BAIFA
BAY AREA INFRASTRUCTURE FINANCING AUTHORITY

BAY AREA INFRASTRUCTURE FINANCING AUTHORITY
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December 6, 2013
Addendum No. 2
to
REQUEST FOR PROPOSALS
BAIFA Express Lane Network
Toll System Integration & Maintenance
dated November 7, 2013

Dear Consultant:

This letter is Addendum No. 2 to the Request for Proposals BAIFA Express Lane Network Toll System Integration & Maintenance, dated November 7, 2013 (RFP). Where text is revised, deleted text is shown in strike-through format; added text is ***italicized***. The RFP is revised as follows:

Addendum Item	Reference	Change
1.	RFP Section IX. Form of Proposal, page 8	BAIFA must receive any requests for clarification of or exceptions to RFP requirements no later than **4:00 p.m. PST, Thursday, November 21, 2013** to guarantee consideration. ***Requests for clarifications of or exceptions to this Addendum No. 2 and Questions and Answers (No. 1) and (No. 2) must be received by BAIFA no later than 4:00 p.m. PST, Wednesday, December 11, 2013 to guarantee consideration***.
2.	RFP, Section VII. Selection Timetable, page 8	***December 11, 2013 at 4:00 p.m.*** — ***Closing Date and time for Requests for Clarification & Exceptions on Addendum No. 2 and Questions and Answers (No. 1) and (No. 2).*** ~~November 27~~ ***December 20***, 2013 — Final addendum issued
3.	RFP Section IX. Form of Proposal, page 11	The Proposal copies shall contain only Proposal Sections 1~~,~~ ***and*** 2~~, and 3~~. The CD shall contain ~~all sections~~ Sections 1, 2, and 3, excluding Proposal Section 5 Financial Responsibility Qualifications ***and Section 4 Cost Proposal. Section 4 Cost Proposal shall be provided on a separate CD included in the separate and sealed envelope with the hardcopy Cost Proposal.***

(Continued)

Addendum Item	Reference	Change
4.	RFP Section IX. Form of Proposal, page 12	See Addendum 2, Appendix 1, attached hereto, for a revised Table 2: Proposal Organization & Mandatory Page Limits.
5.	RFP Section IX. Form of Proposal, Subsection B.5, page 24	***Proposal Section 2.5.5*** shall include a sample Maintenance Management Plan as requested under instructions for *Proposal Section 2.2.4 – ~~Operations &~~ Maintenance.*
6.	RFP Appendix 1 Attachment A-1 - System Requirements, page 3	[Signage and Pricing, Para. 1] Each VTMS will display ***in near real time*** the current toll rate for travel in that Zone on the top line of the sign. The VTMS will also ***in near real time*** display the toll rate for travel along the whole Segment (i.e., to the next major destination) on the second line from the top.
7.	RFP Appendix 1 Attachment A-1 - System Requirements, page 8	Req. 1.3.4.8 All lane equipment shall be fused or circuit breaker protected against over current, over voltage and~~,~~ ***and*** under voltage ~~and lightning~~.
8.	RFP Appendix 1 Attachment A-1 - System Requirements, page 25	Req. 3.5.4.1 The TSI shall provide computing capabilities to display all real time monitoring and CCTV generated graphics (i.e. situational awareness displays, including: roadway schematics, traffic conditions, and toll rate information; map displays and User selected GUI displays) as controlled from the dedicated monitoring workstations ***at the Caltrans TMC Toll Roadway Operations Center.*** ***Req. 3.5.4.2 The TSI shall provide a High Definition LCD matrix video wall, for a wall area approximately 8 feet wide by 6 feet high, and video wall controller in order to display all real time monitoring and CCTV generated graphics (i.e. situational awareness displays, including: roadway schematics, traffic conditions, and toll rate information; map displays and User selected GUI displays) as controlled from the dedicated monitoring workstations at the 375 Beale Toll Roadway Operations Center.***
9.	RFP Appendix 1 Attachment A-1 - System Requirements, page 25	Req. 3.5.5.1 The TSI shall provide ***4*** standard personal computer workstations, peripherals, and ***each with*** dual ***20" - 22" High Definition*** monitors for the 375 Beale Toll Roadway Operation Center. Req. ***3.5.5.2 The TSI shall provide 4 standard personal computer workstations, peripherals, and each with four- 20" - 22" High Definition monitors for the Caltrans TMC Toll Roadway Operation Center.*** Req. ~~3.5.5.2~~***3.5.5.3*** Workstations shall support up to four monitors in a

Addendum Item	Reference	Change
		large screen virtual format. Req. ~~3.5.5.3~~***3.5.5.4*** Workstations shall support simultaneous use of all delivered applications without performance degradation and loaded with the latest Microsoft Windows, and Microsoft Office Professional~~, and computer virus protection suite.~~
10.	RFP Appendix 1 Attachment A-1 - System Requirements, page 25	Req. 3.5.6.1 The TSI shall provide ~~a~~ ***one*** high-speed large format color laser printer that supports 11x17 print output ***at each Toll Roadway Operations Center.***
11.	RFP Appendix 1 Attachment A-1 - System Requirements, page 11	2.2.2.1 Correctly associate transponders to vehicles when the vehicles are traveling in the express lane, ~~straddling express and general purpose lanes~~, ***defined as a vehicle whose tires are within the express lanes or whose tires are on the pavement striping delineating the express lanes***, or traveling in the ***express lane*** shoulder.
12.	RFP Appendix 1 Attachment A-1 - System Requirements, page 12	Req. 2.2.2.3 ~~Provide all electronic interaction to the transponder and ensure that a transponder identification number is recorded only once per passage through the Read Point.~~
13.	RFP Appendix 1 Attachment A-1 - System Requirements, page 17	Req. ***2.6.2.4 The TSI shall maximize the characters the LED panel can display based on character size allowed by the MUTCD and the LED panel dimensions provided.***
14.	RFP Appendix 1 Attachment A-1 System Requirements, page 24	Req. 3.3.2.2.2 Two ~~Mittal~~ ***Rittal TS IT TS-82 Server Rack Cabinets*** ~~server rack cabinets~~ (42U) with 5KW of electrical power, ***rack model subject to change.***
15.	RFP Appendix 1 Attachment A-1, System Requirements, page 25	Req. 3.5.5.3 Workstations shall support simultaneous use of all delivered applications without performance degradation and loaded with the latest Microsoft Windows ***and*** Microsoft Office Professional~~, and computer virus protection suite.~~
16.	RFP Appendix 1 Attachment A-1 - System Requirements, page 31	Req. 3.9.5.4 The Host shall, ***in near real time,*** communicate to all VTMS within a Zone to display the same toll rates during the time period between toll rate updates.

Addendum Item	Reference	Change
17.	RFP Appendix 1 Attachment A-1 - System Requirements, page 36	Req. 3.9.10.4 The diagrams below provide sample scenarios to illustrate toll rate assignment concepts. Each of the colored cars is placed next to an entry below the Corridor graphic and an exit above the graphic, such that the direction of travel is from left to right. In this set of examples, there are two Segments along the Corridor, and each Segment contains three Zones. At any given time, all VTMS within a single Zone display the same toll rate ***in near real time***.
18.	RFP Appendix 1, Attachment A-1, System Requirements, page 46	***Req. 3.15.1.9 The TSI shall be responsible for providing any solution to support the web portal, including but not limited to hardware, network equipment, and measures to secure the Web portal from unauthorized access to the rest of the Host. BAIFA will provide communication services for the TSI to provide internet access for the Web Portal.***
19.	RFP Appendix 1 Attachment A-1, System Requirements, page 68	~~10.2.2.1 Preventive maintenance program – define and track preventive maintenance program activity, costs and system performance results.~~ ~~10.2.2.2 Supplier information – company name, contact person name, company address, telephone number(s), fax number(s) and email address.~~ ~~10.2.2.3 Equipment inventory – part or component supplier, location, serial number, purchase date, price, date placed into service, warranty expiration date, BAIFA asset number and part/component identification.~~ ~~10.2.2.4~~***10.2.2.1*** Error detection. ~~10.2.2.5~~***10.2.2.2*** Equipment conditions. ~~10.2.2.6~~***10.2.2.3*** Logical conditions/Business Rule exceptions.
20.	RFP Appendix 1, Attachment A-1, System Requirements, page 66	Req. 9.3.1.5.4 In locations where the Backhaul Network trunk fiber is located along the ***I-680 and I-880*** Corridor***s***, access to 12 strands of Backhaul Network trunk fiber will be made available to the TSI. ***Four (4) strands of fiber optic cable will be supplied for the SR-92 and SR-84 bridge approaches between the Toll plazas and the bridge sign banks.*** Access to more ~~than 12~~ strands of Backhaul trunk fiber is subject to availability of fiber strands and BAIFA approval. The TSI shall coordinate with BAIFA for access to any Backhaul network fiber strands.
21.		Not Used
22.		Not Used
23.	RFP Appendix 1, Attachment A-2, Implementation Requirements, page 45	Req. 12.1.13 ***For Source Code delivered to BAIFA in compliance with the Agreement, a***~~A~~ BAIFA designated and funded Third Party will follow the Source Code Documentation and load the Source Code on a server and compile it. The Third Party will provide written feedback if the compilation effort fails.

Addendum Item	Reference	Change
24.	RFP Appendix 1, Attachment A-2, Implementation Requirements, page 45	Req. 12.1.14 If the Third Party succeeds in compiling the Source Code, the TSI meets the ~~Third Party Source Code Compilation~~ ***Qualifying Event of the Software Source Code and Documentation for the Operations Test Milestone.***
25.	RFP Appendix 1, Attachment A-2, Implementation Requirements, page 22	***Req. 7.1.6.9 The TSI shall update the design and installation of VTMS LED panels and VTMS sign structures to apply lessons learned to subsequent Corridors.***
26.	RFP Appendix 1, Attachment A-2, Implementation Requirements, page 26	Req. 8.2.1 The TSI shall develop a TCP for the project, which will be submitted to BAIFA and Caltrans for review, comment and approval 60 Days before any field installation activity commences and updated as directed by Caltrans and BAIFA. ***The TCP shall include Lane Closure Charts, approved by Caltrans, prior to TCP submittals.***
27.	RFP Appendix 1, Attachment A-2, Implementation Requirements, page 26	Req. 8.3.5 The full width of traveled way shall be open for use by public traffic as shown in the table "Lane Closure Restriction for Designated Legal Holidays and Special Days" included in this section. Designated legal holidays are: January 1st, the third Monday in February, the last Monday in May, July 4th, the first Monday in September, November 11th, Thanksgiving Day, and December 25th. When a designated legal holiday falls on a Sunday, the following Monday shall be a designated legal holiday. When November 11th falls on a Saturday, the preceding Friday shall be a designated legal holiday. ***Lane closures will not be allowed as shown on the table below:***
28.	RFP Appendix 1, Attachment A-2, Implementation Requirements, page 27	Req. 8.4.1 The TSI shall provide a ~~full-time~~ traffic control coordinator throughout the duration of implementation. The traffic control coordinator shall cooperate with BAIFA, Caltrans and other project contractors.
29.	RFP Appendix 1, Attachment A-3, Maintenance Requirements, page 10	***Section 14. Annual Performance Audit*** ***Req. 14.1 After System Acceptance and on an annual basis, the TSI shall conduct an Annual Performance Audit to verify that system performance has not degraded over time and that the TCS continues to meet all functional requirements in the approved RTM. BAIFA will approve a Performance Audit Report that demonstrates that the TCS meets the performance and functional requirements.*** ***Req. 14.2 The TSI shall conduct the Performance Audit on the installed production TCS under live operational conditions.*** ***Req. 14.3 The Performance Audit shall use TCS transaction data, reports and MOMs data for at least the 30 days preceding the performance audit. In addition, test vehicles mixed with live traffic shall be used for controlled testing.***

<table>
<tr><th>Addendum Item</th><th>Reference</th><th>Change</th></tr>
<tr><td></td><td></td><td>

Req. 14.4 The TSI shall provide detailed Performance Audit plans and procedures for BAIFA approval prior to each performance test period.

Req. 14.5 The TSI shall produce a Performance Audit Report within 15 days of the completion of the Performance Audit procedures that documents the results of the test, identification of problems, and corrective action plans and schedules.

Section ~~14~~***15.*** End of Maintenance Period
Req. ~~14.1~~ 15.1 At the end of the Maintenance Period, items such as spares inventory, manuals, licenses and any other requirements necessary for another maintenance contractor to assume maintenance shall be turned over by the TSI to BAIFA.

</td></tr>
<tr><td>30.</td><td>RFP Appendix 1, Attachment B, Project Schedule & Milestone Dates, Page 2</td><td>
<table>
<tr><th>#</th><th>Milestone Name</th><th>Qualifying Event</th></tr>
<tr><td>1-3</td><td>Preliminary Design Approval</td><td>Preliminary Design Document
Updated Requirements Trace Matrix
Functional Demonstration Plan
OmniAir Certification Services' ISO 18000-6C Certification Report</td></tr>
<tr><td>1-4</td><td>Critical Design Approval</td><td>System Design Document (SDD)
Updated Requirements Traceability Matrix
~~OmniAir Certification Services' ISO 18000-6C Certification Report~~</td></tr>
</table>
</td></tr>
<tr><td>31.</td><td>RFP Appendix 1 Attachment C Performance Requirements and Penalties Table 3, page 6</td><td>
<table>
<tr><td>2.12</td><td>Trip Building</td><td>Trip Processing Time: The time from the last Lane Transaction to building the final Trip Transaction shall be no more than ~~three~~ ***six*** hours.

Rebuilt Trip Transactions shall be formed within ~~three~~ ***six*** hours from receiving new license plate information from the RCSC</td><td>~~3~~ ***6*** Hours</td></tr>
</table>
</td></tr>
<tr><td>32.</td><td>RFP Appendix 1 Attachment C Performance Requirements and Penalties, Table 1, page 1</td><td>See Addendum 2, Appendix 5, attached hereto, for a revised Table 1: Toll System Capacity and other Minimum Requirements.</td></tr>
</table>

<table>
<tr><th>Addendum Item</th><th>Reference</th><th>Change</th></tr>
<tr><td>33.</td><td>RFP Appendix 1 Attachment A-1 - System Requirements, page 69</td><td>Req. 9.3.1.5.3 Fiber optic cable can use available BAIFA designated conduit as identified in Reference 2, Diagrams, Drawings and Schematics. The use of any identified <s>empty</s> BAIFA designated conduit shall be coordinated with BAIFA.</td></tr>
<tr><td>34.</td><td>RFP Appendix 1, Reference 1, Glossary of Acronyms, Terms and Definitions, page 10</td><td><table><tr><td>Lane System (Express Lane Network Lane System)</td><td>The portion of the TCS that collects System Data from in-lane equipment, systems and sub-systems and processing the System Data for transmission to the Host. The Lane System includes the lane controller and in-lane equipment, and the operating systems, drivers, peripherals and interfaces. The Lane System includes the Software for maintenance and monitoring the lane level systems and subsystems. The Lane System does not include system or user interfaces with the Host. Lane System is also referred to as and is synonymous with “Roadside System”.</td></tr></table></td></tr>
<tr><td>35.</td><td>RFP Appendix 1, Reference 1, Glossary of Acronyms, Terms and Definitions, page 12</td><td><table><tr><td>Roadside System</td><td>See Lane System (Express Lane Network Lane System).</td></tr></table></td></tr>
<tr><td>36.</td><td>RFP Appendix 1 Reference 2A, Tolling Equipment Location</td><td>See Addendum 2, Appendix 6, attached hereto, for a new “Quantities by Corridor” Tolling Equipment Location Tables for I-680, I-880, SR 92, SR 84, and I-80. Electrical information columns have been added in place of “TBD”. For SR -92, at station 621+61, the “Cantilever Type” structure has been added.”</td></tr>
<tr><td>37.</td><td>RFP Appendix 1, Reference 3, Communications Network Conceptual Predesign, Page 5</td><td>At the ELN primary and secondary Host sites, the TSI provides and configures Layer 3 Ethernet <s>core</s> switches.</td></tr>
</table>

Addendum Item	Reference	Change
38.	RFP Appendix 1, Reference 3, Communications Network Conceptual Predesign, Page 5	Section 3 In other locations, ***there are*** existing small BAIFA and Caltrans fiber-optic cables at the San Mateo and Dumbarton toll plazas ~~may be replaced with new trunk fiber optic cable and that cable is shared with Caltrans.~~ ***, and the TSI will have access to four (4) strands of fiber optic cable between the Toll plazas and the bridge sign banks***
39.	RFP Appendix 1, Reference 3, Communications Network Conceptual Predesign, Page 7	Section 4.1.1 ~~Layer 3 Ethernet core switches~~
40.	RFP Appendix 1, Reference 3, Communications Network Conceptual Predesign, Page 8	Section 4.2.2 Coordination with other contractors and BAIFA to ensure sufficient reliable power for all network devices, with UPS power backup for ~~core~~ switching platforms and network devices
41.	RFP Appendix 1, Reference 3, Communications Network Conceptual Predesign, Page 12	Section 7. Ethernet Communications Hardware Furnish and install Ethernet communications hardware consisting of ~~managed Layer 3 Ethernet core switches,~~ managed Layer 3 Ethernet switches, and managed Ethernet edge switches (MEES), cabinets, and UPS.
42.	RFP Appendix 1, Reference 3, Communications Network Conceptual Predesign, Page 23	Section 7.2.2 Layer 3 Ethernet ~~Core~~ Switch Section 7.2.2.1 Install managed Layer 3 Ethernet ~~core~~ switches at the following locations:
43.	RFP Appendix 1, Reference 3, Communications Network Conceptual Predesign, Page 15	Section 7.1.2.8.3 Provide Layer 3 Ethernet switches having a minimum of twenty-four (24) optical 1000 Base-X ports capable of transmitting data at ~~10,000~~ ***1000*** Megabits per second. Provide optical ports designed for use with a pair of fibers; one fiber transmits data and one fiber receives data.
44.	RFP Appendix 1, Reference 3, Communications	Section 7.1.3.3.1 A minimum of two (2) Gigabit Interface Converter (GBIC)-based 10000Base-X ports for connection to the ***Backhaul*** communications ***network at Roadside-network to Backhaul-network***

Addendum Item	Reference	Change
	Network Conceptual Predesign, Page 18	***demarc locations.***
45.	RFP Appendix 1, Attachment A, Reference 4: Communications Network Conceptual Pre-Design, Page 34-39, Figures 1-5	See Addendum 2, Appendix 4, attached hereto, for updates to the Communications Network Conceptual Pre-Design, Page 34-39, Figures 1-5.
46.	RFP Appendix 2, Form "C" Series, Cost Proposal	See Addendum 2, Appendix 2, attached hereto, for a revised Cost Proposal Forms. (Note: Revised forms in the editable format will also be provided.)
47.	RFP Appendix 1, Reference 2, Typicals	See Addendum 2, Appendix 7, attached hereto, for revised typicals clarifying VES equipment mounting constraints for the side-fire option and the sign structure overhang distance over the express lane.
48.	RFP Appendix 1 Attachment C Performance Requirements and Penalties Table 3, page 7	Req. 3.2 Toll Collection System Availability: Essential (~~3~~***1***) Support (~~4~~***2***)
49.	RFP Appendix 1 Attachment C Performance Requirements and Penalties, page 1	Req. 1.2.3 To vehicles traveling through a single or a multiple lane Read Point***(s),*** ~~including vehicles straddling lanes or traveling up to two feet into either~~ ***traveling in the Express Lane shoulder*** ~~(i.e. express lane vehicles).~~
50.	RFP Appendix 1 Reference 2E Conduit Inventory Table	**NOTE:** This reference document lists the segments that have been identified as potentially available ***shared*** conduit sites for ***Roadside network*** communications installation. Segments in the conduit inventory table where the sizes are to-be-determined (TBD), conduits will be designed, furnished and installed by others.

The remaining provisions of the RFP remain unchanged. In the event of a conflict between this Addendum and the previous version(s), this Addendum takes precedence.

Questions and Answers (No. 2) is included with this Addendum.

Any questions concerning this Addendum to the RFP should be directed to Jim Macrae, Project Manager, at (510) 817-5714 or jmacrae@mtc.ca.gov.

Sincerely,

Andrew B. Fremier
Deputy Executive Director, Operations

AF:jm

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Addendum No. 2, Appendix 1

RFP Section IX, Page 12

Table 2: Proposal Organization and Mandatory Page Limits

PROPOSAL SECTION	Mandatory Page Limit
SECTION 1: Proposer Information (Original + Copies + CD)	
1.1 Transmittal Letter	2
1.2 Title Page	1
1.3 Table of Contents	No Page Limit
1.4 Company Overview & Qualifications	~~10~~15
1.5 Conflict of Interest Statement	No Page Limit
SECTION 2: Technical Proposal (Original + Copies + CD)	
2.1 Executive Summary	4
2.2 Work Plan	-
2.2.1 Tolling System	75
2.2.2 Roadside Communication Network	30
2.2.3 Implementation and Testing	30
2.2.4 ~~Operations and~~ Maintenance	20
2.2.5 Disposition/Issues Matrix (Form G)	No Page Limit
2.2.6 Preliminary Bill of Materials	No Page Limit
2.2.7 Software List	No Page Limit
2.3 Qualifications & Staff Experience	-
2.3.1 Project Organization and Staffing	5
2.3.2 Staff Qualifications and Résumés	2/résumé; 1/profile
2.3.3 ~~Proposer Project Experience~~Project Descriptions & References (including Form B)	2 (narrative only) plus form
2.4 Proposed Project Schedule	5 (narrative only)
2.5 Required Supplemental Documentation	-
2.5.1 Example Reports	100
2.5.2 System Design Work Plan	15
2.5.3 Sample Project Management Plan	No Page Limit
2.5.4 Subcontractor Management Plan	15
2.5.5 Sample Maintenance Management Plan	No Page Limit
~~2.6 Additional submittals and documentation (OPTIONAL)~~	~~No Page Limit~~
SECTION 3: Proposer Affirmations/Certifications (Original + CD)	
3.1 California Levine Act (Form D)	No Page Limit
3.2 Iran Contracting Act (Form E)	No Page Limit
3.3 Acknowledgement of Rights in Data Provisions (Form F)	No Page Limit
3.4 Disclosure of Past and Pending Legal Actions (Form H)	No Page Limit
3.5 Insurance Provisions Acknowledgement (Form I)	No Page Limit
SECTION 4: Cost Proposal (Original, Separate Cover + Separate CD)	
4.0 Completed Cost Proposal Forms (Form "C" Series)	No Page Limit
SECTION 5: Financial ~~Responsibility Qualifications~~Statements (Hard Copy Only, Separate Cover)	
5.0 Audited financial statements described in Section IX.E.	No Page Limit

Addendum No. 2, Appendix 2

RFP Appendix 2, Required Proposal Form – Revised Form "C" Series

Form C, COST PROPOSALS

Cost Proposal Form "C" Series includes:

- Submittal Signature Page
- Form C-1: Implementation
- Form C-2: Maintenance
- Form C-3: Unit Prices
- Form C-4: Hourly Labor Rates
- Form C-5: Implementation Milestone Payments
- Form C-6: Hypothetical Project Estimate

SUBMITTAL SIGNATURE

The Cost Proposal contains the minimal information that is desired by BAIFA for specific functions and components. The prices herein will be utilized in the event that additional components are to be added or removed from the Agreement.

Only one (1) set of Cost Proposal forms shall be submitted in the Cost Proposal. Prices shall reflect the cost for a fully compliant proposal and shall not include any alternatives or additions noted in Form G, Disposition/Issues Matrix.

Should there be a discrepancy in calculations on the Cost Proposal forms, the Unit and Lump Sum prices, and their quantities, shall prevail.

Cost Proposal Form "C" Series shall become Attachment C to the Agreement for execution.

SIGNATURE BLOCK

Note: Please return all pages with your Proposal (printed and scanned).

_____	_____
Company Name	Authorized Signature
_____	_____
Mailing Address	Printed Name
_____	_____
City, State, Zip Code	Title
_____	_____
Federal Employer ID Number	Phone Number
_____	_____
Type of Entity (S-Corp, LLC, etc.)	Official EMAIL Address

COST PROPOSAL Form C-1
IMPLEMENTATION

General Instructions:

The total Implementation pricing for the project is included in Form C-1.

The empty lines on Form C-1, Implementation, are to be used by the proposer to add any additional items that have not been specified but are included in the estimate.

Description of Items Requested:

The descriptions below are listed to provide guidance for completing Form C-1, Implementation, as intended. If the proposer's system is different than the descriptions found below, proposers must add the changes to the "Description Modifications" column to reflect the Technical Proposal, including moving descriptions from one item to another, if appropriate. The descriptions are not intended to replace requirements defined in the Attachment A, Scope of Work, or any other terms of the Agreement.

1. Section A: Project Costs

Item	Description	Description Modifications
~~Mobilization (5% of B+C)~~	~~Mobilization costs will be 5% of the sum of the TCS and TSI Services and Development costs.~~	
Payment Bond	Payment Bond for the total Agreement amount (for implementation and maintenance periods) is paid for by the proposer but is separated and included in the Total TCS Implementation Cost so that the Proposer's Unit prices and Lump Sum prices are indicative of the actual costs of the component pricing.	
Performance Bond	A Performance Bond for the total Agreement amount (for implementation and maintenance periods) is paid for by the proposer but is separated and included in the Total TCS Implementation ~~& Maintenance~~ Cost so that the Proposer's Unit prices and Lump Sum prices are indicative of the actual costs of the component pricing.	
Escrow for Lane System	Escrow fees are paid for by the proposer but are separated and included ~~for the entire Agreement term~~through System Acceptance in the Total TCS Implementation Cost so that the Proposer's Unit prices and Lump Sum prices are indicative of the actual costs of the component pricing. Escrow fees after System Acceptance are included on Form C-2 Maintenance.	

2. Section B: TCS

Item	Description	Description Modifications

I-680 Toll Collection System	The Lump Sum for the I-680 Toll Collection System price includes, but is not limited to:
	• Furnishing, installing and testing:
	  ○ CCTV systems
	  ○ Variable Toll Message Signs (VTMS)
	  ○ Violation Enforcement System (VES)
	  ○ Traffic Monitoring Stations (TMS)
	  ○ Automatic Vehicle Detection and Automatic Vehicle Classification (AVD/AVC)
	  ○ Automatic Vehicle Identification System (AVI)
	  ○ Lane equipment (Lane Controllers, switches, UPS, etc.)
	  ○ Roadside Communications Network, switches and equipment
	• Performing all required testing to demonstrate a fully operational system, including end-to-end testing with the RCSC
	• Coordination with BAIFA, their designated representatives, other contractors, and project partners
	• Fulfilling all requirements and terms of the Agreement
	• For electrical conductor length, assume the total length from electrical service drops to tolling equipment locations	

I-880 Toll Collection System/SR-84 Dumbarton Approach/SR-92 San Mateo Approach	The Lump Sum for the I-880 Toll Collection System/SR-84 Dumbarton Approach/SR-92 San Mateo Approach Toll Collection System price includes, but is not limited to:
	• Furnishing, installing and testing:
	  ○ CCTV systems
	  ○ Variable Toll Message Signs	

Item	Description	Description Modifications
	(VTMS) o Violation Enforcement System (VES) o Traffic Monitoring Stations (TMS) o Automatic Vehicle Detection and Automatic Vehicle Classification (AVD/AVC) o Automatic Vehicle Identification System (AVI) o Lane equipment (Lane Controllers, switches, UPS, etc.) o Roadside Communications Network, switches and equipment • Performing all required testing to demonstrate a fully operational system, including end-to-end testing with the RCSC • Coordination with BAIFA, their designated representatives, other contractors, and project partners • Fulfilling all requirements and terms of the Agreement • For electrical conductor length, assume the total length from electrical service drops to tolling equipment locations	
I-80 Toll Collection System	The Lump Sum for the I-80 Toll Collection System price includes, but is not limited to: • Furnishing, installing and testing: o CCTV systems o Variable Toll Message Signs (VTMS) o Violation Enforcement System (VES) o Traffic Monitoring Stations (TMS) o Automatic Vehicle Detection and Automatic Vehicle Classification (AVD/AVC) o Automatic Vehicle Identification System (AVI) o Lane equipment (Lane Controllers, switches, UPS, etc.)	

Item	Description	Description Modifications
	○ Roadside Communications Network, switches and equipment • Performing all required testing to demonstrate a fully operational system, including end-to-end testing with the RCSC • Coordination with BAIFA, their designated representatives, other contractors, and project partners • Fulfilling all requirements and terms of the Agreement • For electrical conductor length, assume the total length from electrical service drops to tolling equipment locations	
Host Systems	The Lump Sum for the Host price includes, but is not limited to: • Furnishing, installing and testing: ○ All servers ○ All development of the solution software • All documentation • System interfaces • Trip pricing software algorithm • Simulator • All Hardware necessary, workstations, terminals, switches, UPSs, storage, printers, etc. • All report development and testing • User interfaces • Video solution, interfaces and all required equipment • Performing all required testing to demonstrate a fully operational system, including end-to-end testing with the RCSC • Toll Roadway Operations Center • Network communication • All other functionality as described in the RFP for the Host system	

3. Section C: Toll System Integrator (TSI) Services and Development

Item	Description	Description Modifications
Design Development	The Design and Development Lump Sum price includes, but is not limited to: • As-builts • Backup and Recovery Plan • Detailed Design Document • Electrical Design • Final Acceptance Testing • Interface Control Documents (ICDs) • Maintenance Plan, Preventive Maintenance Plan • Network Design • Preliminary and Final Deployment Plan • Preliminary Design Document • Quality Management Plan, Project Management Plan • Software Development Plan, Configuration Management Plan • Software Documentation • Software Specifications • System Commissioning Testing • System Design (Hardware) • Technical Management (System, Electrical Network, Technical Meetings • Test Plans (Prelim Test Plan, FAT Plan, Field Test Plan) • Training • Training Plans • User Manuals • Wiring Diagrams, Shop Drawings • All other requirements as described in the RFP for the design and development of the TCS	
Program Management	The Project Management Lump Sum price includes, but is not limited to: • Project management activities (status meetings, schedule updates, invoices, progress reports, etc.) • All other requirements as described in the RFP for the program and project management	

4. Section D: Additional Items

Item	Description	Description Modifications
Additional Items	The Additional Item prices include, but are not limited to: • All Costs for Maintenance of Traffic (MOT) to Install Test and maintain the systems (use one line item per Corridor) • Initial spare parts inventory • Any additional items that the Proposer requires for a fully operational toll system	

COST PROPOSAL Form C-1
IMPLEMENTATION

ITEM / LINE		DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL
A	**1**	**Project Costs**				
~~-~~	~~2~~	~~Mobilization (5% of B+C)~~	~~Lump Sum~~	~~1~~	~~-~~	~~-~~
	~~3~~2	Payment Bond	Lump Sum	1		
	~~4~~3	Performance Bond	Lump Sum	1		
	~~5~~4	Escrow for Lane System	Lump Sum	1		
	5					
	6	**Subtotal – Project Costs Section A**				
B	**7**	**Toll Collection System**				
	8	I-680 Corridor TCS	Lump Sum	1		
	9	I-880/SR-92/SR84 Corridor TCS	Lump Sum	1		
	10	I-80 Corridor TCS	Lump Sum	1		
	11	TCS Host Systems	Lump Sum	1		
	12					
	13					
	14					
	15					
	16	**Subtotal - Toll Collection System Section B**				
C	**17**	**TSI Services & Development**				
	18	Design Development	Lump Sum	1		
	19	Program Management	Lump Sum	1		
	20					
	21					
	22					
	23					
	24	**Subtotal - TSI Services & Dev. Section C**				
D	**25**	**Additional Items**				
	26	Maintenance of Traffic for I-680	Lump Sum~~By Site~~	1		
	27	~~Spare Parts~~ Maintenance of Traffic for I-880/SR-92/SR-84	Lump Sum ~~Lump Sum~~	1		
	28	Maintenance of Traffic for I-80	Lump Sum	1		
	29	Spare Parts	Lump Sum	1		
	30					
	31	**Subtotal - Additional Items Section D**				

E	32	**Total TCS Implementation Cost (Sections A, B, C, and D)**		

COST PROPOSAL Form C-2
MAINTENANCE

General Instructions:

Cost Proposal Form C-2 provides Agreement Maintenance Costs for monthly maintenance by Corridor, by combinations of Corridors, and in total. The Unit (one month) price shall be inclusive of all maintenance activities and services as defined in the Attachment A, Scope of Work, and any other terms of the Agreement.

It is expected that maintenance for multiple Corridors will be consolidated into one monthly price; therefore, combined prices shall reflect synergies and cost savings for the total cost of maintenance on multiple Corridors as shown in the form.

Description of Items Requested:

Prices shall reflect the cost for maintenance of the Host and TCS associated with the Corridors.

Prices for Corridor Maintenance shall be based on the quantities of installed TCS Corridor Hardware and equipment shown in Attachment A, Scope of Work *Reference Document 2A*, Tolling Location Details.

The quantity of months for maintenance are based on Tolling Commencement dates from Attachment B, Schedule and Project Milestone Dates, and are included to assist in pricing of Maintenance during and after Warranty Periods. Maintenance during Warranty Periods is the time when hardware is under warranty and labor is the only factor as materials are covered under warranty.

Item	Description
TCS Maintenance (and TCS Maintenance during Warranty Periods)	The Toll System Maintenance price includes, but is not limited to: • Corridor TCS maintenance during and after Warranty Periods • Host maintenance during and after Warranty Periods • Maintenance of the roadside communications • ~~Annual Performance Audit (Replace the **X** with the estimated number of performance audits.)~~ Maintenance prices will be escalated using CPI. DO NOT show escalations in the forms.
Annual Performance Audit	Include the Annual Performance Audit price to meet the requirements in Attachment A-2, Implementation Requirements NOTE: Replace the **X** with the estimated number of performance audits.
Escrow for Lane System	The price includes the annual cost for the Lane System Source Code and Source Code Documentation to be maintained in escrow after System Acceptance and updated in accordance with the Agreement.

COST PROPOSAL Form C-2
MAINTENANCE

			AGREEMENT MONTHS									
Monthly Maintenance Costs of:	Tolling Commencement Date	Contract End	Apr-16		Apr-17		Oct-17					Jun-19
Host System	3/17/2016	6/30/2019	**Provide 1 month of costs**		**Provide 1 month of costs**							
I-680 Corridor TCS	3/17/2016	6/30/2019	**Provide 1 month. of costs**		**Provide 1 month of costs**							
I-880/SR-84/SR-92 TCS	3/16/2017	6/30/2019			**Provide 1 month of costs**				**Provide 1 month of costs**			
I-80 TCS	9/21/2017	6/30/2019					**Provide 1 month of costs**				**Provide 1 month of costs**	
Sum Monthly Costs of Systems			$ (Add monthly costs of lines above)		$		$		$		$	
Multiply by # of months in each section			12 months		6 months		6 months		6 months		9 months	
Total Maintenance Costs for each section			$		$		$		$		$	
Annual Performance Audit for **X** years	$											
Escrow for Lane System for **X** years												
Total Agreement Maintenance Costs	$											

	= Monthly Maintenance Costs during Warranty
	= Monthly Maintenance Costs after Warranty

NOTE: These prices do not reflect any annual escalation. Costs will be escalated on an annual basis using the Consumer Price Index (CPI) for San Francisco CMSA as published by the California Department of Finance starting July 1, 2016 and each year thereafter for the term of the Agreement. Costs shall be escalated no more than 5% annually regardless of CPI.

EXAMPLE:

(This is for representational purposes only.)

			AGREEMENT MONTHS				
Monthly Maintenance Costs of:	Tolling Commence-ment Date	Contract End	Apr-16	Apr-17	Oct-17		Jun-19
Host System	3/17/2016	6/30/2019	**$1,000**	**$2,000**			
I-680 Corridor TCS	3/17/2016	6/30/2019	**$1,000**	**$2,000**			
I-880/SR-84/SR-92 TCS	3/16/2017	6/30/2019		**$1,500**		**$3,000**	
I-80 TCS	9/21/2017	6/30/2019			**$750**		**$1,500**

Sum Monthly Costs of Systems	$2,000	$5,500	$6,250	$7,750	$8,500
Multiply by # of months in each section	12 months	6 months	6 months	6 months	9 months
Total Maintenance Costs for each section	$24,000	$33,000	$37,500	$46,500	$76,500

Annual Performance Audit for 4 years	$20,000
Escrow for Lane System for 2.5 years	$25,000
Total Agreement Maintenance Costs	$262,500

COST PROPOSAL Form C-3
UNIT PRICES

General Instructions:

The Unit pricing for the project is summarized in Form C-3. The items required are indicated as Unit prices for specific systems. These prices shall include, but not be limited to, Hardware and equipment, Software, installation and traffic control, configuration and testing, network communications components required to support a functional/operational system, and documentation (as-builts, etc.).

The empty lines on Form C-3, Unit Prices, are to be used by the proposer to add any additional items that have not been specified but are included in the estimate.

Description of Items Requested:

The descriptions below are listed to provide guidance for completing Form C-3, Unit Prices, as intended. If the proposed system is different than the descriptions found below, proposers must add the changes to the "Description Modifications" column to reflect the Technical Proposal, including moving descriptions from one item to another, if appropriate. The descriptions are not intended to replace requirements defined in the Attachment A, Scope of Work, or any other terms of the Agreement.

Item	Description	Description Modifications
Host System Integration to a new Corridor	• Integration • Testing • Documentation • Hardware • Communications infrastructure needed to connect to the network	
Lane Controller Systems	• The equipment that provides the infrastructure and control for a Read Point not included in the other systems mentioned below • Installation of the power and communication infrastructure needed to support the Lane Controller • Beacons • All Hardware, cabinets etc. • Integration • Testing • Documentation	
Reader/Antenna System (AVI)	The equipment to provide AVI Functionality for a Read Point: • Reader • Antenna • Mounting Hardware • Installation of the power and	

Item	Description	Description Modifications
	communication infrastructure needed to connect to the Lane Controller • Integration • Testing • Documentation	
Automatic Vehicle Detection and Automatic Vehicle Classification (AVD/AVC)	The equipment to provide AVD/AVC Functionality for a Read Point: • Detection equipment • Classification equipment • Mounting or installation Hardware • Installation of the communication infrastructure needed to connect to the Lane Controller • Integration • Testing • Documentation	
Traffic Monitoring System	The equipment to provide Traffic Monitoring Functionality at the indicated locations: • Reader • Installation of the power and communication infrastructure needed to connect to the TCS • Integration • Testing • Documentation	
Vehicle Enforcement System (VES)	The equipment to provide VES at the indicated locations : • Cameras • Flash Units • Mounting Hardware • Installation of the power and communication infrastructure needed to connect to the TCS • Integration • Testing • Documentation	
CCTV System	The equipment to provide CCTV at the indicated locations : • Cameras • Installation of the power and	

Item	Description	Description Modifications
	communication infrastructure needed to connect to the Network • Integration • Testing • Documentation	
VTMS System	The equipment to provide VTMS at the indicated locations: • Sign LED panel by type • Sign controllers • Installation of the power and communication infrastructure needed to connect to the Network • Integration • Testing • Documentation	
Annual Software Licenses	• Third-party software licenses by application	
Additional Items	The Additional Item prices include, but are not limited to: • All Costs for Maintenance of Traffic (MOT) to Install Test and maintain the systems for each type of closure (i.e. shoulder, single lane, multi-lane, etc.) • Initial spare parts inventory • Electrical conductor powering tolling equipment locations • Fiber optical cable for communications for each type of bundled strands (single strands, multiple strands, quality of fiber, etc) • Toll Roadway Operations Center Workstations • Toll Roadway Operations Center Printer • Any additional items that the Proposer requires for a fully operational toll system •	

COST PROPOSAL Form C-3
UNIT PRICES

ITEM / LINE		DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL
A	**1**	**Project Costs**				
	2					
	3					
B	**4**	**Toll Collection System**				
	5	Host System Integration to a new Corridor	Each	1		
	6	Lane Controller System	Each	1		
	7	Reader/Antenna System (AVI)	Each	1		
	8	AVD/AVC System	Each	1		
	9	Traffic Monitoring System	Each	1		
	10	Vehicle Enforcement System	Each	1		
	11	CCTV System	Each	1		
	12	VTMS System	Each	1		
	13	Annual Software Licenses	Each	1		
	14					
C	**15**	**TSI Services & Development**				
	16					
	17					
	18					
D	**19**	**Additional Items**				
	20	Maintenance of Traffic	Per Closure	1		
	21	Spare Parts	Per Read Point	1		
	22	Spare Parts	Per CCTV	1		
	23	Spare Parts	Per VTMS	1		
	24	Electrical Conductor	Linear Foot	1		
	25	Single Mode Fiber Optic	Linear Foot	1		
	26	Toll Roadway Ops Center Workstations	Each	1		
	27	Toll Roadway Operations Center Printer	Each	1		

COST PROPOSAL Form C-4
HOURLY LABOR RATES

General Instructions:

Provide the hourly rates, inclusive of overhead, profit, insurance, etc., for the positions listed below. Do not include bond or escrow costs. Proposers shall identify the proposed staff and any additional positions necessary to meet the requirements in Attachment A, Scope of Work.

Rates provided shall be effective for the term of the Agreement. If the Agreement is extended, the rates from the last fiscal year of the Agreement shall be escalated annually thereafter for extension periods according to the then current California Consumer Price Index (CPI) for San Francisco CMSA as published by the California Department of Finance. The escalation shall be the percentage increase or decrease calculated by comparing the index of the last fiscal year of the term of the Agreement to the index of the fiscal year for the renewal term. BAIFA's fiscal year is from July through June. Costs shall be escalated no more than 5% annually regardless of CPI.

Description of Items Requested:

In Section A, provide the rates for the Key Personnel listed below.

In Section B, provide rates for all other proposed staff by listing the position title and the name of the staff member.

In Section C, provide any additional positions that may be necessary for the full term of the agreement. Include a brief description of tasks, type of expertise, years of expertise, and any required certifications. Providing tiered levels of technical experts, based on the years of applicable experience, is preferred. Examples are provided below.

Section C Examples: Other Hourly Labor Rates (for illustrative purposes only)

Position	Description
Project Controls/Scheduler	Provide for each position: • Description of tasks or responsibilities • Type of expertise • Years of experience • Certifications
Programmer I	
Programmer II	
Reports Developer	
Technical Documentation Specialist	
Database Administrator I	
Database Administrator II	
Systems Administrator	
Sr. Systems Administrator	
Installation Supervisor	
Network Design/Integration Manager	
System Test Manager	
System Test Coordinator	
Maintenance Tech I	

COST PROPOSAL Form C-4
HOURLY LABOR RATES

ITEM / LINE		DESCRIPTION		YEAR 1 NTP to June 2015	YEAR 2 July 2015 to June 2016	YEAR 3 July 2016 to June 2017	YEAR 4 July 2017 to June 2018	YEAR 5 July 2018 to June 2019
		Unit Prices Hourly Labor Rates – Key Personnel						
A	**1**	**Position**	**Description**					
	2	Project Principal	10+ years experience in tolling; 5+ years of senior mgmt; Managed 1+ project of $5 million or more					
	3	Project Mgr	5+ years experience in program management for similar toll services					
	4	System Design Mgr	3+ years experience designing and developing open road TCSs					
	5	Software Dev Mgr	3+ years experience in managing the development lifecycle of software and hardware for TCSs					
	6	Installation Mgr	3+ years experience providing construction and/or TCS installation management and oversight					
	7	Communications Dev Mgr	3+ years experience managing communications network design/integration for toll systems/interfaces					
	8	Maintenance Mgr	5+ years experience maintaining TCSs for clients					
	9	Project Quality Mgr	3+ years as a Quality Assurance Manager on similar size and type projects					
		Unit Prices Hourly Labor Rates – Proposed Personnel Positions		**YEAR 1 NTP to June 2015**	**YEAR 2 July 2015 to June 2016**	**YEAR 3 July 2016 to June 2017**	**YEAR 4 July 2017 to June 2018**	**YEAR 5 July 2018 to June 2019**
B	**10**	**Position**	**Name of Proposed Staff Member**					
	11							
	12							
	13							
	14							
	15							
	16							
	17							

	18							
	19							
		Unit Prices Hourly Labor Rates – Other Hourly Labor Rates		**YEAR 1 NTP to June 2015**	**YEAR 2 July 2015 to June 2016**	**YEAR 3 July 2016 to June 2017**	**YEAR 4 July 2017 to June 2018**	**YEAR 5 July 2018 to June 2019**
C	**20**	**Position**	**Description**					
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							

COST PROPOSAL Form C-5
IMPLEMENTATION MILESTONE PAYMENTS

General Instructions:

Form C-5 is used to allocate, by percentage, implementation prices provided in Form C-1 (Implementation) into Milestone Payments. The column, "Form C-1 Item/Line" has been provided for guidance on the dollar amount to include in the column, "Form C-1 Total". Multiply the percentage with the dollar amount in column, "Form C-1 Total" to derive the Milestone Payment.

The sum of Form C-5 should equal the total amount for TCS Implementation shown in Form C-1, Section E, Line 32.

COST PROPOSAL Form C-5
IMPLEMENTATION MILESTONE PAYMENTS

#	Milestone Name	Percentage	Form C-1 Item/Line	Form C-1 Amount	Milestone Payment
Milestone Series 1: Program Development					
1-1	Project Initiation	4.6%	E 32		
1-2	Requirements Refinement	2%	E 32		
1-3	Preliminary Design Approval	2%	E 32		
1-4	Critical Design Approval	2%	E 32		
1-5	Other Plans	1%	E 32		
1-6	Factory Acceptance Test (FAT)	5%	E 32		
Milestone Series 2: I-680 (First) Corridor Deployment					
2-1	I-680 Installation Readiness	5%	B 8		
2-2	Onsite First Installation Test (OFIT)	5%	B 8		
2-3	Disaster Recovery Installation	5%	B 8		
2-4	I-680 Site Commissioning Tests 1 through 5	13%	B 8		
2-5	I-680 Site Commissioning Tests 6 through 10	13%	B 8		
2-6	I-680 Site Commissioning Tests 11 through 15	13%	B 8		
2-7	I-680 Remaining Site Commissioning Tests and End-to-end Test	26%	B 8		
2-8	Training	5%	B 8		
2-9	I-680 Tolling Commencement	5%	B 8		
2-10	Operations Test	10%	B 8		
Milestone Series 3: I-880/SR-92/SR-84 Corridor Deployment					
3-1	I-880 Installation Readiness	5%	B 9		
3-2	Incremental & Regression Test	5%	B 9		
3-3	I-880 Site Commissioning Tests 1 through 5	6%	B 9		
3-4	I-880 Site Commissioning Tests 6 through 10	6%	B 9		
3-5	I-880 Site Commissioning Tests 11 through 15	6%	B 9		
3-6	I-880 Site Commissioning Tests 16 through 20	6%	B 9		
3-7	I-880 Site Commissioning Tests 21 through 25	6%	B 9		
3-8	I-880 Site Commissioning Tests 26 through 30	6%	B 9		
3-9	I-880 Site Commissioning Tests 31 through 35	6%	B 9		
3-10	I-880 Site Commissioning Tests 36 through 40	6%	B 9		
3-11	I-880 Site Commissioning Tests 41 through 45	6%	B 9		

3-12	I-880 Remaining Site Commissioning Tests and End-to-end Test	21%	B 9		
3-13	I-880 Tolling Commencement	5%	B 9		
3-14	I -880 Operations Testing	10%	B 9		
Milestone Series 4: I-80 Corridor Deployment					
4-1	I-80 Installation Readiness	5%	B 10		
4-2	Incremental & Regression Test	5%	B 10		
4-3	I-80 Site Commissioning Tests 1 through 5	15%	B 10		
4-4	I-80 Site Commissioning Tests 6 through 10	15%	B 10		
4-5	I-80 Site Commissioning Tests 11 through 15	15%	B 10		
4-6	I-80 Remaining Site Commissioning Tests and End-to-end Test	30%	B 10		
4-7	I-80 Tolling Commencement	5%	B 10		
4-8	I-80 Operations Testing	10%	B 10		
Milestone Series 5: Express Lane Network System Acceptance					
5-1	System Acceptance	Remainder of Total Project Cost			
				TOTAL TCS Implementation Cost	

COST PROPOSAL Form C-6
HYPOTHETICAL PROJECT ESTIMATE

General Instructions:

In the future, BAIFA may request the same or similar services to be provided on additional phases or projects under this Agreement. For this reason, BAIFA is providing a Cost Proposal form that is to be used to provide hypothetical project pricing for two (2) scenarios provided below.

The prices are to be based on the Unit prices provided on Forms C-2, Maintenance, and C-3, Unit Prices and any additional information needed to provide a fully functioning addition to the system. The prices shall use 2013 dollars.

Fill out one form for each scenario and label each accordingly. The price shall have the following characteristics to implement the solution:

1. Detailed description of each item; this may include hours, men, resources, etc.
2. The quantity and Unit prices from Forms C-2, Maintenance, and C-3, Unit Prices
3. Additional equipment required in support of the main items
4. Roadside communication network
5. Project Management and Coordination efforts
6. Engineering
7. Documentation and documentation updates
8. Testing
9. Maintenance of Traffic
10. Maintenance and Warranty
11. All installation

The empty lines on Form C-6 are to be used by the proposer to add any additional items that have not been specified but are included in the estimate.

Pricing Scenario 1:

A new segment is being added to I-80 at the end of the current limits. There will be:

1. Five (5) additional read points
2. Three (3) additional CCTV installations
3. Two (2) VTMS locations
4. Seven (7) mile extension of the terminus

Using Form C-6, provide pricing and quantities. Also, include a short scope and an issues and concerns document for the scenario.

Pricing Scenario 2:

One (1) Read Point and one (1) VTMS are being removed from I-880 at the terminus.

Using Form C-6, provide pricing and quantities. Also, include a short scope and an issues and concerns document for the scenario.

Description of Items Requested:

The descriptions below are listed to provide guidance for completing Form C-6 as intended. If the proposed system is different than the descriptions found below, proposers must add the changes to the "Description Modifications" column to reflect the hypothetical Technical Proposal, including moving descriptions from one item to another, if appropriate.

Item	Description	Description Modifications
Program Management	• Changes to Program Schedule • Manpower changes	
Host System Integration to a New Corridor	• Integration • Testing • Documentation • Hardware	
Lane Controller System	• The equipment that provides the infrastructure and control for a Read Point not included in the other systems mentioned below • Installation of the power and communication infrastructure needed to support the Lane Controller • Beacons • All Hardware, cabinets etc. • Integration • Testing • Documentation	
Reader/Antenna System (AVI)	The equipment to provide AVI Functionality for a Read Point: • Reader • Antenna • Mounting Hardware • Installation of the power and communication infrastructure needed to connect to the Lane Controller • Integration • Testing • Documentation	
Automatic Vehicle Detection and Automatic Vehicle Classification (AVD/AVC)	The equipment to provide AVC Functionality for a Read Point: • Detection equipment • Classification equipment • Mounting or installation Hardware	

Item	Description	Description Modifications
	• Installation of the communication infrastructure needed to connect to the Lane Controller • Integration • Testing • Documentation	
Traffic Monitoring System	The equipment to provide Traffic Monitoring Functionality at the indicated locations: • Reader • Installation of the power and communication infrastructure needed to connect to the TCS • Integration • Testing • Documentation	
Vehicle Enforcement System (VES)	The equipment to provide VES at the indicated locations : • Cameras • Flash Units • Mounting Hardware • Installation of the power and communication infrastructure needed to connect to the TCS • Integration • Testing • Documentation	
CCTV System	The equipment to provide CCTV at the indicated locations : • Cameras • Installation of the power and communication infrastructure needed to connect to the Network • Integration • Testing • Documentation	
VTMS System	The equipment to provide VTMS at the	

Item	Description	Description Modifications
	indicated locations: • Sign LED panel by typeSign controllers • Installation of the power and communication infrastructure needed to connect to the Network • Integration • Testing • Documentation	
Annual Software Licenses	• Third-party software licenses by application	
Engineering	• Services needed to: o Design communications network o Address TCS design issues (e.g. hilly terrain)	
Communication Systems Enhancements	• Any additional components needed to implement the communications system including but not limited to: o Switches o Fiber connections o Conduit and medium (fiber, wire etc.) o Leased considerations o Coordination with other agencies o Reuse or repurpose of assets o Other	
Warranty Costs	• Per major system such as Read Point, CCTV location, etc.	
Training and Documentation	• Additional training • Documentation of systems • As-builts • ICDs	
Additional Items	The Additional Item prices include, but are not limited to: • All Costs for Maintenance of Traffic (MOT) to Install Test and maintain the systems for each	

Item	Description	Description Modifications
	type of closure (i.e. shoulder, single lane, multi-lane, etc.) • Initial spare parts inventory • Any additional items that the Proposer requires for a fully operational toll system	

COST PROPOSAL Form C-6
HYPOTHETICAL PROJECT ESTIMATE

ITEM / LINE		DETAILED DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL
A	**1**	**Project Costs**				
	2	Program Management				
	3	Payment Bond	Lump Sum	1		
	4	Performance Bond	Lump Sum	1		
	5					
B	**6**	**TCS**				
	7	Host System Integration to a new Corridor	Each			
	8	Lane Controller System	Each			
	9	Reader/Antenna System (AVI)	Each			
	10	AVD/AVC System	Each			
	11	Traffic Monitoring System	Each			
	12	Vehicle Enforcement System	Each			
	13	CCTV System	Each			
	14	VTMS System	Each			
	15	Annual Software Licenses	Each			
C	**16**	**~~Contractor~~ TSI Services & Development**				
	17	Engineering	Lump Sum	1		
	18	Communication System Enhancements	Lump Sum	1		
	19	Training and Documentation	Lump Sum	1		
	20					
	21					
D	**22**	**Additional Items**				
	23	Maintenance of Traffic	Per Site			
	24	Spare Parts	Lump Sum	1		
	25					
F	**26**	**TCS Maintenance during/after Warranty**				
	27	Maintenance during Warranty	Point/Month			
	28	Maintenance after Warranty	Point/Month			
	29					
G	**30**	**Other Maintenance Activities**				
	31	Changes to the Annual Performance Audit				
	32					
	33					
H	**34**	**TOTAL Hypothetical Project Estimate**				

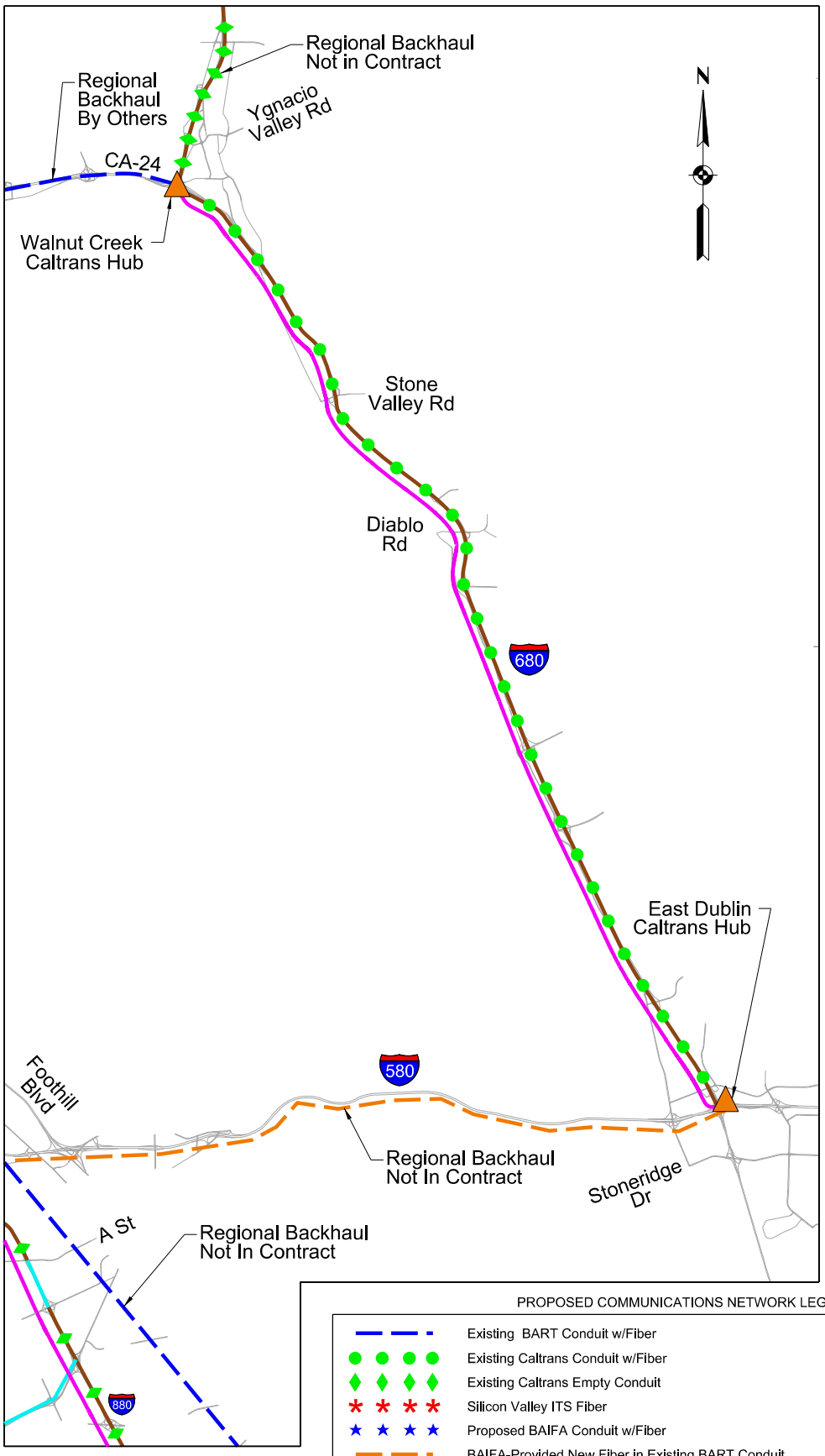
Addendum No. 2, Appendix 3

This appendix has been omitted and is intentionally left blank.

Addendum No. 2, Appendix 4

RFP Appendix 1, Attachment A, Reference 4: Communications Network Conceptual Pre-Design, Page 34-39, Figures 1-5

Figure 1 - I-680 Conceptual Alternative
Acosta Blvd. to Livorna Rd.



PROPOSED COMMUNICATIONS NETWORK LEGEND

- Existing BART Conduit w/Fiber
- Existing Caltrans Conduit w/Fiber
- Existing Caltrans Empty Conduit
- Silicon Valley ITS Fiber
- Proposed BAIFA Conduit w/Fiber
- BAIFA-Provided New Fiber in Existing BART Conduit
- TSI-Proposed Roadside Network
- Proposed BAIFA Fiber in Caltrans Conduit
- Existing BATA Hub
- Regional C2C Sonot Caltrans Hub
- Smart Corridor TMC
- Future MTC Location

METROPOLITAN TRANSPORTATION COMMISSION

No.	DATE	ISSUE / REVISION

SUBMITTED BY:
ATKINS
One Market Street
Spear Tower, Suite 3600
San Francisco, CA 94105

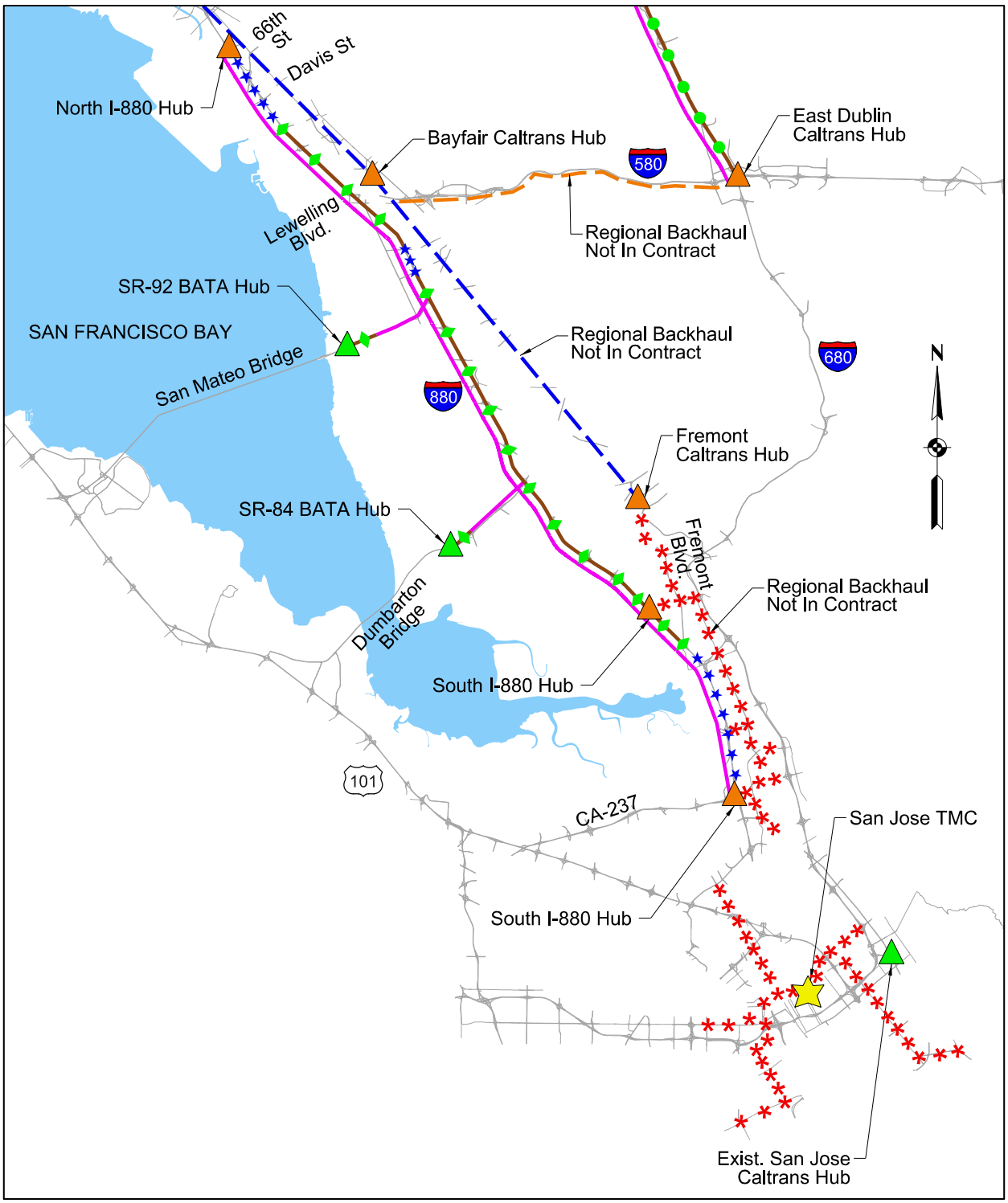
PROJECT
MTC Express Lanes

TITLE
Figure 1

SCALE
None

PAGE
1 of 5

Figure 2 - I-880 Conceptual Alternative
NB & SB Marina to SR 237



PROPOSED COMMUNICATIONS NETWORK LEGEND

- Existing BART Conduit w/Fiber
- Existing Caltrans Conduit w/Fiber
- Existing Caltrans Empty Conduit
- Silicon Valley ITS Fiber
- Proposed BAIFA Conduit w/Fiber
- BAIFA-Provided New Fiber in Existing BART Conduit
- TSI-Proposed Roadside Network
- Proposed BAIFA Fiber in Caltrans Conduit
- Existing BATA Hub
- Regional C2C Sonot Caltrans Hub
- Smart Corridor TMC
- Future MTC Location

METROPOLITAN TRANSPORTATION COMMISSION

No.	DATE	ISSUE / REVISION

SUBMITTED BY:
ATKINS
One Market Street
Spear Tower, Suite 3600
San Francisco, CA 94105

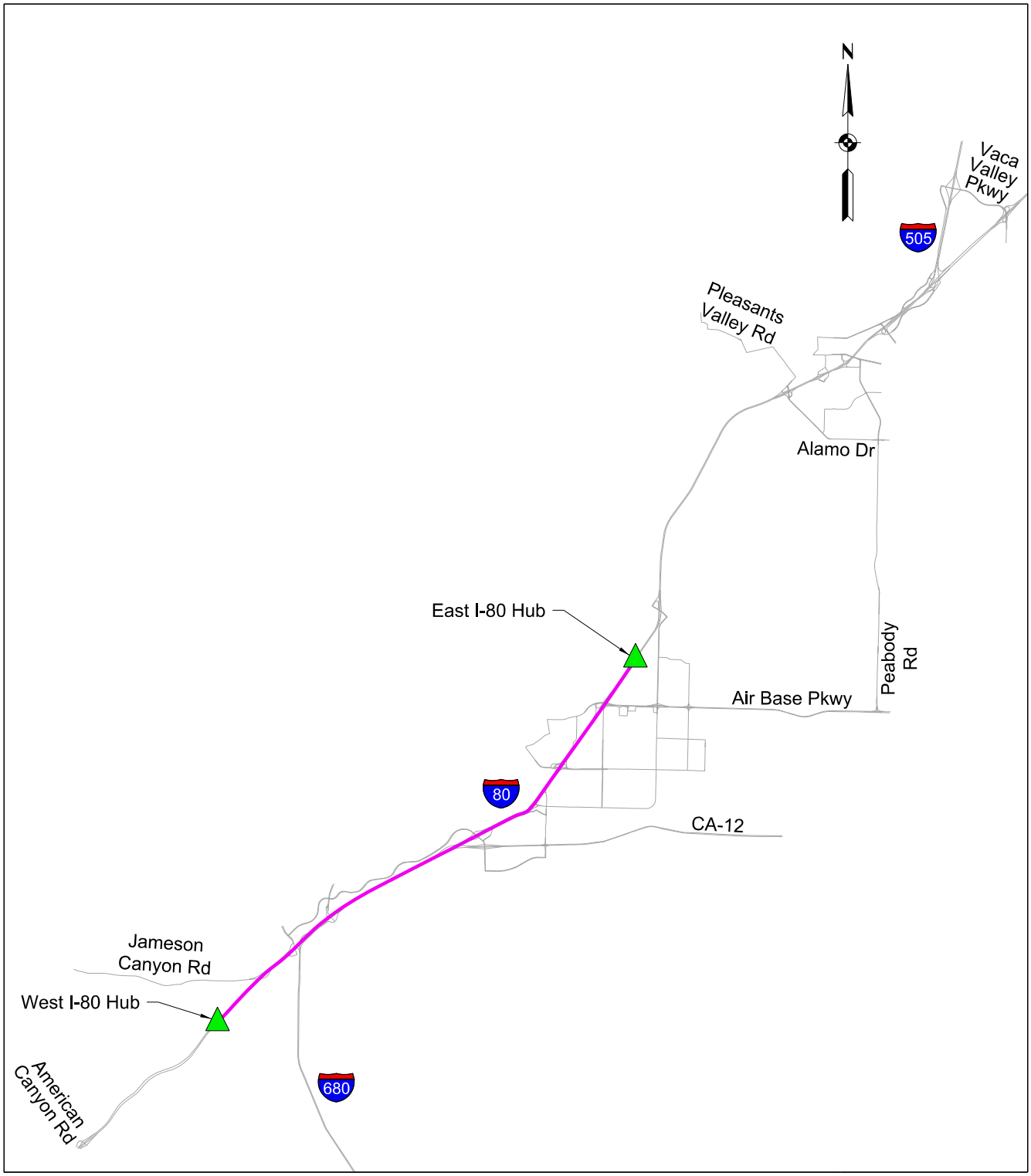
PROJECT
MTC Express Lanes

TITLE
Figure 2

SCALE
None

PAGE
2 of 5

Figure 3 - I-80 Conceptual Alternative
American Canyon Rd. to Vaca Valley Pkwy.



PROPOSED COMMUNICATIONS NETWORK LEGEND

- Existing BART Conduit w/Fiber
- Existing Caltrans Conduit w/Fiber
- Existing Caltrans Empty Conduit
- Silicon Valley ITS Fiber
- Proposed BAIFA Conduit w/Fiber
- BAIFA-Provided New Fiber in Existing BART Conduit
- TSI-Proposed Roadside Network
- Proposed BAIFA Fiber in Caltrans Conduit
- Existing BATA Hub
- Regional C2C Sonot Caltrans Hub
- Smart Corridor TMC
- Future MTC Location

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Figure 3

SCALE
None

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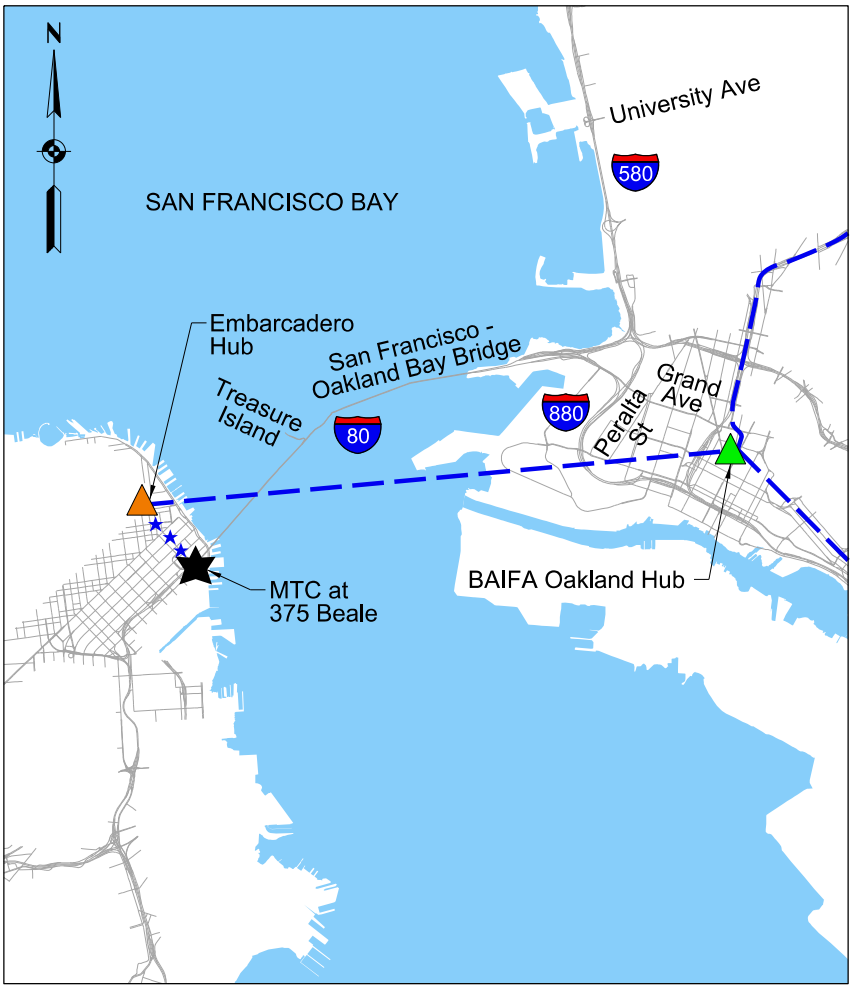
Figure 4 - San Francisco-Oakland Bay Bridge
& MTC 375 Beale Conceptual Alternative



PROPOSED COMMUNICATIONS NETWORK LEGEND

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MTC Express Lanes

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Figure 4

SCALE
None

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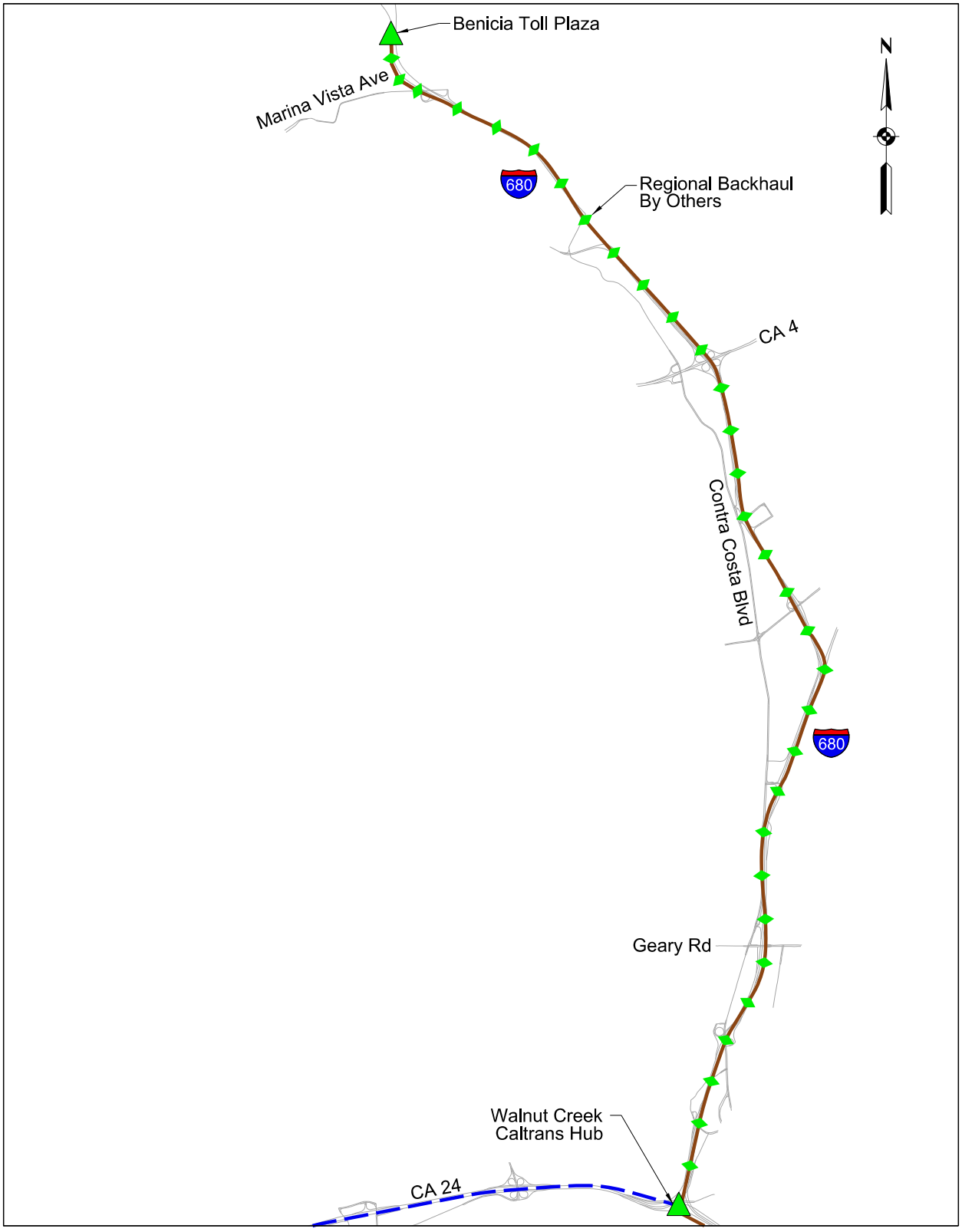
Figure 5 - Benicia Bridge
Conceptual Alternative



PROPOSED COMMUNICATIONS NETWORK LEGEND

- Existing BART Conduit w/Fiber
- Existing Caltrans Conduit w/Fiber
- Existing Caltrans Empty Conduit
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- BAIFA-Provided New Fiber in Existing BART Conduit
- TSI-Proposed Roadside Network
- Proposed BAIFA Fiber in Caltrans Conduit
- Existing BATA Hub
- Regional C2C Sonot Caltrans Hub
- Smart Corridor TMC
- Future MTC Location

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MTC Express Lanes

TITLE
Figure 5

SCALE
None

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Addendum No. 2, Appendix 5

RFP Appendix 1, Attachment C, Performance Requirements & Penalties, Page 1, Table 1

Table 1: Toll System Capacity and other Minimum Requirements

ID	Description	Capacity/Measure
Per Read Point / Per Lane		
	Vehicles (Lane Transactions) per Hour	2,200 minimum
	Vehicles (Lane Transactions) per Day	50,000 minimum
	Vehicle Speed ~~(to meet all standards)~~	~~0 mph to 100 mph~~
	AVD/AVC	0 mph to 100 mph
	AVI	0 mph to 100 mph
	VES	0 mph to 100 mph
	TMS	5 mph to 100 mph
	Vehicle Separation ~~(to meet all standards)~~	~~2 ft. minimum~~
	AVD/AVC	2 ft. minimum
	VES	4 ft. minimum
Express Lane Host (Tier 1 Projects)		
	Lane Transactions per Day	1,520,000 minimum
	Trip Transactions per Day	380,000 minimum
	Trip Processing Time (hours within the same calendar day as first Read Point Lane Transaction)	~~3~~ 6 hours maximum

Addendum No. 2, Appendix 6

RFP Appendix 1 Reference 2A, Tolling Location Details

Quantities by Corridor,

I-80 Toll Equipment Location Table,

I-680 Toll Equipment Location Table,

I-880 Toll Equipment Location Table,

SR-84 Toll Equipment Location Table,

SR-92 Toll Equipment Location Table

QUANTITIES BY CORRIDOR					
Project/Facility	**Estimated Read Points**	**Estimated VTMS Points**	**Estimated CCTV Points**	**Estimated TMS Points**	**Estimated Backhaul Hub Points**
I-680	27	19	19	27	2
I-880	48	33	31	48	3
SR 84	2	1	4	2	1
SR 92	3	2	4	3	1
I-80	20	14	12	20	2
TOTALS =	**80**	**55**	**58**	**80**	**7**

I-80 Toll Equipment Location Table

Location						Structure	Device Codes								Electrical System			Roadway Characteristics							Plan Sheets		Comments
Route	*Direction*	*Post Mile (PM)*	*Station*	*Zone Number*	*Zone Name*	*Proposed Sign Strucuture Type*	*MUTC D Sign Panel Type*	*Proposed Overhead Sign Panel Detail*	*CCTV*	*Read Point*	*Traffic Monitoring System (TMS)*	*VTMS (Number of Toll Rate LED Panels)*	*VTMS (Number of General Messege LED Panel)*	*Backhaul Network Hub*	*Power Source Location*	*Order of Run*	*Length to Service Drop*	*Pavement Type*	*Proposed Median Concrete Barrier Width at Sign (ft)*	*Existing Left Shoulder Elevation (ft)*	*Existing Left Paved Shoulder Width (ft)*	*Proposed Left Paved Shoulder Width (ft)*	*No. of Express Lanes*	*No. General Purpose Lanes*	*Plan Sheets Number*	*Sign Designation*	*Comments*
I-80	TBD	TBD	TBD	FALSE	FALSE									1	TBD	TBD	TBD	FALSE									
I-80	TBD	TBD	TBD	FALSE	FALSE									1	TBD	TBD	TBD	FALSE									
I-80	EB	10	70+30	N/A	N/A	Tubular	-	EXPRESS LANE 1 MILE AHEAD	1										5'-9" Pedestal	--	(Protected by new MBGR, set in	-		4		OS-1A	
I-80	EB	11	83+48	1	I-80 Suisun Valley Rd EB	Tubular	R3-48a Modified	VTMS: Abernathy Rd / Air Base Pkwy				2	1		WB 80 Sta M 94+30		1700	0.70' AC (TYPE A) 0.75' Cl A CTB 1.50' LTS	8'-1"	253	17.9'	Take 3.5' shld from EB, take 2.5' shld from WB		4		OS-1B	
I-80	EB	11	96+68	1	I-80 Suisun Valley Rd EB	Tubular	-	EXPRESS LANE 1/2 MILE AHEAD										0.70' AC (TYPE A) 0.75' Cl A CTB 1.50' LTS	8'-1"	224	17.4'	Take 3.5' shld from EB, take 3.1' shld from WB		4		OS-1C	
I-80	EB	11	123+10	1	I-80 Suisun Valley Rd EB	Tubular	R3-44 Modified	FasTrak ONLY (Begin)	1									0.70' AC (TYPE A) 0.75' Cl A CTB 1.50' LTS	8'-1"	138	10.0'	Take 6.1' shld from WB only	1	4	1	OS-1D	
I-80	EB	12	132+00	1	I-80 Suisun Valley Rd EB	Cantilever Gantry	-	Reader (No Sign Panel)		1	1				WB 80 Sta M 125+70		900	0.70' AC (TYPE A) 0.75' Cl A CTB 1.50' LTS	3'-8"	104	11.0'	Take 1.8' shld from WB only	1	4		OS-1E	
I-80	EB	12	157+95	1	I-80 Suisun Valley Rd EB	Tubular	R3-48a Modified	VTMS: Abernathy Rd / Air Base Pkwy		1	1	2	1		EB 80 Sta M 159+50	1st	1100	0.70' AC (TYPE A) 0.75' Cl A CTB 1.50' LTS	4'	57	9.5'	Take 0.9' shld from EB only	1	4		OS-1F	
I-80	WB	12	172+77	1	I-80 Suisun Valley Rd WB	Tubular	R3-45a	EXPRESS RESTRICTION ENDS	1	1	1				EB 80 Sta M 159+50	2nd	1220	--	4'	--	12.0'	-	1	4		OS-1G	
I-80	EB	13	187+65	1	I-80 Suisun Valley Rd EB	Tubular	R3-48a Modified	VTMS: Abernathy Rd / Air Base Pkwy				2	1		EB 80 Sta M 186+70	1st	530	0.45' AC (TYPE A) 0.75' Cl A CTB 1.50' LTS	5'-9" Pedestal	30	9'	-	1	4		OS-2A	
I-80	WB	13	190+50	1	I-80 Suisun Valley Rd WB	Tubular	R3-44 Modified	FasTrak ONLY		1	1				EB 80 Sta M 186+70	2nd	500	--	5'-9" Pedestal	--	10'	-	1	4		OS-2B	
I-80	WB	13	197+70	1	I-80 Suisun Valley Rd WB	Tubular	R3-42c -	EXPRESS RESTRICTION ENDS 1/2 MILE FasTrak ONLY										0.10' OGFC 0.15' RAC-G 0.20' AC (TYPE A) 0.45' AC (TYPE A) 0.75' Cl A CTB 1.50' LTS	-	22	-	-	1	4		OS-2C OS-2D	
I-80	EB	13	218+03	1	I-80 Suisun Valley Rd EB	Tubular	R3-44 Modified	FasTrak ONLY	1	1	1				EB 80 Sta M 223+00	2nd	6	0.10' OGFC 1.40' AC (TYPE A) 0.50' Cl 4 AS	4'	20	3.0'	Take 1' shld from each side	1	5		OS-2E	
I-80	WB	13	218+09	1	I-80 Suisun Valley Rd WB	Tubular	R3-44 Modified	FasTrak ONLY		1	1				EB 80 Sta M 223+00	1st	600	0.10' OGFC 1.40' AC (TYPE A) 0.50' Cl 4 AS	4'	21	3.0'	3.0'	1	5	2	OS-2F	
I-80	WB	14	250+00	1	I-80 Suisun Valley Rd WB	Tubular	R3-48a Modified	VTMS: SR 12 West				1	1		WB 80 Sta M 249+50		260	0.10' OGFC 1.40' AC (TYPE A) 0.50' Cl 4 AS	4'	29	3.0'	3.0'	1	5		OS-2G	
I-80	EB	14	260+03	1	I-80 Suisun Valley Rd EB	CCTV			1						TBD	TBD	TBD						1	5			
I-80	EB	14	263+50	1	I-80 Suisun Valley Rd EB	Tubular	R3-48a Modified	VTMS: Abernathy Rd / Air Base Pkwy				2	1		WB 80 Sta M 263+40		380	0.10' OGFC 1.40' AC (TYPE A) 0.50' Cl 4 AS	4'	33	5.0'	Take 1.1' shld from EB, take 0.9' shld from WB	1	5		OS-2H	
I-80	EB	14	279+46	1	I-80 Suisun Valley Rd EB	Tubular	R3-44 Modified	FasTrak ONLY		1	1				WB 80 Sta M 280+60	1st	450	0.10' OGFC 1.40' AC (TYPE A) 0.50' Cl 4 AS	4'	39	10.0'	Take 2' shld from EB only	1	5		OS-2I	
I-80	WB	14	279+52	1	I-80 Suisun Valley Rd WB	Tubular	R3-44 Modified	FasTrak ONLY		1	1				WB 80 Sta M 280+60	2nd	6	0.10' OGFC 1.40' AC (TYPE A) 0.50' Cl 4 AS	4'	39	3.0'	10.0'	1	5		OS-2J	
I-80	WB	15	295+35	1	I-80 Suisun Valley Rd WB	Tubular	R3-48a Modified	VTMS: SR 12 West				1	1		WB 80 Sta M 294+60	--	610	0.10' OGFC 1.40' AC (TYPE A) 0.50' Cl 4 AS	4'	37	2	10.2'	1	5		OS-3A	
I-80	EB	15	320+95	1	I-80 Suisun Valley Rd EB	Tubular	R3-44 Modified	FasTrak ONLY		1	1				WB 80 Sta M 340+40	2nd	170	0.10' OGFC 0.70' AC (TYPE A) 0.55' Cl A CTB 0.80' Cl 4 AS	4'	37	21.2'	Take 16.3' shld from EB, wider shld on WB (@ CHP)	1	5		OS-3B	
I-80	WB	15	322+45	1	I-80 Suisun Valley Rd WB	Tubular	R3-44 Modified	FasTrak ONLY	1	1	1				WB 80 Sta M 340+40	1st	1950	0.10' OGFC 0.70' AC (TYPE A) 0.55' Cl A CTB 0.80' Cl 4 AS	4'	38	2.6'	21.2'	1	5		OS-3C	
I-80	WB	16	357+00	1	I-80 Suisun Valley Rd WB	Cantilever Truss	R3-48a Modified	VTMS: SR 12 West		1	1	1	1		WB 80 Sta M 367+70	2nd	570	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	43	5.5'	4.8'	1	4	3	OS-3D	
I-80	EB	16	359+11	1	I-80 Suisun Valley Rd EB	CCTV			1						TBD	TBD	TBD						1	4			
I-80	EB	16	361+50	2	I-80 Air Base Pkway EB	Cantilever Truss	R3-48a Modified	VTMS: Air Base Pkwy				1	1		WB 80 Sta M 367+70	1st	1100	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	44	2.7'	Take 1' shld from each side	1	4		OS-3E	
I-80	EB	17	405+40	2	I-80 Air Base Pkway EB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				EB 80 Sta M 408+50	1st	500	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	36	2.3'	Take 0.5' shld from EB, take 1.6' shld from WB	1	4		OS-4A	
I-80	WB	17	410+00	1	I-80 Suisun Valley Rd WB	Cantilever Truss	R3-44 Modified	FasTrak ONLY	1	1	1				EB 80 Sta M 408+50	2nd	420	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	35	4.3'	5.5'	1	4		OS-4B	

I-80 Toll Equipment Location Table

Location						Structure	Device Codes								Electrical System			Roadway Characteristics							Plan Sheets		Comments
Route	*Direction*	*Post Mile (PM)*	*Station*	*Zone Number*	*Zone Name*	*Proposed Sign Strucuture Type*	*MUTC D Sign Panel Type*	*Proposed Overhead Sign Panel Detail*	*CCTV*	*Read Point*	*Traffic Monitoring System (TMS)*	*VTMS (Number of Toll Rate LED Panels)*	*VTMS (Number of General Messege LED Panel)*	*Backhaul Network Hub*	*Power Source Location*	*Order of Run*	*Length to Service Drop*	*Pavement Type*	*Proposed Median Concrete Barrier Width at Sign (ft)*	*Existing Left Shoulder Elevation (ft)*	*Existing Left Paved Shoulder Width (ft)*	*Proposed Left Paved Shoulder Width (ft)*	*No. of Express Lanes*	*No. General Purpose Lanes*	*Plan Sheets Number*	*Sign Designation*	*Comments*
I-80	EB	17	440+00	2	I-80 Air Base Pkway EB	Cantilever Truss	R3-48a Modified	VTMS: Air Base Pkwy		1	1	1	1		EB 80 Sta M 439+40	2nd	130	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	43	3.0'	Take 1' shld from each side	1	4	4	OS-4C	
I-80	WB	17	441+33	1	I-80 Suisun Valley Rd WB	Cantilever Truss	R3-48a Modified	VTMS: SR 12 West				1	1		EB 80 Sta M 439+40	1st	480	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	41	3.0'	3.4'	1	4		OS-4D	
I-80	EB	18	447+94	2	I-80 Air Base Pkway EB	CCTV			1						TBD	TBD	TBD						1	4			
I-80	WB	18	475+20	2	I-80 Air Base Pkway WB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				WB 80 Sta M 461+40	2nd	180	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	48	3.4'	3.0'	1	4		OS-4F	
I-80	EB	18	477+00	2	I-80 Air Base Pkway EB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				WB 80 Sta M 461+40	1st	2230	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	48	3.0'	Take 1' shld from each side	1	4		OS-4G	
I-80	WB	19	502+00	2	I-80 Air Base Pkway WB	Cantilever Truss	R3-48a Modified	VTMS: W. Texas St / SR 12 West				2	1		WB 80 Sta M 524+80	3rd	1260	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	63	3.2'	3.0'	1	4		OS-5A	
I-80	WB	19	508+34	2	I-80 Air Base Pkway WB	CCTV			1						TBD	TBD	TBD						1	4			
I-80	EB	19	513+50	2	I-80 Air Base Pkway EB	Cantilever Truss	R3-48a Modified	VTMS: Air Base Pkwy				1	1		WB 80 Sta M 524+80	2nd	710	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	77	3.0'	Take 1' shld from each side	1	4		OS-5B	
I-80	WB	19	519+80	2	I-80 Air Base Pkway WB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				WB 80 Sta M 524+80	1st	1150	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	90	3.1'	3.1'	1	4		OS-5C	
I-80	EB	19	538+60	2	I-80 Air Base Pkway EB	Cantilever Truss	R3-44 Modified R3-42c	FasTrak ONLY EXPRESS RESTRICTION ENDS 1/2 MILE		1	1				EB 80 Sta M 531+50	2nd	140	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	111	3.0'	Take 1' shld from each side	1	4		OS-5D OS-5E	
I-80	WB	19	540+00	2	I-80 Air Base Pkway WB	Cantilever Truss	R3-48a Modified	VTMS: W. Texas St / SR 12 West				2	1		EB 80 Sta M 531+50	1st	1620	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	111	3.0'	3.3'	1	4		OS-5F	
I-80	EB	20	563+81	2	I-80 Air Base Pkway EB	Cantilever Truss	R3-45a	EXPRESS RESTRICTION ENDS	1	1	1				WB 80 Sta M 557+10	1st	1000	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	92	3.3'	Take 0.7' shld from EB, take 1.1' shld from WB	1	4	5	OS-5G	8/6/13: Revised - (1) End EL previously post mounted on PM 19.87 WB Toll Reader, (2) Install Infrastructure for Ph 2 EB VTMS
I-80	WB	20	563+87	2	I-80 Air Base Pkway WB	Cantilever Gantry	-	Reader (No Sign Panel)		1	1				WB 80 Sta M 557+10	2nd	7	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	92	3.1'	3.3'	1	4		OS-5H	
I-80	WB	20	575+47	2	I-80 Air Base Pkway WB	Cantilever Truss	R3-44 Modified	FasTrak ONLY (Begin)							WB 80 Sta M 557+10	3rd	1260	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	105	10.8'	12'	1	4		OS-5I	

I-80 Toll Equipment Location Table

Location						Structure	Device Codes								Electrical System			Roadway Characteristics							Plan Sheets		Comments
Route	*Direction*	*Post Mile (PM)*	*Station*	*Zone Number*	*Zone Name*	*Proposed Sign Strucuture Type*	*MUTC D Sign Panel Type*	*Proposed Overhead Sign Panel Detail*	*CCTV*	*Read Point*	*Traffic Monitoring System (TMS)*	*VTMS (Number of Toll Rate LED Panels)*	*VTMS (Number of General Messege LED Panel)*	*Backhaul Network Hub*	*Power Source Location*	*Order of Run*	*Length to Service Drop*	*Pavement Type*	*Proposed Median Concrete Barrier Width at Sign (ft)*	*Existing Left Shoulder Elevation (ft)*	*Existing Left Paved Shoulder Width (ft)*	*Proposed Left Paved Shoulder Width (ft)*	*No. of Express Lanes*	*No. General Purpose Lanes*	*Plan Sheets Number*	*Sign Designation*	*Comments*
I-80	WB	21	600+79	2	I-80 Air Base Pkway WB	Cantilever Truss	-	EXPRESS LANE 1/2 MILE AHEAD										0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	5'-9" Pedestal	130	10.5'	10'		4		OS-5J	
I-80	WB	21	616+61	2	I-80 Air Base Pkway WB	Cantilever Truss	R3-48a Modified	VTMS: W. Texas St / SR 12 West				2	1		EB 80 Sta M 612+95		610	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	162	10.5'	10'		4		OS-5K	
I-80	WB	21	633+50	2	I-80 Air Base Pkway WB	Cantilever Truss	-	EXPRESS LANE 1 MILE AHEAD	1						EB 80 Sta M 632+95		310	0.10' OGFC 0.15' RHMA-G 0.10' HMA (TYPE A) PRF 0.10' HMA (TYPE A) 0.45' AC (TYPE A) 0.65' Cl A CTB 1.25' Cl 4 AS	4'	165	10'	9.5'		4		OS-5L	8/6/13:Revised - previously at PM 21.02 (Future Ph 2 Reader here instead of PM 21.59)
TOTAL						-	-	-	**12**	**20**	**20**	**21**	**14**	**2**	-		**24059**	-	-	-	-	-	-	-		-	-

Notes:
1) Shoulder elevation measured approximately 2.0' from face of barrier.
2) Shoulder widths measured from face of barrier to inside edge of traveled way.

Abbreviations:
AC Asphalt Concrete
AS Aggregate Subbase
CTB Cement Treated Base
HMA Hot Mix Asphalt
LTS Lime Treated Subbase
OGFC Open Grade Friction Concrete
PRF Pavement
RAC-G Rubberized
RHMA-G Rubberized

I-680 Toll Equipment Location Table

Location						Structure	Device Codes								Electrical System			Roadway Characteristics							Plan Sheets		Comments
Route	*Direction*	*Post Mile (PM)*	*Station*	*Zone Number*	*Zone Name*	*Proposed Sign Strucuture Type*	*MUTC D Sign Panel Type*	*Proposed Overhead Sign Panel Detail*	*CCTV*	*Read Point*	*Traffic Monitoring System (TMS)*	*VTMS (Number of Toll Rate LED Panels)*	*VTMS (Number of General Messege LED Panel)*	*Backhaul Network Hub*	*Power Source Location*	*Order of Run*	*Length to Service Drop*	*Pavement Type*	*Proposed Median Concrete Barrier Width at Sign (ft)*	*Existing Left Shoulder Elevation (ft)*	*Existing Left Paved Shoulder Width (ft)*	*Proposed Left Paved Shoulder Width (ft)*	*Exsiting No. HOV Lanes*	*Existing No. General Purpose Lanes*	*Plan Sheets Number*	*Sign Designation*	*Comments*
I-680	NB	20	478+50	2	I-680 Bollinger Canyon NB									1	TBD		TBD							2	1		
I-680	NB	20	485+60	2	I-680 Bollinger Canyon NB	Cantilever Truss		EXPRESS LANE 1 MILE AHEAD	1						492+45		880	0.60 AC (TYPE A) 0.25 ATPB 0.50 CI A CTB 0.67 LTB	8	359	15	12		3		OS-1A	
I-680	NB	21	499+48	2	I-680 Bollinger Canyon NB	Cantilever Truss	R3-48a Modified	VTMS - Crow Canyon / 24				2	1		492+45		1120	0.55 AC (TYPE A) 0.75 CI A CTB 0.67 LTB	8	355	10	7		5		OS-1B	
I-680	NB	21	514+82	2	I-680 Bollinger Canyon NB	Cantilever Truss		EXPRESS LANE 0.5 MILE AHEAD							509+75		610	0.55 AC (TYPE A) 0.75 CI A CTB 0.67 LT	8	360	10	7		4		OS-1C	
I-680	NB	21	540+54	2	I-680 Bollinger Canyon NB	Cantilever Truss	R3-44 Modified	FasTrak ONLY (Begin)	1						540+24	1	600	0.55 AC (TYPE A) 0.75 CI A CTB 0.67 LTB	8	367	10	7	1	4		OS-1D	
I-680	NB	21	548+41	2	I-680 Bollinger Canyon NB	Cantilever Gantry		Reader (No Sign Panel)		1	1				540+24	2	640	0.55 AC (TYPE A) 0.75 CI A CTB 0.67 LTB	4	368	10	9	1	4		OS-1E	
I-680	SB	0	593+61	2	I-680 Bollinger Canyon SB	Cantilever Truss	R3-45a	EXPRESS RESTRICTION ENDS	1	1	1				583+80		1050	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	415	10	7	1	3		OS-2A	
I-680	NB	1	606+10	2	I-680 Bollinger Canyon NB	Cantilever Truss	R3-48a Modified	VTMS - Crow Canyon / 24				2	1		611+03		610	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	429	10	7	1	3		OS-2B	Replaced FT Sign & Reader w/ VTMS (no reader).
I-680	NB	1	625+44	2	I-680 Bollinger Canyon NB	Three-Post Sign Bridge Truss	R3-44 Modified	FasTrak ONLY		1	1				625+98	1	360	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	450	11	8	1	3	2	OS-2C	Replaced VTMS (no reader) w/ FT Sign & Reader
I-680	SB	1	625+44	2	I-680 Bollinger Canyon SB	Three-Post Sign Bridge Truss	R3-48a Modified	VTMS - 580 / Blank		1	1	1	1		625+98	2	N/A	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	450	10	7	1	3		OS-2D	Replaced VTMS (no reader) w/ FT Sign & Reader
I-680	SB	1	626+50	2	I-680 Bollinger Canyon SB	CCTV		CCTV	1						TBD		TBD						1	3			
I-680	NB	2	658+98	2	I-680 Bollinger Canyon NB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				649+69	1	1190	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	432	10	7	1	3		OS-3A	
I-680	SB	2	658+98	2	I-680 Bollinger Canyon SB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				649+69	2	10	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	432	10	7	1	3		OS-3B	
I-680	NB	2	679+57	2	I-680 Bollinger Canyon NB	CCTV		CCTV	1						TBD		TBD						1	3			
I-680	NB	2	692+02	2	I-680 Bollinger Canyon NB	Cantilever Truss	R3-48a Modified	VTMS - Crow Canyon / 24		1	1	2	1		696+91	1	840	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	4	448	4	3	1	4		OS-3C	Replaced FT Sign & Reader w/ VTMS (WITH reader).
I-680	SB	2	693+52	2	I-680 Bollinger Canyon SB	Cantilever Truss	R3-48a Modified	VTMS - 580 / Blank		1	1	1	1		696+91	2	10	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	4	447	4	3	1	3	3	OS-3D	Replaced FT Sign & Reader w/ VTMS (WITH reader).
I-680	SB	3	705+66	2	I-680 Bollinger Canyon SB	CCTV		CCTV	1						TBD		TBD						1	3			
I-680	SB	3	736+18	2	I-680 Bollinger Canyon SB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				743+33	1	830	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	472	10	7	1	3		OS-3E	
I-680	NB	3	736+18	2	I-680 Bollinger Canyon NB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				743+33	2	10	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	472	10	7	1	4		OS-3F	
I-680	SB	4	759+50	2	I-680 Bollinger Canyon SB	Cantilever Truss	R3-48a Modified	VTMS - 580 / Blank				1	1		755+33		670	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	490	10	7	1	4		OS-4A	Replaced FT Sign & Reader w/ VTMS (no reader).
I-680	SB	4	768+48	2	I-680 Bollinger Canyon SB	CCTV		CCTV	1						TBD		TBD						1	3			
I-680	NB	4	777+75	1	I-680 Diablo NB	Cantilever Truss	R3-48a Modified	VTMS - 24 / Blank				1	1		768+67		1370	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	485	10	7	1	3		OS-4B	
I-680	SB	4	793+54	2	I-680 Bollinger Canyon SB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				801+94	1	1020	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	482	10	7	1	3	4	OS-4C	
I-680	NB	4	799+98	1	I-680 Diablo NB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				801+94	2	130	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	480	10	7	1	3		OS-4D	
I-680	SB	5	812+00	2	I-680 Bollinger Canyon SB	Cantilever Truss	R3-48a Modified	VTMS - 580 / Blank				1	1		801+94	3	1140	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	478	10	7	1	4		OS-4E	
I-680	SB	5	813+58	2	I-680 Bollinger Canyon SB	CCTV		CCTV	1						TBD		TBD						1	4			
I-680	NB	5	848+43	1	I-680 Diablo NB	CCTV		CCTV	1						TBD		TBD						1	4			
I-680	NB	5	850+39	1	I-680 Diablo NB	Cantilever Truss	R3-48a Modified	VTMS - 24 / Blank				1	1		850+21		190	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	456	8	7	1	4		OS-5A	Replaced FT Sign & Reader w/ VTMS (no reader).
I-680	SB	5	851+17	1	I-680 Diablo SB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				850+21		90	0.20 RHMA-G 0.35 AC 0.75 CI A CTB 0.67 LTB	8	456	8	7	1	4	5	OS-5B	

I-680 Toll Equipment Location Table

Location						Structure	Device Codes								Electrical System			Roadway Characteristics							Plan Sheets		Comments
Route	*Direction*	*Post Mile (PM)*	*Station*	*Zone Number*	*Zone Name*	*Proposed Sign Strucuture Type*	*MUTC D Sign Panel Type*	*Proposed Overhead Sign Panel Detail*	*CCTV*	*Read Point*	*Traffic Monitoring System (TMS)*	*VTMS (Number of Toll Rate LED Panels)*	*VTMS (Number of General Messege LED Panel)*	*Backhaul Network Hub*	*Power Source Location*	*Order of Run*	*Length to Service Drop*	*Pavement Type*	*Proposed Median Concrete Barrier Width at Sign (ft)*	*Existing Left Shoulder Elevation (ft)*	*Existing Left Paved Shoulder Width (ft)*	*Proposed Left Paved Shoulder Width (ft)*	*Exsiting No. HOV Lanes*	*Existing No. General Purpose Lanes*	*Plan Sheets Number*	*Sign Designation*	*Comments*
I-680	NB	6	899+03	1	I-680 Diablo NB	Cantilever Truss	R3-44 Modified	FasTrak ONLY	1	1	1				914+30	1	1650	0.20 RHMA-G 0.35 AC 0.75 Cl A CTB 0.67 LTB	4	424	4	3	1	4		OS-5C	Removed NB VTMS @ PM 5.65 (sta 867+47). Removed SB VTMS @ PM 6.01 (sta 886+70)
I-680	SB	6	900+53	1	I-680 Diablo SB	Cantilever Truss	R3-48a Modified	VTMS - Crow Canyon / 580		1	1	2	1		914+30	2	10	0.20 RHMA-G 0.35 AC 0.75 Cl A CTB 0.67 LTB	4	421	4	3	1	4		OS-5D	Replaced FT Sign & Reader w/ VTMS (WITH reader).
I-680	NB	7	949+63	1	I-680 Diablo NB	CCTV		CCTV	1						1		TBD						1	4			
I-680	NB	7	950+86	1	I-680 Diablo NB	Cantilever Truss	R3-48a Modified	VTMS - 24 / Blank		1	1	1	1		953+00	1	320	0.20 RHMA-G 0.35 AC 0.75 Cl A CTB 0.67 LTB	8	396	10	7	1	4		OS-6A	Replaced FT Sign & Reader w/ VTMS (WITH reader).
I-680	SB	7	950+86	1	I-680 Diablo SB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				953+00	2	10	0.20 RHMA-G 0.35 AC 0.75 Cl A CTB 0.67 LTB	8	396	10	7	1	4		OS-6B	Replaced FT Sign & Reader w/ VTMS (WITH reader).
I-680	SB	8	966+24	1	I-680 Diablo SB	Cantilever Truss	R3-48a Modified	VTMS - Crow Canyon / 580				2	1		967+70		300	0.20 RHMA-G 0.35 AC 0.75 Cl A CTB 0.67 LTB	8	390	10	4	1	3		OS-6C	
I-680	SB	8	968+88	1	I-680 Diablo SB	CCTV		CCTV	1						TBD		TBD						1	3			
I-680	NB	8	995+81	1	I-680 Diablo NB	CCTV		CCTV	1						TBD		TBD						1	3			
I-680	NB	8	998+52	1	I-680 Diablo NB	Cantilever Truss	R3-48a Modified	VTMS - 24 / Blank				1	1		994+72		560	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.75 Cl A CTB 0.67 LTB	8	400	10	7	1	3	6	OS-6D	
I-680	NB	8	1013+17	1	I-680 Diablo NB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				1011+79	1	330	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.65 Cl A CTB 0.80 Cl 4 AS 0.50 Cl 3 PM	8	396	10	7	1	3		OS-6E	
I-680	SB	8	1013+17	1	I-680 Diablo SB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				1011+79	2	10	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.65 Cl A CTB 0.80 Cl 4 AS 0.50 Cl 3 PM	8	396	10	7	1	3		OS-6F	
I-680	NB	9	1055+94	1	I-680 Diablo NB	CCTV		CCTV	1						TBD		TBD						1	3			
I-680	NB	9	1059+00	1	I-680 Diablo NB	Cantilever Truss	R3-48a Modified	VTMS - 24 / Blank				1	1		1056+76	1	320	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.75 Cl A CTB 0.67 LTB	8	352	10	7	1	3		OS-7A	Replaced FT Sign & Reader w/ VTMS (no reader).
I-680	SB	9	1059+00	1	I-680 Diablo SB	Cantilever Truss	R3-48a Modified	VTMS - Crow Canyon / 580		1	1	2	1		1056+76	2	10	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.75 Cl A CTB 0.67 LTB	8	352	10	7	1	3		OS-7B	Replaced FT Sign & Reader w/ VTMS (no reader).
I-680	SB	10	1085+40	1	I-680 Diablo SB	CCTV		CCTV	1						TBD		TBD						1	3	7		
I-680	NB	10	1103+14	1	I-680 Diablo NB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				1117+57	1	1530	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.65 Cl A CTB 0.80 Cl 4 AS 0.50 Cl 3 PM	6	312	10	6	1	3		OS-7C	Removed SB VTMS @ PM 9.69 (sta 1079+68). Replaced VTMS (no reader) w/ FT Sign & Reader
I-680	SB	10	1114+31	1	I-680 Diablo SB	Cantilever Truss	R3-48a Modified	VTMS - Crow Canyon / 580		1	1	2	1		1117+57	2	120	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.75 Cl A CTB 0.67 LTB	8	302	10	7	1	3		OS-7D	Replaced FT Sign & Reader w/ VTMS (WITH reader).
I-680	NB	11	1123+81	1	I-680 Diablo NB	CCTV		CCTV	1						TBD		TBD						1	3			
I-680	NB	11	1133+07	1	I-680 Diablo NB	Cantilever Truss	R3-48a Modified	VTMS - 24 / Blank				1	1		1117+57	3	1940	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.75 Cl A CTB 0.67 LTB	8	294	10	7	1	3		OS-8A	Replaced FT Sign & Reader w/ VTMS (no reader).
I-680	NB	11	1162+60	1	I-680 Diablo NB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				1165+72		500	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.75 Cl A CTB 0.67 LTB	8	281	10	7	1	3		OS-8B	
I-680	SB	11	1162+60	1	I-680 Diablo SB	Cantilever Truss	R3-44 Modified	FasTrak ONLY		1	1				1165+72		10	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.75 Cl A CTB 0.67 LTB	8	282	10	7	1	3		OS-8C	
I-680	NB	11	1173+70	1	I-680 Diablo NB	Cantilever Truss	R3-45a	EXPRESS RESTRICTION ENDS		1	1				1165+72		950	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.65 Cl A CTB 0.80 Cl 4 AS 0.50 Cl 3 PM	6	277	10	6	1	3	8	OS-8D	

I-680 Toll Equipment Location Table

Location						Structure	Device Codes								Electrical System			Roadway Characteristics							Plan Sheets		Comments
Route	*Direction*	*Post Mile (PM)*	*Station*	*Zone Number*	*Zone Name*	*Proposed Sign Strucuture Type*	*MUTC D Sign Panel Type*	*Proposed Overhead Sign Panel Detail*	*CCTV*	*Read Point*	*Traffic Monitoring System (TMS)*	*VTMS (Number of Toll Rate LED Panels)*	*VTMS (Number of General Messege LED Panel)*	*Backhaul Network Hub*	*Power Source Location*	*Order of Run*	*Length to Service Drop*	*Pavement Type*	*Proposed Median Concrete Barrier Width at Sign (ft)*	*Existing Left Shoulder Elevation (ft)*	*Existing Left Paved Shoulder Width (ft)*	*Proposed Left Paved Shoulder Width (ft)*	*Exsiting No. HOV Lanes*	*Existing No. General Purpose Lanes*	*Plan Sheets Number*	*Sign Designation*	*Comments*
I-680	SB	12	1188+03	1	I-680 Diablo SB	Cantilever Truss	R3-44 Modified	FasTrak ONLY	1	1	1				1192+58		670	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.65 Cl A CTB 0.80 Cl 4 AS 0.50 Cl 3 PM	4	271	4	3	1	4		OS-8E	
I-680	SB	12	1211+03	1	I-680 Diablo SB	Cantilever Truss	R3-48a Modified	VTMS - Crow Canyon / 580				2	1		1220+85		1190	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.65 Cl A CTB 0.80 Cl 4 AS 0.50 Cl 3 PM	4	261	1	1	1	4		OS-8F	
I-680	SB	13	1233+08	1	I-680 Diablo SB	Cantilever Gantry		Reader (No Sign Panel)		1	1				1234+37		240	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.75 Cl A CTB 0.67 LTB	4	236	3	3	1	5		OS-9A	
I-680	SB	13	1241+30	1	I-680 Diablo SB	Cantilever Truss	R3-44 Modified	FasTrak ONLY (Begin)	1						1245+70		580	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.75 Cl A CTB 0.67 LTB	4	217	2	2	1	5		OS-9B	
I-680	SB	13	1272+30	1	I-680 Diablo SB	Cantilever Truss		EXPRESS LANE 0.5 MILE AHEAD							1271+33		250	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.75 Cl A CTB 0.67 LTB	8	186	10	7		5	9	OS-9C	
I-680	SB	14	1287+92	1	I-680 Diablo SB	Cantilever Truss	R3-48a Modified	VTMS - Crow Canyon / 580				2	1		1287+98		160	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.75 Cl A CTB 0.67 LTB	8	175	26	23		6		OS-9D	
I-680	SB	14	1301+36	1	I-680 Diablo SB	Cantilever Truss		EXPRESS LANE 1 MILE AHEAD	1						1306+78		760	0.10 HMA (OG) 0.15 RHMA-G 0.20 HMA-A 0.55 AC (TYPE A) 0.75 Cl A CTB 0.67 LTB	8	178	14	11		6		OS-9E	
I-680	NB	14	1334+47	1	I-680 Diablo NB									1													
TOTAL						-	-	-	**19**	**27**	**27**	**28**	**19**	**2**	-		-	-	-	-	-	-	-	-		-	-

Notes:
1) Shoulder elevation measured approximately 2.0' from face of barrier.
2) Shoulder widths measured from face of barrier to inside edge of traveled way.

Abbreviations:

AC	Asphalt Concrete
ATPB	Asphalt Treated Perme
CTB	Cement Treated Base
HMA (OG)	Hot Mix Asphalt (Open
HMA-A	Hot Mix Asphalt (Type A)
LTB	Lime Treated Base
PM	Permeable Material
RHMA-G	Rubberized Hot Mix Aspl

I-880 Toll Equipment Location Table

Location						Structure	Device Codes								Electrical System			Roadway Characteristics							Plan Sheets		Comments
Route	*Direction*	*Post Mile (PM)*	*Station*	*Zone Number*	*Zone Name*	*Proposed Sign Strucuture Type*	*MUTC D Sign Panel Type*	*Proposed Overhead Sign Panel Detail*	*CCTV*	*Read Point*	*Traffic Monitoring System (TMS)*	*VTMS (Number of Toll Rate LED Panels)*	*VTMS (Number of General Messege LED Panel)*	*Backhaul Network Hub*	*Power Source Location*	*Order of Run*	*Length to Service Drop*	*Pavement Type*	*Proposed Median Concrete Barrier Width at Sign (ft)*	*Existing Left Shoulder Elevation (ft)*	*Existing Left Paved Shoulder Width (ft)*	*Proposed Left Paved Shoulder Width (ft)*	*Exsiting No. HOV Lanes*	*Existing No. General Purpose Lanes*	*Plan Sheets Number*	*Sign Designation*	*Comments*
I-880	NB	8	1006+37	7	DIXON NB	Cantilever	-	EXPRESS LANE 1 MILE AHEAD	1						1006+29	1	830		8	31	10	7		3	1	OS-1A	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	8	1019+57	7	DIXON NB	Cantilever	R3-48a Mod	VTMS - Mission Blvd 262 / Dumbarton Br 84				2	1		1006+29	2	1100		8	29	9	6		4		OS-1B	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	8	1032+77	7	DIXON NB	Cantilever	-	EXPRESS LANE 0.5 MILE AHEAD							1045+52		1660		8	28	10	7		3		OS-1C	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	8	1048+00	7	DIXON NB									1	TBD		TBD							3			
I-880	NB	9	1059+17	7	DIXON NB	Cantilever	-	EXPRESS LANE DO NOT CORSS DOUBLE WHITE NEXT 1.5 MILES							1062+04	1	470		8	21	21	15	1	3	1	OS-1D	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	9	1059+17	7	DIXON SB	Cantilever	R3-45a	EXPRESS RESTRICTION ENDS	1	1	1				1062+04	2	100		8	21	16	11		3		OS-1E	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	NB	9	1064+45	7	DIXON NB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1062+04	3	410		8	26	23	16	1	4		OS-1F	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	10	1122+53	7	DIXON SB	Cantilever	R3-48a Mod	VTMS - Great Mall Pkwy				1	1		1121+68	1	210		8	16	12	9	1	5		OS-2A	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	10	1125+17	7	DIXON SB				1						TBD		TBD						1	5			
I-880	NB	10	1133+09	7	DIXON NB	Cantilever	R3-48a Mod	VTMS - Mission Blvd 262 / Dumbarton Br 84				2	1		1121+68		1150		8	16	8	5	1	4		OS-2B	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	11	1159+42	7	DIXON NB	Cantilever	R3-44 Mod	Fastrak ONLY	1	1	1				1156+66	1	440		8	16	10	7	1	4		OS-2C	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	11	1159+57	7	DIXON SB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1156+66	2	10		8	16	10	7	1	4		OS-2D	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	1	1206+97	7	DIXON SB				1						TBD		TBD						1	5			
I-880	NB	1	1212+32	7	DIXON NB	Cantilever	R3-48a Mod	VTMS - Mission Blvd 262 / Dumbarton Br 84		1	1	2	1		1204+18	1	1040		8	17	10	7	1	5		OS-3A	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	1	1212+47	7	DIXON SB	Cantilever	R3-48a Mod	VTMS - Great Mall Pkwy		1	1	1	1		1204+18	2	10		8	17	10	10	1	5		OS-3B	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	NB	2	1238+72	7	DIXON NB				1						TBD		TBD						1	5			
I-880	NB	2	1259+92	7	DIXON NB	Cantilever	R3-48a Mod	VTMS - Mowry Ave / Dubarton Br 84				2	1		1258+37		380		8	26	10	7	1	3		OS-3C	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	3	1277+01	6	AUTO MALL NB	Cantilever	-	EXPRESS LANE - NEXT EXIT Mowry Ave	1	1	1				1278+58	1	630		8	24	10	7	1	3		OS-3D	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	3	1277+16	7	DIXON SB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1278+58	2	10		8	24	10	7	1	3		OS-3E	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	NB	3	1293+97	6	AUTO MALL NB	Cantilever	R3-48a Mod	VTMS - Mowry Ave / Dubarton Br 84				2	1		1290+13		510		8	21	10	7	1	4		OS-4A	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	3	1299+84	7	DIXON SB	Cantilever	R3-48a Mod	VTMS - Great Mall Pkwy				1	1		1299+87		140		8	20	10	7	1	4		OS-4B	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	3	1316+68	6	AUTO MALL NB	Cantilever	-	EXPRESS LANE DO NOT CROSS DOUBLE WHITE LINES NEXT 2.75 MILES	1						1321+66	1	650		8	16	10	7	1	3		OS-4C	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	4	1330+51	6	AUTO MALL NB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1321+66	2	1010		8	18	11	8	1	4		OS-4D	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	4	1330+66	6	AUTO MALL SB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1321+66	3	10		8	18	9	6	1	4		OS-4E	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	NB	4	1380+47	6	AUTO MALL NB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1385+92	1	630		8	26	12	8	1	4		OS-5A	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	4	1380+62	6	AUTO MALL SB	Cantilever	R3-48a Mod	VTMS - Mission Blvd 262		1	1	2	1		1385+92	2	10		8	26	8	5	1	4		OS-5B	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	5	1383+11	6	AUTO MALL SB				1						TBD		TBD						1	4			
I-880	NB	5	1392+00	6	AUTO MALL NB									1	TBD		TBD						1	3			
I-880	NB	5	1425+06	6	AUTO MALL NB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1416+55	1	930		4	31	6	3	1	3		OS-5C	Overhead Sign Foundation Option 2A (Modified Foundation).
I-880	SB	5	1426+56	6	AUTO MALL SB	Cantilever	R3-44 Mod	Fastrak ONLY	1	1	1				1416+55	2	170		4	31	2	3	1	3		OS-5D	Overhead Sign Foundation Option 2A (Modified Foundation).
I-880	NB	6	1454+94	6	AUTO MALL NB	Cantilever	R3-48a Mod	VTMS - Dumbarton Br 84 / San Mateo Br 92				2	1		1453+86	1	260		8	34	12	9	1	3		OS-5E	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	6	1455+09	6	AUTO MALL SB	Cantilever	R3-48a Mod	VTMS - Mission Blvd 262				2	1		1453+86	2	10		8	34	8	5	1	3		OS-5F	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	NB	7	1489+26	5	MOWRY NB	Cantilever	R3-44 Mod	Fastrak ONLY	1	1	1				1490+09	1	180		8	38	13	10	1	4		OS-6A	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	7	1489+41	5	MOWRY SB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1490+09	2	10		8	38	8	5	1	3		OS-6B	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	NB	7	1519+96	5	MOWRY NB	Cantilever	R3-48a Mod	VTMS - Dumbarton Br 84 / San Mateo Br 92		1	1	2	1		1518+85		310		8	41	12	9	1	3		OS-6C	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	8	1541+08	5	MOWRY NB				1						TBD		TBD						1	4			
I-880	SB	8	1551+64	5	MOWRY SB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1546+17		640		8	37	9	6	1	3		OS-7A	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	8	1567+48	5	MOWRY NB	Cantilever	R3-48a Mod	VTMS - Dumbarton Br 84 / San Mateo Br 92		1	1	2	1		1569+74		420		8	38	11	8	1	4		OS-7B	Overhead Sign Foundation Option 1 (Standard) Type 60GE.

I-880 Toll Equipment Location Table

Location						Structure	Device Codes								Electrical System			Roadway Characteristics							Plan Sheets		Comments
Route	*Direction*	*Post Mile (PM)*	*Station*	*Zone Number*	*Zone Name*	*Proposed Sign Strucuture Type*	*MUTC D Sign Panel Type*	*Proposed Overhead Sign Panel Detail*	*CCTV*	*Read Point*	*Traffic Monitoring System (TMS)*	*VTMS (Number of Toll Rate LED Panels)*	*VTMS (Number of General Messege LED Panel)*	*Backhaul Network Hub*	*Power Source Location*	*Order of Run*	*Length to Service Drop*	*Pavement Type*	*Proposed Median Concrete Barrier Width at Sign (ft)*	*Existing Left Shoulder Elevation (ft)*	*Existing Left Paved Shoulder Width (ft)*	*Proposed Left Paved Shoulder Width (ft)*	*Exsiting No. HOV Lanes*	*Existing No. General Purpose Lanes*	*Plan Sheets Number*	*Sign Designation*	*Comments*
I-880	NB	9	1620+21	5	MOWRY NB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1614+29	1	970		8	39	11	8	1	4	7	OS-7C	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	9	1620+36	5	MOWRY SB	Cantilever	R3-44 Mod	Fastrak ONLY	1	1	1				1614+29	2	10		8	39	8	5	1	3		OS-7D	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	9	1626+56	5	MOWRY SB	Cantilever	-	EXPRESS LANE DO NOT CROSS DOUBLE WHITE LINES NEXT 2.75 MILES							1626+58		110		8	43	8	5	1	3		OS-7E	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	10	1646+68	5	MOWRY SB	Cantilever	R3-48a Mod	VTMS - Auto Mall Pkwy				2	1		1654+69		1060		8	39	3	4	1	3	8	OS-8A	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	10	1667+80	4	ALVARADO NB				1						TBD		TBD						1	4			
I-880	NB	10	1670+27	4	ALVARADO NB	Cantilever	R3-48a Mod	VTMS - San Mateo Br 92 / 238 580		1	1	2	1		1668+70	1	280		4	37	6	3	1	4		OS-8B	Overhead Sign Foundation Option 2A (Modified Foundation).
I-880	SB	10	1671+76	5	MOWRY SB	Cantilever	-	EXPRESS LANE NEXT EXIT Auto Mall Pkwy		1	1				1668+70	2	150		4	37	8	3	1	3		OS-8C	Overhead Sign Foundation Option 2A (Modified Foundation).
I-880	NB	10	1694+20	4	ALVARADO NB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1687+70	1	730		8	34	12	9	1	3		OS-8D	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	11	1701+71	5	MOWRY SB	Cantilever	R3-48a Mod	VTMS - Auto Mall Pkwy				2	1		1687+70	2	890		8	33	10	7	1	3		OS-8E	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	11	1725+47	4	ALVARADO NB				1						TBD		TBD						1	4			
I-880	NB	11	1727+72	4	ALVARADO NB	Cantilever	R3-48a Mod	VTMS - San Mateo Br 92 / 238 580				2	1		1727+71	1	130		8	31	10	7	1	4		OS-9A	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	11	1737+08	4	ALVARADO SB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1727+71	2	940		8	30	10	7	1	3		OS-9B	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	11	1748+89	4	ALVARADO NB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1749+16		160		8	28	10	7	1	3		OS-9C	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	12	1762+84	4	ALVARADO SB	Cantilever	R3-48a Mod	VTMS - Dumbarton Br 84				2	1		1752+46		1300		8	31	9	6	1	3		OS-9D	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	12	1763+37	4	ALVARADO SB				1						TBD		TBD						1	3			
I-880	NB	12	1788+19	4	ALVARADO NB	Cantilever	R3-48a Mod	VTMS - San Mateo Br 92 / 238 580		1	1	2	1		1780+66	1	850		8	26	10	7	1	3		OS-9E	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	12	1791+90	4	ALVARADO SB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1780+66	2	390		8	26	10	7	1	3		OS-9F	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	13	1810+39	4	ALVARADO SB	Cantilever	R3-48a Mod	VTMS - Dumbarton Br 84				2	1		1808+93		260		8	26	10	7	1	3		OS-9G	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	13	1828+31	4	ALVARADO NB	Cantilever	-	EXPRESS LANE NEXT EXIT 92 WEST	1	1	1				1826+70		300		8	23	9	6	1	3		OS-10A	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	13	1854+66	3	TENNYSON NB	Cantilever	R3-48a Mod	VTMS - San Mateo Br 92 / 238 580				2	1		1862+50	1	930		8	18	9	6	1	4		OS-10B	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	14	1857+88	4	ALVARADO SB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1862+50	2	10		8	18	14	11	1	4		OS-10C	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	14	1879+00	3	TENNYSON NB	Cantilever	-	EXPRESS LANE DO NOT CROSS DOUBLE WHITE LINES NEXT 1.5 MILES							1876+66	1	450		8	36	11	8	1	4		OS-10D	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	14	1885+17	3	TENNYSON NB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1876+66	2	620		8	20	11	8	1	3	10	OS-10E	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	14	1885+32	4	ALVARADO SB	Cantilever	R3-48a Mod	VTMS - Dumbarton Br 84				2	1		1876+66	3	10		8	20	9	6	1	3		OS-10F	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	14	1886+75	3	TENNYSON SB				1						TBD		TBD						1	3			
I-880	SB	15	1918+60	3	TENNYSON SB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				1916+57		680		8	15	7	4	1	3		OS-11A	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	15	1934+44	3	TENNYSON NB				1						TBD		TBD						1	4			
I-880	NB	15	1937+08	3	TENNYSON NB	Cantilever	R3-48a Mod	VTMS - 238 580				1	1		1939+75	1	660		8	19	11	8	1	4		OS-11B	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	15	1937+23	3	TENNYSON SB	Cantilever	R3-48a Mod	VTMS - Whipple Rd & Dyer St / Dumbarton Br 84				2	1		1939+75	2	10		8	19	9	6	1	4		OS-11C	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	NB	15	1947+64	3	TENNYSON NB	Cantilever	R3-44 Mod	Fastrak ONLY	1	1	1				1939+75	3	900		8	22	10	7	1	4	11	OS-11D	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	16	1979+25	3	TENNYSON NB	Cantilever	-	EXPRESS LANE DO NOT CROSS DOUBLE WHITE LINES NEXT 3.25 MILES							1972+69	1	810		8	33	10	7	1	4		OS-11E	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	16	1979+40	3	TENNYSON SB	Cantilever	R3-48a Mod	VTMS - Whipple Rd & Dyer St / Dumbarton Br 84		1	1	2	1		1972+69	2	10		8	33	10	7	1	3		OS-11F	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	NB	16	1984+92	3	TENNYSON NB	Cantilever	R3-44 Mod	Fastrak ONLY	1	1	1				1972+69	3	580		8	35	6	3	1	4		OS-11G	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	17	2016+28	3	TENNYSON SB	Cantilever	R3-48a Mod	VTMS - Whipple Rd & Dyer St / Dumbarton Br 84		1	1	2	1		2019+91		830		8	42	6	7	1	4		OS-12A	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	NB	17	2039+01	3	TENNYSON NB	Cantilever	R3-44 Mod	Fastrak ONLY	1	1	1				2032+59		760		6	58	4	2	1	3		OS-12B	Overhead Sign Foundation Option 2B (Modified Foundation). Design Approval Required.
I-880	SB	17	2067+19	3	TENNYSON SB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				2076+02		1010		4	66	4	2	1	4		OS-12C	Overhead Sign Foundation Option 2A (Modified Foundation).
I-880	NB	18	2089+79	3	TENNYSON NB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				2095+63	1	700		4	65	4	3	1	4	12	OS-12D	Overhead Sign Foundation Option 2A (Modified Foundation). Cantilever in Dual Configuration
I-880	SB	18	2089+94	3	TENNYSON SB	Cantilever	R3-48a Mod	VTMS - Whipple Rd & Dyer St / Dumbarton Br 84				2	1		2095+63	2	10		4	65	4	3	1	4		OS-12E	Overhead Sign Foundation Option 2A (Modified Foundation). Cantilever in Dual Configuration
I-880	SB	18	2090+32	3	TENNYSON SB				1						TBD		TBD						1	4			
I-880	NB	19	2129+12	3	TENNYSON NB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				2130+58	1	250		8	62	10	7	1	4		OS-13A	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	SB	19	2129+27	2	PASEO GRANDE SB	Cantilever	R3-44 Mod	Fastrak ONLY		1	1				2130+58	2	10		8	62	6	3	1	5	13	OS-13B	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Cantilever in Dual Configuration.
I-880	NB	19	2155+81	3	TENNYSON NB	Cantilever	R3-45a	EXPRESS RESTRICTION ENDS		1	1				2163+49	1	970		8	40	16	12	1	4		OS-13C	Overhead Sign Foundation Option 1 (Standard) Type 60GE.

I-880 Toll Equipment Location Table

Location						Structure	Device Codes								Electrical System			Roadway Characteristics								Plan Sheets		Comments
Route	*Direction*	*Post Mile (PM)*	*Station*	*Zone Number*	*Zone Name*	*Proposed Sign Strucuture Type*	*MUTC D Sign Panel Type*	*Proposed Overhead Sign Panel Detail*	*CCTV*	*Read Point*	*Traffic Monitoring System (TMS)*	*VTMS (Number of Toll Rate LED Panels)*	*VTMS (Number of General Messege LED Panel)*	*Backhaul Network Hub*	*Power Source Location*	*Order of Run*	*Length to Service Drop*	*Pavement Type*	*Proposed Median Concrete Barrier Width at Sign (ft)*	*Existing Left Shoulder Elevation (ft)*	*Existing Left Paved Shoulder Width (ft)*	*Proposed Left Paved Shoulder Width (ft)*	*Exsiting No. HOV Lanes*	*Existing No. General Purpose Lanes*	*Plan Sheets Number*	*Sign Designation*	*Comments*
I-880	SB	19	2169+40	2	PASEO GRANDE SB	Cantilever	R3-44 Mod	Fastrak ONLY	1	1	1				2163+49	2	760		8	39	8	5	1	5		OS-13D	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	21	2248+60	2	PASEO GRANDE SB	Cantilever	R3-44 Mod	Fastrak ONLY	1	1	1				2248+48	1	120		4	27	5	4	1	3		OS-14A	Overhead Sign Foundation Option 3.
I-880	SB	21	2251+26	2	PASEO GRANDE SB	Cantilever	-	EXPRESS LANE DO NOT CROSS DOUBLE WHITE LINES NEXT 1.5 MILES							2248+48	2	280		4	27	5	4	1	3	14	OS-14B	Overhead Sign Foundation Option 2A (Modified Foundation).
I-880	SB	21	2275+00	2	PASEO GRANDE SB	Cantilever	R3-48a Mod	VTMS - San Mateo Br 92 / Dumbarton Br 84				2	1		2264+97		1100		6	30	5	3	1	4		OS-14C	Overhead Sign Foundation Option 2B (Modified Foundation). Design Approval Required.
I-880	SB	22	2306+68	1	DAVIS SB	Cantilever	R3-48a Mod	VTMS - 238 580 / San Mateo Br 92	1	1	1	2	1		2313+15		950		6	32	4	3	1	4		OS-15A	Overhead Sign Foundation Option 2B (Modified Foundation). Design Approval Required.
I-880	SB	23	2333+08	1	DAVIS SB	Cantilever	R3-48a Mod	VTMS - 238 580 / San Mateo Br 92	1			2	1		2326+56		990		6	30	6	3		4		OS-15B	Overhead Sign Foundation Option 2B (Modified Foundation). Design Approval Required.
I-880	SB	23	2359+48	1	DAVIS SB	Cantilever	R3-48a Mod	VTMS - 238 580 / San Mateo Br 92		1	1	2	1		2361+54		960		8	26	10	6		4	15	OS-15C	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	23	2362+12	1	DAVIS SB				1						TBD		TBD							4			
I-881	SB	26	2533+73	1	DAVIS SB									1	TBD		TBD										
I-880	SB	24	2412+29	1	DAVIS SB	Cantilever	R3-44 Mod	Fastrak ONLY	1	1	1				2414+96		670		4	27	5	3		4	16	OS-16A	Overhead Sign Foundation Option 2A (Modified Foundation).
I-880	SB	24	2436+14	1	DAVIS SB	Cantilever	R3-48a Mod	VTMS - 238 580 / San Mateo Br 92				2	1		2445+26		1120		4	36	2	2		4		OS-16B	Overhead Sign Foundation Option 2A (Modified Foundation).
I-880	SB	25	2471+29	1	DAVIS SB	Cantilever	-	Reader (No Sign Panel)	1	1	1				2457+82	1	1480		4	14	10	7		5	17	OS-17A	Overhead Sign Foundation Option 3 (Toll Gantry Only).
I-880	SB	25	2480+93	1	DAVIS SB	Cantilever	R3-44 Mod	Fastrak ONLY							2457+82	2	1050		8	12	10	7		4		OS-17B	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
I-880	SB	26	2507+33	1	DAVIS SB	Cantilever	-	EXPRESS LANE 0.5 MILE AHEAD							2496+68		1170		6	11	5	2		5		OS-17C	Overhead Sign Foundation Option 2B (Modified Foundation). Design Approval Required.
I-880	SB	26	2523+17	1	DAVIS SB	Cantilever	R3-48a Mod	VTMS - 238 580 / San Mateo Br 92				2	1		2526+11		480		6	12	5	3		4		OS-17D	Overhead Sign Foundation Option 2B (Modified Foundation). Design Approval Required.
I-880	SB	26	2533+73	1	DAVIS SB	Cantilever	-	EXPRESS LANE 1 MILE AHEAD	1						2533+67		190		6	12	5	3		4		OS-17E	Overhead Sign Foundation Option 2B (Modified Foundation). Design Approval Required.
TOTAL						-	-	-	**31**	**48**	**48**	**62**	**33**	**3**	-		-	-	-	-	-	-	-	-		-	-

Notes:
1) Shoulder elevation measured approximately 2.0' from face of barrier.
2) Shoulder widths measured from face of barrier to inside edge of traveled way.
3) Assumed tubular cantilever sign structure. If truss cantilever structure increase concrete barrier

Abbreviations:

AC	Asphalt Concrete
ATPB	Asphalt Treated Perm
CTB	Cement Treated Base
HMA (OG)	Hot Mix Asphalt (Open
HMA-A	Hot Mix Asphalt (Type A)
LTB	Lime Treated Base
PM	Permeable Material
RHMA-G	Rubberized Hot Mix Asp

SR-84 Toll Equipment Location Table

Location						Structure	Device Codes								Electrical System			Roadway Characteristics							Plan Sheets		Comments
Route	*Direction*	*Post Mile (PM)*	*Station*	*Zone Number*	*Zone Name*	*Proposed Sign Strucuture Type*	*MUTC D Sign Panel Type*	*Proposed Overhead Sign Panel Detail*	*CCTV*	*Read Point*	*Traffic Monitoring System (TMS)*	*VTMS (Number of Toll Rate LED Panels)*	*VTMS (Number of General Messege LED Panel)*	*Backhaul Network Hub*	*Power Source Location*	*Order of Run*	*Length to Service Drop*	*Pavement Type*	*Proposed Median Concrete Barrier Width at Sign (ft)*	*Existing Left Shoulder Elevation (ft)*	*Existing Left Paved Shoulder Width (ft)*	*Proposed Left Paved Shoulder Width (ft)*	*Exsiting No. HOV Lanes*	*Existing No. General Purpose Lanes*	*Plan Sheets Number*	*Sign Designation*	*Comments*
SR-84	WB	3	672+45	1	SR 84 Newark Blvd WB									1	TBD		TBD						1	6	1		
SR-84	WB	4	708+23	1	SR 84 Newark Blvd WB	Cantilever Truss	R3-44 (Mod)	FasTrak ONLY	1	1	1				704+01		1400	0.15' RAC (TYPE C) 0.65' AC (TYPE A) 0.80' CTB 0.95' CI 4 AS	8			10	1	2		OS-1A	Overhead Sign Foundation Option 1 (Standard) Type 60GE, offset to maintain 10.4' shoulder due to large center median and EB left shoulder.
SR-84	WB	5	752+79	1	SR 84 Newark Blvd WB	Cantilever Truss		Reader (No Sign Panel)	1	1	1				760+94	1	930	0.15' RAC (TYPE C) 0.65' AC (TYPE A) 0.80' CTB 0.95' CI 4 AS	4			10	1	2	2	OS-2A	Overhead Sign Foundation Option 1 (Standard) Type 60GE, offset to maintain 10.4' shoulder due to large center median and EB left shoulder.
SR-84	WB	5	771+18	1	SR 84 Newark Blvd WB	Cantilever Truss	R3-44 (Mod)	FasTrak ONLY							760+94	2	1170	0.15' RAC (TYPE C) 0.65' AC (TYPE A) 0.80' CTB 0.95' CI 4 AS	8			13	1	2		OS-2B	Overhead Sign Foundation Option 1 (Standard) Type 60GE, offset to maintain 10.4' shoulder due to large center median and EB left shoulder.
SR-84	WB	6	796+25	1	SR 84 Newark Blvd WB	Cantilever Truss		EXPRESS LANE 0.5 MILE AHEAD	1						789+10		920	0.15' RAC (TYPE C) 0.65' AC (TYPE A) 0.80' CTB 0.95' CI 4 AS	8			4	1	3		OS-2C	Overhead Sign Foundation Option 1 (Standard) Type 60GE, offset to maintain 10.4' shoulder due to large center median and EB left shoulder.
SR-84	WB	6	810+70	1	SR 84 Newark Blvd WB	Cantilever Truss	R3-48a (Mod)	VTMS - XXX / XXX				2	1		810+45		160	0.15' RAC (TYPE C) 0.65' AC (TYPE A) 0.80' CTB 0.95' CI 4 AS	8			7	1	2	2	OS-2D	Overhead Sign Foundation Option 1 (Standard) Type 60GE, offset to maintain 10.4' shoulder due to large center median and EB left shoulder.
SR-84	WB	6	819+77	1	SR 84 Newark Blvd WB	Existing Sign Bridge		EXPRESS LANE 1.0 MILE AHEAD							819+77		N/A	0.15' RAC (TYPE C) 0.65' AC (TYPE A) 0.80' CTB 0.95' CI 4 AS	NA			NA		3		OS-2E	Overhead Sign Foundation Option 1 (Standard) Type 60GE, offset to maintain 10.4' shoulder due to large center median and EB left shoulder.
SR-84	WB	6	823+38	1	SR 84 Newark Blvd WB	Cantilever Truss		EXPRESS LANE 1.0 MILE AHEAD	1						823+35		230	0.15' RAC (TYPE C) 0.65' AC (TYPE A) 0.80' CTB 0.95' CI 4 AS	8			1		3		OS-2F	Overhead Sign Foundation Option 1 (Standard) Type 60GE, offset to maintain 10.4' shoulder due to large center median and EB left shoulder.
TOTAL						-	-	-	**4**	**2**	**2**	**2**	**1**	**1**	-		-	-	-	-	-	-	-	-		-	-

Notes:
1) Shoulder elevation measured approximately 2.0' from face of barrier.
2) Shoulder widths measured from face of barrier to inside edge of traveled way.

Abbreviations:
AC Asphalt Concrete
AS Aggregate Subbase
CTB Cement Treated Base
RAC Rubberized Ashpalt Co

SR-92 Toll Equipment Location Table

Location						Structure	Device Codes									Electrical System			Roadway Characteristics								Plan Sheets		Comments
Route	*Direction*	*Post Mile (PM)*	*Station*	*Zone Number*	*Zone Name*	*Proposed Sign Strucuture Type*	*MUTC D Sign Panel Type*	*Proposed Overhead Sign Panel Detail*	*CCTV*	*Read Point*	*Traffic Monitoring System (TMS)*	*VTMS (Number of Toll Rate LED Panels)*	*VTMS (Number of General Messege LED Panel)*	*Backhaul Network Hub*	*Power Source Location*	*Order of Run*	*Length to Service Drop*	*Pavement Type*	*Proposed Median Concrete Barrier Width at Sign (ft)*	*Existing Left Shoulder Elevation (ft)*	*Existing Left Paved Shoulder Width (ft)*	*Proposed Left Paved Shoulder Width (ft)*	*Exsiting No. HOV Lanes*	*Existing No. General Purpose Lanes*	*Plan Sheets Number*	*Sign Designation*	*Comments*
SR-92	WB	3		1	SR 92 Hesperian Blvd WB									1	TBD		TBD						1	5	1		
SR-92	WB	3	512+58	1	SR 92 Hesperian Blvd WB	Existing Sign Bridge	R3-44 (Mod)	FasTrak ONLY	1	1	1				512+36		110	0.15' RAC 1.13' AC (TYPE A)	NA		8	8	1	3		OS-1A	Existing Sign Bridge.
SR-92	WB	4		1	SR 92 Hesperian Blvd WB	Cantilever Truss	R3-48a (Mod)	VTMS - XXX / XXX				2	1		540+84		780	0.15' RAC 1.13' AC (TYPE A)	8		11	7	1	3	2	OS-2A	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
SR-92	WB	5	573+44	1	SR 92 Hesperian Blvd WB	Cantilever Truss	R3-44 (Mod)	FasTrak ONLY	1	1	1				571+56		310	0.33' AC (TYPE A) 0.66' CTB 1.00 Cl 4 AS	8		10	7	1	3		OS-2B	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
SR-92	WB	5	621+61	1	SR 92 Hesperian Blvd WB	Cantilever Truss			1	1	1				629+50	1	910	0.15' RAC 1.13' AC (TYPE A)	4		10	9	1	3	3	OS-3A	Overhead Sign Foundation Option 3 (Toll Gantry Only).
SR-92	WB	6	631+81	1	SR 92 Hesperian Blvd WB	Cantilever Truss	R3-44 (Mod)	FasTrak ONLY							629+50	2	330	0.58' PCC 0.45' ACB 0.34' AS 0.98' PM	8		10	7		3		OS-3B	Overhead Sign Foundation Option 1 (Standard) Type 60GE.
SR-92	WB	6	660+05	1	SR 92 Hesperian Blvd WB	Proposed Sign Bridge	R3-48a (Mod)	EXPRESS LANE 0.5 MILE AHEAD VTMS - XXX / XXX				2	1		660+32		140	0.35' AC 0.80' CTB 0.90' AS 1.00 Cl 3 PM	8		10	7		4		OS-3C	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Proposed Sign Bridge.
SR-92	WB	6		1	SR 92 Hesperian Blvd WB				1																	OS-3D	Overhead Sign Foundation Option 1 (Standard) Type 60GE. Proposed Sign Bridge.
TOTAL						-	-	-	**4**	**3**	**3**	**4**	**2**	**1**	-		-	-	-	-	-	-	-	-		-	-

Notes:
1) Shoulder elevation measured approximately 2.0' from face of barrier.
2) Shoulder widths measured from face of barrier to inside edge of traveled way.

Abbreviations:
AC Asphalt Concrete
ACB Asphalt Concrete Base
CTB Cement Treated Base
PCC Portlanc Cement Concrete
PM Permeable Material
RAC Rubberized Asl

Addendum No. 2, Appendix 7

RFP Appendix 1 Reference 2D, Diagrams, Drawings and Schematics

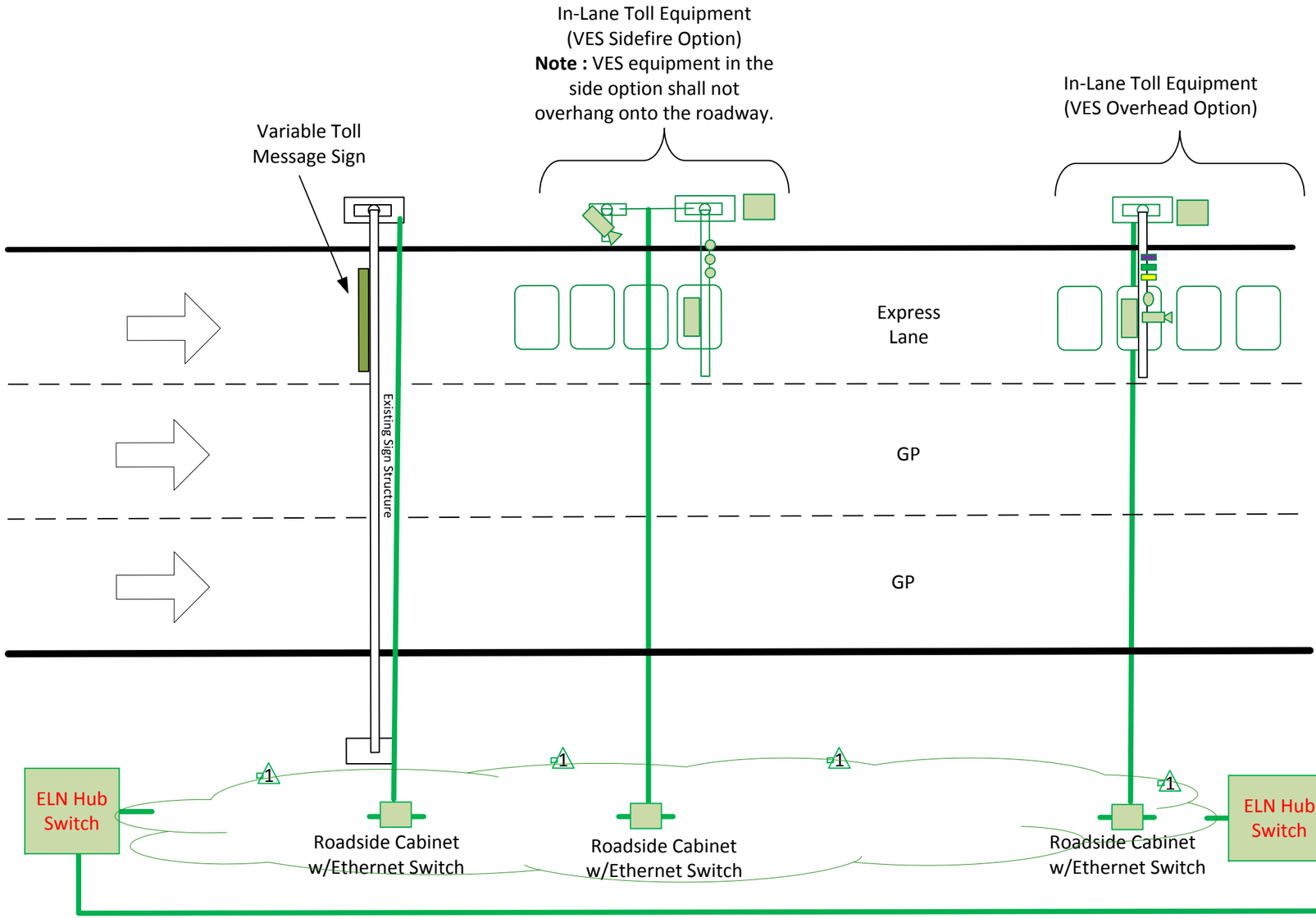
Communication Responsibility Demarcation,

Toll System Sample Layout,

Overhead Sign Foundation Option 3 (Toll Gantry Only)

Communication Responsibility Demarcation

Toll equipment communications and Corridor Roadside Network will be designed, installed and maintained by TSI. Civil work for trenching and conduit installation will be done by a civil contractor.



Legend

Toll Systems Communications

In-lane toll equipment and Roadside Network

Backhaul Network (By Others)

From the demarcation hub/switch on the Roadside Network to the Host sites and to the RCSC

TSI Equipment

1 Roadside Network Communications by TSI. Connection shall be by various methods as determined in the Critical Design.

No.	DATE	ISSUE / REVISION
	10/09/13	Draft RFP
	11/26/13	Addendum 2

SUBMITTED BY:

ATKINS
One Market, Spear Tower
Suite 3600
San Francisco, CA 94105

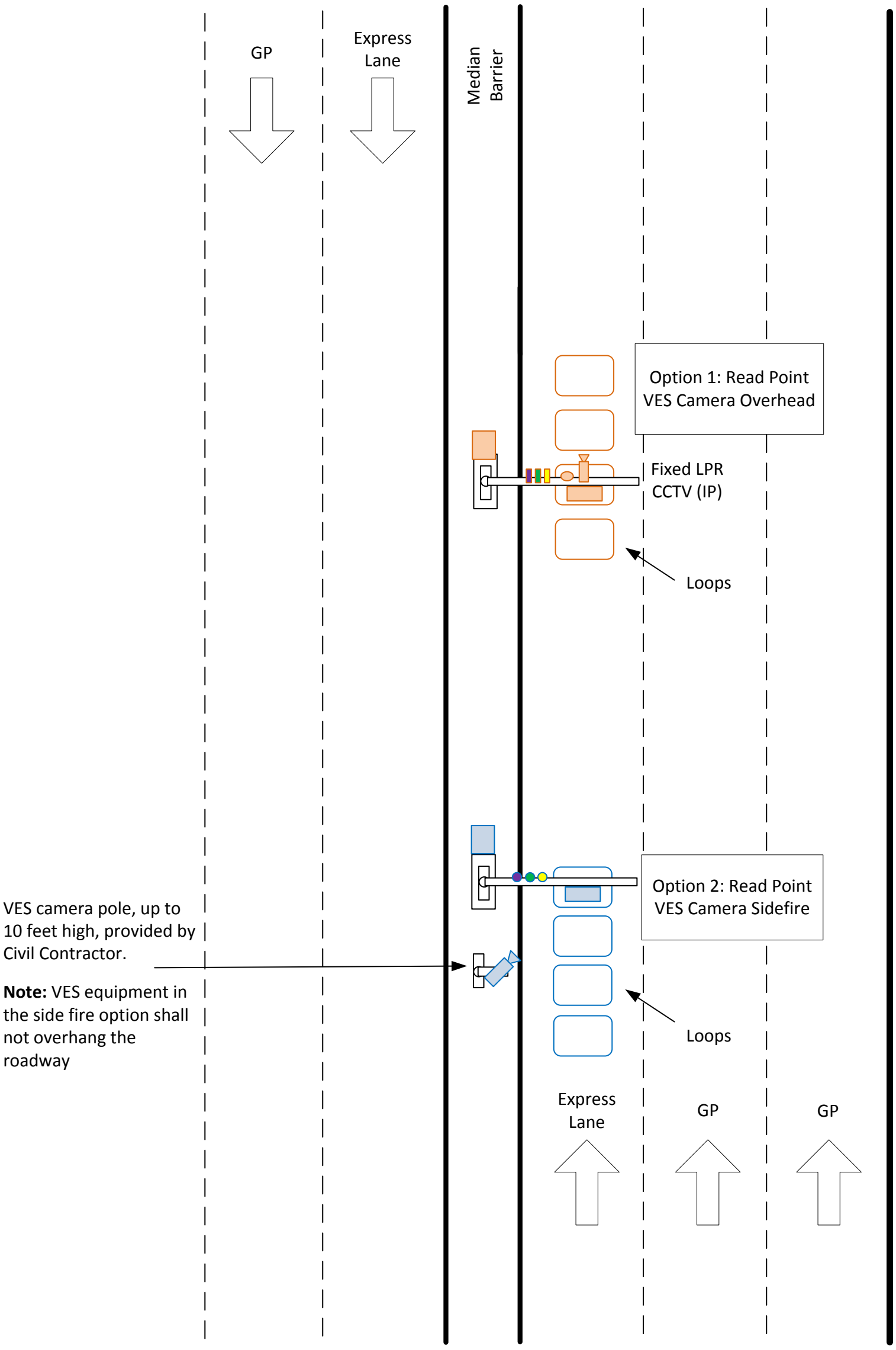
PROJECT

BAIFA Express Lanes

TITLE **Communication Responsibility Demarcation**

SCALE None

PAGE



Optional Read Point equipment mounting configurations. Design to be determined during Critical Design and coordination with the civil design

Toll System Sample Layout

No.	DATE	ISSUE / REVISION
	10/09/13	Draft RFP
	11/26/13	RFP Addendum 2

SUBMITTED BY:

ATKINS
One Market, Spear Tower,
Suite 3600
San Francisco, CA 94105

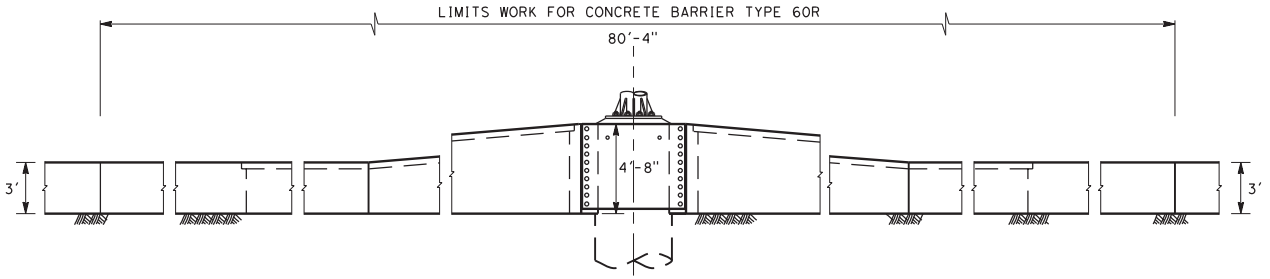
PROJECT

BAIFA Express Lanes

TITLE
Toll System Sample Layout

SCALE
None

PAGE



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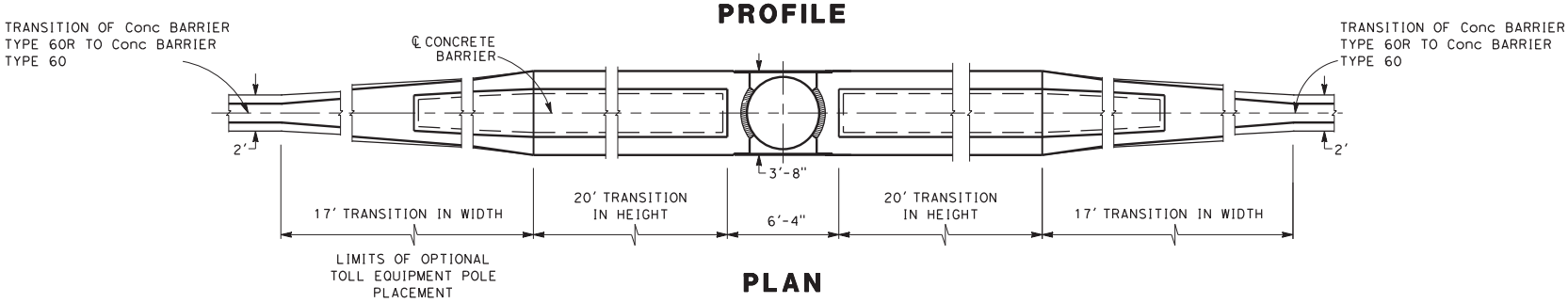
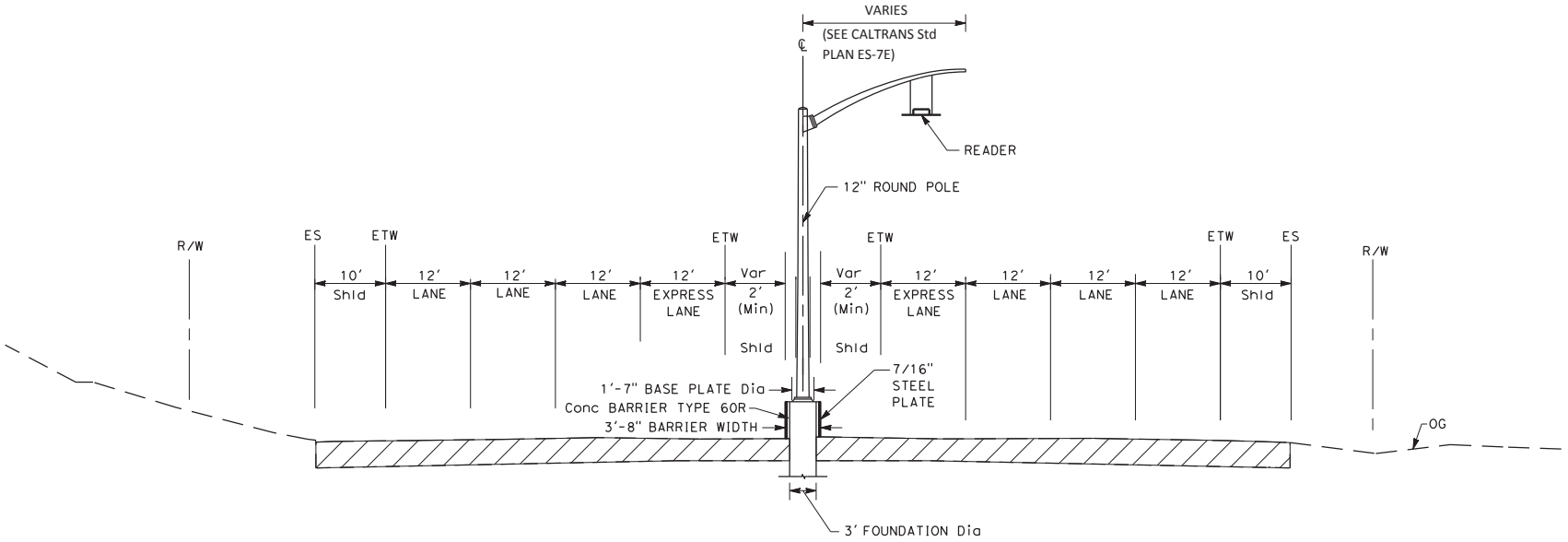


PLAN



SECTION

NOT TO SCALE

METROPOLITAN TRANSPORTATION COMMISSION

HDR | ONE COMPANY *Many Solutions*℠

AUGUST 2013

OVERHEAD SIGN FOUNDATION OPTION 3 (TOLL GANTRY ONLY)
MTC EXPRESS LANE NETWORK - PHASE 1 PA & ED

REQUEST FOR PROPOSALS (RFP)

EXPRESS LANE NETWORK

TOLL SYSTEM INTEGRATION & MAINTENANCE, dated December 6, 2013

Proposers' Submitted Questions and Answers (No. 2)

Item #	RFP section or RFP appendix number	Attachment # and title	Page #	Section #	Specific and applicable text	Request for clarification or exception	Response
1	SOW 9	Communication Network Requirements	Starting pg 61		References to wireless communication devices	We request that dedicated fiber optic cabling be provided by BAIFA in all segments of the roadside network in all three corridors. Due to the estimated high bandwidth requirements for transmitting large numbers of images, and the security and reliability issues related to the use of wireless communication devices, fiber is best choice for this application.	Please see Addendum 2, Item 20 for updates to fiber availability described in Attachment A-1, System Requirements, Req. 9.3.1.5. The TSI is required to provide communications solutions for locations where BAIFA will not provide conduit and fiber for the roadside network along the I-80 corridor and portions of bridge approaches.
2	RFP Section IX, Form of Proposal		11 and 12		The last paragraph on page 11 indicates proposal section 3 should be packaged with the Technical proposal (1 original, 15 copies 1 CD). However, in Table 2 on page 12, Section 3 is listed as not having copies.	Please clarify the correct number of copies for Section 3.	Proposal copies will not include Section 3. Section 3 shall only be in the original Proposal and on the CD. Please see Addendum 2, Item 3 regarding RFP Section IX, Form of Proposal, page 11.
3	RFP Section IX, Form of Proposal		12 and 21		The description for Section 2.2 in Table 2 on page 12 stops at Section 2.2.6. However, the expanded discussion on page 22 also includes a Section 2.2.7 - Software List.	Please clarify if a Software List should be included as proposal section 2.2.7.	Yes, the Software list shall be included as Proposal Section 2.2.7. Please see Addendum 2, Item 4.
4	RFP Section IX	Form of Proposal, Table 2	12 and 24	2.6	This section appears to allow optional "Additional submittals and documentation", however, there is no additional information in the section discussion (which would have appeared on page 24) to provide guidance on what kinds of additional information may be included.	Please clarify what information the proposer may or should include.	"Additional submittals and documentation" **shall not be submitted as part of the Proposal**. Please see Addendum 2, Item 4. Table 2:Proposal Organization & Mandatory Page Limits, is revised to eliminate "Additional submittals and documentation", which shall not be submitted.

Item #	RFP section or RFP appendix number	Attachment # and title	Page #	Section #	Specific and applicable text	Request for clarification or exception	Response
5	RFP Section IX	Form of Proposal, Section B. Proposal Section 2: Technical Proposal; and SOW A1-2 Lane Systems	RFP 17 and SOW 20	Section 2.2.1 Section 2 (Lane Systems)	The outline for the section describing the lane systems appears to cover the requirements in SOW Section 2 with the exception of 2.9 - Electrical Work.	1. Please clarify where SOW 2.9 Electrical Work should be addressed. 2. Should this section be titled "Lane Systems" (as described in the Form of Proposal or "Roadside Systems" (as described in the SOW)?	1. The Technical Proposal shall address the full technical requirements listed in the Scope of Work. Critical areas of interest have been identified to request more specific detail with the associated Proposal Section. 2. "Lane Systems" and "Roadside Systems" may be used interchangeably. Please see Addendum 2, Items 34 and 35 for clarification.
6	Appendix 1	Attachment C Performance Requirements and Penalties	6	2	In Appendix 1 Attachment C under Toll Collection System Performance Requirements it says “Trip Processing Time – The time from the last Lane Transaction to building the final Trip Transaction shall be no more than three hours”.	In many other areas of the RFP it reflects an understanding that trips should not be built when the acknowledgement of the toll rates being displayed of the VTMS or some of the AVI or license plate information is not available at the host. This understanding however is not reflected in this requirement. In the worst case, the network communications could be down to all of the Zones in a Corridor, in which case someone would need to go out to each of the data collection points along the Corridor and manually pick up the transactions and transfer them to the host. For example, see section 2.4.17 in the scope of work. Please either remove this requirement or increase the required time limit to something more reasonable like 48 hours.	Please see Addendum 2, Items 31 and 32 wherein the Trip Processing Time has been increased.
7	Appendix 2	COST PROPOSAL Form C-1 IMPLEMENTATION	3 of 27	Section A	Escrow for Lane SystemEscrow fees are paid for by the proposer but are separated and included for the entire Agreement term in the Total TCS Implementation Cost so that the Proposer’s Unit prices and Lump Sum prices are indicative of the actual costs of the component pricing. Specifically:Reference Cost Proposal Form C-1Escrow for Lane System | Lump Sum|Qty = 1	*Can BAIFA please clarify for exactly how many years should escrow fees be included in this line item? Should each year of maintenance also have a provision for annual escrow fees?*	Escrow fees for the entire Agreement term through System Acceptance shall be included on Form C-1. Form C-2 has been revised with an additional line item for annual escrow fees. Please see Addendum 2, Item 46 for revisions to Form C-1 and Form C-2.
8	Appendix 1	Attachment A-1 System Requirements	24	3.3.2.2.2	Two Mittal server rack cabinets (42U) with 5KW of electrical power	Can BAIFA confirm that the server rack cabinets are Mittal and not Rittal? If Mittal, can BAIFA please provide proposers the specifications for the Mittal server racks?	Please see Addendum 2, Item 14 for clarification, on the manufacturer and model number for the 375 Beale server racks.
9	Appendix 1	Attachment A-1 System Requirements	25	3.5.5.1	The TSI Shall provide standard personal computer workstation, peripherals, and dual monitors	Can BAIFA please clarify the quantity for user workstations and specifications for the monitor size and resolutions?	Please see Addendum 2, Item 9 for clarification on quantities of workstation, monitors, and peripherals.

Item #	RFP section or RFP appendix number	Attachment # and title	Page #	Section #	Specific and applicable text	Request for clarification or exception	Response
10	Appendix 1	Attachment A-1 System Requirements	25	3.5.5.3	Workstations shall support simultaneous use of all delivered applications without performance degradation and loaded with the latest Microsoft Windows, Microsoft Office Professional, and computer virus protection suite.	For the computer virus protection suite, can BAIFA clarify whether the TSI should use the MCAfee Enterprise Antivirus software as defined in Section 11.1.9 for Host servers?	Please see Addendum 2, Item 15 which eliminated the computer virus protection for workstations requirement.
11	Appendix 1	Attachment A-1 System Requirements	45	3.15.1	General Enforcement Web Portal	Can BAIFA clarify whether the TSI will be provided Internet access to the Host so that CHP officers can interact with the protected enforcement web portal? If not, will there be other network/security considerations required to host the Web Portal in another BAIFA network segment?	Please see Addendum 2, Item 18 which adds requirement 3.15.1.9 stating TSI shall provide internet access for the Web Portal.
12	Appendix 1 Reference 3	Communications Network Conceptual Pre-Design	12	7	Furnish and install Ethernet Communications hardware consisting of managed Layer 3 Ethernet core switches, managed Layer 3 Ethernet switches, and managed Ethernet edge switches (MEES), cabinets, and UPS.	Can BAIFA please clarify the difference between “managed Layer 3 Ethernet core switches” and “managed Layer 3 Ethernet switch”? Following this, there is no further mention of “managed Layer 3 Ethernet core switches” for any requirement. Section 7.1.2 is only for “managed Layer 3 Ethernet switch[es].”	Please see Addendum 2, (Items 37-45).
13	Appendix 1 Reference 3	Communications Network Conceptual Pre-Design	15	7.1.2.8.3	Provide Layer 3 Ethernet switches having a minimum of twenty-four (24) optical 1000 Base-X ports capable of transmitting data at 10,000 Megabits per second. Provide optical ports designed for use with a pair of fibers; one fiber transmits data and onefiber receives data	If the TSI is to use optical 1000 Base-X ports, then how can data be transmitted at 10,000Mbps? Can BAIFA please clarify the requirement?	Please see Addendum 2, Items 37 through 45 for clarification.
14	Appendix 1 Reference 3	Communications Network Conceptual Pre-Design	18	7.1.3.3.1	A minimum of two (2) Gigabit Interface Converter (GBIC)-based 10000Base-X ports for connection to the Communications network.	Can BAIFA please confirm the necessity for 10Gbps (10000Base-X) connectivity at the Ethernet Edge Switch? This requirements will significantly increase the cost of network equipment at each Read Point.	Please see Addendum 2, Items 37 through 45 for clarification.

Item #	RFP section or RFP appendix number	Attachment # and title	Page #	Section #	Specific and applicable text	Request for clarification or exception	Response
15	Appendix 1	Attachment A-1 System Requirements	11 of 71	2.2.2.1	Correctly associate transponders to vehicles when the vehicles are traveling in the express lane, straddling express and general purpose lanes, or traveling in the shoulder	Not reading transponders in general purpose lanes means that a larger buffer is needed to reliably operate. Please delete straddling express and general purpose lanes and traveling in the shoulder. The requirement to read transponders in the shoulder is inconsistent with the performance requirements. The issue is “correctly” at 99.9%, hence delete as indicated. See performance requirements and penalties pg 1 of 8 section 1.2.3 where 2 foot is defined.	Please see Addendum 2, Items 11 and 49 which remove the requirement for AVI to correctly associate vehicles straddling the Express Lane and General Purpose Lane.
16	Appendix 1	Attachment C Performance Requirements and Penalties	1 of 8	1.2.3	To Vehicles traveling through a single or a multiple lane read point, including vehicles straddling lanes or traveling up to two feet into either shoulder (i.e. express lane vehicles).	The two feet over the line is difficult to meet while eliminating general purpose lane reads, and two feet is difficult to evaluate. Can BAIFA please reword to require that the vehicle is wholly in the express lane as evaluated by all tires in or on the express lane line? Justification: Charging a vehicle in the general purpose lane is so bad that this should be definitely excluded, hence the need to tighten up the 99.9% assured zone to just the express lane – all tires in/on line.	Please see Addendum 2, Item 11 which removes the requirement for AVI to correctly associating vehicles straddling the Express Lane and General Purpose Lane.
17	Appendix 1	Attachment A-1 System Requirements	11 of 71	2.2.2.3	Ensure that a transponder identification number is recorded only once per passage through the read point.	Various scenarios, including turning off the beep, may result in the reader recording in its buffer the transponder number more than once. Can BAIFA reword to include words: "ID number is transmitted in only one transaction from the lane controller per passage through the read point."?	Please see Addendum 2, Item 12 which removes requirement 2.2.2.3.
18	Appendix 2	COST PROPOSAL Form C-1 IMPLEMENTATION	9	N/A	Mobilization (5% of B+C)	Can BAIFA please clarify how the 5% mobilization listed in Form C-1 ties into the payment milestones listed in Form C-5 (Implementation Milestone Payments)?	Please see Addendum 2, Item 46 wherein Form C-1 for the Implementation Cost Proposal has been revised to remove mobilization.
19	Appendix 2	COST PROPOSAL Form C-2COST PROPOSAL Form C-6	10 of 2727 of 27	N/AN/A	Table at bottom of page includes a bullet under the Description column:• Annual Performance Audit (Replace the X with the estimated number of performance audits.)In the Hypothetical Project Estimate Form in Section G, Item 3, Proposers are to provide pricing for changes to the Annual Performance Audit.	The term “Annual Performance Audit” is only presented in Appendix 2 without any definition or scope as to what the audit entails. Can BAIFA please clarify what the requirements are for the Annual Performance Audit?	Please see Addendum 2, Item 29 for clarification on annual performance audit requirements.

Item #	RFP section or RFP appendix number	Attachment # and title	Page #	Section #	Specific and applicable text	Request for clarification or exception	Response
20	Appendix 1	Implementation Requirements Attachment B - Schedule and Project Milestones Dates	15 of 47 2 of 6	4.1.5 Table 1	The TSI shall obtain certification of its AVI subsystem through the OmniAir Certification Services' ISO 18000-6C Certification Program prior to the start of the Preliminary Design Review. The TSI shall deliver both the certificate and related certification report to BAIFA as proof of this certification. Table 1: Implementation Payment Milestones, Item 1-4 indicates that the ISO 18000-6C Certification Report is due at the Critical Design Approval Milestone.	The instance in the SOW states ISO 18000-6C certification by Preliminary Design Review and Attachment B Schedule and Project Milestones indicates certification is due by Critical Design Approval. Can BAIFA please clarify the discrepancy between these two due dates?	The OmniAir Certification Services' ISO 18000-6C Certification Report is a Qualifying Event for Milestone 1-3 (Preliminary Design Approval). Please see Addendum 2, Item 30 for the correction.
21	Appendix 1	Attachment A-1 System Requirements	25	3.5.4	Video Wall Computing Support	Is it the TSI's responsibility to supply the video wall?	Please see Addendum 2, Item 8 for clarification on the video wall.
22	Appendix 1	Attachment A-1 System Requirements	25	3.5.5.1	The TSI shall provide standard personal computer workstations, peripherals, and monitors.	How many workstations are required to be supplied by the TSI?	Please see Addendum 2, Item 9 for clarification on quantities of workstation, monitors, and printers.
23	IX. Form of Proposal	None	11	IX.	The proposal copies shall contain only proposal sections 1, 2 and 3. The CD shall contain all sections, excluding proposal section 5…	Please confirm that Section 4, cost proposal, will be included in the same CD, making the sequence of presentation Sections 1, 2, 3 and 4.	The proposers shall submit the Cost Proposal on a separate CD.
24	IX. Form of Proposal	Table 2, Proposal Organization	12	IX.	Reference to section 2.2.4	Table 2 refers to 2.2.4 as Operations and Maintenance, while Page 21 titles this section as Maintenance. Please provide the proper title for 2.2.4.	The proper title for Proposal Section 2.2.4 is Maintenance. Please see Addendum 2, Item 4 and 5.
25	IX. Form of Proposal	Proposal Section 2.2.7 - Software List	21	IX.	Proposal Section 2.2.7 - Software List	Please advise where this section 2.2.7 should be placed, it was omitted from Table 2 in page 12. Also we kindly request that this list be excluded from the page count.	Please see Addendum 2, Item 4 for the addition of Proposal Section 2.2.7 to Table 2: Proposal Organization and Mandatory Page Limits.
26	IX. Form of Proposal	Table 2, Proposal Organization	12	IX.	Proposal Section 2.3.3. Proposed Project Experience (Form B)	Table 2 refers to Proposal Section 2.3.3 as Proposed Project Experience (Form B), while on page 23 it is referred to as Proposal Section 2.3.3 Project Descriptions and References. Please provide proper title for 2.2.3.	The proper title for Proposal Section 2.3.3 is Project Descriptions & References. Please see Addendum 2, Item 4 for the correction in Table 2: Proposal Organization and Mandatory Page Limits.
27	IX. Form of Proposal	Table 2, Proposal Organization	12	IX.	Proposal section 2.6, Additional submittals and documentation.	Please confirm that bidders may also use this section to include any additional reports or documents that could not fit on other page-restricted sections.	This section has been removed from Table 2: Proposal Organization and Mandatory Page Limits. Please see Addendum 2, Item 4.

Item #	RFP section or RFP appendix number	Attachment # and title	Page #	Section #	Specific and applicable text	Request for clarification or exception	Response
28	Appendix_1	Reference 3	35	Figure 1	Figure 1 shows a map of I680 with existing Caltrans conduit with fiber.	Will the TSI be allowed to use this fiber for the roadside network? If yes then will the civil contractor install the conduit from the existing conduit to the equipment cabinets for Read Points, VTMS, CCTV and TMS?	Yes, the TSI will have access to fiber optic cable strands along the I-680 corridor as specified in the requirements. Yes, civil contractor will install conduit to equipment cabinets. Please see Addendum 2, Item 45 for revised Figures 1-5 of RFP Attachment A, Scope of Work, Reference 3: Communications Network Conceptual Pre-Design.
29	Appendix_1	Reference 3	36	Figure 2	Figure 2 shows a map of I880 with existing Caltrans empty conduit.	Will the TSI be allowed to use this empty conduit to install fiber for the roadside network? If yes then will the civil contractor install the conduit from the existing conduit to the equipment cabinets for Read Points, VTMS, CCTV and TMS?	Yes, the TSI will have access to conduit identified in Appendix 1, Ref. 2E Conduit Inventory Table. Yes, the civil contractor will install conduit to equipment cabinets. Please see Addendum 2, Appendix 4 for revised Figures 1-5 of RFP Attachment A, Scope of Work, Reference 3: Communications Network Conceptual Pre-Design.
30	Appendix_1	Reference 3	36	Figure 2	Figure 2 shows approaches to the San Mateo Bridge and the Dumbarton bridge. There is a comment near each bridge that states "Replace Ex. Caltrans/BATA Fiber Optic Cable".	Is there existing conduit connecting the approaches to the bridges to the existing conduit on I880? What does “Replace Ex. Caltrans/BATA Fiber Optic Cable" refer to?	There is no available conduit connecting the bridge approaches to the I-880. The TSI is not expected to replace the existing fiber between the sign banks and the bridge approach toll center. Please see Addendum 2, Appendix 4 for revised Figures 1-5 of RFP Attachment A, Scope of Work, Reference 3: Communications Network Conceptual Pre-Design.
31	RFP	Section VII, Timetable	8	Table 1	Requests for Questions and Clarifications due November 19, 2013.	Will BAIFA provide an additional opportunity for Proposers to ask follow up Questions? A second round of questions would be helpful in obtaining the most competitive and compliant responses to the RFP.	Yes, the deadline to ask follow up questions on responses provided is extended to December 11, 2013. Please see Addendum 2, items 1 and 2 for revisions.
32	Form C, Cost Proposals	Form C-1, Implementation	3 of 27	Section A, Mobilization	Mobilization costs will be 5% of the sum of the TCS and TSI Services and Development costs.	Will the Authority please explain the rationale behind the 5% mobilization amount? How does a TSI propose a figure or more or less than 5% if it wishes to?	Please see Addendum 2, Item 46 wherein Form C-1 for the Implementation Cost Proposal has been revised to remove mobilization.
33	Form C, Cost Proposals	Form C-1, Implementation	3 of 27	Section A	Performance Bond, paid for by the proposer.	Similar to the Escrow for Lane System, should the pricing for the Performance Bond on this line also be for the "entire Agreement Term" (Implementation and Maintenance periods)?	Yes, the price for the performance bond is for the entire term of the agreement. Please see Addendum 2, Item 46 for revisions to Form C-1 and Form C-2.

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34	Form C, Cost Proposals	Form C-1, Implementation	Page 9 of 27	Form C-1	Additional Items, Line 26 - Maintenance of Traffic, "By Site".	Please define what is meant by site. Is this a roadway section (i.e. I-680 Corridor) or is this a tolling read point site on the roadway section?	Please see Addendum 2, Item 46 for revisions to Form C-1 to include costs for maintenance of traffic by Corridor.
35	Form C, Cost Proposals	Form C-1, Implementation	Page 9 of 27	Form C-1	Additional Items, Line 26 - Maintenance of Traffic, "By Site".	The quantity column is blank. The number of roadway sections and tolling sites is known -- please provide.	Please see Addendum 2, Item 46 for revisions to Form C-1 to include costs for maintenance of traffic by Corridor.
36	Form C, Cost Proposals	Form C-2, Maintenance	10 of 27	Form C-2	Annual Performance Audit (Replace X with the estimated number of performance audits).	Please clarify. As shown on the Form C-2 Example, it would appear that there are four (4) year annual audits to be performed.	Please see Addendum 2 Item 29.
37	Form C, Cost Proposals	Form C-2, Maintenance	10 of 27	Form C-2	Maintenance prices will be escalated using CPI. DO NOT show escalations in the forms.	Please confirm that the CPI escalation will begin 12-months after the first roadway section is in toll collection service (toll commencement) and each 12 months thereafter.	These prices do not reflect any annual escalation. Costs will be escalated on an annual basis using the Consumer Price Index (CPI) starting July 1, 2016 and each year thereafter for the term of the Agreement. Please see Addendum 2, Item 46 for revisions to Form C-2.
38	Appendix 1	Attachment A-1 - System Requirements	68	10.2.2.1 10.2.2.2 10.2.2.3	Preventive maintenance program – define and track preventive maintenance program activity, costs and system performance results. Supplier information – company name, contact person name, company address, telephone number(s), fax number(s) and email address. Equipment inventory – part or component supplier, location, serial number, purchase date, price, date placed into service, warranty expiration date, BAIFA asset number and part/component identification.	Can BAIFA please confirm that the information noted in these requirements is necessary to be included in the alarms and alerts? Some of the information appears unnecessary, such as pricing, costs, system performance results, supplier information, etc.	Please see Addendum 2, Item 19.

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39	Appendix 1	Attachment A-1 System Requirements	2, 3, 31, and 36	3.9.5.4, and 3.9.10.4	***** PLEASE NOTE - This question has been clarified and resubmitted - clarification provided in red font. ***** There are a few places in the Scope of Work where it says things like "displaying the current rate simultaneously on multiple Variable Toll Message Signs (VTMS) within the Zone", "that all VTMS within the same Zone will display the same toll rate(s)", and "at any given time, all VTMS within a single Zone display the same toll rate".	If some of the VTMSs within a Zone are communicating with the host and others are not (such as a VTMS lost communication and displaying the historic toll while rest of VTMS displaying dynamic tolls), it is possible that the VTMSs could be showing different rates. Also it is very unlikely that the request for a new toll rate will be received through the network and be processed at exactly the same time. Please remove the word "simultaneously" and change "will display the same toll rate" and "display the same toll rate" to "should display the same toll rate" to allow for the fact that they may not always be the same. Also it needs to be clear in each of these cases that the patron will be charged based on the toll rate displayed on the VTMS associated with the place where the patron's vehicle entered the Express Lanes.	Please see Addendum 2, Items 6, 16, and 17, for clarification.
40	Appendix 1	Attachment A-1 System Requirements	25	3.5.4	Video Wall Computing	Can BAIFA please clarify whether the TSI be required provide a new video wall for the Toll Roadway Operations Center?	Please see Addendum 2, Item 8 for clarification on the video wall.
41	Appendix 1	Attachment A-1 System Requirements	11	2.2.2.1	Correctly associate transponders to vehicles when the vehicles are traveling in the express lane, straddling express and general purpose lanes, or traveling in the shoulder.	Can BAIFA please confirm that there will be sufficient isolation between the express lane and GP lane to support this requirement? BATA-approved tag mounting locations within the vehicle include the upper center, lower left, and lower right. It may not be possible to tune the read zone to cover a straddling vehicle, but not GP lane when the tag could be mounted on the left or middle of car?	Please see Addendum 2, Item 11 which removes the requirement for AVI to correctly associate vehicles straddling the Express Lane and General Purpose Lane.
42	RFP App 1 (SOW)	Att A-1: System Requirements	11 of 71	2.2.2.1	2.2.2.1 Correctly associate transponders to vehicles when the vehicles are traveling in the express lane, straddling express and general purpose lanes, or traveling in the shoulder.	Is the Toll Collection System also required to detect and classify (a) vehicles that straddle the Express Lane and vehicles travelling on the shoulder, or (b) just vehicles that are completely within the Express Lane boundaries?	Please see Addendum 2, Items 11 and 49 for clarification.
43	RFP App 1 (SOW), Att C	Att A-1: System Requirements	11 of 71	2.2.2.1	2.2.2.1 Correctly associate transponders to vehicles when the vehicles are traveling in the express lane, straddling express and general purpose lanes, or traveling in the shoulder.	Is the Toll Collection System also required to capture license plate number or images for (a) vehicles that straddle the Express Lane and vehicle travelling on the shoulder, or (b) just vehicles that are completely within the Express Lane boundaries?	Please see Addendum 2, Item 11 for clarification on the requirement for AVI to correctly associate vehicles in the Express Lane and in the shoulder.

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44	RFP App 1 (SOW), Att C	Performance Requirements and Penalties	All	All	2.8.3.1 Detect traffic by lane in the express lanes and all general purpose lanes at vehicle speeds between 5 and 100 mph. 2.1.1.1 Detect accurately vehicles between 0 and 100 mph.	Section 2.8.3.1 requires the TMS to detect traffic from 5 to 100 mph. Section 2.1.1.1 requires classification at speeds of 0 to 100 mph. Typical diagrams in RFP Appendix 1 (SOW) Reference 2D shows in-pavement loops -- even though in-pavement loops have difficulty classifying vehicles at very low speeds. Please clarify the range of vehicle speeds for which the minimum performance requirements (in RFP Appendix 1 Attachment C) must be met.	Please see Addendum 2, Item 32.
45	RFP App 1 (SOW), Ref 4-6	Civil Design Documents	All	All	Diagrams, not text	For any given Corridor, what are the minimum and maximum turn radii for the curved portion of the "Overhead Sign Typical Section", and what are the minimum and maximum distances from the center of the median across the roadway to the end of the mast arm?	Please see Addendum 2, Item 47 for revised mast arm overhang note. Please refer to Attachment A, Scope of Work, References 4-6: Civil Plans wherein curve information is provided for each corridor.
46	RFP App 1 (SOW), Ref 4-6	Civil Design Documents	All	All	Diagrams, not text	For all Read Points on any given Corridor,, what are the guaranteed minimum and maximum distances from the Express Lane pavement to the center of the mast arm?	Please see Addendum 2, Item 47 for revised mast arm overhang note. Please refer to Attachment A, Scope of Work, References 4-6: Civil Plans wherein curve information is provided for each corridor.
47	RFP App 1 (SOW), Ref 2	Diagrams, Drawings and Schematics	113,115 of 166 in PDF	D: Typicals	Diagram, not text. Shows an Read Point option where a VES camera is mounted on a separate pole before vehicles reach the gantry with the AVI antennas.	Are there restrictions on the height of the pole and/or on how far the camera COG can be mounted away from the pole over the inner shoulder?	Please see Addendum 2, Items 47 for revised diagram in Attachment A, Scope of Work, Reference 2: Typicals, including a note to clarify VES equipment in the side fire configuration cannot overhang onto the roadway and the pole height provided.
48	RFP App 1 (SOW)	Att A-1: System Requirements	p12 of 71	2.3.1.2	… and vehicles with a separation of at least 4 feet.	Appears to disagree with RFP Appendix 1 (SOW) Attachment C (Performance Requirements and Penalties) Table 1 which cites "2 feet" not "4 feet"	Please see Addendum 2, Item 32.
49	RFP App1 (SOW) AttC	Att C: Performance Requirements and Penalties	pp 186 of 187 in PDF	Second item labeled 3.2	3.2 Toll Collection System Availability	Please clarify (a) what items are defined to be Toll Collection System components as it relates to the availability requirements, and, (b) what is defined as their essential functions and support functions. Note that footnotes (3) and (4) pertain specifically to the Host.	Please see Addendum 2, Item 48.
50	RFP App 1 (SOW), Ref 2	Diagrams, Drawings and Schematics	pp24 of 166	A: Tolling Location Details	SR-92 Toll Equipment Location Table	What is the sign structure type planned for Station 621+61 on SR-92? This is provided for all other Read Points on all corridors.	Please see Addendum 2, Item 36.

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51	RFP App 1 (SOW)	Statement of Work	pg 25 of 71	3.5.4 Video Wall Computing	The TSI shall provide computing capabilities to display …	In addition to the "computing capabilities …" will the TSI also be responsible for providing and installing the displays for the video wall or will this be provided by others?	Please see Addendum 2, Item 8 for clarification on the video wall.
52	RFP App 1 (SOW)	Statement of Work	pg 25 of 71	3.5.5 User Workstations	The TSI shall provide standard personal computer workstations, peripherals, and dual monitors.	Please define how many workstations are required at each Operations Center.	Please see Addendum 2, Item 9.
53	RFP App 1 (SOW)	Statement of Work	pg 25 of 71	3.5.5,1 User Workstations	The TSI shall provide standard personal computer workstations, peripherals, and dual monitors.	Please define the desired/minimum size of the dual monitors required for each workstation.	Please see Addendum 2, Item 9.
54	RFP Section VII. Selection Table 1	BAIFA_ELN_Toll_Integrator_RFP_Final.pdf	Pg. 8	VII	Table 1: Selection Table – November 19, 2013 at 4:00 p.m. Closing date and time for Request for Clarification & Exceptions	We respectfully request BAIFA extend the closing date for Request for Clarification & Exception to December 3, 2013 allowing vendors the necessary time to thoroughly review and responsibly draft requests for clarification or exception.	Yes, the deadline to ask follow up questions on responses provided is extended to December 11, 2013. Please see Addendum 2,, Items 1 and 2.
55	1.3.4.8	RFP APPENDIX 1: Attachment A General Scope of Work	8	General Requirements	All lane equipment shall be fused or circuit breaker protected against over current, over voltage, under voltage and lightning.	Who is responsible for gantry lightning protection?	Please see Addendum 2, Item 7 which removes the lighting protection requirement from Attachment A-1, System Requirements.
56	IX. Form of Proposal	Table 3: Demonstration of Minimum Qualifications	13	IX.	Section 1.4 Company Overview and Qualifications "In this section, the proposer shall provide all necessary information to demonstrate that the requirements shown in Section III. Proposer Minimum Qualifications (MQs) of this RFP have been met at the time of Proposal submission…"	Request that the page limit of this section be increased from 10 to 20 to allow ample room for responding to the minimum qualifications proposal content requirements.	The page limit is increased to 15 pages for Proposal Section 1.4. Please see Addendum 2, Item 4 regarding the revision to Table 2: Proposal Organization & Mandatory Page Limits.
57	Appendix 1	Attachment A-1 System Requirements	17	2.6.2.3	The general message LED panel shall be 28-inches high by 27-feet wide to display other tolling information.	Can BAIFA please clarify what is the maximum number of characters that will be displayed on the toll or message panel?	Please see Addendum 2, Item 13 for clarification on VTMS lettering requirement.
58	Appendix 1	Reference 3 Communications Network Conceptual Pre-design	4	2	The communications infrastructure utilizes existing conduit… and new fiber-optic cable will be installed in those conduits.	Please confirm that any sections of the defined Corridors along I-680 and I-880 where fiber and/or conduit is not present, will have conduit and fiber installed by BAIFA and will then be available for use by the TSI and the Toll Collection System.	Please see Addendum 2, Item 20 for updates to fiber availability described in Attachment A-1, System Requirements, Req. 9.3.1.5. Communications conduit and fiber will not be provided by BAIFA between the I-880 corridor and the SR-84 and SR-92 bridge approaches.
59	Appendix 1	Reference 3 Communications Network Conceptual Pre-design	4	2	The communications infrastructure utilizes existing conduit… and new fiber-optic cable will be installed in those conduits.	Please confirm that BAIFA will ensure that the TSI and Toll Collection System will have access to a minimum of 4 fibers along the full length of the defined Corridors on the following expressways: I-680, SR-84, SR-92, and I-880.	Please see Addendum 2, Item 20 for updates to fiber availability described in Attachment A-1, System Requirements, Req. 9.3.1.5. The TSI

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							shall have access to twelve (12) strands of Backhaul fiber along the I-680 and I-880 corridors only. The TSI will have access to four (4) strands of fiber optic cable along the SR-84 and SR-92 bridge approaches from the sign bank on the bridge approaches to the bridge toll plazas. Fiber optic cable will not be available from the sign banks on the bridge approaches to the I-880.
60	Appendix 1	Reference 3 Communications Network Conceptual Pre-design	5	3	In other locations, existing small BAIFA and Caltrans fiber-optic cables at the San Mateo and Dumbarton toll plazas may be replaced with new trunk fiber-optic cable and that cable is shared with Caltrans.	Please verify that any sections of the defined Corridors along SR-92 and SR-84 where fiber and/or conduit is not present, will have conduit and fiber installed by BAIFA and will then be available for use by the TSI and the Toll Collection System.	Please see Addendum 2, Item 20 for updates to fiber availability described in Attachment A-1, System Requirements, Req. 9.3.1.5. The TSI will have access to four (4) strands of fiber optic cable along the SR-84 and SR-92 bridge approaches from the sign bank on the bridge approaches to the bridge toll plazas. Fiber optic cable will not be available from the sign banks on the bridge approaches to the I-880.