

PROJECT DESCRIPTION: In Sonoma County, On Route 101, Modify Airport Boulevard Fulton Road Interchange Complex

Limits: From 0.3 miles south of Fulton Road Overcrossing to 0.5 miles north of Airport Boulevard Overcrossing

Proposed Improvement (Scope): Modify Interchange; Complete I/C at Airport Boulevard; Close Ramps Fulton Road

Build Alternative

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS		\$20,434,000
TOTAL STRUCTURES ITEMS		\$8,370,000
SUBTOTAL CONSTRUCTION COST	2009	<u>\$28,804,000</u>
TOTAL RIGHT OF WAY		\$4,588,000
TOTAL CAPITAL COST (2012) - (Escalated 3% per year)		<u>\$36,063,000</u>
SUBTOTAL CONSTRUCTION COST	2012	\$31,475,000

Approved by District Program Manager *Humbert P. Jimenez*
(Signature)

Date: 05/10/2010

Approved by Project Manager *[Signature]*
(Signature)

Date: 05/05/2010

Phone No. (510) 286-5800

I. ROADWAY ITEMS

<u>Section 1 - Earthwork</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Roadway Excavation	123,600	CY	\$ 10	\$ 1,236,000.00	
Imported Borrow	26000	CY	\$ 17	\$ 442,000.00	
Clearing & Grubbing	1	LS	\$ 50,000	\$ 50,000.00	
Develop Water Supply	1	LS	\$ 20,000	\$ 20,000.00	
	0		\$ -	\$ -	
	0		\$ -	\$ -	
	0		\$ -	\$ -	
				Subtotal: \$	1,748,000.00
<u>Section 2 - Pavement Section</u>					
PCC Pavement (xx.xx depth)	0		\$ -	\$ -	
PCC Pavement (xx.xx depth)	0		\$ -	\$ -	
Asphalt Concrete (Type A)	22000	TON	\$ 90	\$ 1,980,000.00	
Lean Concrete Base	2420	CY	\$ 125	\$ 302,500.00	
Aggregate Base (3)	14000	CY	\$ 42	\$ 588,000.00	
Treated Permeable Base	0		\$ -	\$ -	
Aggregate Subbase (4)	27200	CY	\$ 20	\$ 544,000.00	
Pavement Reinforcing Fabric	0		\$ -	\$ -	
Edge Drains	0		\$ -	\$ -	
Open Graded Friction Couse	550	TON	\$ 128	\$ 70,400.00	
	0		\$ -	\$ -	
	0		\$ -	\$ -	
				Subtotal: \$	3,484,900.00
<u>Section 3 - Drainage</u>					
Large Drainage Facilities	0		\$ -	\$ -	
Storm Drains	1	LS	\$ 800,000	\$ 800,000.00	
Pumping Plants	0		\$ -	\$ -	
Project Drainage	0		\$ -	\$ -	
(X-drains, overside, etc.)					
Minor Concrete box culvert	1500	CY	\$ 1,000	\$ 1,500,000.00	
Reinforcement box culvert	1	LS	\$ 100,000	\$ 100,000.00	
Temp. Creek Diversion Sys.	1	LS	\$ 150,000	\$ 150,000.00	
	0		\$ -	\$ -	
				Subtotal: \$	2,550,000.00

Section 6a - Minor Items

(Subtot. 1-5) x 10% = \$ 1,315,152.50

Subtotal: \$ 1,315,152.50

Sum of Subtotals Sections 1-6a

Sum Subtotal: \$ 14,466,677.50

Section 6b - Time Related Overhead

(Subtot. 1-6a) x 5% = \$ 723,333.88

Subtotal: \$ 723,333.88

Sum of Subtotals Sections 1-6

Sum Subtotal: \$ 15,190,011.38

Section 7 - Roadway Mobilization

(Subtot. 1-6a) x 10% = \$ 1,446,667.75

Subtotal: \$ 1,446,667.75

Section 8 - Roadway Additions

State FM/Supplemental Work:

(Subtot. 1-6) x 10% = \$ 1,519,001.14

Contingencies:

(Subtot. 1-6) x 15% = \$ 2,278,501.71

Subtotal: \$ 3,797,502.84

TOTAL ROADWAY ITEMS

(Subtotal Sections 1-8)

Roadway Sum Subtotal: \$ 20,434,181.97

Estimate Prepared By:

Abeer Aqrabawi

(Print Name)

Phone#

(510) 286-4735 Date 02/24/10

Estimate Checked By:

Fred Witteborn

(Print Name)

Phone#

(510) 286-4859 Date 04/30/10

II. STRUCTURES ITEMS (continued)

Bridge Name	<u>Airport Boulevard Overcrossing (Replace)</u>	
Structure Type	CIP/PS Box Girder	
Width, Length (m)		
Footing Type	Pile	
Total Area (m2)		
Cost per m2 (incl. Mob. & Cont.)	\$	-
Total Cost for Structure		\$ 4,677,000.00

Bridge Name	<u>Airport Boulevard NB Off Ramp Bridge</u>	
Structure Type	CIP/PS Slab	
Width, Length (m)		
Footing Type	Pile	
Total Area (m2)		
Cost per m2 (incl. Mob. & Cont.)	\$	-
Total Cost for Structure		\$ 1,189,000.00

Bridge Name	<u>Mark West Creek Bridge (Widen)</u>	
Structure Type	CIP Slab	
Width, Length (m)		
Footing Type	Pile	
Total Area (m2)		
Cost per m2 (incl. Mob. & Cont.)	\$	-
Total Cost for Structure		\$ 504,000.00

Subtotal of Bridge Items: \$ 6,370,000.00

Railroad Costs:

Item	\$	-
Item	\$	-

Subtotal of Railroad Items: \$ -

Non-Standard Retaining Walls

Retaining Wall 1	\$	2,000,000
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Subtotal Retaining Walls: \$ 2,000,000.00

TOTAL STRUCTURES ITEMS

Structures Sum Subtotal: \$ 8,370,000.00

(Subtotal Bridge + Rail)

III. RIGHT OF WAY ITEMS

	Escalated Value
Acquisition Cost (Includes Damages and Goodwill)	\$ 3,593,000.00
Utility Relocation Cost	\$ 897,138.00
Relocation Assistance	\$ -
Clearance/Demolition	\$ -
Title and Escrow Fees	\$ 32,500.00
Grantor's Appraisal Cost	\$ 65,000.00

Right of Way Sum Total: \$ 4,587,638.00

Right of Way Estimate Prepared: 8/19/2009

Right of Way Certification Date: 7/1/2011

SUMMARY OF PROJECT COST ESTIMATE

SUBTOTAL ROADWAY	\$ 20,434,181.97
SUBTOTAL STRUCTURES	\$ 8,370,000.00
SUBTOTAL CONSTRUCTION COSTS	<u>\$ 28,804,181.97</u>
RIGHT OF WAY TOTAL	\$ 4,587,638.00
TOTAL PROJECT CAPITAL OUTLAY COSTS	<u>\$ 33,391,819.97</u>

T0: Design North Counties

Date

August 19, 2009

Dist 4 Co SON Rte 101 PM
25.0/27.0
EA 3A2300

Attention: Fred Witteborn
Project Engineer

From: ENID LAU
Right of Way Resource Manager

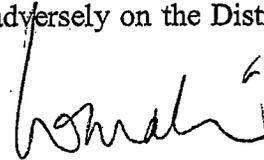
Airport Fulton I/C Modification
D.S. #5653 (Alt 5)

Subject: Current Estimated Right of Way Costs

We have completed an estimate of the right of way costs for the above referenced project based on maps we received from you on May 12, 2009 and the following assumptions and limiting conditions.

- 1. The mapping did not provide sufficient detail to determine the limits of the right of way required.
- 2. The transportation facilities have not been sufficiently designed so our estimator could determine the damages to any of the remainder parcels affected by the project.
- 3. Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.
- 4. This estimate does not include \$ _____ right of way costs previously incurred on the project, which may affect the total project right of way costs for programming purposes.
- 5. We have determined there are no right of way functional involvements in the proposed project at this time, as designed.

Right of Way Lead Time will require a minimum of 18 months after we begin receiving final right of way requirements (PYPSCAN node No. 224), necessary environmental clearance has been obtained, and freeway agreements have been approved. From the date of receipt of final right of way requirements (PYPSCAN node No. 265), we will require a minimum of 14 months prior to the date of certification of the project. Shorter lead times will require either more right of way resources or an increased number of condemnation suits to be filed. Either of these actions may reflect adversely on the District's other programs or our public image generally.



Right of Way Resource Manager

Attachments:

- Right of Way Data Sheet – Page One (always required)
- Right of Way Data Sheet – All Pages (required when interest in real property is being acquired)
- Utility Information Sheet
- Railroad Information Sheet

RIGHT OF WAY DATA SHEET
Son-101-PM 25.6/26.9

ATTACHMENT F

RIGHT OF WAY DATA SHEET

TO: Design North Counties Date 8/6/09 D.S. # 5653

Dist 04 Co Son Rte 101 PM 25.0/27.0

ATTN: Jonathan Lee EA 04-3A2301

Project Description: Airport/Fulton I/C Modification

SUBJECT: Right of Way Data – Alternate No. _____

1. Right of Way Cost Estimate:

	Current Value (Future Use)	Escalation Rate	Escalated Value
A. Acquisition, including Excess Lands, Damages, and Goodwill.	\$ <u>3,593,000.00</u>	%	\$ <u>3,593,000.00</u>
Project Permit Fees			\$ <u>0.00</u>
Environmental Mitigation			\$ <u>0.00</u>
Grantor's Appraisal Cost			\$ <u>65,000.00</u>
B. Utility Relocation (State Share)	\$ <u>897,138.00</u>	%	\$ <u>897,138.00</u>
C. Relocation Assistance	\$ <u>0.00</u>	%	\$ <u>0.00</u>
D. Clearance/Demolition	\$ <u>0.00</u>	%	\$ <u>0.00</u>
E. Title and Escrow Fees	\$ <u>32,500.00</u>	%	\$ <u>32,500.00</u>
F. <u>TOTAL ESCALATED VALUE</u>			\$ <u>4,587,638.00</u>
G. Construction Contract Work	\$ <u>0.00</u>	RT	\$ <u>4,588,000.00</u>

2. Anticipated Date of Right of Way Certification 7/2011

3. Parcel Data:

Type	Dual/Appr	Utilities	RR Involvements	
X		U4-1	None	X
A <u>3</u>		-2	C&M Agrmt	
B <u>10</u>	<u>1</u>	-3 <u>2</u>	Svc Contract	
C		-4		Design
D		U5-7		Const.
E <u>XXXX</u>		-8 <u>4</u>	Lic/RE/Clauses	
F <u>XXXX</u>		-9		
			Misc R/W Work	
			RAP Displ	<u>0</u>
			Clear Demo	<u>0</u>
			Const. Permits	<u>0</u>
			Condemnation	<u>3</u>
Total	<u>13</u>			

Areas: Right of Way 8.756 Acres No. Excess Parcels 109 Excess _____

Enter PMCS Screens 8 / 10 / 109 by M.C. [Signature]

Enter AGRE Screen (Railroad data only) _____ / _____ / _____ by _____

(Handwritten initials)

4. Are there any major items of construction contract work?
Yes No (If yes, explain)

5. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.). No right of way required

13 parcels are required for this project. They include both fee and utility easements. Subject properties include vineyards, row crops, commercial land and residential land. No major improvements are affected however, development plans are in the approval stages on one of the subject properties. One billboard is within the required area.

6. Is there an effect on assessed valuation?
Yes Not Significant No (If yes, explain)

7. Are utility facilities or rights of way affected? Yes No
(If yes, attach Utility Information Sheet Exhibit 01-01-05)

8. Are railroad facilities or rights of way affected? Yes No
(If yes, attach Railroad Information Sheet Exhibit 01-01-06)

9. Were any previously unidentified sites with hazardous waste and/or material found?
Yes None evident (If yes, attach memorandum per Procedural Handbook Volume 1, Section 101.011)

10. Are RAP displacements required? Yes No
(If yes, provide the following information)

No. of single family	_____	No. of business/non profit	_____
No. of multi-family	_____	No. of farms	_____

Based on Draft/Final Relocation Impact Statement/Study dated _____, it is anticipated that sufficient replacement housing (will/will not) be available without Last Resort Housing.

11. Are there material borrow and/or disposal sites required? Yes No
(If yes, explain)

12. Are there potential relinquishments and/or abandonments? Yes No
(If yes, explain)

13. Are there any existing and/or potential Airspace sites? Yes No
(If yes, explain)

14. Are there Environmental Mitigation costs? Yes No
(If yes, explain)

Per the coop that covers this project, SCTA will pay for mitigation estimated to be \$1,000,000.

15. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if District proposes less than PMCS lead time and/or if significant pressures for project advancement are anticipated.)

PYPSCAN lead time (from Regular R/W to project certification) 18 months

16. Is it anticipated that all Right of Way work be performed by CALTRANS staff?
Yes No (If no, discuss)

Assumptions and Limiting Conditions

- This data sheet was completed without a hazardous waste/materials report.
- Information on this data sheet was based on maps provided by Jonathan Lee on 5/12/09.

Evaluation Prepared By: Renata Frey

Right of Way: Name Renata Frey Date 8/16/09

Railroad: Name Amtrak Date 9/19/09

Utilities: Name Appraisal Date 8/10/09

Recommended for Approval:

[Signature]

Right of Way Capital Cost Coordinator

I have personally reviewed this Right of Way Data Sheet and all supporting information. It is my opinion that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the limiting conditions set forth, and find this Data Sheet complete and current.

[Signature]
Chief, R/W Appraisal Services

8/19/09
Date

cc: Program Manager
Project Manager

UTILITY INFORMATION SHEET

1. Utility Owners located within project limits:

PG&E, Santa Rosa Sewer Dist., Comcast, AT&T, Town of Windsor water

2. Facilities potentially impacted by project (if known, include Owner(s) and facility type(s)):

Electrical, Water, TV cable, Telephone, Sewer, Gas

3. Anticipated Workload:

- Utility Verification required
- Positive Identification
- Utility Relocation
- Other (Specify)

4. Additional information concerning anticipated utility involvements (include limiting conditions and a narrative addressing likelihood that conflicts will occur);

Involves possible relocation of electric transmission facilities
(If X'd, Data sheet should be forwarded to environmental)

5. PMCS Input information

U4-1 Owner Expense Involvements

U4-2 State Expense Involvements
(Conventional, No Fed Aid)

U4-3 2 State Expense Involvements
(Freeway, No Fed Aid)

U4-4 State Expense Involvements
(Conventional or Freeway, No Fed Aid)

U5-7 Verifications-without involvements

U5-8 4 Verifications-50% involvements

U5-9 Verifications resulting in involvements

NOTE: The sum of the U-4's must equal the sum of 1/2 of the U5-8's and all of the U5-9's.

ESTIMATED STATE SHARE OF COSTS \$897,138.00

Prepared by: Edgar Velez


Right of Way Utility
Coordinator

Date 8/10/09

Airport Blvd. / Fulton Rd. Right of Way Acquisition Areas

EA 3A2300

SONOMA COUNTY	APN number	Acres needed for Project widening	Acres needed for Utility easement	Sheet number
Vineyard Creek	059-230-081	0.83		5 + 7
Ginn, Harry L & Grace A Trust	059-240-066	0.06		6
Airport Business Center	059-350-080	0.10		7 + 8
Abbondanza LLC	059-230-062	0.06		6
Abbondanza LLC	059-230-061	0.27		6 + 7
Abbondanza LLC	059-230-056	1.08		7
California-American Water Co.	059-230-050	0.57	0.28	7
Sonoma Co Ag Preservation & Open Sp Dist	059-230-040	0.45	0.05	4 + 7
Sonoma Co Ag Preservation & Open Sp Dist	059-230-074	1.94	0.21	4
Bagley, Raymond C & Eleanor H Trust et al	059-230-076	2.76		4 + 5
Larkfield Oaks	059-230-079	0.05		4
5185 Fulton Road LLC	059-170-025	0.53		5
County of Sonoma	059-230-082	0.05		5
Finster, Chet & Durelle	059-284-021		0.05	7 + 8
Taipale, Dennis L & Kelly J	059-284-020		0.01	8
Total		8.75	0.60	

Airport Blvd. / Fulton Rd. Utility Relocation Information

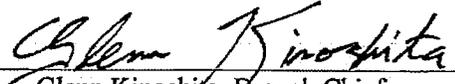
EA 3A2300		
Type of Utility	Length to be relocated	# of poles
AT&T Fiber Optic - Overhead	2100	2
AT&T Fiber Optic - Underground	270	N/A
AT&T Telephone - Overhead	2300	2
Comcast - Underground	2300	N/A
PG&E 2-12KV - Overhead	1000	2
PG&E 12KV - Overhead	3100	4
PG&E 75mm Gas	770	N/A
SRSD 530 mm with 600 mm Casing - Underground	610	N/A
Town of Windsor Water Dept 300 mm	780	N/A
Total	13230	10

Noise Abatement Decision Report

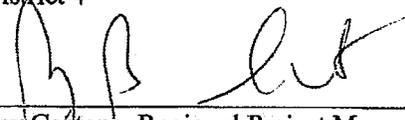
04-SON-101-25.9/26.33

04-3A2300

January 2010

Prepared By:  Date: 1/14/10
Glenn Kinoshita, Branch Chief
Office of Environmental Engineering
District 4

Approval Recommended By:  Date: 1/14/10
Fred Witteborn, Project Engineer
Office of Design North Counties
District 4

 Date: 1/14/10
Rey Cejtano, Regional Project Manager- Sonoma County
Office of Project Management North
District 4

Approved By:  Date: 1/14/10
Ziad AbuBekr, Office Chief
Office of Design North Counties
District 4

Approved By:  Date: 1/14/10
Allen Baradar, Office Chief
Office of Environmental Engineering
District 4

List of Abbreviated Terms

Caltrans	California Department of Transportation
dB	A measure of sound pressure level on a logarithmic scale
dBA	A-weighted sound pressure level
FHWA	Federal Highway Administration
Leq	Equivalent sound level (energy averaged sound level)
Leq[h]	A-weighted, energy average sound level during a 1-hour period
Benefited residence	A dwelling unit expected to receive a noise reduction of at least 5 dBA from the proposed abatement measure
Critical design receiver	The design receiver that is impacted and for which the absolute noise levels, build vs. existing noise levels, or achievable noise reduction will be at a maximum where noise abatement is considered
Planned, designed, and programmed	A noise-sensitive land use is considered planned, designed, and programmed when it has received final development approval (generally the issuance of a building permit) from the local agency with jurisdiction
Date of public knowledge	The date that a project is approved—approval of the final environmental documentation (e.g., Record of Decision) is complete
NSR	Noise study report
NADR	Noise Abatement Decision Report
NAC	Noise abatement criteria
ED	Environmental document
Reasonable allowance	A single dollar value—a reasonable allowance per benefited residence that embodies five reasonableness factors

1. Introduction

The Noise Abatement Decision Report (NADR) presents the preliminary noise abatement decision as defined in the Caltrans Traffic Noise Analysis Protocol (Protocol). This report has been approved by a California licensed professional civil engineer. The project level noise study report, "Noise Study Report-Highway 101 HOV Lane Widening and Improvement Project, Steele Lane in Santa Rosa to Windsor River Road in Windsor dated March 8, 2006" and technical memorandum, "Traffic Noise Impact Analysis for Highway 101/Airport Boulevard Interchange Revisions dated September 18, 2009", prepared for this project are hereby incorporated by reference.

1.1. Noise Abatement Assessment Requirements

Title 23, Code of Federal Regulations (CFR), Part 772 of the Federal Highway Administration (FHWA) standards (23 CFR 772) and the Caltrans Traffic Noise Analysis Protocol (Protocol) require that noise abatement be considered for projects that are predicted to result in traffic noise impacts. A traffic noise impact is considered to occur when future predicted design-year noise levels with the project "approach or exceed" Noise Abatement Criteria (NAC) defined in 23 CFR 772 or when the predicted design-year noise levels with the project substantially exceed existing noise levels. A predicted design-year noise level is considered to "approach" the NAC when it is within 1 dB of the NAC. A substantial increase is defined as being a 12-dB increase above existing conditions.

23 CFR 772 requires that noise abatement measures that are reasonable and feasible and are likely to be incorporated into the project be identified before adoption of the final environmental document.

The Protocol establishes a process for assessing the reasonableness and feasibility of noise abatement. Before incorporating noise abatement into a project, a *preliminary noise abatement decision* is made. The preliminary noise abatement decision is based on the *feasibility* of evaluated abatement and the *preliminary reasonableness determination*. Noise abatement is considered to be acoustically feasible if it provides noise reduction of at least 5 dBA at receivers subject to noise impacts. Other nonacoustical factors relating to geometric standards (e.g., sight distances), safety, maintenance, and security can also affect feasibility.

The preliminary reasonableness determination is made by calculating an allowance that is considered to be a reasonable amount of money, per benefited residence, to spend on abatement. This *reasonable allowance* is then compared to the engineer's cost estimate for the abatement. If

the engineer's cost estimate is less than the allowance, the preliminary determination is that the abatement is reasonable. If the cost estimate is higher than the allowance, the preliminary determination is that abatement is not reasonable.

The NADR presents the preliminary noise abatement decision based on acoustical and nonacoustical feasibility factors and the relationship between noise abatement allowances and the engineer's cost estimate. The NADR does not present the final decision regarding noise abatement; rather, it presents key information on abatement to be considered throughout the environmental review process, based on the best available information at the time the draft environmental document (ED) is published. The final overall reasonableness decision will take this information into account, along with other reasonableness factors identified during the environmental review process. These factors may include:

- impacts of abatement construction,
- public and local agency input,
- life cycle of abatement measures,
- views/opinions of impacted residents, and
- social, economic, environmental, legal, and technological factors.

At the end of the public review process, the final noise abatement decision is made and will be documented in the record of meeting for a public information meeting where the NADR will be made available for comment. The preliminary noise abatement decision will become the final noise abatement decision unless compelling information received during the public review process indicates that it should be changed.

1.2. Purpose of the Noise Abatement Decision Report

The purpose of the NADR is to:

- summarize the conclusions of the NSR relating to acoustical feasibility and the reasonable allowances for abatement evaluated,
- present the engineer's cost estimate for evaluated abatement,
- present the engineer's evaluation of nonacoustical feasibility issues,
- present the preliminary noise abatement decision, and
- present preliminary information on secondary effects of abatement (impacts on cultural resources, scenic views, hazardous materials, biology, etc.).

The NADR does not address noise barriers or other noise-reducing treatments required as mitigation for significant adverse environmental effects identified under the California Environmental Quality Act (CEQA).

1.3. Project Description

This project is a freeway interchange modification project on Route 101 in Sonoma County from south of Fulton Road to north of Airport Boulevard, commonly referred to as "The Airport Boulevard/Fulton Road Interchange Complex." It will convert the two existing partial interchanges at Fulton Road and at Airport Boulevard into a single complete interchange by modifying the off ramps and on ramps at Airport Boulevard, making it a complete interchange, and eliminating the off ramps and on ramps at Fulton Road. Additionally, the project will replace the existing two-lane Airport Boulevard Overcrossing at Route 101 with a new five-lane overcrossing bridge structure.

This project is a "child" project related to a "parent" project to widen Route 101 from four to six lanes for HOV from Steele Lane in Santa Rosa to Windsor River Road in Windsor. The "parent" project was split into several "children". One of the "children" is the HOV widening and is currently in construction. This project to modify the Airport / Fulton Complex, is another "child."

The current "build" alternative has the following features:

- Remove existing Airport Boulevard Overcrossing and Construct new five-lane overcrossing bridge structure.
- Construct new NB off ramp to Airport Boulevard. Includes construction of two-lane bridge over Mark West Creek.
- Construct modified NB on ramp from Airport Boulevard.
- Construct modified SB on ramp from Airport Boulevard. Includes bridge widening of existing SB mainline bridge structure at Mark West Creek.
- Construct modified SB off ramp to Airport Boulevard.
- Construct new SB loop on ramp from Airport Boulevard.
- Remove all off ramps and on ramps to/from Fulton Road.
- Local street improvements including street paving for four thru lanes plus turn pockets at Airport Boulevard within the limits of the interchange.
- Construction of pedestrian and bicycle facilities on Airport Boulevard within the limits of the interchange.

1.4. Affected Land Uses

Land uses within the project limits are residential and commercial.

2. Results of the Noise Study Report

The NSR for this project was prepared by Parsons on September 18, 2009.

Descriptions of the feasible soundwalls are presented in this section. An analysis with barrier heights ranging from 8 to 16 feet was conducted for the impacted areas. The locations of the proposed barriers, receptor locations, and the design of the interchange are shown in figures 1 and 2 of appendix A. More complete information regarding the impacted receptors can be found in the noise study and technical memorandum.

Table 1 shows the summary of the minimum heights and lengths for feasible barriers as well as the reasonableness allowance costs per barrier.

Soundwall S67

Soundwall S67 would be located along the shoulder of the Airport Boulevard on-ramp to southbound Highway 101 between on-ramp stations 72+00 and 62+00. This soundwall would provide feasible noise abatement for the outdoor use areas of eight multi-family residences represented by Receptors R35 to R35D.

Soundwall S82

Soundwall S82 would be located along the right-of-way of northbound Highway 101 between stations 74+00 and 90+00. This soundwall would provide feasible traffic noise abatement for 11 single-family residences represented by Receptors R34C through R38C and R38A through R38D.

Table 1. Summary of Barrier Evaluation from Noise Study Report							
Barrier	Location	Station	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S67	ES	72+00 to 62+00	8	No	0	N/A	N/A
			10	Yes	2	\$39,000	\$78,000
			12	Yes	6	\$39,000	\$234,000
			14	Yes	8	\$39,000	\$312,000
			16	Yes	11	\$41,000	\$451,000
S82	ROW	74+00 to 90+00	8	Yes	3	\$55,000	\$165,000
			10	Yes	5	\$57,000	\$285,000
			12	Yes	9	\$57,000	\$513,000
			14	Yes	11	\$57,000	\$627,000
			16	Yes	11	\$57,000	\$627,000

3. Preliminary Noise Abatement Decision

3.1. Summary of Key Information

Table 2 summarizes key information including the estimated construction costs, which have been updated from the estimates shown in the September 18, 2009 technical memo to reflect the latest design information.

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Estimated Construction Cost	Cost Less than Allowance?
S67	8	No	0	N/A	N/A	N/A
	10	Yes	2	\$78,000	\$470,000	No
	12	Yes	6	\$234,000	\$515,000	No
	14	Yes	8	\$312,000	\$565,000	No
	16	Yes	11	\$451,000	\$630,000	No
S82	8	Yes	3	\$165,000	\$495,000	No
	10	Yes	5	\$285,000	\$635,000	No
	12	Yes	9	\$513,000	\$780,000	No
	14	Yes	11	\$627,000	\$857,000	No
	16	Yes	11	\$627,000	\$1,060,000	No

3.2. Nonacoustical Factors Relating to Feasibility

There are no nonacoustical factors relating to the feasibility of the aforementioned noise abatement.

3.3. Preliminary Recommendation and Decision

Based on the preceding information the preliminary noise abatement decision is as follows:

Barrier No. S67 has been determined to be feasible, but not reasonable.

Barrier No. S82 has been determined to be feasible, but not reasonable.

The preliminary noise abatement decision presented in this report is based on preliminary project alignments and profiles, which may be subject to change. As such, the physical characteristics of noise abatement described herein also may be subject to change. If pertinent parameters change

substantially during the final project design, the preliminary noise abatement decision may be changed or the proposed abatement may be eliminated from the final project design.

The preliminary noise abatement decision presented here is subject to public review and will be available for comment at a public meeting. After the NADR has been reviewed at the public meeting, the final decision will be documented in the record of the meeting.

4. Secondary Effects of Abatement

Secondary effects refers to additional impacts such as those on cultural resources, scenic views, hazardous materials, biology, etc. For the aforementioned abatement, no secondary effects have been identified.

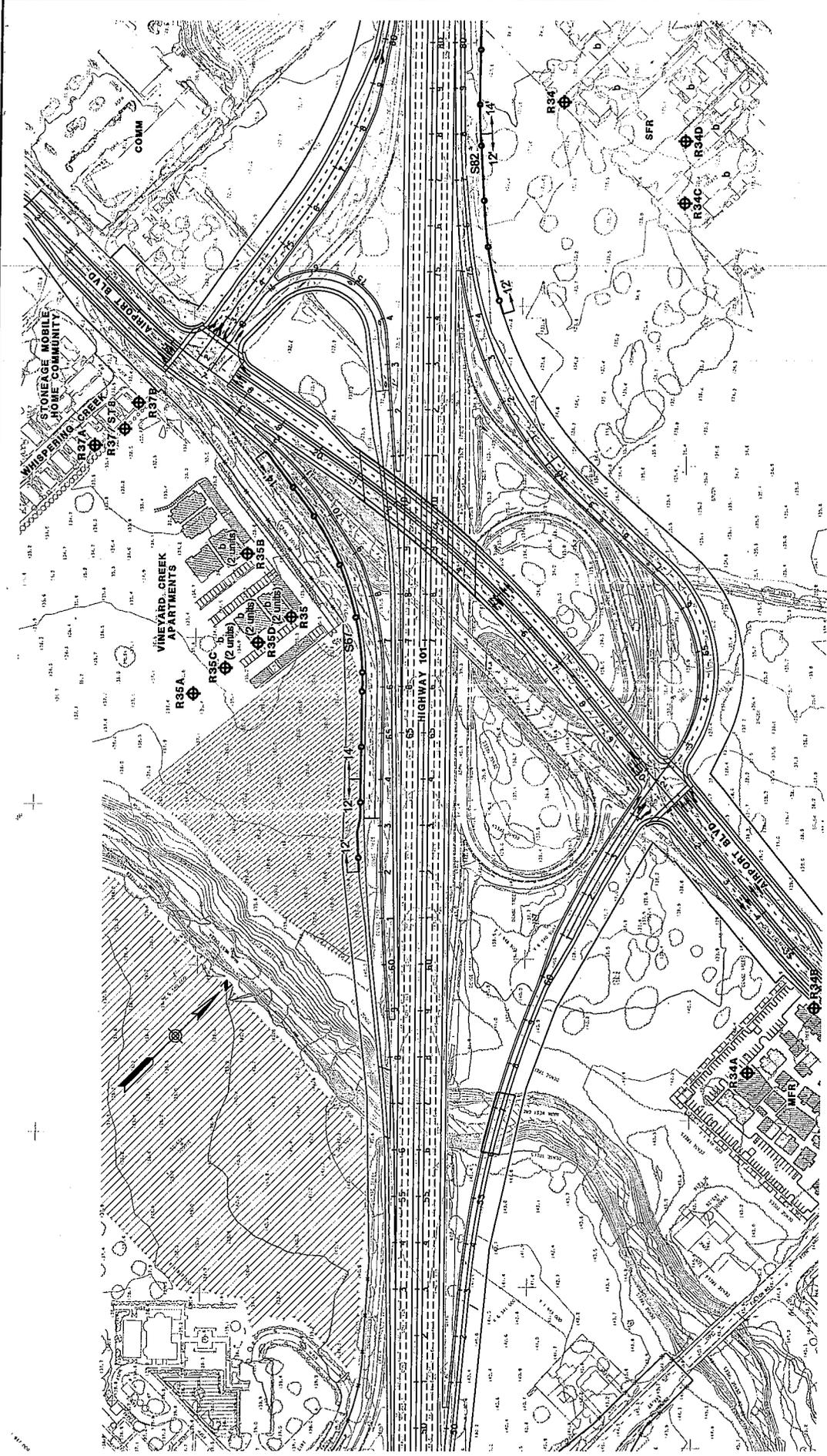
5. References

Books, Journal Articles, Reports: Caltrans Traffic Noise Analysis Protocol (August, 2006)

Caltrans' noise policy website: <http://pd.dot.ca.gov/env/noise/html/noisepolicy.htm>

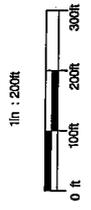
Appendix A

Figure 1 & Figure 2: Project Design, Soundwall locations, and receptor locations.



LEGEND

- ⊕RS - SENSITIVE RECEPTOR SITE
- ⊕ST - SHORT TERM MEASUREMENT
- ⊕LT - LONG TERM MEASUREMENT
- SOUNDWALL
- EXISTING WALL
- b - BENEFITED RESIDENCE
- SFR - SINGLE FAMILY RESIDENCE
- MFR - MULTI-FAMILY RESIDENCE
- COMM - COMMERCIAL

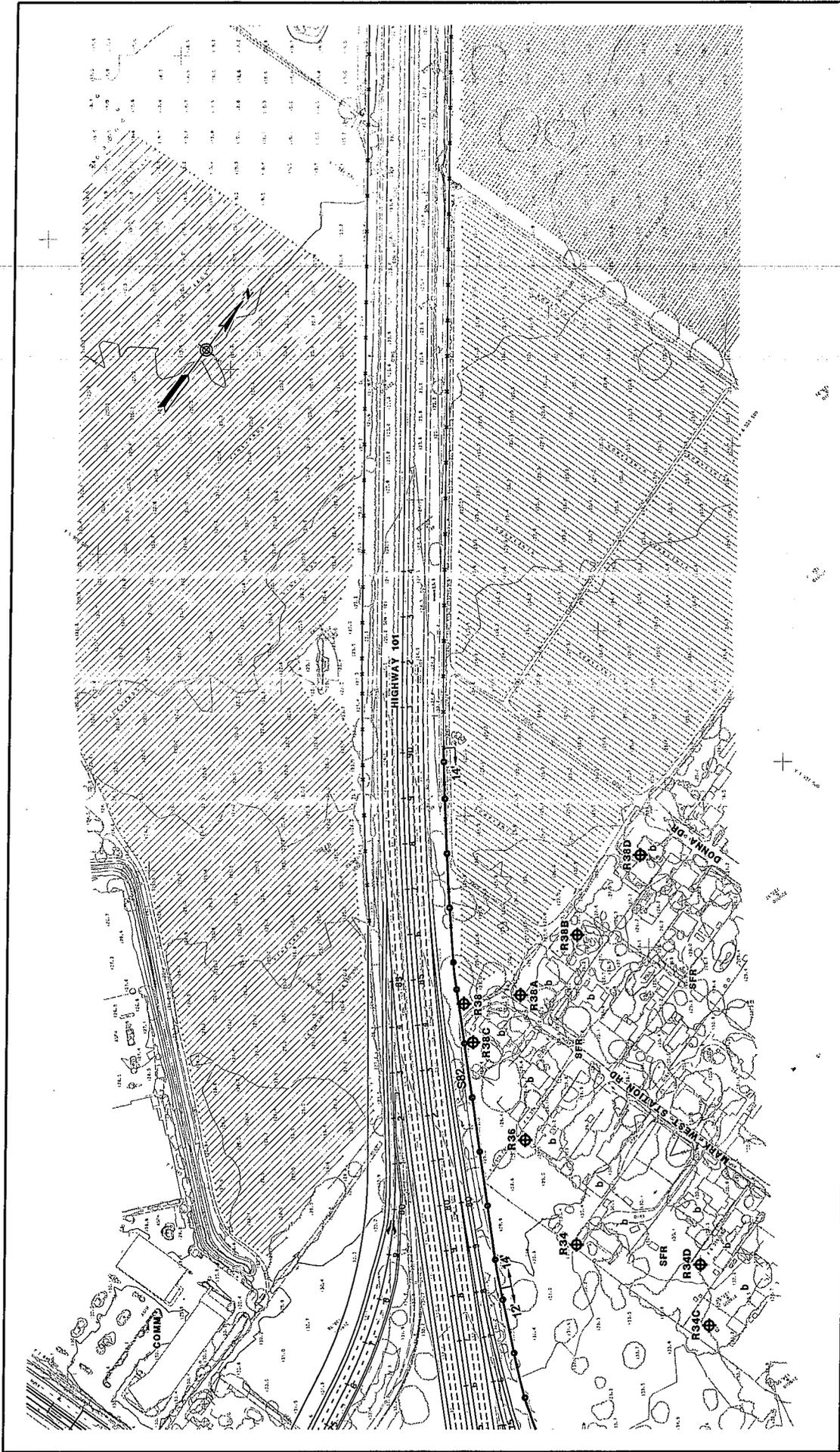


PARSONS
 100 WEST WALNUT ST.
 PASADENA, CA 91104
 (626) 440-6100

**HIGHWAY 101 IMPROVEMENT
 PROJECT - AIRPORT BLVD
 NOISE RECEPTOR &
 BARRIER LOCATIONS**

SEPTEMBER 14, 2009

FIGURE 1



<p>LEGEND</p> <ul style="list-style-type: none"> ⊕ - SENSITIVE RECEPTOR SITE ⊕ - SHORT TERM MEASUREMENT ⊕ - LONG TERM MEASUREMENT ⊕ - SOUNDWALL ⊕ - EXISTING WALL 	<p>1 in = 200ft</p> <p>0 ft 100ft 200ft 300ft</p>	<p>PARSONS 100 WEST WALNUT ST. PASADENA, CA 91104 626.601.4400-6400</p>	<p>HIGHWAY 101 IMPROVEMENT PROJECT - AIRPORT BLVD NOISE RECEPTOR & BARRIER LOCATIONS</p> <p>SEPTEMBER 14, 2008</p> <p>FIGURE 2</p>
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Memorandum



*Flex your power!
Be energy efficient!*

To: MR. JONATHAN LEE
District Branch Chief
Office Of Design North Counties

Date: October 8, 2009

File: 4-SON-101 PM 25.6/26.9

Attention: Fred Witteborn

4-3A230K/0A10U1
Modify Interchange
Airport Bl./Fulton Rd.

From: BRIAN W. BARBER
Materials Design Engineer
Office Of Engineering Services I - Materials B

Subject: PS&E Materials Recommendations

This memorandum is in response to your September 23, 2009 memorandum requesting Materials recommendations for the PS&E project (EA 3A230K/EA 0A10U1) proposing to modify the existing Sonoma 101/Airport Boulevard-Fulton Road Interchange Complex, located in Sonoma County from PM 25.6 to PM 26.9. We understand the proposed new interchange complex will be constructed with new and modified ramps at Airport Boulevard making it a "complete" interchange, with all ramps at Fulton Road to be removed. Airport Boulevard will be widened to 4 lanes, including turn pockets. The project also proposes to replace the existing two lane Airport Boulevard Overcrossing with a new five lane bridge structure. In addition, you have requested our office to provide pavement structural sections for Route 101 mainline, shoulders, and gore areas within the project limits.

We understand this project is a "child" project split from the "parent" EA 0A10U4 project currently under construction for HOV widening along Highway 101 from Bicentennial Way in Santa Rosa to Windsor River Road in Windsor.

The following information was provided to us for our review with your 9/23/09 memorandum:

- Draft Plan Map-Sonoma 101, Airport Boulevard I/C, Alternative 5 (EA 3A2300), Updated 8/5/2009.
- Plan Sheets 1 through 8, Scale 1" = 100', undated.

Mr. Jonathan Lee
Attn: Fred Witteborn
October 8, 2009
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Pavement Engineering Design Parameters

Traffic Index (T.I.) information used for pavement structural section design was provided in the 9/23/09 memorandum. We understand the T.I. data was developed by an outside consultant for this project. For design of the Route 101 mainline, mainline shoulders, and gore areas we used a design T.I. = 13.5. For Airport Boulevard we used a design T.I. = 11.5. For the proposed new Airport Boulevard Interchange On- and Off-ramps we used a design T.I. = 10.0.

Subgrade soil R-values for pavement structural section design were based on soil samples obtained and tested from locations within or near the project area. For new pavement design in cut areas we used an R-value = 5. An R-value = 15 was used for new pavement to be constructed on engineered fill.

ROUTE 101 MAINLINE WIDENING, OUTSIDE SHOULDERS, AND GORE AREA NEW PAVEMENT STRUCTURAL SECTION DESIGN

Design Parameters: T.I._{20-yr.} = 13.5; Cut: R-value = 5; G.E. (min. req.) = 4.17
Fill: R-value = 15; G.E. (min. req.) = 3.73

<u>Cut:</u>	**OGFC	<u>HMA(A)</u>	<u>LCB</u>	<u>AS(4)</u>	<u>Total Thickness</u>
	0.10'	0.65'	0.70'	1.80'	3.25'
<u>Fill:</u>	**OGFC	<u>HMA(A)</u>	<u>LCB</u>	<u>AS(4)</u>	<u>Total Thickness</u>
	0.10'	0.65'	0.70'	1.35'	2.80'

Notes:

HMA(A) = Hot Mix Asphalt, Type A
LCB = Lean Concrete Base
AS(4) = Class 4 Aggregate Subbase
G.E. = Gravel Equivalent (in feet)

** If there is existing Open Graded Friction Course (OGFC) located in a downgradient direction on Route 101 adjacent to the proposed new pavement widenings then OGFC should be placed as the final pavement course for drainage continuity to the outside edge of pavement.

- Pavement design for fill assumes there are 3 or more feet of engineered fill over native soil, otherwise the pavement design selected should be as given for the cut design.
- The new outside mainline shoulders are to have the same structural section as the new mainline pavement widenings.

Mr. Jonathan Lee
Attn: Fred Witteborn
October 8, 2009

Page 3

- Remove existing AC shoulders at the traveled-way prior to construction of the new outside mainline pavement widenings. **Note:** Review current/future Route 101 as-built plans to ensure there would be no shoulder removal if the shoulders are shown to have already been constructed to meet the full mainline T.I. = 13.5 within these project limits.
- For the proposed new mainline/ramp gore areas use the full mainline (T.I. = 13.5) design as provided above for a distance of at least 23 feet (7 meters) as measured from the gore starting point.
- Consider recycling and reusing the existing shoulder materials as Class 4 Aggregate Subbase [AS(4)] for the new pavement sections if current Caltrans specification requirements for AS(4) can be met.

AIRPORT BOULEVARD NEW PAVEMENT STRUCTURAL SECTION DESIGN

Design Parameters: T.I._{20-yr.} = 11.5; Cut: R-value = 5; G.E. (min. req.) = 3.55
Fill: R-value = 15; G.E. (min. req.) = 3.18

<u>Cut:</u>	<u>HMA(A)</u>	<u>AB(3)</u>	<u>AS(4)</u>	<u>Total Thickness</u>	
		0.55'	0.95'	1.50'	3.00'
<u>Fill:</u>	<u>HMA(A)</u>	<u>AB(3)</u>	<u>AS(4)</u>	<u>Total Thickness</u>	
	0.55'	0.95'	1.10'	2.60'	

FULL DEPTH HMA OPTION

<u>Cut:</u>	<u>HMA(A)</u>	<u>AS(4)</u>	<u>Total Thickness</u>
	1.45'	0.33'	1.78'
<u>Fill:</u>	<u>HMA(A)</u>	<u>AS(4)</u>	<u>Total Thickness</u>
	1.33'	0.33'	1.66'

Notes: HMA(A) = Hot Mix Asphalt, Type A
AB(3) – Aggregate Base, Class 3
AS(4) – Aggregate Subbase, Class 4
G.E. = Gravel Equivalent (in feet)

- Pavement sections designed on fill requires 3 or more feet of engineered fill over native soil, otherwise the pavement design selected should be as given ~~for the cut design.~~
- Consider using the "Full Depth" pavement section design option only in cases where there are narrow (i.e. less than 6' width) pavement sections requiring constructability

Mr. Jonathan Lee
Attn: Fred Witteborn
October 8, 2009
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considerations, otherwise use the HMA/AB/AS layered pavement sections as provided above.

AIRPORT BOULEVARD NEW ON/OFF RAMP PAVEMENT STRUCTURAL SECTION DESIGN

Design Parameters: T.L._{20-yr.} = 10.0; Cut: R-value = 5; G.E. (min. req.) = 3.09
Fill: R-value = 15; G.E. (min. req.) = 2.76

<u>Cut:</u>	<u>HMA(A)</u>	<u>AB(3)</u>	<u>AS(4)</u>	<u>Total Thickness</u>
	0.55'	0.85'	1.25'	2.65'

<u>Fill:</u>	<u>HMA(A)</u>	<u>AB(3)</u>	<u>AS(4)</u>	<u>Total Thickness</u>
	0.55'	0.85'	0.95'	2.35'

FULL DEPTH HMA OPTION

<u>Cut:</u>	<u>HMA(A)</u>	<u>AS(4)</u>	<u>Total Thickness</u>
	1.20'	0.33'	1.53'

<u>Fill:</u>	<u>HMA(A)</u>	<u>AS(4)</u>	<u>Total Thickness</u>
	1.10'	0.33'	1.43'

Notes: HMA(A) = Hot Mix Asphalt, Type A
AB(3) – Aggregate Base, Class 3
AS(4) – Aggregate Subbase, Class 4
G.E. = Gravel Equivalent (in feet)

- Pavement sections designed on fill requires 3 or more feet of engineered fill over native soil, otherwise the pavement design selected should be as given ~~for the cut design~~.
- Consider using the "Full Depth: pavement section design option only in cases where there are narrow (i.e. less than 6' width) pavement sections requiring constructability considerations, otherwise, use the HMA/AB/AS pavement sections as provided above.
- Consider recycling and reusing the existing shoulder materials as Class 4 Aggregate Subbase [AS(4)] for the new pavement sections if current Caltrans specification requirements for AS(4) can be met.

Mr. Jonathan Lee
Attn: Fred Witteborn
October 8, 2009
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HMA OVERLAYS ON EXISTING RAMP PAVEMENT

If there are plans to construct new pavement widenings adjacent to existing ramp pavements we recommend placing a 0.10' HMA(A) overlay on the existing pavement to provide a final finished pavement surface across the entire ramp pavement section. The 0.10' overlay should be incorporated with the final HMA lift of the adjacent new pavement section. Prior to any new AC overlays on existing AC pavements conduct a field review to identify specific areas showing severe distress including rutting greater than 3/5", loose spalling pavement, or alligator cracking. Digout the identified distress areas up to a 6" maximum depth, or to the depth of the existing pavement AC layer, **which ever is less**. Repair the digout areas with HMA(A) [3/4" Maximum Medium Grade]. Seal all cracks wider than 2/10". Squeegee off excess sealant.

UNDERDRAINS

In cut areas susceptible to seasonal ground water intrusion underdrains should be considered. Underdrain trenches should extend a minimum of 3 feet below the **bottom** of the new pavement sections at the outside edges of the pavements in cut. The underdrain trenches would consist of Permeable Material (PM) and an 8" diameter perforated plastic pipe with the entire PM and pipe wrapped with filter fabric to prevent contamination with fines.

If you have any comments or questions, please contact Brian Barber at 622-5490.

c: Daily File, Route File

BBarber/dg/SON-101, Airport Blvd. Overcrossing I/C EA 3A230K/0A10U1



Dist-County-Route 04-Son-101
Kilometer Post (Post Mile) Limits 34.9/47.2 (21.7/29.3)
Project Type: Freeway Widening
EA: 0A1000
RU: 04276
Program Identification: 20.XX.075.651 (HB5)
Phase: PID PA/ED PS&E

Regional Water Quality Control Board(s): North Coast Region

Is the project required to consider incorporating Treatment BMPs? Yes No
If yes, can Treatment BMPs be incorporated into the project? Yes No

If No, a Technical Data Report must be submitted to the RWQCB at least 30 days prior to Advertisement. List submittal date: _____

Total Disturbed Soil Area: 32 ha / 80 ac

Estimated Construction Start Date: 8/2008 Construction Completion Date: 12/2011

Notification of Construction (NOC) Date to be submitted: 6/2008

Notification of ADL reuse (if Yes, provide date) Yes Date TBD No

Separate Dewatering Permit (if Yes, permit number) Yes Permit # TBD No

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the data upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

Richard S. Bottcher
Registered Project Engineer

7/28/06
Date

I have reviewed the storm water quality design issues and find this report to be complete, current, and accurate:



Ray Akkawi
Ray Akkawi, Project Manager 8/2/2006
Date

Robert W. Braga
Robert Braga, Designated Maintenance Representative 8/2/2006
Date

Kathleen Jenkins
Kathleen Jenkins, Designated Landscape Architect Representative 8/2/2006
Date

Andree Ochoa
Andree Ochoa, District/Regional SW Coordinator or Designee 8/15/06
Date