR, noise barrier S829 would be located on Caltrans right-of-way along the southbound side of I-5, south of Vista Way/Route 78. This area is represented by receiver site R18.10. The noise barrier would extend for approximately 72 meters (236 feet). The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 4.9 meters (16 feet). The wall would benefit one single-family residence and is considered feasible. The estimated cost of S829, when all easements are assumed eliminated, would be 396% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 466%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 533% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S829 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S829. No severely impacted receptors exist for this wall that need to be abated for. Construction of noise barrier S829 is not recommended.

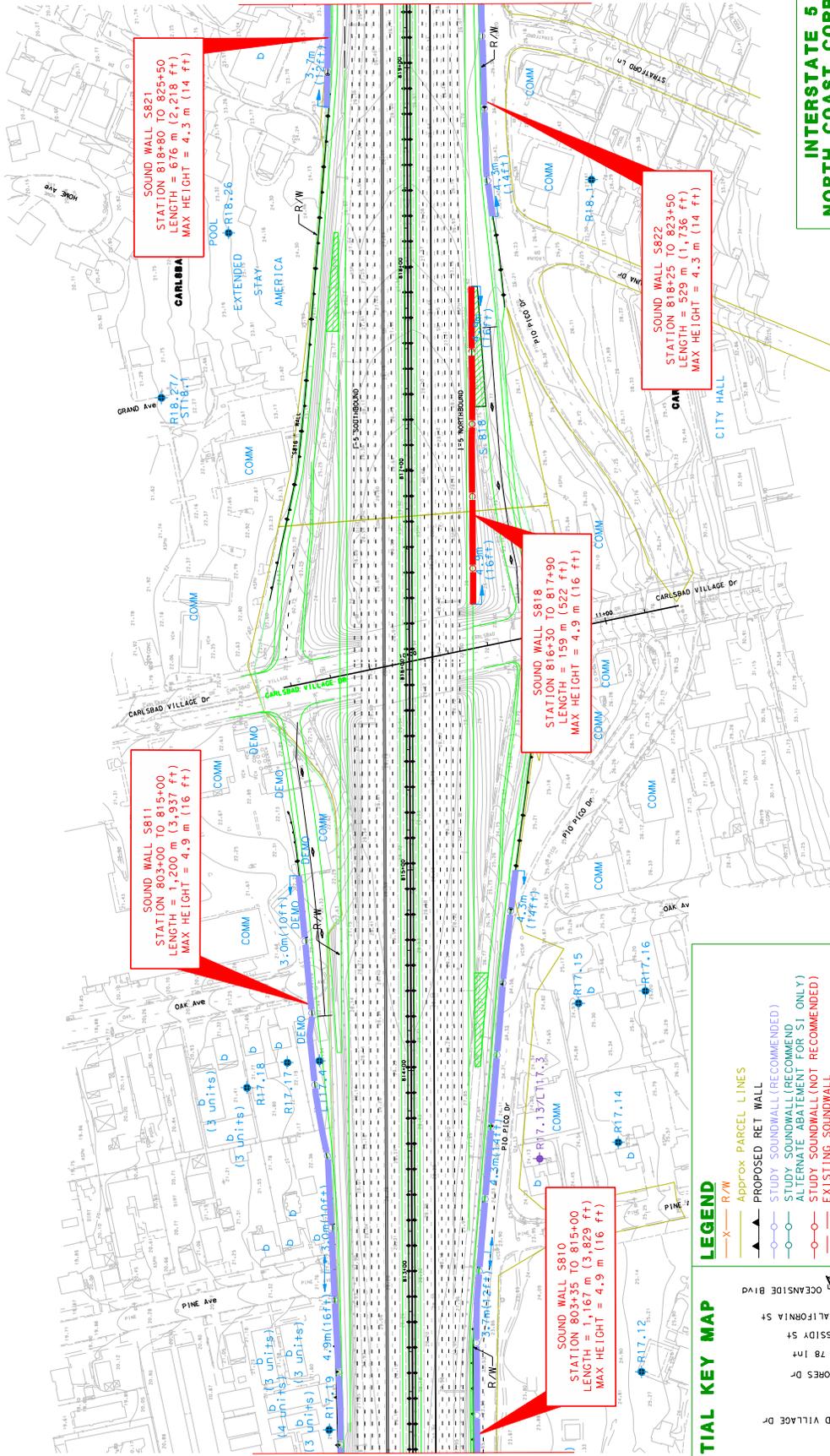
SEGMENT 18 - COST ANALYSIS

Sound Wall	# of Benefitted Residences	WALL CHARACTERISTICS				QUANTITIES				EASEMENTS				
		Height (m)	Length of Sound Wall on Retaining Wall (m)	Length of Sound Wall Not on Retaining Wall (m)	Length of Sound Wall (m)	Excavation Depth (m)	Excavation Width (m)	Excavation and Backfill (cu m)	Demolition of wood fence (m)	Demolition of existing sound walls/property walls (cu m)	Minor Concrete Sound Wall (cu m)	Temporary Construction Easements (sq m)	Footling Easements (sq m)	Total Easements (sq m)
18.S818	1	4.9	0	159	159	1.22	2.9	562,542	0	0	219.42	0	0	0
18.S821	51	4.3	17	109	126	1.22	2.6	346	0	0	131	270	90	360
18.S822	19	4.3	165	364	529	1.22	2.6	1,155	0	0	437	0	0	0
18.S826	1	3.0	0	132	132	1.22	2.1	338	0	0	119	396	99	495
18.S827	3	4.9	0	178	178	1.22	2.9	630	152	0	246	534	205	739
18.S829	1	4.9	0	72	72	1.22	2.9	255	0	0	99	216	83	299

Sound Wall	# of Benefitted Residences	CONSTRUCTION COSTS				ADDITIONAL COSTS				EASEMENT COSTS				
		Sound Wall Masonry Cost (\$210/sq m)	Minor Concrete Sound Wall Cost (\$700/cu m)	Excavation and Backfill Cost (\$100/cu m)	Demolition Cost - wood fence (\$20/m)	Demolition Cost - sound wall/property wall (\$40/cu m)	Clearing & Grubbing (\$8% of Wall Cost)	Landscaping Cost (10% of Wall Cost)	Traffic Control Cost (5% of Wall Cost)	SWPPP Cost (5% of Wall Cost)	Construction Easements (\$150/sq m)	Footling Easements (\$370/sq m)	Construction Easements	Footling Easements
18.S818	1	\$183,645	\$153,594	\$56,254	\$0	\$0	\$31,479	\$39,349	\$19,675	\$19,675	\$0	\$0	\$0	\$0
18.S821	51	\$448,718	\$91,560	\$34,875	\$0	\$0	\$18,987	\$21,246	\$10,623	\$10,623	\$0	\$0	\$0	\$0
18.S822	19	\$501,571	\$305,760	\$115,461	\$0	\$0	\$50,797	\$63,496	\$31,748	\$31,748	\$0	\$0	\$0	\$0
18.S826	1	\$93,792	\$83,160	\$33,818	\$0	\$0	\$17,342	\$21,677	\$10,839	\$10,839	\$59,400	\$36,630	\$96,030	\$96,030
18.S827	3	\$205,590	\$171,948	\$62,976	\$3,036	\$0	\$35,484	\$44,355	\$22,178	\$22,178	\$80,100	\$75,739	\$155,839	\$155,839
18.S829	1	\$83,160	\$69,552	\$25,474	\$0	\$0	\$14,255	\$17,819	\$8,909	\$8,909	\$32,400	\$50,636	\$63,036	\$63,036

Sound Wall	# of Benefitted Residences	TOTAL COSTS			COST PER BENEFITTED RESIDENCE			COST ALLOWANCE			REASONABLENESS		
		Estimated Total Cost (w/ Easements)	Estimated Total Cost (w/ Construction Easement Only)	Estimated Total Cost w/ Easements	Estimated Cost/Benefitted Residence (w/ Construction Easement Only)	Estimated Cost/Benefitted Residence (w/o Easements)	Estimated Cost Per Benefitted Residence w/ Easements	Reasonable Allowance Per Residence	Reasonable Total Allowance	Reasonable w/o Easements	Reasonable w/ Construction Easements Only	Reasonable w/ all easements	
18.S818	1	\$503,671	\$503,671	\$503,671	\$503,671	\$503,671	\$503,671	\$48,000	\$48,000	NO	NO	NO	
18.S821	51	\$753,809	\$887,459	\$989,690	\$14,781	\$17,401	\$19,406	\$50,000	\$2,550,000	YES	YES	YES	
18.S822	19	\$1,100,582	\$1,100,582	\$1,100,582	\$57,925	\$57,925	\$57,925	\$56,000	\$1,064,000	NO	NO	NO	
18.S826	1	\$277,466	\$336,866	\$373,496	\$277,466	\$336,866	\$373,496	\$50,000	\$50,000	NO	NO	NO	
18.S827	3	\$567,745	\$647,845	\$723,564	\$189,248	\$215,948	\$241,195	\$56,000	\$168,000	NO	NO	NO	
18.S829	1	\$228,078	\$260,478	\$291,114	\$228,078	\$260,478	\$291,114	\$46,000	\$46,000	NO	NO	NO	

MATCH LINE, SEE SHEET 50



SOUND WALL S821
STATION 818+50 TO 825+50
LENGTH = 676 m (2,218 ft)
MAX HEIGHT = 4.3 m (14 ft)

SOUND WALL S822
STATION 818+25 TO 823+50
LENGTH = 529 m (1,736 ft)
MAX HEIGHT = 4.3 m (14 ft)

SOUND WALL S818
STATION 816+30 TO 817+90
LENGTH = 159 m (522 ft)
MAX HEIGHT = 4.9 m (16 ft)

SOUND WALL S811
STATION 803+00 TO 815+00
LENGTH = 1,200 m (3,937 ft)
MAX HEIGHT = 4.9 m (16 ft)

SOUND WALL S810
STATION 803+35 TO 815+00
LENGTH = 1,167 m (3,829 ft)
MAX HEIGHT = 4.9 m (16 ft)

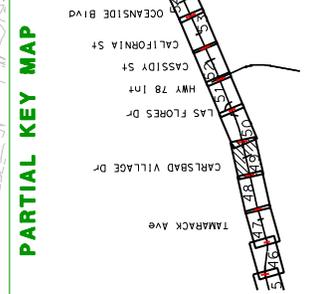
**INTERSTATE 5
NORTH COAST CORRIDOR**

**SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

SCALE 1:2000

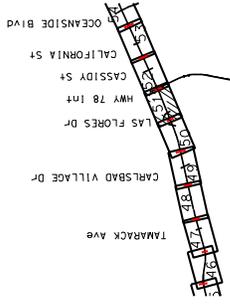
SEG	SHT
17 & 18	49

- LEGEND**
- X- R/W
 - - - - - APPROX PARCEL LINES
 - ▲- PROPOSED RET WALL
 - STUDY SOUNDWALL (RECOMMENDED)
 - STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
 - STUDY SOUNDWALL (NOT RECOMMENDED)
 - EXISTING SOUNDWALL
 - ▲- PROPOSED CONCRETE BARRIER
 - ▲- SENSITIVE RECEPTOR SITE
 - ▲- SEVERELY IMPACTED (S1) RECEPTOR SITE
 - b- BENEFITED UNIT
 - HM- HOTEL/MOTEL
 - SFR/MFR- SINGLE/MULTI FAMILY RESIDENCE
 - COMM- COMMERCIAL
 - REC- RECREATIONAL



MATCH LINE, SEE SHEET 48

PARTIAL KEY MAP



LEGEND

- X R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR SI ONLY)
- STUDY SOUNDWALL (NOT RECOMMENDED)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (SI) RECEPTOR SITE
- BENEFITED UNIT
- HM HOTEL/MOTEL
- SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL

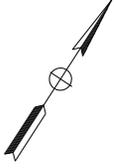
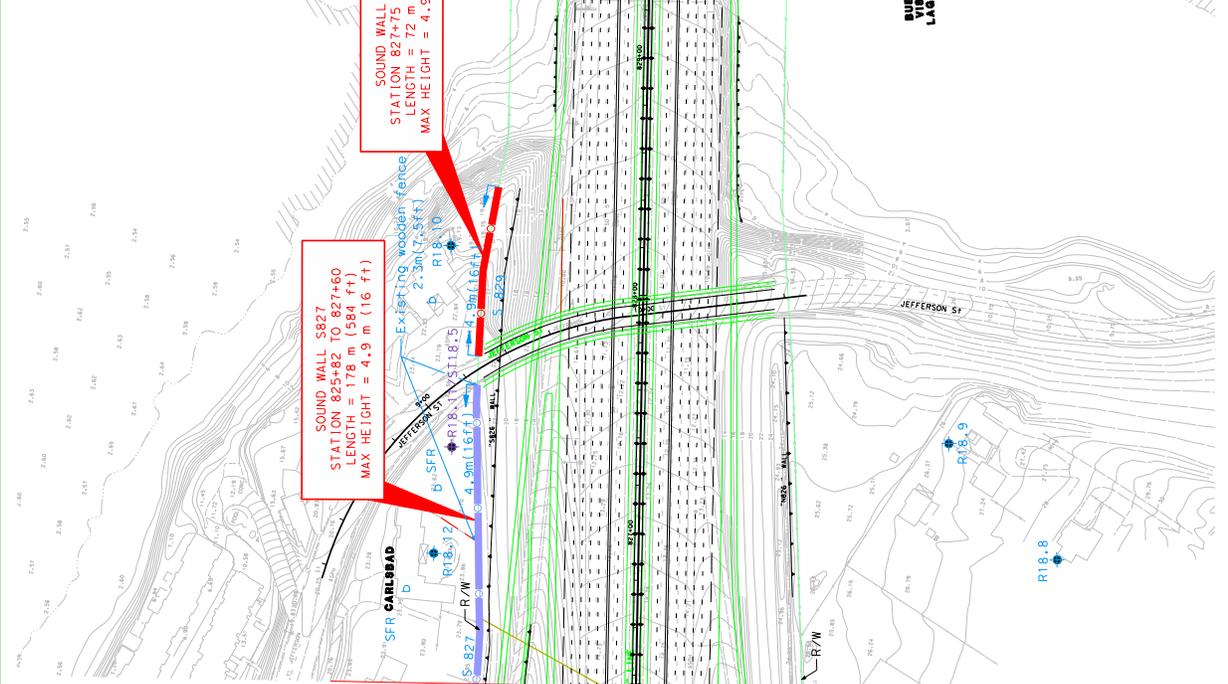
INTERSTATE 5 NORTH COAST CORRIDOR SENSITIVE RECEPTOR & NOISE BARRIER LOCATION

	SCALE	SEG	SHT
	1:2000	18	51

LEGEND

- X R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR SI ONLY)
- STUDY SOUNDWALL (NOT RECOMMENDED)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (SI) RECEPTOR SITE
- BENEFITED UNIT
- HM HOTEL/MOTEL
- SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL

INTERSTATE 5 NORTH COAST CORRIDOR SENSITIVE RECEPTOR & NOISE BARRIER LOCATION



Segment 19

Noise Barrier S835

General

Type: Sound wall

I-5 Station limits: 834+50 to 837+60

Receptor sites: R19.41 through R19.47

Severely Impacted Receptors: R19.43 through R19.45

Height: 3.0 meters (10 feet) and 3.7 meters (12 feet)

Location: Environmental Segment 19; see exhibit

Benefited Units: 16 single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 66 to 82 dBA

Compared to existing (year 2005): Three to nine dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$928,000*

Estimated Total Cost without Easements: \$762,354

Estimated Total Cost with Construction Easements only: \$897,804

Estimated Total Cost with all Easements: \$991,044

Reasonable Cost Allowance/Benefited Unit: \$58,000*

Estimated Cost/Benefited Unit without Easements: \$47,647

Estimated Cost/Benefited Unit with Construction Easements only: \$56,113

Estimated Cost/Benefited Unit with all Easements: \$61,940

* The reasonable allowances found by Dokken Engineering for this sound wall differ from those given in the Noise Study Report. The values found by Dokken have been used in the reasonableness analysis for this wall.

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 19, Sheet 52, of this NADR, noise barrier S835 would be located on Caltrans right-of-way and along the shoulder of the southbound side of I-5, between Vista Way and Cassidy Street. This area is represented by receiver sites R19.41 through R19.47. The noise barrier would extend for approximately 436 meters (1,430 feet) and would replace an existing 1.5 meter (5 foot) property wall and a 1.8 meter (6 foot) wood fence. The new sound wall would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would be 3.0 meters (10 feet) to 3.7 meters (12 feet). The wall would benefit 16 single-family residences and is considered feasible. The estimated cost of S835 without easements would be below the reasonable allowance. The estimated cost of the wall including costs for footing easements would be seven percent above the reasonable allowance.

Noise Abatement Decision

Construction of S835 is feasible and reasonable when easements are waived. There exist severely impacted receptors, R19.43, R19.44, and R19.45, that must be abated for. S835 is preliminarily recommended in order to abate for these severely impacted receptors.

Noise Barrier S836

General

Type: Sound wall

I-5 Station limits: 835+65 to 837+62

Receptor sites: R19.1 through R19.3

Severely Impacted Receptors: R19.1 and R19.2

Height: 4.3meters (14 feet)

Location: Environmental Segment 19; see exhibit

Benefited Units: Three single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 73 to 76 dBA

Compared to existing (year 2005): Five to seven dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$156,000

Estimated Total Cost without Easements: \$411,945

Estimated Total Cost with Construction Easements only: \$411,945

Estimated Total Cost with all Easements: \$411,945

Reasonable Cost Allowance/Benefited Unit: \$52,000

Estimated Cost/Benefited Unit without Easements: \$137,315

Estimated Cost/Benefited Unit with Construction Easements only: \$137,315

Estimated Cost/Benefited Unit with all Easements: \$137,315

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 19, Sheet 52, of this NADR, noise barrier S836 would be located on Caltrans right-of-way and along the shoulder of the northbound side of I-5, between Vista Way and Cassidy Street. This area is represented by receiver sites R19.1 through R19.3. The noise barrier would extend for approximately 206 meters (676 feet) and would replace part of an existing 2.1 meter (7 foot) sound wall that would be partially demolished due to the widening of the highway. The barrier would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would 4.3 meters (14 feet). The wall would benefit three single-family residences and is considered feasible. There are no apparent easements that need to be acquired in order to construct S836. The estimated cost of S836 would be 164% above the reasonable allowance, and so is not considered reasonable.

Noise Abatement Decision

Construction of noise barrier S836 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S836. However, there exist severely impacted receptors that must be abated for. S836 is preliminarily recommended in order to abate for the severely impacted receptors, R19.1 and R19.2.

Noise Barrier S840

General

Type: Sound wall

I-5 Station limits: 839+00 to 843+00

Receptor sites: R19.6A through R19.8

Severely Impacted Receptors: R19.7

Height: 4.9 meters (16 feet)

Location: Environmental Segment 19; see exhibit

Benefited Units: 12 single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 73 to 75 dBA

Compared to existing (year 2005): One to eight dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance:	\$624,000
Estimated Total Cost without Easements:	\$677,304
Estimated Total Cost with Construction Easements only:	\$677,304
Estimated Total Cost with all Easements:	\$677,304

Reasonable Cost Allowance/Benefited Unit:	\$52,000
Estimated Cost/Benefited Unit without Easements:	\$56,442
Estimated Cost/Benefited Unit with Construction Easements only:	\$56,442
Estimated Cost/Benefited Unit with all Easements:	\$56,442

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 19, Sheets 52 and 53, of this NADR, noise barrier S840 would be located on Caltrans right-of-way and along the shoulder of the northbound side of I-5, between Cassidy Street and California Street. This area is represented by receiver sites R19.6A through R19.8. The noise barrier would extend for approximately 409 meters (1,342 feet) and would be partially founded on a proposed retaining wall. There is an existing sound wall that varies in heights from 1.8 meters (6 feet) to 3.0 meters (10 feet) that would be partially replaced by the widening of the highway. The heights of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would be 4.9 meters (16 feet). The wall would benefit 12 single-family residences and is considered feasible. There are no apparent easements that need to be acquired in order to construct S840. The estimated cost of S840 would be nine percent above the reasonable allowance, and so is not considered reasonable.

Noise Abatement Decision

Construction of noise barrier S840 with all easements would be feasible but not reasonable and is not recommended for construction. However, the existing property wall that will be removed during the widening project, is to be replaced as a project feature.

Noise Barrier S841

General

Type: Sound wall

I-5 Station limits: 837+85 to 843+75

Receptor sites: R19.30 through R19.33, R19.35 through R19.37, R19.39, and R19.40

Severely Impacted Receptors: R19.30, R19.31, R19.35 through R19.37

Height: 3.0 meters (10 feet) and 4.3 meters (14 feet)

Location: Environmental Segment 19; see exhibit

Benefited Units: 17 single-family residences and one recreational facility (five frontage units)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 64 to 80 dBA

Compared to existing (year 2005): Three to seven dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$1,188,000

Estimated Total Cost without Easements: \$1,171,896

Estimated Total Cost with Construction Easements only: \$1,220,046

Estimated Total Cost with all Easements: \$1,259,636

Reasonable Cost Allowance/Benefited Unit: \$54,000

Estimated Cost/Benefited Unit without Easements: \$53,268

Estimated Cost/Benefited Unit with Construction Easements only: \$55,457

Estimated Cost/Benefited Unit with all Easements: \$57,256

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 19, Sheets 52 and 53, of this NADR, noise barrier S841 would be located on Caltrans right-of-way and along the shoulder of the southbound side of I-5, between Cassidy Street and California Street. This area is represented by receiver sites R19.30 through R19.33, R19.35 through R19.37, R19.39, and R19.40. The noise barrier would extend for approximately 635 meters (2,083 feet) and will partially replace an existing 1.8 meter (6 foot) property wall. The new sound wall would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would be 3.0 meters (10 feet) and 4.3 meters (14 feet). The wall would benefit 17 single-family residences and one recreational facility and is considered feasible. The estimated construction cost of S845 with all easements would be less than the cost allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by three percent. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be six percent above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S841 would be feasible and reasonable and is preliminarily recommended.

Noise Barrier S845

General

Type: Sound wall

I-5 Station limits: 843+95 to 847+20

Receptor sites: R19.25 through R19.28

Severely Impacted Receptors: R19.26 through R19.28

Height: 2.4 meters (8 feet)

Location: Environmental Segment 19; see exhibit

Benefited Units: Ten single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 73 to 78 dBA

Compared to existing (year 2005): Seven to eight dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$540,000

Estimated Total Cost without Easements: \$356,102

Estimated Total Cost with Construction Easements only: \$374,102

Estimated Total Cost with all Easements: \$393,342

Reasonable Cost Allowance/Benefited Unit: \$54,000

Estimated Cost/Benefited Unit without Easements: \$35,610

Estimated Cost/Benefited Unit with Construction Easements only: \$37,410

Estimated Cost/Benefited Unit with all Easements: \$39,334

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 19, Sheet 53, of this NADR, noise barrier S845 would be located on Caltrans right-of-way and private property along the southbound side of I-5, north of California Street. This area is represented by receiver sites R19.25 through R19.28. The noise barrier would extend for approximately 364 meters (1,194 feet) and would replace an existing 1.8 meter (6 foot) wooden fence. The new sound wall would be partially founded on a proposed retaining wall. The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 2.4 meters (8 feet). The wall would benefit ten single-family residences and is considered feasible. The estimated construction cost of S845 with all easements would be less than the cost allowance and so is considered reasonable.

Noise Abatement Decision

Construction of noise barrier S845 with all easements would be feasible and reasonable and is preliminarily recommended.

Noise Barrier S846

General

Type: Sound wall

I-5 Station limits: 844+00 to 848+55

Receptor sites: R19.12 through R19.18

Severely Impacted Receptors: R19.12, R19.14 through R19.16, and R19.18

Height: 2.4 meters (8 feet) to 3.7 meters (12 feet)

Location: Environmental Segment 19; see exhibit

Benefited Units: 18 single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 66 to 77 dBA

Compared to existing (year 2005): Three to eight dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$972,000

Estimated Total Cost without Easements: \$956,261

Estimated Total Cost with Construction Easements only: \$1,163,711

Estimated Total Cost with all Easements: \$1,347,601

Reasonable Cost Allowance/Benefited Unit: \$54,000

Estimated Cost/Benefited Unit without Easements: \$53,126

Estimated Cost/Benefited Unit with Construction Easements only: \$64,651

Estimated Cost/Benefited Unit with all Easements: \$74,867

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 19, Sheets 53 and 54, of this NADR, noise barrier S846 would be located on Caltrans right-of-way and private property along the northbound side of I-5, between California Street and Oceanside Boulevard. This area is represented by receiver sites R19.12 through R19.18. The noise barrier would extend for approximately 461 meters (1,512 feet). The height of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 2.4 meters to 3.7 meters (12 feet). The wall would benefit 18 single-family residences and is considered feasible. The estimated cost of S846, when all easements are assumed eliminated, is less than the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 20%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 39% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S846 would be feasible and reasonable with no easements. S846 is preliminarily recommended in order to abate for the severely impacted receptors, R19.12, R19.14 through R19.16, and R19.18.

Noise Barrier S849

General

Type: Sound wall

I-5 Station limits: 847+20 to 851+12

Receptor sites: R19.20 through R19.24

Severely Impacted Receptors: None

Height: 3.7 meters (12 feet) and 4.3 meters (14 feet)

Location: Environmental Segment 19; see exhibit

Benefited Units: 20 mobile homes, clubhouse (one frontage unit)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 65 to 71 dBA

Compared to existing (year 2005): Zero to three dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: Yes

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$1,050,000

Estimated Total Cost without Easements: \$640,965

Estimated Total Cost with Construction Easements only: \$640,965

Estimated Total Cost with all Easements: \$640,965

Reasonable Cost Allowance/Benefited Unit: \$50,000

Estimated Cost/Benefited Unit without Easements: \$30,522

Estimated Cost/Benefited Unit with Construction Easements only: \$30,522

Estimated Cost/Benefited Unit with all Easements: \$30,522

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 19, Sheets 53 and 54, of this NADR, noise barrier S849 would be located along the shoulder of the southbound side of I-5, south of Oceanside Boulevard. This area is represented by receiver sites R19.20 through R19.24. The noise barrier would extend for approximately 391 meters (1,283 feet) and would be partially founded on a proposed retaining wall. The height of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 3.7 meters (12 feet) and 4.3 meters (14 feet). The wall would benefit 20 mobile homes and a clubhouse and is considered feasible. The estimated construction cost of S849 with all easements would be less than the reasonable cost allowance and so is considered reasonable.

Noise Abatement Decision

Construction of noise barrier S849 with all easements would be feasible and reasonable and is preliminarily recommended.

SEGMENT 19 - COST ANALYSIS (a)

Sound Wall	# of Benefitted Residences	WALL CHARACTERISTICS				QUANTITIES					EASEMENTS			
		Height (m)	Length of Sound Wall (m)	Length of Sound Wall on Retaining Wall (m)	Length of Sound Wall Not on Retaining Wall (m)	Excavation Depth (m)	Excavation Width (m)	Excavation and Backfill (cu m)	Demolition of wood fence (m)	Demolition of existing sound walls/property walls (cu m)	Minor Concrete Sound Wall (cu m)	Temporary Construction Easements (sq m)	Footing Easements (sq m)	Total Easements (sq m)
19.S835	16	3.0	261	135	126	1.22	2.1	323	106	0	113	378	95	473
19.S836	3	4.3	206	80	126	1.22	2.6	400	0	265	151	0	0	0
19.S840	12	4.9	409	282	127	1.22	2.9	449	0	340	175	0	0	0

Sound Wall	# of Benefitted Residences	CONSTRUCTION COSTS					ADDITIONAL COSTS					EASEMENT COSTS		
		Sound Wall Masonry Cost (\$210/sq m)	Minor Concrete Sound Wall Cost (\$700/cu m)	Excavation and Backfill Cost (\$100/cu m)	Demolition Cost - wood fence (\$20/m)	Demolition Cost - sound wall/property wall (\$40/cu m)	Clearing & Grubbing (8% of Wall Cost)	Landscaping Cost (10% of Wall Cost)	Traffic Control Cost (5% of Wall Cost)	SWPPP Cost (5% of Wall Cost)	Construction Easements (\$150/sq m)	Footing Easements (\$370/sq m)	Total Easements	
19.S835	16	\$158,025	\$132,300	\$51,240	\$0	\$27,325	\$34,157	\$17,078	\$17,078	\$78,750	\$58,275	\$137,025		
19.S836	3	\$172,652	\$79,380	\$32,281	\$2,120	\$11,062	\$13,828	\$6,914	\$6,914	\$56,700	\$34,965	\$91,665		
19.S836	3	\$195,319	\$105,840	\$39,967	\$0	\$17,210	\$21,512	\$10,756	\$10,756	\$0	\$0	\$0		
19.S840	12	\$441,904	\$122,682	\$44,933	\$0	\$15,479	\$19,349	\$9,674	\$9,674	\$0	\$0	\$0		

Sound Wall	# of Benefitted Residences	TOTAL COSTS			COST PER BENEFITTED RESIDENCE			COST ALLOWANCE			REASONABLENESS		
		Estimated Total Cost (w/o Easements)	Estimated Total Cost (w/ Construction Easement Only)	Estimated Total Cost w/ Easements	Estimated Cost/Benefitted Residence (w/o Easements)	Estimated Cost/Benefitted Residence (w/ Construction Easement Only)	Estimated Cost Per Benefitted Residence w/ Easements	Reasonable Allowance Per Residence	Reasonable Total Allowance	Reasonable w/o Easements	Reasonable w/ Construction Easements Only	Reasonable w/ all easements	
19.S835	16	\$437,203	\$515,953	\$574,228	\$27,075	\$32,185	\$35,260	\$1,692	\$1,692	\$1,692	NO	NO	NO
19.S836	3	\$762,354	\$897,804	\$991,044	\$47,647	\$56,113	\$61,940	\$58,000	\$928,000	YES	YES	NO	NO
19.S836	3	\$411,945	\$411,945	\$411,945	\$137,315	\$137,315	\$137,315	\$52,000	\$156,000	NO	NO	NO	NO
19.S840	12	\$677,304	\$677,304	\$677,304	\$56,442	\$56,442	\$56,442	\$52,000	\$624,000	NO	NO	NO	NO

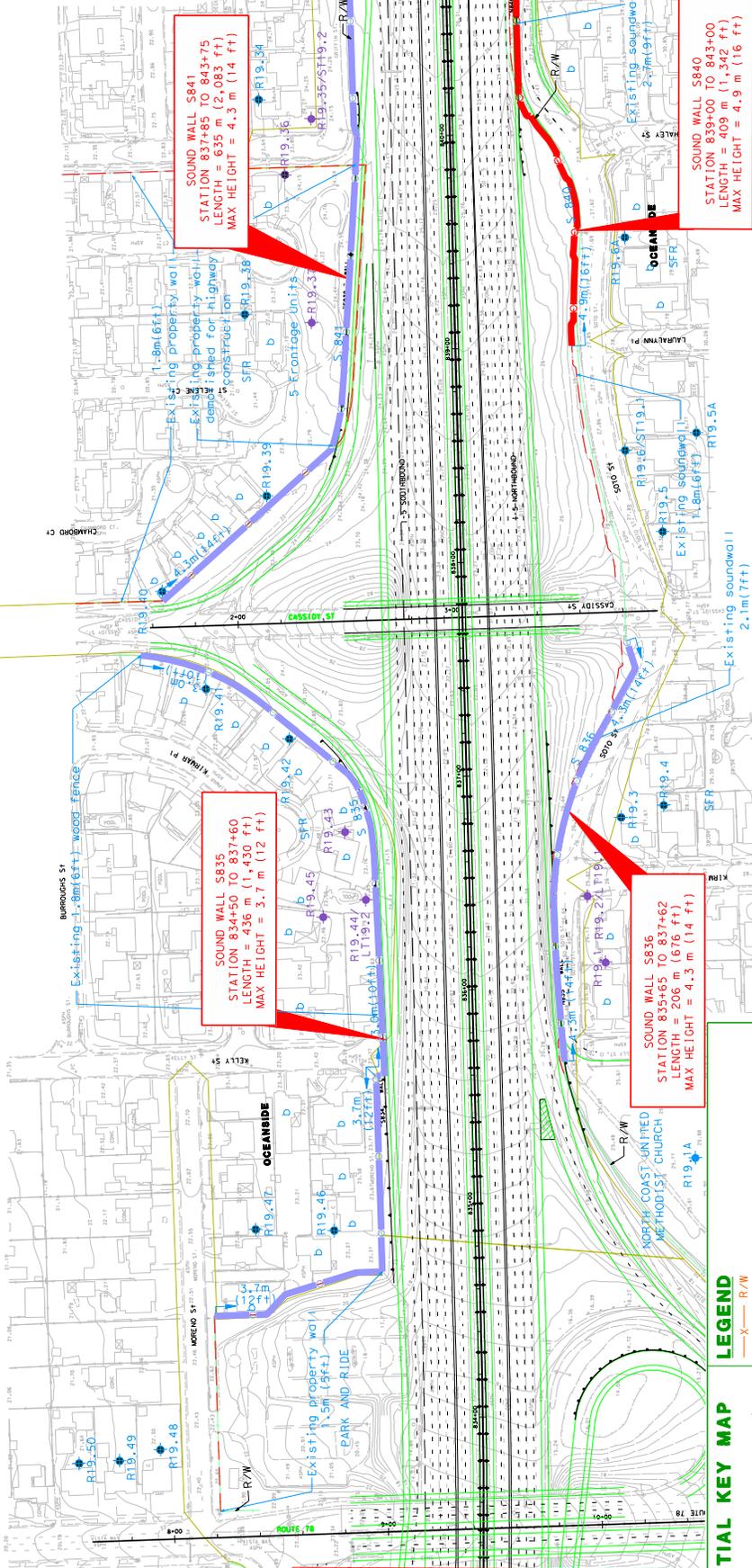
SEGMENT 19 - COST ANALYSIS (b)

Sound Wall	# of Benefitted Residences	WALL CHARACTERISTICS					QUANTITIES					EASEMENTS			
		Height (m)	Length of Sound Wall (m)	Length of Sound Wall on Retaining Wall (m)	Length of Sound Wall Not on Retaining Wall (m)	Excavation Depth (m)	Excavation Width (m)	Excavation and Backfill (cu.m)	Demolition of wood fence (m)	Demolition of existing sound walls/property walls (cu.m)	Minor Concrete Sound Wall (cu.m)	Temporary Construction Easements (sq.m)	Footing Easements (sq.m)	Total Easements (sq.m)	
19.S841		4.3	483	145	338	1.22	2.6	1,072	0	193	406	107	428		
	22	3.0	182	111	41	1.22	2.1	105	0	0	37	0	0		
19.S845		2.4	364	204	160	1.22	1.9	371	0	0	125	52	172		
	10	3.7	121	0	121	1.22	2.4	354	288	0	131	109	472		
19.S846		3.0	98	0	98	1.22	2.1	251	176.4	0	88	74	368		
	18	2.4	242	0	242	1.22	1.9	561	0	0	189	315	1,041		
19.S849		4.3	207	207	0	1.22	2.6	0	0	0	0	0	0		
	21	3.7	178	0	178	1.22	2.4	521	0	0	192	0	0		

Sound Wall	# of Benefitted Residences	CONSTRUCTION COSTS					ADDITIONAL COSTS					EASEMENT COSTS			
		Sound Wall Masonry Cost (\$210/sq m)	Minor Concrete Sound Wall Cost (\$700/cu.m)	Excavation and Backfill Cost (\$100/cu.m)	Demolition Cost - wood fence (\$20/m)	Demolition Cost - sound wall/property wall (\$40/cu.m)	Clearing & Grubbing (8% of Wall Cost)	Landscaping Cost (10% of Wall Cost)	Traffic Control Cost (5% of Wall Cost)	SWPPP Cost (5% of Wall Cost)	Construction Easements (\$150/sq m)	Footing Easements (\$370/sq m)	Total Easements		
19.S841		\$457,956	\$283,920	\$107,214	\$0	\$7,704	\$47,966	\$59,958	\$29,979	\$29,979	\$48,150	\$39,590	\$87,740		
	22	\$100,548	\$25,830	\$10,504	\$0	\$0	\$2,954	\$3,692	\$1,846	\$1,846	\$0	\$0	\$0		
19.S845		\$192,629	\$87,360	\$27,088	\$0	\$0	\$11,150	\$13,937	\$6,969	\$18,000	\$19,240	\$37,240			
	10	\$109,263	\$91,476	\$25,429	\$5,760	\$0	\$19,354	\$24,193	\$12,096	\$54,450	\$40,293	\$94,743			
19.S846		\$74,068	\$61,740	\$23,108	\$3,528	\$0	\$13,157	\$16,446	\$6,223	\$44,100	\$27,195	\$71,295			
	18	\$152,460	\$132,132	\$56,096	\$0	\$0	\$27,235	\$34,069	\$17,034	\$108,900	\$116,402	\$225,302			
19.S849		\$196,267	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0			
	21	\$160,734	\$134,568	\$52,118	\$0	\$0	\$27,794	\$34,742	\$17,371	\$0	\$0	\$0			

Sound Wall	# of Benefitted Residences	TOTAL COSTS			COST PER BENEFITTED RESIDENCE			COST ALLOWANCE			REASONABLENESS		
		Estimated Total Cost (w/o Easements)	Estimated Total Cost w/ Construction Easement Only)	Estimated Total Cost w/ Footing Easements	Estimated Cost/Benefitted Residence (w/o Easements)	Estimated Cost/Benefitted Residence (w/ Construction Easement Only)	Estimated Cost Per Benefitted Residence w/ Easements	Reasonable Allowance Per Residence	Reasonable Total Allowance	Reasonable w/o Easements	Reasonable w/ Construction Easements Only	Reasonable w/all easements	
19.S841		\$1,024,676	\$1,072,826	\$1,112,416	\$46,580	\$48,792	\$50,576	\$54,000	\$1,188,000	YES	NO	NO	
	22	\$147,220	\$147,220	\$147,220	\$6,591	\$6,737	\$6,737	\$54,000	\$1,188,000	YES	NO	NO	
19.S845		\$356,102	\$374,102	\$393,342	\$16,186	\$16,958	\$17,415	\$54,000	\$54,000	YES	YES	YES	
	10	\$309,668	\$364,118	\$374,411	\$30,967	\$36,412	\$37,441	\$54,000	\$54,000	YES	YES	YES	
19.S846		\$210,513	\$254,513	\$261,809	\$21,051	\$25,451	\$26,181	\$54,000	\$54,000	YES	NO	NO	
	18	\$436,080	\$594,960	\$661,362	\$24,227	\$32,998	\$36,795	\$54,000	\$972,000	YES	NO	NO	
19.S849		\$956,261	\$1,163,711	\$1,347,801	\$53,123	\$64,651	\$74,867	\$50,000	\$1,050,000	YES	YES	YES	
	21	\$196,267	\$196,267	\$196,267	\$9,346	\$9,346	\$9,346	\$50,000	\$1,050,000	YES	YES	YES	

MATCH LINE, SEE SHEET 53



SOUND WALL S841
 STATION 837+85 TO 843+75
 LENGTH = 635 m (2,083 FT)
 MAX HEIGHT = 4.3 m (14 FT)

SOUND WALL S835
 STATION 834+50 TO 837+60
 LENGTH = 436 m (1,430 FT)
 MAX HEIGHT = 3.7 m (12 FT)

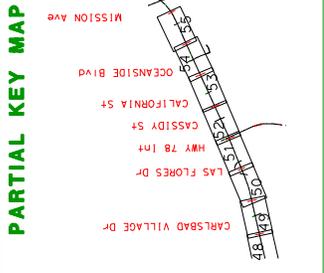
SOUND WALL S836
 STATION 835+65 TO 837+62
 LENGTH = 206 m (676 FT)
 MAX HEIGHT = 4.3 m (14 FT)

SOUND WALL S840
 STATION 839+00 TO 843+00
 LENGTH = 409 m (1,342 FT)
 MAX HEIGHT = 4.9 m (16 FT)

**INTERSTATE 5
 NORTH COAST CORRIDOR
 SENSITIVE RECEPTOR &
 NOISE BARRIER LOCATION**

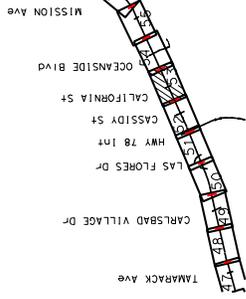
	SCALE	SEG	SHT
	1:2000	19	52

- LEGEND**
- X- R/W
 - Approx PARCEL LINES
 - ▲ PROPOSED RET WALL
 - STUDY SOUNDWALL (RECOMMENDED)
 - STUDY SOUNDWALL (RECOMMENDED)
 - ALTERNATE ABATEMENT FOR S1 ONLY
 - STUDY SOUNDWALL (NOT RECOMMENDED)
 - EXISTING SOUNDWALL
 - ◆ PROPOSED CONCRETE BARRIER
 - ◆ SENSITIVE RECEPTOR SITE
 - ◆ SEVERELY IMPACTED (S1) RECEPTOR SITE
 - ◆ BENEFITED UNIT
 - ◆ b HOTEL/MOTEL
 - ◆ HM HOTEL/MOTEL
 - ◆ COMM COMMERCIAL
 - ◆ REC RECREATIONAL



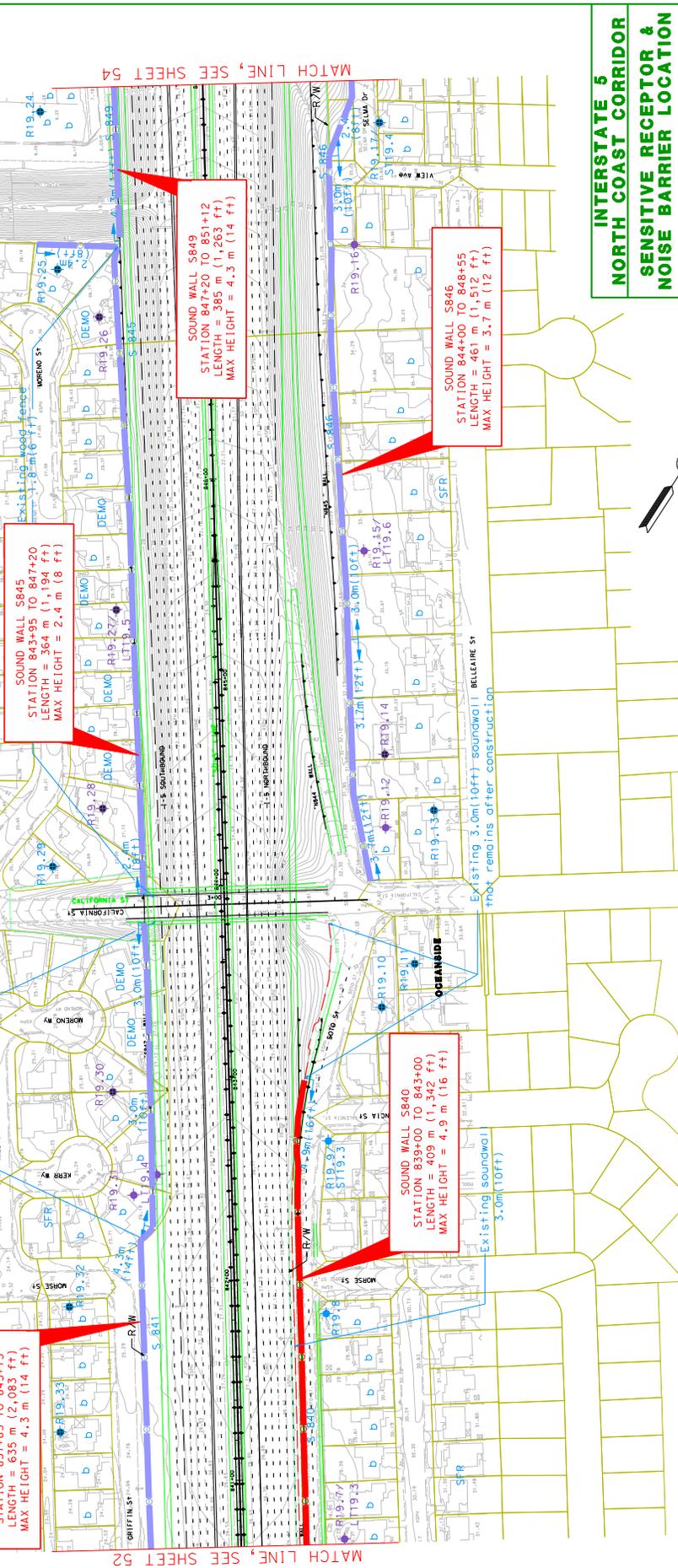
MATCH LINE, SEE SHEET 51

PARTIAL KEY MAP



LEGEND

- X R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- STUDY SOUNDWALL (NOT RECOMMENDED)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (S1) RECEPTOR SITE
- BENEFITTED UNIT
- HM HOTEL/MOTEL
- SFR/AMFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL



MATCH LINE, SEE SHEET 54

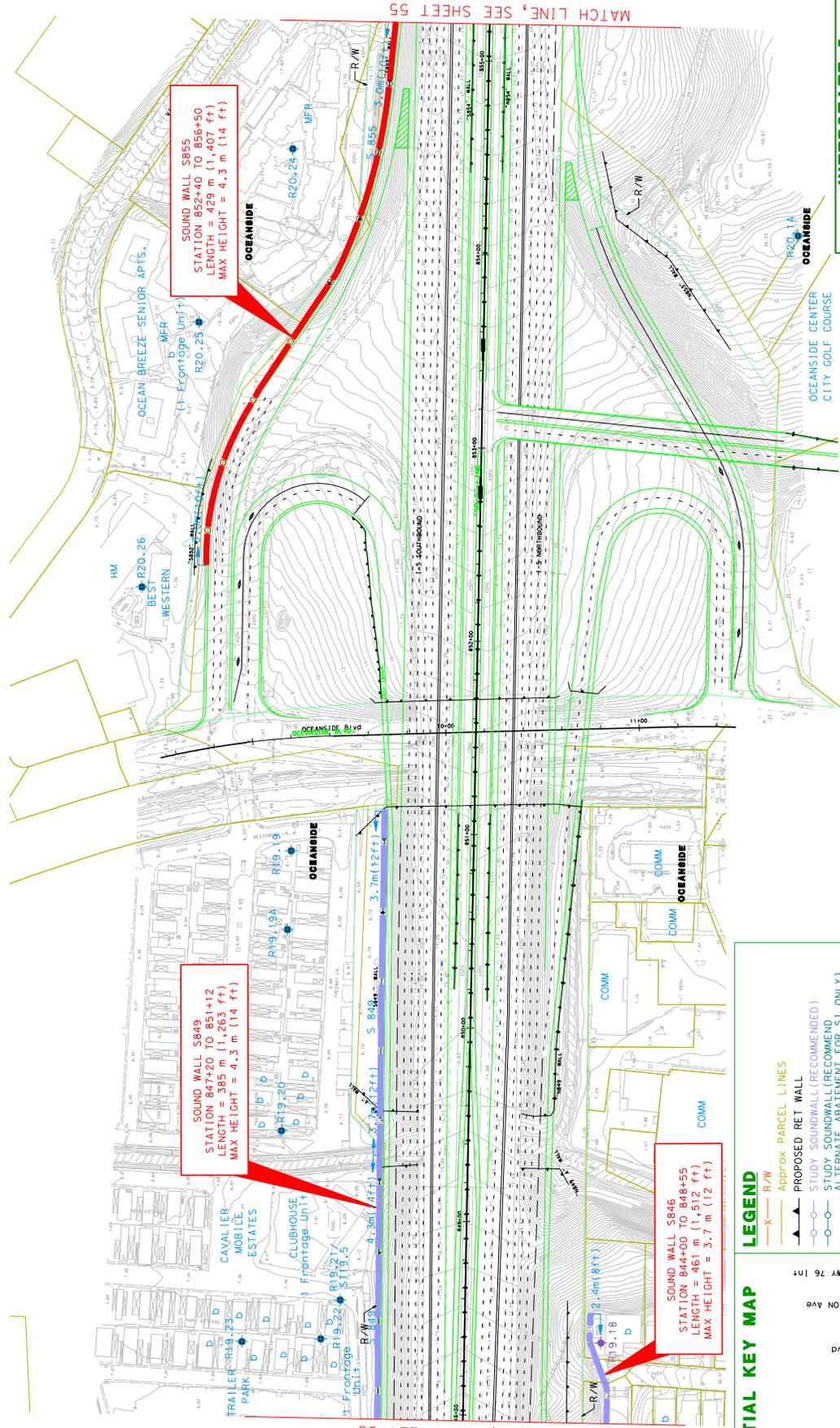
MATCH LINE, SEE SHEET 52

**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**



	SCALE	SHT
	1:2000	53

SEG	SHT
19	53



SOUND WALL S855
 STATION 852+40 TO 856+50
 LENGTH = 429 m (1,407 ft)
 MAX HEIGHT = 4.3 m (14 ft)

SOUND WALL S849
 STATION 847+20 TO 851+12
 LENGTH = 385 m (1,263 ft)
 MAX HEIGHT = 4.3 m (14 ft)

SOUND WALL S846
 STATION 844+00 TO 848+55
 LENGTH = 461 m (1,512 ft)
 MAX HEIGHT = 3.7 m (12 ft)

MATCH LINE, SEE SHEET 55

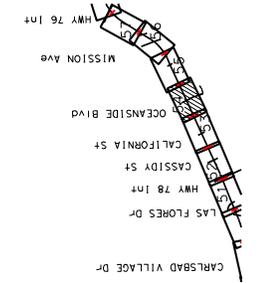
MATCH LINE, SEE SHEET 53

**INTERSTATE 5
 NORTH COAST CORRIDOR
 SENSITIVE RECEPTOR &
 NOISE BARRIER LOCATION**

	SCALE	SHT
	1:2000	54
	SEG	19 & 20



PARTIAL KEY MAP



LEGEND

- X- R/W
- Approx PARCEL LINES
- Proposed RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- STUDY SOUNDWALL (NOT RECOMMENDED)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- PROPOSED CONCRETE BARRIER
- SEVERELY IMPACTED (S1) RECEPTOR SITE
- BENEFITED UNIT
- b HOTEL/MOTEL
- HM SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL

Segment 20

Noise Barrier S855

General

Type: Sound wall

I-5 Station limits: 852+40 to 856+50

Receptor sites: R20.23 and R20.25

Severely Impacted Receptors: None

Height: 3.0 meters (10 feet) and 4.3 meters (14 feet)

Location: Environmental Segment 20; see exhibit

Benefited Units: Four multi-family residences, one recreational area (one frontage unit)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 69 dBA

Compared to existing (year 2005): Zero to four dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: Yes

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$180,000*

Estimated Total Cost without Easements: \$676,120

Estimated Total Cost with Construction Easements only: \$692,770

Estimated Total Cost with all Easements: \$720,150

Reasonable Cost Allowance/Benefited Unit: \$36,000*

Estimated Cost/Benefited Unit without Easements: \$135,224

Estimated Cost/Benefited Unit with Construction Easements only: \$138,554

Estimated Cost/Benefited Unit with all Easements: \$144,030

* The reasonable allowances found by Dokken Engineering for this sound wall differ from those given in the Noise Study Report. The values found by Dokken have been used in the reasonableness analysis for this wall.

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 20, Sheets 54 and 55, of this NADR, noise barrier S855 would be located along the shoulder of the southbound side of I-5, north of Oceanside Boulevard. This area is represented by receiver sites R20.23 and R20.25. The noise barrier would extend for approximately 429 meters (1,407feet) and would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would be 3.0 meters (10 feet) and 4.3 meters (14 feet). The wall would benefit four multi-family residences and one recreational area and is considered feasible. The estimated cost of S855, when all easements are assumed eliminated, would be 276% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 285%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 300% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S855 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S855. No severely impacted receptors exist for this wall that need to be abated for. Construction of noise barrier S855 is not recommended.

Noise Barrier S859

General

Type: Sound wall

I-5 Station limits: 858+00 to 859+70

Receptor sites: R20.13 and R20.15

Severely Impacted Receptors: R20.13

Height: 3.7 meters (12 feet)

Location: Environmental Segment 20; see exhibit

Benefited Units: One single-family residence, and one recreation facility (one frontage unit)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 67 to 75 dBA

Compared to existing (year 2005): Two dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance:	\$96,000
Estimated Total Cost without Easements:	\$427,210
Estimated Total Cost with Construction Easements only:	\$504,160
Estimated Total Cost with all Easements:	\$618,046

Reasonable Cost Allowance/Benefited Unit:	\$48,000
Estimated Cost/Benefited Unit without Easements:	\$213,605
Estimated Cost/Benefited Unit with Construction Easements only:	\$252,080
Estimated Cost/Benefited Unit with all Easements:	\$309,023

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 20, Sheet 55, of this NADR, noise barrier S859 would be located on Caltrans right-of-way along the southbound side of I-5, south of Mission Avenue. This area is represented by receiver sites R20.13 and R20.15. The noise barrier would extend for approximately 171 meters (561 feet). The height of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 3.7 meters (12 feet). The wall would benefit one single-family residence and one recreation facility and is considered feasible. The estimated cost of S859, when all easements are assumed eliminated, would be 345% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 425%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 544% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S859 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S859. However, there exists a severely impacted receptor that must be abated for. It is recommended that S859 not be constructed as proposed, with the stipulation that the severely impacted receptor, R20.13, receive individual abatement.

Noise Barrier S862

General

Type: Sound wall

I-5 Station limits: 859+95 to 862+40

Receptor sites: R20.1 through R20.3

Severely Impacted Receptors: R20.2

Height: 3.7 meters (12 feet) and 4.3 meters (14 feet)

Location: Environmental Segment 20; see exhibit

Benefited Units: One recreational facility (six frontage units)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 73 to 77 dBA

Compared to existing (year 2005): One dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$300,000

Estimated Total Cost without Easements: \$384,407

Estimated Total Cost with Construction Easements only: \$433,457

Estimated Total Cost with all Easements: \$506,051

Reasonable Cost Allowance/Benefited Unit: \$50,000

Estimated Cost/Benefited Unit without Easements: \$64,068

Estimated Cost/Benefited Unit with Construction Easements only: \$72,243

Estimated Cost/Benefited Unit with all Easements: \$84,342

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 20, Sheets 55 and 56, of this NADR, noise barrier S862 would be located on Caltrans right-of-way along the northbound side of I-5, south of and Mission Avenue. This area is represented by receiver sites R20.1 through R20.3. The noise barrier would extend for approximately 246 meters (807 feet) and would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve an insertion loss of a 5 dBA or more at the critical design receiver would be 3.7 meters (12 feet) and 4.3 meters (14 feet). The wall would benefit one recreational facility and is considered feasible. The estimated cost of S862, when all easements are assumed eliminated, would be 28% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 44%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 69% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S862 is feasible but not reasonable. However, there exist severely impacted receptors R20.2 and R20.3, that need to be abated for. S862 is preliminarily recommended.

Noise Barrier S863

General

Type: Sound wall

I-5 Station limits: 859+82 to 866+50

Receptor sites: R20.5 through R20.8, R20.10, and R20.11

Severely Impacted Receptors: R20.7

Height: 3.7 meters (12 feet) to 4.9 meters (16 feet)

Location: Environmental Segment 20; see exhibit

Benefited Units: Six single-family residences, five multi-family residences, and
one school (15 frontage units)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 68 to 77 dBA

Compared to existing (year 2005): One to two dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$1,300,000

Estimated Total Cost without Easements: \$1,592,363

Estimated Total Cost with Construction Easements only: \$1,811,963

Estimated Total Cost with all Easements: \$1,989,489

Reasonable Cost Allowance/Benefited Unit: \$50,000

Estimated Cost/Benefited Unit without Easements: \$61,245

Estimated Cost/Benefited Unit with Construction Easements only: \$69,691

Estimated Cost/Benefited Unit with all Easements: \$76,519

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 20, Sheets 55 and 56, of this NADR, noise barrier S863 would be located on Caltrans right-of-way and the shoulder of the southbound side of I-5, between Brooks Street and Mission Avenue. This area is represented by receiver sites R20.5 through R20.8, R20.10, and R20.11. The noise barrier would extend for approximately 669 meters (2,195 feet) and would replace an existing 2.4 meter (8 foot) sound wall. The new sound wall would be partially founded on a proposed retaining wall. A portion of the existing sound wall will have to be demolished for the widening of the highway. The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 3.7 meters (12 feet) to 4.9 meters (16 feet). The wall would benefit six single-family residences, five multi-family residences, and one school and is considered feasible. The estimated cost of S863, when all easements are assumed eliminated, would be 22% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 39%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 53% above the reasonable allowance.

Noise Abatement Decision

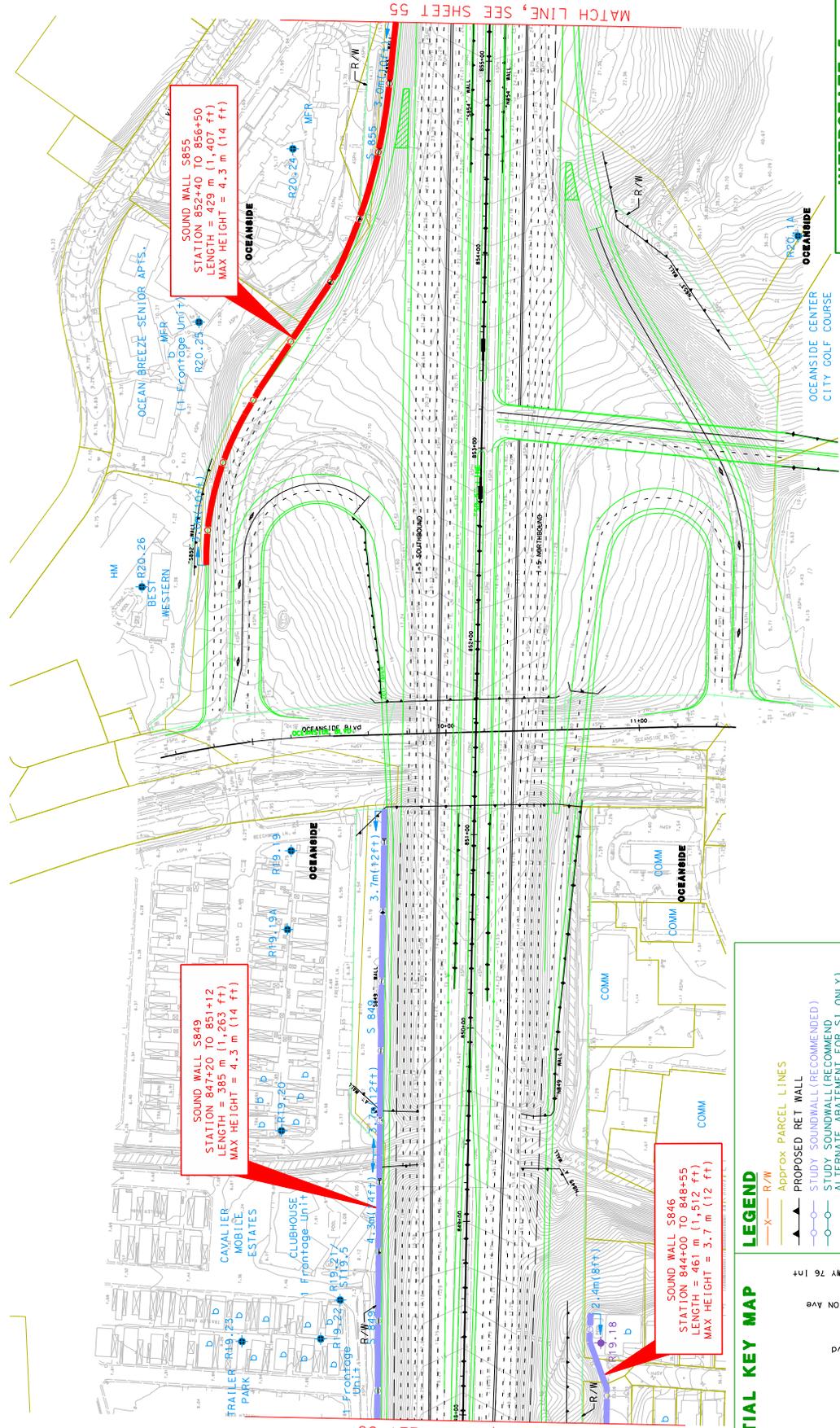
Construction of noise barrier S863 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S863. The existing 2.4 meter (8 foot) sound wall will be replaced as a project feature. Construction of S863 is not recommended.

SEGMENT 20 - COST ANALYSIS

Sound Wall	# of Benefitted Residences	WALL CHARACTERISTICS				QUANTITIES				EASEMENTS				
		Height (m)	Length of Sound Wall (m)	Length of Sound Wall on Retaining Wall (m)	Length of Sound Wall Not on Retaining Wall (m)	Excavation Depth (m)	Excavation Width (m)	Excavation and Backfill (cu.m)	Demolition of wood fence (m)	Demolition of existing sound walls/property walls (cu.m)	Minor Concrete Sound Wall (cu.m)	Temporary Construction Easements (sq.m)	Footing Easements (sq.m)	Total Easements (sq.m)
20.S855	5	3.0	158	158	145	1.22	2.7	371	0	0	13	0	0	0
20.S859	2	3.7	171	0	171	1.22	2.4	501	0	0	185	513	308	821
20.S862	6	3.7	139	27	112	1.22	2.4	328	0	0	121	327	196	523
20.S863	26	3.7	253	0	253	1.22	2.4	741	0	0	273	759	228	987

Sound Wall	# of Benefitted Residences	CONSTRUCTION COSTS				ADDITIONAL COSTS				EASEMENT COSTS			
		Sound Wall Masonry Cost (\$210/sq m)	Minor Concrete Sound Wall Cost (\$700/cu.m)	Excavation and Backfill Cost (\$100/cu.m)	Demolition Cost - wood fence (\$20/m)	Demolition Cost - sound wall/property wall (\$40/cu.m)	Clearing & Grubbing (8% of Wall Cost)	Landscaping Cost (10% of Wall Cost)	Traffic Control Cost (5% of Wall Cost)	SWPPP Cost (5% of Wall Cost)	Construction Easements (\$150/sq m)	Footing Easements (\$370/sq m)	Total Easements
20.S855	5	\$119,467	\$90,720	\$37,149	\$0	\$0	\$12,953	\$15,741	\$7,871	\$16,650	\$0	\$44,030	
20.S859	2	\$164,413	\$129,276	\$50,069	\$0	\$0	\$26,701	\$33,376	\$16,688	\$76,950	\$113,886	\$190,836	
20.S862	6	\$113,403	\$84,672	\$32,794	\$0	\$0	\$14,982	\$18,602	\$9,301	\$49,050	\$72,594	\$121,644	
20.S863	26	\$228,459	\$191,268	\$74,078	\$0	\$0	\$39,504	\$49,381	\$24,690	\$113,850	\$84,249	\$198,099	

Sound Wall	# of Benefitted Residences	TOTAL COSTS				COST PER BENEFITTED RESIDENCE				COST ALLOWANCE				REASONABLENESS	
		Estimated Total Cost (w/o Easements)	Estimated Total Cost (w/ Construction Easement Only)	Estimated Total Cost w/ Easements	Estimated Cost/Benefitted Residence (w/o Easements)	Estimated Cost/Benefitted Residence (w/ Construction Easement Only)	Estimated Cost Per Benefitted Residence w/ Easements	Reasonable Allowance Per Residence	Reasonable Total Allowance	Reasonable w/o Easements	Reasonable w/ Construction Easements Only	Reasonable w/ all easements			
20.S855	5	\$373,008	\$373,008	\$373,008	\$74,602	\$74,602	\$74,602	\$14,920	\$14,920	\$14,920	\$14,920	\$14,920	\$14,920	NO	NO
20.S859	2	\$676,120	\$699,770	\$720,150	\$338,224	\$352,080	\$368,046	\$184,112	\$176,040	\$184,023	\$184,023	\$184,023	\$184,023	NO	NO
20.S862	6	\$282,955	\$332,005	\$404,599	\$64,088	\$67,040	\$82,452	\$14,001	\$14,333	\$17,340	\$14,333	\$14,333	\$14,333	NO	NO
20.S863	26	\$1,592,363	\$1,611,963	\$1,628,489	\$61,245	\$62,346	\$62,653	\$23,519	\$23,996	\$24,019	\$23,996	\$23,996	\$23,996	NO	NO



SOUND WALL S855
 STATION 852+40 TO 856+50
 LENGTH = 429 m (1,407 ft)
 MAX HEIGHT = 4.3 m (14 ft)

SOUND WALL S849
 STATION 847+20 TO 851+12
 LENGTH = 385 m (1,263 ft)
 MAX HEIGHT = 4.3 m (14 ft)

SOUND WALL S846
 STATION 844+00 TO 848+55
 LENGTH = 461 m (1,512 ft)
 MAX HEIGHT = 3.7 m (12 ft)

MATCH LINE, SEE SHEET 55

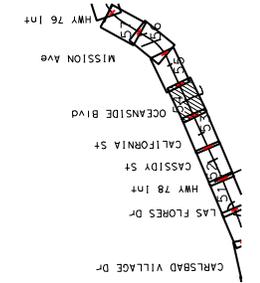
MATCH LINE, SEE SHEET 53

**INTERSTATE 5
 NORTH COAST CORRIDOR
 SENSITIVE RECEPTOR &
 NOISE BARRIER LOCATION**

	SCALE	SHT
	1:2000	54
	SEG	19 & 20



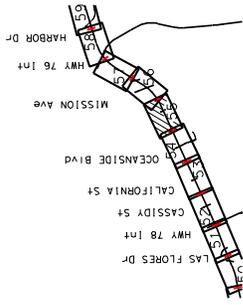
PARTIAL KEY MAP



LEGEND

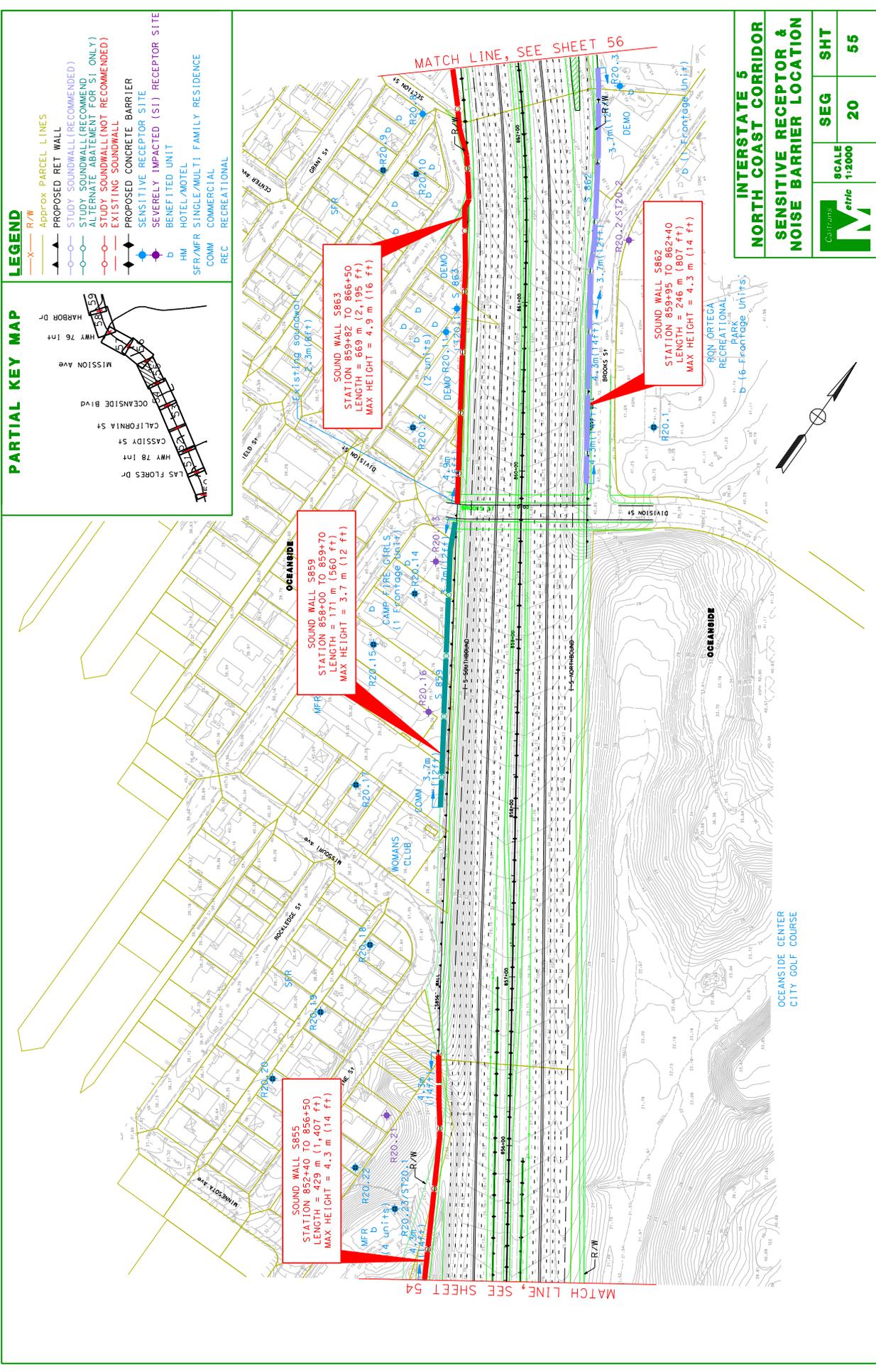
- X- R/W
- Approx PARCEL LINES
- Proposed RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- STUDY SOUNDWALL (NOT RECOMMENDED)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR (S1) RECEPTOR SITE
- SEVERELY IMPACTED (SI) RECEPTOR SITE
- BENEFITED UNIT
- b HOTEL/MOTEL
- HM HOTEL/MOTEL
- SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL

PARTIAL KEY MAP



LEGEND

- X R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- STUDY SOUNDWALL (NOT RECOMMENDED)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED UNIT
- BENEFITED UNIT
- HM HOTEL/MOTEL
- SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL



SOUND WALL S855
STATION 852+40 TO 856+50
LENGTH = 429 m (1,407 ft)
MAX HEIGHT = 4.3 m (14 ft)

SOUND WALL S859
STATION 858+00 TO 859+70
LENGTH = 171 m (560 ft)
MAX HEIGHT = 3.7 m (12 ft)

SOUND WALL S863
STATION 864+82 TO 866+50
LENGTH = 669 m (2,195 ft)
MAX HEIGHT = 4.9 m (16 ft)

SOUND WALL S862
STATION 859+95 TO 862+40
LENGTH = 246 m (807 ft)
MAX HEIGHT = 4.3 m (14 ft)

MATCH LINE, SEE SHEET 54

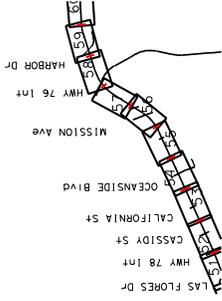
MATCH LINE, SEE SHEET 56

**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

	SCALE	SEG	SHT
	1:2000	20	55

OCEANSIDE CENTER
CITY GOLF COURSE

PARTIAL KEY MAP

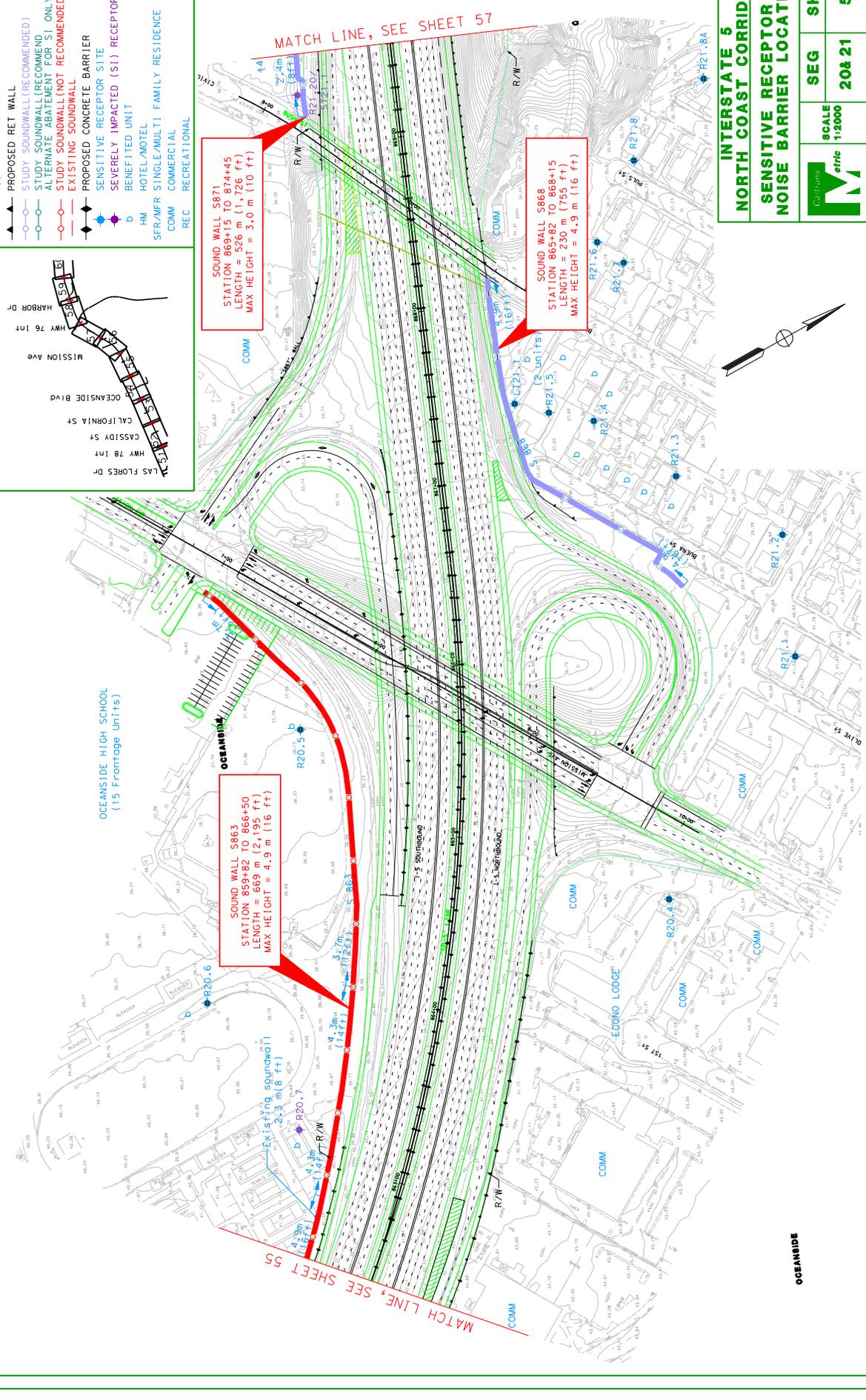


LEGEND

- X- R/W
- - - Approx PARCEL LINES
- - - PROPOSED RET WALL
- - - STUDY SOUNDWALL (RECOMMENDED)
- - - STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR SI ONLY)
- - - STUDY SOUNDWALL (NOT RECOMMENDED)
- - - EXISTING SOUNDWALL
- - - PROPOSED CONCRETE BARRIER
- - - SENSITIVE RECEPTOR SITE
- - - SEVERELY IMPACTED (S1) RECEPTOR SITE
- - - b HOTEL/MOTEL
- - - HM SINGLE/MULTI FAMILY RESIDENCE
- - - COMM COMMERCIAL
- - - REC RECREATIONAL

LEGEND

- - - SFR/MFR
- - - COMM
- - - REC



SOUND WALL S871
STATION 869+15 TO 874+45
LENGTH = 526 m (1,726 ft)
MAX HEIGHT = 3.0 m (10 ft)

SOUND WALL S868
STATION 865+82 TO 866+15
LENGTH = 230 m (755 ft)
MAX HEIGHT = 4.9 m (16 ft)

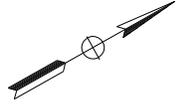
SOUND WALL S863
STATION 869+82 TO 866+50
LENGTH = 669 m (2,195 ft)
MAX HEIGHT = 4.9 m (16 ft)

MATCH LINE, SEE SHEET 55

MATCH LINE, SEE SHEET 57

**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

	SCALE	SEG	SHT
	1:2000	20& 21	56



OCEANSIDE

Segment 21

Noise Barrier S868

General

Type: Sound wall

I-5 Station limits: 865+82 to 868+15

Receptor sites: R21.3 through R21.5

Severely Impacted Receptors: None

Height: 4.9 meters (16 feet)

Location: Environmental Segment 21; see exhibit

Benefited Units: Eight single-family residences, two multi-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 66 to 74 dBA

Compared to existing (year 2005): negative four to one dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$480,000

Estimated Total Cost without Easements: \$457,327

Estimated Total Cost with Construction Easements only: \$457,327

Estimated Total Cost with all Easements: \$457,327

Reasonable Cost Allowance/Benefited Unit: \$48,000

Estimated Cost/Benefited Unit without Easements: \$45,733

Estimated Cost/Benefited Unit with Construction Easements only: \$45,733

Estimated Cost/Benefited Unit with all Easements: \$45,733

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 21, Sheet 56, of this NADR, noise barrier S868 would be located on Caltrans right-of-way along the northbound side of I-5, between Mission Avenue and Civic Center Drive. This area is represented by receiver sites R21.3 through R21.5. The noise barrier would extend for approximately 230 meters (755 feet) and would be partially founded on a proposed retaining wall. The height of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 4.9 meters (16 feet). The wall would benefit eight single-family residences and two multi-family residences and is considered feasible. There are no apparent easements that need to be acquired in order to construct S475. The estimated construction cost of S868 would be less than the reasonable cost allowance and so is considered reasonable.

Noise Abatement Decision

Construction of noise barrier S868 with all easements would be feasible and reasonable and is preliminarily recommended.

Noise Barrier S871

General

Type: Sound wall

I-5 Station limits: 869+15 to 874+45

Receptor sites: R21.12 through R21.18, and R21.20

Severely Impacted Receptors: R21.14, R21.18, and R21.20

Height: 2.4 meters (8 feet) and 3.0 meters (10 feet)

Location: Environmental Segment 21; see exhibit

Benefited Units: Nine single-family residences, 14 multi-family residences,
one recreation facility (four frontage units)

Predicted Noise Levels if Project Built without Abatement

Year 2030: 65 to 78 dBA

Compared to existing (year 2005): One to two dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$1,350,000

Estimated Total Cost without Easements: \$679,641

Estimated Total Cost with Construction Easements only: \$826,341

Estimated Total Cost with all Easements: \$939,468

Reasonable Cost Allowance/Benefited Unit: \$50,000

Estimated Cost/Benefited Unit without Easements: \$25,172

Estimated Cost/Benefited Unit with Construction Easements only: \$30,605

Estimated Cost/Benefited Unit with all Easements: \$34,795

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 21, Sheets 56 and 57, of this NADR, noise barrier S871 would be located on Caltrans right-of-way along the southbound side of I-5, between Mission Avenue and San Luis Rey - SR 76. This area is represented by receiver sites R21.12 through R21.18, and R21.20. The noise barrier would extend for approximately 526 meters (1,726 feet) and would be partially founded on a proposed retaining wall. The heights of the barrier required to achieve a 5 dBA or more insertion loss at the critical design receiver would be 2.4 meters (8 feet) and 3.0 meters (10 feet). The wall would benefit nine single-family residences, 14 multi-family residences, and one recreation facility, and is considered feasible. The estimated construction cost of S871 with all easements would be less than the reasonable cost allowance and so is considered reasonable.

Noise Abatement Decision

Construction of noise barrier S871 with all easements would be feasible and reasonable. S871 abates for severely impacted receptors, R21.14, R21.16, R21.18, and R21.20 and is preliminarily recommended.

Noise Barrier S875

General

Type: Sound wall

I-5 Station limits: 874+70 to 876+95

Receptor sites: R21.9 to R21.11

Severely Impacted Receptors: None

Height: 4.3 meters (14 feet) and 4.9 meters (16 feet)

Location: Environmental Segment 21; see exhibit

Benefited Units: Four single-family residences and one hotel/motel

Predicted Noise Levels if Project Built without Abatement

Year 2030: 66 to 73 dBA

Compared to existing (year 2005): Five to six dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: Yes

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$250,000

Estimated Total Cost without Easements: \$631,909

Estimated Total Cost with Construction Easements only: \$726,859

Estimated Total Cost with all Easements: \$810,867

Reasonable Cost Allowance/Benefited Unit: \$50,000

Estimated Cost/Benefited Unit without Easements: \$126,382

Estimated Cost/Benefited Unit with Construction Easements only: \$145,372

Estimated Cost/Benefited Unit with all Easements: \$162,173

<u>Reasonable without Easements:</u>	No
<u>Reasonable with Construction Easements only:</u>	No
<u>Reasonable with all Easements:</u>	No

Discussion

As shown in Segment 21, Sheet 57, of this NADR, noise barrier S875 would be located on Caltrans right-of-way along the southbound side of I-5, east of San Luis Rey – SR 76. This area is represented by receiver sites R21.9 to R21.11. The noise barrier would extend for approximately 227 meters (745 feet) and would be partially founded on a proposed retaining wall. The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 4.3 meters (14 feet) and 4.9 meters (16 feet). The wall would benefit four single-family residences and one hotel/motel and is considered feasible. The estimated cost of S875, when all easements are assumed eliminated, would be 153% above the reasonable allowance. When only temporary construction easements are included, the estimated cost exceeds the reasonable allowance by 191%. The estimated cost of the wall including costs for both temporary construction easements and footing easements would be 224% above the reasonable allowance.

Noise Abatement Decision

Construction of noise barrier S875 is feasible but not reasonable due to the estimated construction cost being higher than the total cost allowance for noise barrier S875. No severely impacted receptors exist for this wall that need to be abated for. Construction of noise barrier S875 is not recommended.

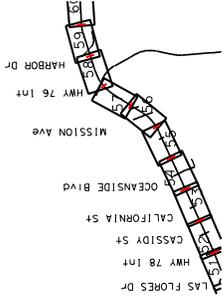
SEGMENT 21 - COST ANALYSIS

Sound Wall	# of Benefitted Residences	WALL CHARACTERISTICS					QUANTITIES					EASEMENTS		
		Height (m)	Length of Sound Wall on Retaining Wall (m)	Length of Sound Wall Not on Retaining Wall (m)	Excavation Depth (m)	Excavation Width (m)	Excavation and Backfill (cu m)	Demolition of existing sound walls/property walls (cu m)	Minor Concrete Sound Wall (cu m)	Temporary Construction Easements (sq m)	Footling Easements (sq m)	Total Easements (sq m)		
21.S868	10	4.9	113	116	1.22	410	0	160	0	0	0	0	0	0
21.S871	27	3.0	207	164	1.22	420	0	148	0	0	0	0	0	0
21.S875	5	4.9	16	107	1.22	379	0	148	0	0	0	0	0	0
		4.3	0	104	1.22	330	0	125	0	0	0	0	0	0

Sound Wall	# of Benefitted Residences	CONSTRUCTION COSTS					ADDITIONAL COSTS					EASEMENT COSTS		
		Sound Wall Masonry Cost (\$210/sq m)	Minor Concrete Sound Wall Cost (\$700/cu m)	Excavation and Backfill Cost (\$100/cu m)	Demolition Cost - sound wall/property wall (\$40/cu m)	Demolition Cost - wood fence (\$20/m)	Clearing & Grubbing (8% of Wall Cost)	Landscaping Cost (10% of Wall Cost)	Traffic Control Cost (5% of Wall Cost)	SWPPP Cost (5% of Wall Cost)	Construction Easements (\$150/sq m)	Footling Easements (\$370/sq m)	Total Easements	
21.S868	10	\$247,423	\$112,056	\$41,041	\$0	\$0	\$16,231	\$20,288	\$10,144	\$10,144	\$0	\$0	\$0	
21.S871	27	\$82,026	\$76,986	\$32,684	\$0	\$0	\$13,951	\$17,438	\$8,719	\$8,719	\$63,900	\$52,910	\$116,810	
		\$245,417	\$103,320	\$42,017	\$0	\$0	\$13,819	\$17,273	\$8,637	\$8,637	\$62,800	\$60,218	\$143,018	
21.S875	5	\$132,895	\$103,382	\$37,857	\$0	\$0	\$19,077	\$23,846	\$11,923	\$11,923	\$48,150	\$45,529	\$93,679	
		\$107,016	\$87,360	\$32,989	\$0	\$0	\$18,189	\$22,736	\$11,368	\$11,368	\$46,800	\$38,480	\$85,280	

Sound Wall	# of Benefitted Residences	TOTAL COSTS			COST PER BENEFITTED RESIDENCE			COST ALLOWANCE			REASONABLENESS		
		Estimated Total Cost (w/o Easements)	Estimated Total Cost (w/ Construction Easement Only)	Estimated Total Cost w/ Easements	Estimated Cost/Benefitted Residence (w/o Easements)	Estimated Cost/Benefitted Residence (w/ Construction Easement Only)	Estimated Cost Per Benefitted Residence w/ Easements	Reasonable Allowance Per Residence	Reasonable Total Allowance	Reasonable w/o Easements	Reasonable w/ Construction Easements Only	Reasonable w/ all easements	
21.S868	10	\$457,327	\$457,327	\$457,327	\$45,733	\$45,733	\$45,733	\$48,000	\$480,000	YES	YES	YES	
21.S871	27	\$673,641	\$626,341	\$939,468	\$25,172	\$30,605	\$34,795	\$50,000	\$1,350,000	YES	YES	YES	
21.S875	5	\$631,909	\$726,859	\$810,867	\$126,382	\$145,372	\$162,173	\$50,000	\$250,000	NO	NO	NO	

PARTIAL KEY MAP



LEGEND

- X- R/W
- - - Approx PARCEL LINES
- - - PROPOSED RET WALL
- - - STUDY SOUNDWALL (RECOMMENDED)
- - - STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR SI ONLY)
- - - STUDY SOUNDWALL (NOT RECOMMENDED)
- - - EXISTING SOUNDWALL
- - - PROPOSED CONCRETE BARRIER
- - - SENSITIVE RECEPTOR SITE
- - - SEVERELY IMPACTED (S1) RECEPTOR SITE
- - - b HOTEL/MOTEL
- - - HM SINGLE/MULTI FAMILY RESIDENCE
- - - COMM COMMERCIAL
- - - REC RECREATIONAL

LEGEND

- - - SOUND WALL S871
- - - STATION 869+15 TO 874+45
- - - LENGTH = 526 m (1,726 ft)
- - - MAX HEIGHT = 3.0 m (10 ft)
- - - SOUND WALL S868
- - - STATION 865+82 TO 866+15
- - - LENGTH = 230 m (755 ft)
- - - MAX HEIGHT = 4.9 m (16 ft)

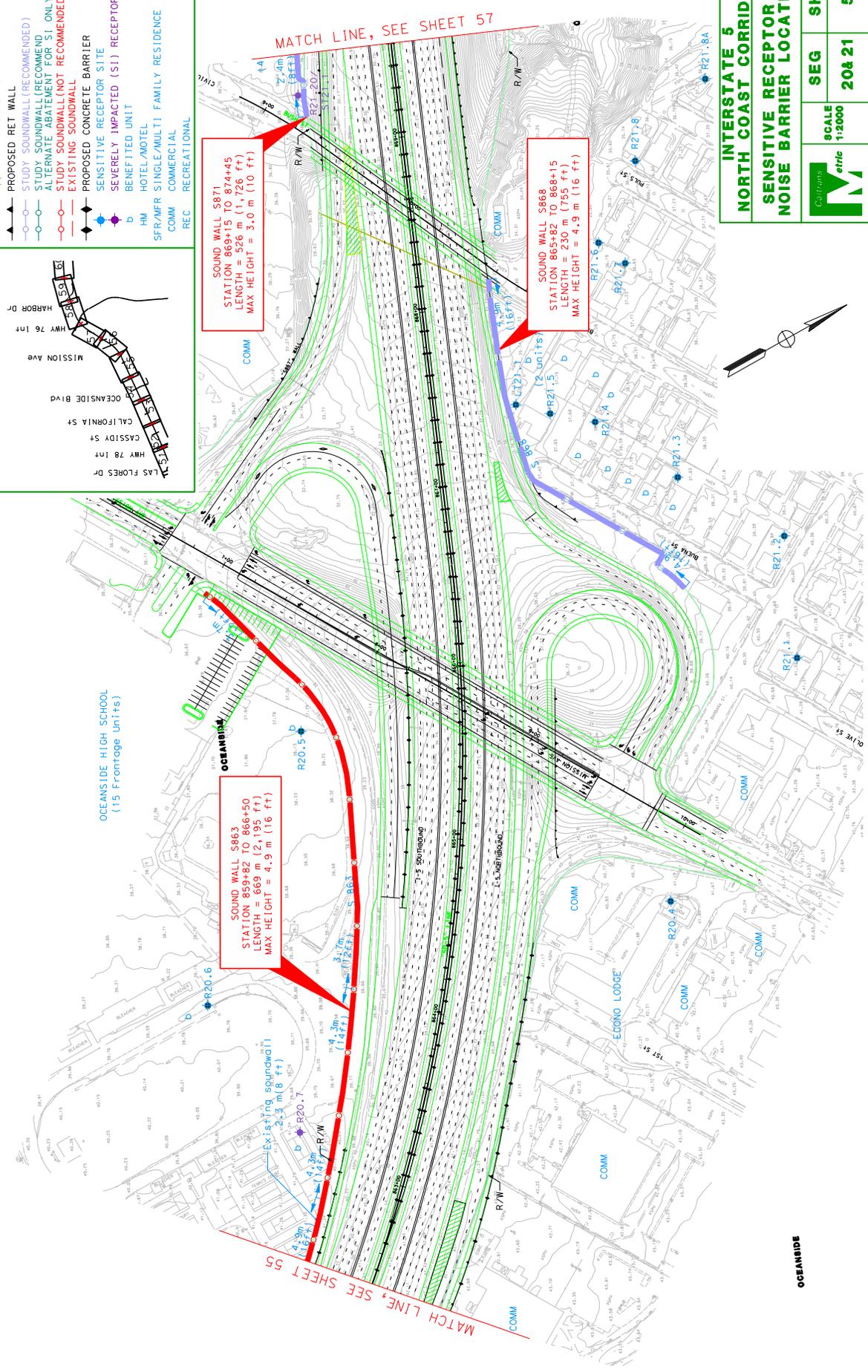
MATCH LINE, SEE SHEET 57

SOUND WALL S871
STATION 869+15 TO 874+45
LENGTH = 526 m (1,726 ft)
MAX HEIGHT = 3.0 m (10 ft)

SOUND WALL S868
STATION 865+82 TO 866+15
LENGTH = 230 m (755 ft)
MAX HEIGHT = 4.9 m (16 ft)

SOUND WALL S863
STATION 869+82 TO 866+50
LENGTH = 669 m (2,195 ft)
MAX HEIGHT = 4.9 m (16 ft)

MATCH LINE, SEE SHEET 55



**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

	SCALE	SEG	SHT
	1:2000	20& 21	56

OCEANSIDE

Segment 22

Noise Barrier S882

General

Type: Sound wall

I-5 Station limits: 881+08 to 882+95

Receptor sites: R22.2 through R22.5

Severely Impacted Receptors: R22.2, R22.4, R22.4A, and R22.5

Height: 3.7 meters (12 feet)

Location: Environmental Segment 22; see exhibit

Benefited Units: 11 single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 70 to 82 dBA

Compared to existing (year 2005): One to two dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$616,000

Estimated Total Cost without Easements: \$361,752

Estimated Total Cost with Construction Easements only: \$423,402

Estimated Total Cost with all Easements: \$469,023

Reasonable Cost Allowance/Benefited Unit: \$56,000

Estimated Cost/Benefited Unit without Easements: \$32,887

Estimated Cost/Benefited Unit with Construction Easements only: \$38,491

Estimated Cost/Benefited Unit with all Easements: \$42,638

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 22, Sheet 58, of this NADR, noise barrier S882 would be located on Caltrans right-of-way along the northbound side of I-5, between San Luis Rey – SR 76 and Capistrano Drive. This area is represented by receiver sites R22.2 through R22.5. The noise barrier would extend for approximately 189 meters (620 feet) and would be partially founded on a proposed retaining wall. The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 3.7 meters (12 feet). The wall would benefit 11 single-family residences and is considered feasible. The estimated construction cost of S882 with all easements would be less than the reasonable cost allowance and so is considered reasonable.

Noise Abatement Decision

S882 is feasible and reasonable without easements. The wall abates for severely impacted receptors, R22.2, R22.4, R22.4A, and R22.5, and is preliminarily recommended.

Noise Barrier S884

General

Type: Sound wall

I-5 Station limits: 883+15 to 885+45

Receptor sites: R22.6 through R22.8A

Severely Impacted Receptors: R22.6, R22.7, and R22.8

Height: 3.7 meters (12 feet)

Location: Environmental Segment 22; see exhibit

Benefited Units: Nine single-family residences

Predicted Noise Levels if Project Built without Abatement

Year 2030: 73 to 78 dBA

Compared to existing (year 2005): One to two dBA increase

Feasibility

5-dBA reduction: Yes

Noise reduction below NAC: No

Feasible: Yes

Reasonableness

Reasonable Total Cost Allowance: \$468,000

Estimated Total Cost without Easements: \$286,013

Estimated Total Cost with Construction Easements only: \$304,463

Estimated Total Cost with all Easements: \$318,116

Reasonable Cost Allowance/Benefited Unit: \$52,000

Estimated Cost/Benefited Unit without Easements: \$31,779

Estimated Cost/Benefited Unit with Construction Easements only: \$33,829

Estimated Cost/Benefited Unit with all Easements: \$35,346

<u>Reasonable without Easements:</u>	Yes
<u>Reasonable with Construction Easements only:</u>	Yes
<u>Reasonable with all Easements:</u>	Yes

Discussion

As shown in Segment 22, Sheets 58 and 59, of this NADR, noise barrier S884 would be located on Caltrans right-of-way along the northbound side of I-5, between Capistrano Drive and Harbor Drive. This area is represented by receiver sites R22.6 through R22.8A. The noise barrier would extend for approximately 226 meters (741 feet) and would be partially founded on a proposed retaining wall. The height of the barrier required to achieve an insertion loss of 5 dBA or more at the critical design receiver would be 3.7 meters (12 feet). The wall would benefit nine single-family residences and is considered feasible. The estimated construction cost of S884 with all easements would be less than the reasonable cost allowance and so is considered reasonable.

Noise Abatement Decision

S884 is feasible and reasonable with all easements. The wall abates for severely impacted receptors, R22.6, R22.7, and R22.8, and is preliminarily recommended.

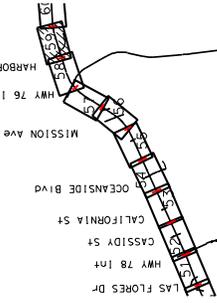
SEGMENT 22 - COST ANALYSIS

Sound Wall	# of Benefitted Residences	WALL CHARACTERISTICS				QUANTITIES					EASEMENTS		
		Height (m)	Length of Sound Wall on Retaining Wall (m)	Length of Sound Wall on Retaining Wall Not on Retaining Wall (m)	Excavation Depth (m)	Excavation Width (m)	Excavation and Backfill (cu m)	Demolition of wood fence (m)	Demolition of existing sound walls/property walls (cu m)	Minor Concrete Sound Wall (cu m)	Temporary Construction Easements (sq m)	Footing Easements (sq m)	Total Easements (sq m)
22.S882	11	3.7	189	50	1.22	2.4	407	0	0	150	411	123	534
22.S884	9	3.7	226	152	1.22	2.4	217	0	0	80	123	37	180

Sound Wall	# of Benefitted Residences	CONSTRUCTION COSTS				ADDITIONAL COSTS				EASEMENT COSTS		
		Sound Wall Masonry Cost (\$210/sq m)	Minor Concrete Sound Wall Cost (\$700/cu m)	Excavation and Backfill Cost (\$100/cu m)	Demolition Cost - wood fence (\$20/m)	Demolition Cost - sound wall/property wall (\$40/cu m)	Clearing & Grubbing (8% of Wall Cost)	Landscaping Cost (10% of Wall Cost)	Traffic Control Cost (5% of Wall Cost)	SWPPP Cost (5% of Wall Cost)	Construction Easements (\$150/sq m)	Footing Easements (\$370/sq m)
22.S882	11	\$154,196	\$105,084	\$40,899	\$0	\$0	\$17,650	\$22,062	\$11,031	\$61,650	\$45,621	\$107,271
22.S884	9	\$184,382	\$55,944	\$21,867	\$0	\$0	\$6,863	\$8,579	\$4,289	\$18,450	\$13,653	\$32,103

Sound Wall	# of Benefitted Residences	TOTAL COSTS			COST PER BENEFITTED RESIDENCE			COST ALLOWANCE			REASONABLENESS		
		Estimated Total Cost (w/o Easements)	Estimated Total Cost w/ Construction Easement Only)	Estimated Total Cost w/ Construction Easements	Estimated Cost/Benefitted Residence (w/o Easements)	Estimated Cost/Benefitted Residence (w/ Construction Easement Only)	Estimated Cost Per Benefitted Residence w/ Easements	Reasonable Allowance Per Residence	Reasonable Total Allowance	Reasonable w/o Easements	Reasonable w/ Construction Easements Only	Reasonable w/ all easements	
22.S882	11	\$361,752	\$423,402	\$469,023	\$32,887	\$38,491	\$42,638	\$56,000	\$616,000	YES	YES	YES	
22.S884	9	\$286,013	\$304,463	\$318,116	\$31,779	\$33,829	\$35,346	\$52,000	\$468,000	YES	YES	YES	

PARTIAL KEY MAP



LEGEND

- X R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- STUDY SOUNDWALL (NOT RECOMMENDED)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (S1) RECEPTOR SITE
- b BENEFITED UNIT
- HM HOTEL/MOTEL
- SFR/AMFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL

CAMP PENDLETON
MARINE BASE HOUSING

4.9m (16 ft)
Existing wall
on 1.2m (4 ft) berm

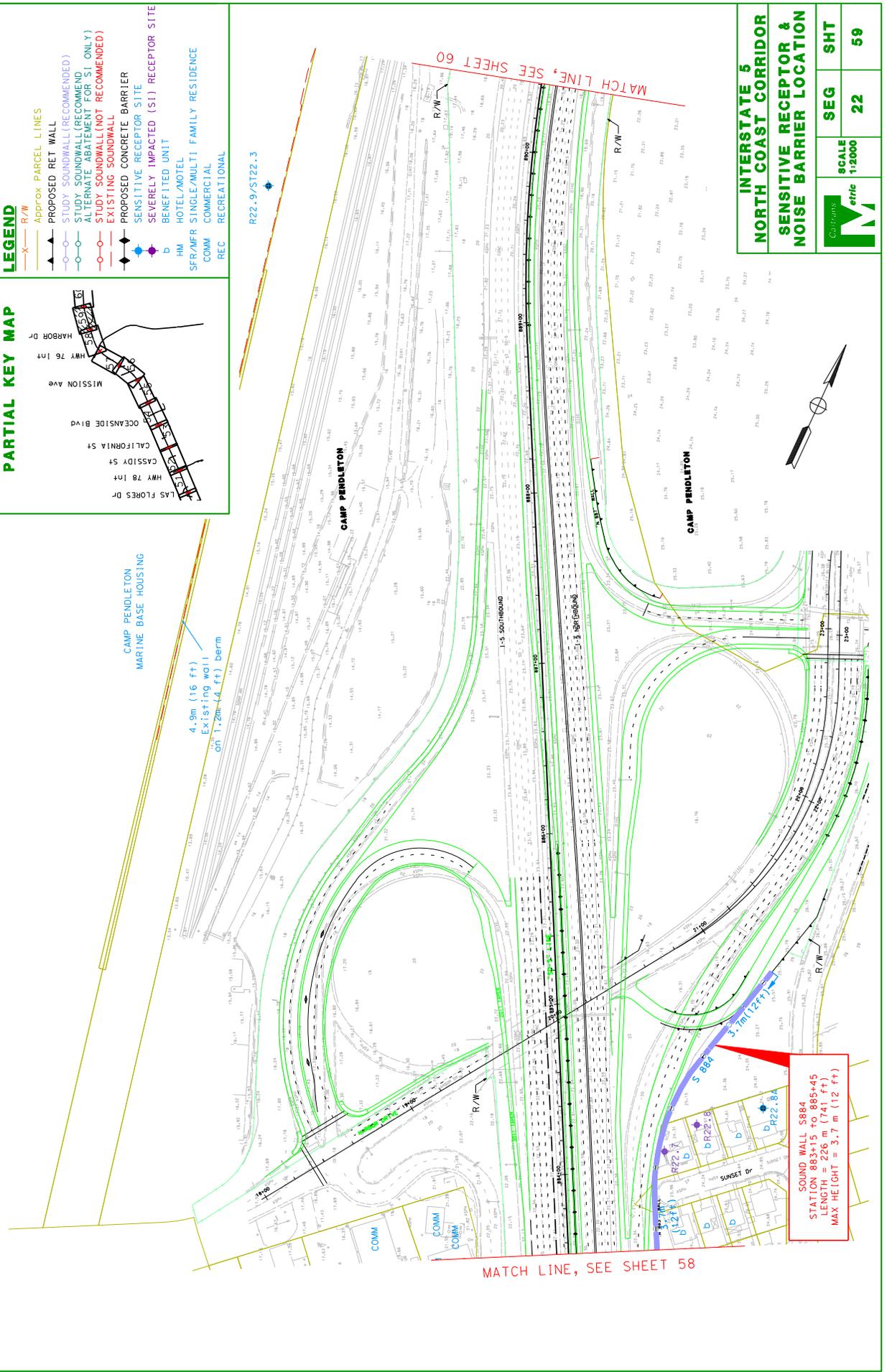
R22-9/ST22-3

MATCH LINE, SEE SHEET 60

MATCH LINE, SEE SHEET 58

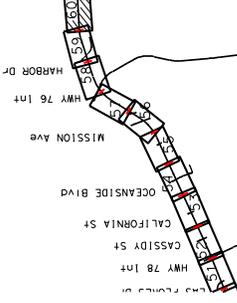
**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**

	SCALE	1:2000
	SEG	22
SHT	59	



SOUND WALL S884
STATION 863+15 TO 885+45
LENGTH = 226 m (741 ft)
MAX HEIGHT = 3.7 m (12 ft)

PARTIAL KEY MAP



LEGEND

- X- R/W
- Approx PARCEL LINES
- PROPOSED RET WALL
- ▲ STUDY SOUNDWALL (RECOMMENDED)
- STUDY SOUNDWALL (RECOMMEND ALTERNATE ABATEMENT FOR S1 ONLY)
- EXISTING SOUNDWALL
- PROPOSED CONCRETE BARRIER
- SENSITIVE RECEPTOR SITE
- SEVERELY IMPACTED (S1) RECEPTOR SITE
- b BENEFITED UNIT
- HM HOTEL/MOTEL
- SFR/MFR SINGLE/MULTI FAMILY RESIDENCE
- COMM COMMERCIAL
- REC RECREATIONAL

CAMP PENDLETON

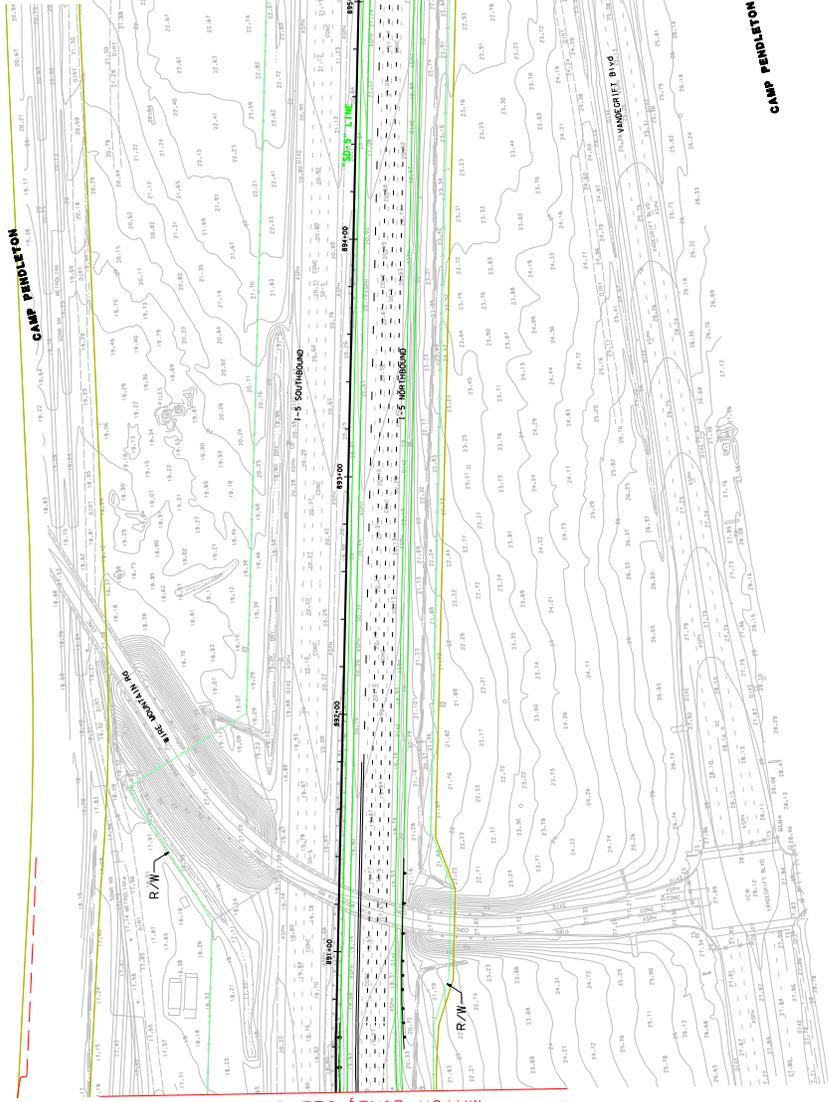
DU WYSE SPRK

US HIGHWAY

50-25 LINE

MANASCRIPT BLVD

CAMP PENDLETON



MATCH LINE, SEE SHEET 60

**INTERSTATE 5
NORTH COAST CORRIDOR
SENSITIVE RECEPTOR &
NOISE BARRIER LOCATION**



SCALE
1:2000

SEG	SHT
22	60

