

File No. 130392

Committee Item No. 1  
Board Item No. 14

### COMMITTEE/BOARD OF SUPERVISORS AGENDA PACKET CONTENTS LIST

Committee: Budget and Finance Committee

Date: 06/17/2013

Board of Supervisors Meeting

Date: JUNE 25, 2013

#### Cmte Board

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Completed by: Victor Young Date June 13, 2013  
Completed by: Victor Young Date \_\_\_\_\_

[Agreement Amendment - Motorola, Inc., 800 MHz - ~~\$28,000,000~~ \$24,000,000]

**Resolution authorizing the Department of Technology to enter into the Seventh Amendment of the Citywide 800 MHz Radio System Project Agreement between the City and Motorola, Inc., to increase the contract amount from to ~~\$28,000,000~~ \$24,000,000 for the period of September 22, 1997, through September 21, 2017.**

WHEREAS, The Department of Technology, developed the 800 MHz Radio System Project Agreement for the purchase of products and services related to the City's Radio Systems; and,

WHEREAS, Motorola, Inc., was the sole qualified vendor who responded to the City's Invitations to Bid in 1996; and

WHEREAS, The Board of Supervisors adopted a resolution authorizing the original agreement on August 25, 1997, by Resolution 804-97, on file with the Clerk of the Board of Supervisors in File No. 172-97-52, hereby declared to be a part of this resolution as if set forth fully herein; and

WHEREAS, The agreement has been amended six times, by the First Amendment dated May 18, 1998; and the Second Amendment dated September 24, 1998; and the Third Amendment dated August 11, 1999; and the Fourth Amendment dated May 19, 2000; and the Fifth Amendment dated November 21, 2000; and the Sixth Amendment dated November 17, 2006; and

WHEREAS, The original 1997 agreement authorized a maximum guaranteed amount of ten million dollars; and

WHEREAS, On November 7, 2006, the Board of Supervisors adopted Resolution No. 653-06 authorizing the Sixth Amendment increasing the amount of the original agreement, to

Department of Technology  
BOARD OF SUPERVISORS



1 20 million dollars and extending the agreement term to 2017, which is on file with the Clerk of  
2 the Board of Supervisors in File No. 060484, hereby declared to be a part of this resolution as  
3 if set forth fully herein; and

4 WHEREAS, The Department of Technology estimates that the money projected to be  
5 spent with Motorola, Inc. could reach the contract's not-to-exceed amount for additional  
6 equipment in the reasonably near future; and

7 WHEREAS, The Seventh Amendment is on file with the Clerk of the Board of  
8 Supervisors in File No. 130392, and is hereby declared to be a part of this resolution as if set  
9 forth fully herein; and

10 WHEREAS, Charter Section 9.118, "Contract and Lease Limitations," subsection (b),  
11 requires Board of Supervisors approval of any contract estimated to exceed \$10 million in  
12 expenditures; now, therefore, be it


13 RESOLVED, That the Board of Supervisors authorizes the Department of Technology  
14 and the Office of Contract Administration to execute the Seventh Amendment increasing the  
15 maximum guaranteed amount to ~~\$28,000,000~~ \$24,000,000 substantially in the form of the  
16 agreement on file with the Clerk of the Board of Supervisors, in File No. 130392, with such  
17 changes or modifications, as may be acceptable to the Director of the Department of  
18 Technology and the City Attorney and which do not materially increase the obligations and  
19 liabilities of the City; and, be it

20 FURTHER RESOLVED, That upon execution of the Seventh Amendment, the Director  
21 of the Department of Technology shall transmit to the Clerk of the Board of Supervisors a  
22 copy of the Seventh Amendment, for inclusion in File No. 130392.



City & County of San Francisco  
**Department of  
Technology**  
*Powered by Innovation*

One South Van Ness Avenue, 2nd Floor  
San Francisco, CA 94103-0948  
Office: 415-581-4001 • Fax: 415-581-4002

**Date:** March 25, 2013  
**To:** Angela Calvillo, Clerk of the Board  
Board of Supervisors  
**From:** Ken Bukowski   
Acting Chief Information Officer  
**Subject:** Motorola, Resolution and Seventh Amendment Board approval request

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### MEMORANDUM

Dear Ms. Calvillo,

Attached please find an original and two copies of the proposed resolution/ordinance motion and 3 copies of the Seventh Amendment for Board of Supervisors approval, authorizing the Department of Technology to enter into the Seventh Amendment of the Citywide 800 MHz System Project agreement between the City and Motorola, Inc. to increase the contract amount to \$28,000,000.

The following is a list of accompanying documents:

- Three copies of the Motorola Master Agreement
- Three copies of First Amendment
- Three copies of Second Amendment
- Three copies of Third Amendment
- Three copies of Fourth Amendment
- Three copies of Fifth Amendment
- Three copies of Sixth Amendment
- Three copies, Seventh Amendments
- One original Resolution, plus two copies
- Three copies, Form SFEC -126
- Three copies, Assignment and Assumption Agreement's

Please contact Kendall Gary directly at 415-581-4066 or by email to [Kendall.Gary@sfgov.org](mailto:Kendall.Gary@sfgov.org) if you have any questions. Thank you for your review.

130392

**CITY AND COUNTY OF SAN FRANCISCO**

**BOARD OF SUPERVISORS**

**BUDGET AND LEGISLATIVE ANALYST**

1390 Market Street, Suite 1150, San Francisco, CA 94102 (415) 552-9292  
FAX (415) 252-0461

June 13, 2013

**TO:** Budget and Finance Committee

**FROM:** Budget and Legislative Analyst

**SUBJECT:** June 17, 2013 Budget and Finance Committee Meeting



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Item 1  
File 13-0392

Department:  
Department of Technology (DT)

## EXECUTIVE SUMMARY

### Legislative Objectives

- Resolution authorizing the Department of Technology (DT) to enter into a Seventh Amendment to the Citywide 800 MHz Radio System Agreement, between the City and Motorola, Inc. to increase the contract amount to \$28,000,000 for the overall term of September 22, 1997 through September 21, 2017.

### Key Points

- In 1996, based on the City's Invitation to Bid, Motorola was determined to be the sole qualified vendor to provide comprehensive services and equipment for the City's 800 MHz radio system. On August 25, 1997, the Board of Supervisors approved a resolution authorizing the City to enter into a \$9,999,999 initial agreement with Motorola to provide an 800 MHz Radio System for the City (Resolution 804-97) for the 10-year term from September 22, 1997 through September 21, 2007.
- On November 17, 2006, the Board of Supervisors approved an increase of \$10,000,001 or 100% to a not-to-exceed \$20,000,000 and extended the term by an additional ten years or through September 21, 2017. At the time of this approval, the Department of Technology estimated that City expenditure levels would remain consistent for the remaining life of the agreement.

### Fiscal Impacts

- By October 24, 2006, or nine years into the initial Motorola contract, the City had expended a total of \$9.7 million, or an average of approximately \$1,077,778 per year. Between July 24, 2007 and January 4, 2013, a period of approximately five years and five months, the City paid Motorola a total of \$9,624,602, or an average of approximately \$1,779,039 per year. The \$1,779,039 average annual rate of expenditure over the past five years and five months is approximately \$701,261 or 65% higher than the average rate of expenditures between 1997 and 2006.

### Policy Consideration

- (a) Motorola was the sole qualified vendor in 1996 who responded to the City's bid to provide the City's 800 MHz radio system, (b) in 2006, the Board of Supervisors increased the original sole source \$9,999,999 agreement by \$10,000,001 or 100% to a not-to-exceed \$20,000,000 and extended the term by ten years or through September 21, 2017, (c) the proposed resolution would authorize an additional \$8,000,000 or 40% increase from the existing \$20,000,000 to \$28,000,000 for the same term through September 21, 2017, (d) the average annual rate of expenditures over the past five years and five months was \$1,779,039, which is \$701,261 or 65% higher than the average rate of expenditures between 1997 and 2006, although the Department of Technology estimated that City expenditure levels would remain consistent, (e) the Department of Technology is not effectively managing the expenditures under the subject agreement, and (f) the Department of Emergency Management has included \$1,830,000 of General Funds in its FY 2013-14 and FY 2014-15 budgets for the replacement of this Motorola 800 radio system.

### Recommendations

- Amend the proposed resolution to reduce the requested total not-to-exceed \$28,000,000 authorization to \$24,000,000, a reduction of \$4,000,000 and urge the Department of Technology to directly manage and monitor the expenditures under this agreement on an ongoing basis, such that the expenditures do not exceed the authorized amount.
- Approve the proposed resolution, as amended.

## MANDATE STATEMENT AND BACKGROUND

### Mandate Statement

Charter Section 9.118(b) requires that any agreement entered into by a department which extends for ten or more years or has anticipated City and County expenditures of \$10,000,000 or more, or amendments to such agreements of \$500,000 or more be subject to approval by resolution of the Board of Supervisors.

### Background

In 1996, Motorola was determined by the Purchaser to be the sole qualified vendor who responded to the City's Invitation to Bid to provide comprehensive services and equipment for the City's 800 MHz radio system<sup>1</sup>. On August 25, 1997, the Board of Supervisors approved a resolution authorizing the City to enter into a sole source agreement with Motorola for a not-to-exceed \$9,999,999 to provide a comprehensive 800 MHz Radio System for the City (Resolution 80-497) for the ten-year term from September 22, 1997 through September 21, 2007.

This initial agreement was amended five times to incorporate various changes in definitions, warranties, scheduling and other revisions. As of October 24, 2006, or approximately nine years into the contract, the City had expended a total of \$9.7 million out of the original not-to-exceed \$9,999,999 agreement. On November 17, 2006, the Board of Supervisors approved a sixth amendment to the original agreement to increase the agreement by \$10,000,001 or 100% to a not-to-exceed \$20,000,000 and to extend the term of the agreement by an additional ten years or through September 21, 2017 for a total term of 20 years (Resolution 653-06). At the time of the approval of this additional \$10,000,001, the Department of Technology estimated that City expenditure levels would remain consistent with the initial 10 years \$9,999,999 agreement for the remaining life of the agreement, especially given a 27% favorable discount that was being provided by Motorola to the City.

The purpose of the 800 MHz Radio System is to provide push-to-talk voice communication between various departments and employees in the City. Under the existing Motorola agreement, the City has purchased 800 MHz radios, related equipment and batteries and ongoing radio maintenance services for various City departments, including the Airport, Department of Building Inspection (DBI), Department of Technology (DT), Department of Emergency Management (DEM), Fire Department, Municipal Transportation Agency (MTA), Police Department, and the Public Utilities Commission (PUC). According to Ms. Kendall Gary,

<sup>1</sup> The 800 MHz radio frequency band was the standard radio signal for emergency services nationwide, including police, fire, sheriff, 911 dispatch and other emergency communications activities.

Director of Technology Procurement for the Department of Technology, since 1997, the City has purchased approximately 12,000 800 MHz radios under the subject contract with Motorola and currently has approximately 11,000 800 MHz radios in use.

## DETAILS OF PROPOSED LEGISLATION

The proposed resolution would authorize the Department of Technology (DT) to enter into a Seventh Amendment to the Citywide 800 MHz Radio System Project Agreement, between the City and Motorola, Inc. to increase the authorized amount by \$8,000,000 or 40% from the existing \$20,000,000 to the proposed not-to-exceed \$28,000,000 for the same existing term of 20 years from September 22, 1997 through September 21, 2017. In addition, the proposed Seventh Amendment would update language in the City's Agreement with Motorola to be consistent with the City's existing policies and procedures regarding insurance, indemnity, the Health Care Accountability Ordinance, Minimum Compensation Ordinance and Campaign and Government Conduct Code requirements.

## FISCAL IMPACTS

According to Ms. Gary, the proposed additional \$8,000,000 would be expended as follows:

• Replace and repair existing radios and various dispatch equipment	\$5,400,000
• Replace related radio equipment, including batteries, antennas, speakers	800,000
• System technical support for 8 radio transmission sites	800,000
• Airport radio purchase and infrastructure replacement and upgrade	<u>1,000,000</u>
Total	\$8,000,000

According to Ms. Dina Quesada, Manager of ITT Business Services at the San Francisco Airport, the requested not-to-exceed \$1,000,000 for the Airport includes approximately \$505,500 for upgraded 700 MHz interoperability radio equipment to be purchased over the next two fiscal years and approximately \$494,500 for annual maintenance and parts replacement and related costs over the next four fiscal years. Mr. Mike Dilallo, Senior Communications System Tech at the Airport advises that the Airport currently operates its radios on both the older 800MHz and the newer 700 MHz broadcast frequencies, such that the requested additional funds would be used to purchase six upgraded consoles which enable digital audio communication which is consistent with the newer 700 MHz radios.

Based on information provided by the Controller's Office, the Table below identifies a total of \$9,624,602 in payments made by various City departments to Motorola from July 24, 2007 through January 4, 2013 for equipment purchases and maintenance services. As shown in the Table below, the Department of Technology, with expenditures totaling \$4,572,990, is the largest equipment purchaser and maintenance user under the subject Motorola contract. However, Ms. Gary advises that because the City's Radio Shop is located in the Department of

Technology, most of the equipment purchases and maintenance services are performed by the Department of Technology on behalf of other City departments. However, Ms. Gary could not provide a breakdown of the City departments that purchased equipment or services through the Department of Technology under the subject Motorola agreement.

**Table: City Payments to Motorola from July 24, 2007 through January 4, 2013**

Departments	Equipment Purchases	Maintenance	Total
Airport	\$2,322,802	\$133,396	\$2,456,198
Building Inspection		8,611	8,611
Department of Technology	3,561,160	1,011,831	4,572,990
Department of Emergency Management	666,831	151,020	817,851
Fire Department	260,359		260,359
Municipal Transportation Agency	236,297	4,530	240,827
Police Department	1,171,131		1,171,131
Public Utilities Commission	96,635		96,635
<b>Total</b>	<b>\$8,315,215</b>	<b>\$1,309,387</b>	<b>\$9,624,602</b>

As shown in the Table above, between July 24, 2007 and January 4, 2013, a period of approximately five years and five months, the City paid Motorola a total of \$9,624,602, or an average of approximately \$1,776,850 per year. However, as noted above, as of October 24, 2006, or approximately nine years into the initial Motorola contract, the City had expended a total of \$9.7 million, or an average of approximately \$1,077,778 per year. The \$1,776,850 average annual rate of expenditure over the past five years and five months is approximately \$699,072 or approximately 65% higher than the average rate of expenditures of \$1,077,778 from 1997 through 2006.

According to Ms. Gary, expenditures are presently occurring at a faster rate because (a) the Motorola radios only have a useful life of approximately five years, (b) 60% of the radios are beyond their useful life, and (c) the newer radios are more expensive than the older models. However, as noted above, in November 2006, when the additional \$10,000,001 was added to the existing Motorola contract, the Department of Technology estimated that City expenditure levels would remain consistent for the remaining life of the agreement, especially given a 27% favorable discount that was being provided by Motorola to the City.

Ms. Gary could not provide a specific allocation of the funding sources to pay for the subject \$8,000,000 increase in the Motorola contract. However, Ms. Gary advises that each City department that requires these Motorola radios, equipment and maintenance includes the requested funds in their annual budgets, such that the sources of revenues to pay for the subject agreement include the City's General Fund (Police, Fire, Municipal Transportation Agency) as well as Enterprise Funds (Airport, Building Inspection, Public Utilities Commission). The Department of Technology costs are allocated through work orders to individual City departments.

**POLICY CONSIDERATIONS****Management of the Motorola Contract**

Currently, the Office of Contract Administration (OCA) maintains the blanket purchase order for equipment purchases and maintenance services under the subject Motorola contract. At the same time, the Department of Technology operates the City's Radio Shop and is responsible for overseeing the existing contract authorization for the not-to-exceed \$20,000,000 agreement with Motorola as well as the proposed increase to a not-to-exceed \$28,000,000 agreement. However, the Department of Technology could not identify the level of costs that were incurred each year by each City department nor could the Department of Technology identify the type of radio equipment, the specific number of radios, or the maintenance services requested. Ms. Gary advises that she is currently discussing ways to better manage the subject agreement with Motorola in order to properly account for the agreement expenditures.

**City's Information and Communication Technology (ICT) Plan**

On April 16, 2013, the Board of Supervisors approved a resolution adopting the City's Five Year Information and Communication Technology (ICT) Plan for FY 2013-14 through FY 2017-18, in accordance with City Administrative Code Section 22A.6 (Resolution 116-13; File 13-0230). This recently approved ICT Plan identifies \$69 million as the initial estimated cost to replace the City's 800 MHz radio voice push-to-talk communications system, which the ICT Plan notes is nearing the end of its service life. The ICT Plan also discusses the need to shift IT funding from older IT projects to support new IT projects and for COIT to review all project requests with the financial strategies identified. The ICT Plan does not mention the need to increase the existing Motorola 800 MHz contract by an additional \$8 million, which is the subject of the proposed resolution. Furthermore, the ICT Plan identifies the 800 MHz radio replacement project as a priority project and recommends that COIT fund critical project development to replace the 800 MHz radios for FY 2013-14 and FY 2014-15, with regular reports back on the scope, budget and timeline for implementation.

The Department of Emergency Management (DEM) has included General Fund budget requests of \$930,000 in FY 2013-14 and \$900,000 in FY 2014-15, for a total General Fund expenditure of \$1,830,000, which includes the creation of one new 0932 Project Manager position, to initiate planning for the replacement of the City's 800 MHz radio system. These budget requests are currently pending before the Board of Supervisors Budget and Finance Committee. In their request, DEM advises that Motorola will no longer support the existing 800 MHz radio system after 2018. As noted above, the existing agreement and the proposed Seventh Amendment to the agreement with Motorola expires September 21, 2017.

**Summary**

Given that (a) Motorola was determined by the City to be the sole qualified vendor in 1996 who responded to the City's bid to provide the City's 800 MHz radio system, (b) on November 17, 2006, the Board of Supervisors increased the original sole source \$9,999,999 agreement by \$10,000,001 or 100% to a not-to-exceed \$20,000,000 and extended the term by ten years or through September 21, 2017, (c) the proposed resolution would authorize an additional \$8,000,000 or 40% increase from the existing \$20,000,000 to the proposed not-to-exceed



\$28,000,000 for the same term through September 21, 2017, (d) the average annual rate of expenditures over the past five years and five months was \$1,776,850, which is approximately \$699,072 or approximately 65% higher than the average annual rate of expenditures between 1997 and 2006, although the Department of Technology estimated that City expenditure levels would remain consistent for the remaining life of the agreement, (e) the Department of Technology is not effectively managing the expenditures under the subject agreement, as the Department cannot identify the type of radio request, the specific number of radios acquired or the maintenance service requested, and (f) the Department of Emergency Management has included \$1,830,000 of General Fund monies in its FY 2013-14 and FY 2014-15 budgets to plan for the replacement of the subject Motorola 800 MHz radio system, the Budget and Legislative Analyst questions the reasonableness of authorizing an additional \$8 million under the existing Motorola contract.

However, given that the City has fully expended the existing \$20,000,000 authorized amount, and that a new replacement for the outdated Motorola 800 MHz radio system will not be available for several years, the Budget and Legislative Analyst recommends that the Budget and Finance Committee reduce the requested additional \$8,000,000 authorization, or total authorized amount not-to-exceed \$28,000,000 to \$24,000,000, a reduction of \$4,000,000 and urge the Department of Technology to directly manage and monitor the expenditures under this agreement on an ongoing basis to ensure that the expenditures do not exceed the authorized amount.

## RECOMMENDATIONS

1. Amend the proposed resolution to reduce the requested total not-to-exceed \$28,000,000 authorization to \$24,000,000, a reduction of \$4,000,000, and urge the Department of Technology to directly manage and monitor the expenditures under this agreement on an ongoing basis, such that the expenditures do not exceed the authorized amount.
2. Approve the proposed resolution as amended



**City and County of San Francisco  
Office of Contract Administration  
Purchasing Division**

**Seventh Amendment**

THIS AMENDMENT (this "Amendment") is made as of April 15, 2013 in San Francisco, California, by and between Motorola Solutions, Inc., formerly Motorola, Inc. ("Contractor"), and the City and County of San Francisco, a municipal corporation ("City"), acting by and through its Director of the Office of Contract Administration.

RECITALS

WHEREAS, City and Contractor have entered into the Agreement (as defined below); and

WHEREAS, City and Contractor desire to modify the Agreement on the terms and conditions set forth herein to increase the contract amount, and update standard contractual clauses; and

WHEREAS, approval for this Amendment was obtained when the Civil Service Commission approved Contract number 4073-12/13 on February 4, 2013;

NOW, THEREFORE, Contractor and the City agree as follows:

**1. Definitions.** The following definitions shall apply to this Amendment:

**a. Agreement.** The term "Agreement" shall mean the Agreement dated September 22, 1997 between Contractor and City as modified by:

First Amendment	May 18, 1998,
Second Amendment	September 24, 1998,
Third Amendment	August 11, 1999,
Fourth Amendment	May 19, 2000,
Fifth Amendment	November 21, 2000, and
Sixth Amendment	November 17, 2006.

**b. Other Terms.** Terms used and not defined in this Amendment shall have the meanings assigned to such terms in the Agreement.

**2. Modifications to the Agreement.** The Agreement is hereby modified as follows:

**a. Section 3.03(e).** Section 3.03(e), "Additional Equipment Purchase," of the Agreement currently reads as follows:

In addition to and separate and apart from the Equipment to be purchased for the Project, the City may, but is not obligated to, purchase Additional Equipment and related Services from Contractor in accordance with Section 4.02(a) hereof. The City may purchase up to ten million dollars' worth of

Additional Equipment and Related Services under this Master Agreement and Amendments without further approval of the Board of Supervisors.

Such section is hereby amended in its entirety to read as follows:

In addition to and separate and apart from the Equipment to be purchased for the Project, the City may, but is not obligated to, purchase Additional Equipment and related Services from Contractor in accordance with Section 4.02(a) hereof. The City may purchase up to eighteen million dollars (\$18,000,000) worth of Additional Equipment and Related Services under this Master Agreement and Amendments without further approval of the Board of Supervisors.

**2b. Insurance.** Section 9.01 is hereby replaced in its entirety to read as follows:

### **9.01 Insurance**

a. Without in any way limiting Contractor's liability pursuant to the "Indemnification" section of this Agreement, Contractor must maintain in force, during the full term of the Agreement, insurance in the following amounts and coverages:

(1) Workers' Compensation, in statutory amounts, with Employers' Liability Limits not less than \$1,000,000 each accident, injury, or illness; and

(2) Commercial General Liability Insurance with limits not less than \$2,000,000 each occurrence, \$4,000,000 aggregate for bodily injury, property damage, contractual liability, personal injury, products and completed operations.

(3) Commercial Automobile Liability Insurance with limits not less than \$2,000,000 each occurrence Combined Single Limit for Bodily Injury and Property Damage, including Owned, Non-Owned and Hired auto coverage, as applicable.

(4) Professional liability insurance, applicable to Contractor's profession, with limits not less than \$1,000,000 each claim with respect to negligent acts, errors or omissions in connection with professional services to be provided under this Agreement.

b. Commercial General Liability and Commercial Automobile Liability Insurance policies must be endorsed to provide:

(1) Include as Additional Insured the City and County of San Francisco, its Officers and Employees.

(2) That such policies are primary insurance to any other insurance available to the Additional Insureds, with respect to any claims arising out of this Agreement, and that insurance applies separately to each insured against whom claim is made or suit is brought.

c. Regarding Workers' Compensation, Contractor hereby agrees to waive subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss. Contractor agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the City for all work performed by the Contractor and its employees.

d. Contractor agrees to provide thirty days' advance written notice to the City of reduction below the limits required above or nonrenewal of coverages or cancellation of coverages for any reason. Notices shall be sent to the City address in the "Notices to the Parties" section.

e. Should any of the required insurance be provided under a claims-made form, Contractor shall maintain such coverage continuously throughout the term of this Agreement and, without lapse, for a period of three years beyond the expiration of this Agreement, to the effect that, should occurrences during the contract term give rise to claims made after expiration of the Agreement, such claims shall be covered by such claims-made policies.

f. [Intentionally omitted. Liability limits in Section 9.01.a were increased to address this section.]

g. Should any required insurance lapse during the term of this Agreement, requests for payments originating after such lapse shall not be processed until the City receives satisfactory evidence of reinstated coverage as required by this Agreement, effective as of the lapse date. If insurance is not reinstated, the City may, at its sole option, terminate this Agreement upon thirty days prior written notice.

h. Before commencing any operations under this Agreement, Contractor shall furnish to City an Acond form certificate of insurance and blanket additional insured policy endorsements with insurers with ratings comparable to A-, VIII or higher, that are authorized to do business in the State of California, and that are satisfactory to City, in form evidencing all coverages set forth above. Failure to maintain insurance shall constitute a material breach of this Agreement.

i. Approval of the insurance by City shall not relieve or decrease the liability of Contractor hereunder.

j. If a subcontractor will be used to complete any portion of this agreement, the Contractor shall ensure that the subcontractor shall provide all necessary insurance as determined by the Motorola Insurance Department and shall include the City and County of San Francisco, its officers and employees and the Contractor listed as additional insureds. Additionally, if a subcontractor is used for a transaction under this agreement, Contractor will cause the subcontractor to provide to City with respect to its Workers' Compensation policy a waiver of subrogation endorsement in favor of the City for all work performed by the subcontractor and its employees.

2c. **Article 10.** Article 10, "Indemnification," of the Agreement is hereby amended in its entirety to read as follows:

## 16. Indemnification

a. **General Indemnity.** To the fullest extent permitted by law, Contractor shall assume the defense of, indemnify and save harmless the City, its boards, commissions, officers, and employees (collectively "Indemnitees"), from any claim, loss, damage, injury (including, without limitation, injury to or death of an employee of the Contractor or its subconsultants) and liabilities of every kind, nature and description (including, without limitation, an Indemnitee's incidental and consequential damages, court costs, attorney's fees and costs of investigation), to the extent they arise directly or indirectly, in whole or in part, from (1) the performance of services under this Agreement, or any part of such services, and (2) any negligent, reckless, or willful act or omission of the Contractor and subconsultant to the Contractor, anyone directly or indirectly employed by them, or anyone that they control (collectively, "Liabilities"), subject to the provisions set forth herein.

b. **Limitations.** Subject to Section 16.03.a and b, as amended below, no insurance policy covering the Contractor's performance under this Agreement shall operate to limit the Contractor's liability under this provision. Nor shall the amount of insurance coverage operate to limit the extent of such liability. The Contractor assumes no liability whatsoever for the negligence or willful misconduct of any Indemnitee or the contractors of any Indemnitee. The Contractor's indemnification obligations of claims involving "Professional Liability" (claims involving acts, errors or omissions in the rendering of professional services) and "Economic Loss Only" (claims involving economic loss which are not connected with bodily injury or physical damage to property) shall be limited to the extent of the Contractor's negligence or other breach of duty.

c. **Copyright Infringement.** Contractor shall also indemnify, defend and hold harmless all Indemnitees from all suits or claims for infringement of the patent rights, copyright, trade secret, trade name, trademark, service mark, or any other proprietary right of any person or persons in consequence of the use by the City, or any of its boards, commissions, officers, or employees of articles or services to be supplied in the performance of Contractor's services under this Agreement as described more fully in Section 10.02 of the Agreement.

**16.03. Limitation of Contractor's Liability.** Section 16.03.a and b are hereby replaced in their entirety as follows:

a. Except for personal injury or death, Contractor's total liability regardless of the cause of action or theory of liability will be limited to the direct damages recoverable under law, but not to exceed \$18,000,000.

b. ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, THEY AGREE THAT CONTRACTOR WILL NOT BE LIABLE FOR ANY COMMERCIAL LOSS; INCONVENIENCE; LOSS OF USE, TIME, DATA, GOOD WILL, REVENUES, PROFITS OR SAVINGS; OR OTHER SPECIAL,

INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO OR ARISING FROM THIS AGREEMENT, THE SALE OR USE OF THE EQUIPMENT OR SOFTWARE, OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT.

This limitation of liability provision as set forth in Section 16.03.a and b survives the expiration or termination of the Agreement and applies notwithstanding any contrary provision.

**2d. Health Care Accountability Ordinance.** Section 18.16 is hereby replaced in its entirety to read as follows and applies only to transactions involving the purchase and sale of services or public improvement/public works transactions:

**18.16. Health Care Accountability Ordinance.** Contractor agrees to comply fully with and be bound by all of the provisions of the Health Care Accountability Ordinance (HCAO), as set forth in San Francisco Administrative Code Chapter 12Q, including the remedies provided, and implementing regulations, as the same may be amended from time to time. The provisions of Chapter 12Q are incorporated by reference and made a part of this Agreement as though fully set forth herein. The text of the HCAO is available on the web at [www.sfgov.org/olse](http://www.sfgov.org/olse). Capitalized terms used in this Section and not defined in this Agreement shall have the meanings assigned to such terms in Chapter 12Q.

a. For each Covered Employee, Contractor shall provide the appropriate health benefit set forth in Section 12Q.3 of the HCAO. If Contractor chooses to offer the health plan option, such health plan shall meet the minimum standards set forth by the San Francisco Health Commission.

b. Notwithstanding the above, if the Contractor is a small business as defined in Section 12Q.3(e) of the HCAO, it shall have no obligation to comply with part (a) above.

c. Contractor's failure to comply with the HCAO shall constitute a material breach of this agreement. City shall notify Contractor if such a breach has occurred. If, within 30 days after receiving City's written notice of a breach of this Agreement for violating the HCAO, Contractor fails to cure such breach or, if such breach cannot reasonably be cured within such period of 30 days, Contractor fails to commence efforts to cure within such period, or thereafter fails diligently to pursue such cure to completion, City shall have the right to pursue the remedies set forth in 12Q.5.1 and 12Q.5(f)(1-6). Each of these remedies shall be exercisable individually or in combination with any other rights or remedies available to City.

d. Any Subcontract entered into by Contractor shall require the Subcontractor to comply with the requirements of the HCAO and shall contain contractual obligations substantially the same as those set forth in this Section. Contractor shall notify City's Office of Contract Administration when it enters into such a Subcontract and shall certify to the Office of Contract Administration that it has notified the Subcontractor of the obligations under the HCAO and has imposed the requirements of the HCAO on Subcontractor through the Subcontract. Each Contractor shall be responsible for its

Subcontractors' compliance with this Chapter. If a Subcontractor fails to comply, the City may pursue the remedies set forth in this Section against Contractor based on the Subcontractor's failure to comply, provided that City has first provided Contractor with notice and an opportunity to obtain a cure of the violation.

e. Contractor shall not discharge, reduce in compensation, or otherwise discriminate against any employee for notifying City with regard to Contractor's noncompliance or anticipated noncompliance with the requirements of the HCAO, for opposing any practice proscribed by the HCAO, for participating in proceedings related to the HCAO, or for seeking to assert or enforce any rights under the HCAO by any lawful means.

f. Contractor represents and warrants that it is not an entity that was set up, or is being used, for the purpose of evading the intent of the HCAO.

g. Contractor shall maintain employee and payroll records in compliance with the California Labor Code and Industrial Welfare Commission orders, including the number of hours each employee has worked on the City Contract.

h. Contractor shall keep itself informed of the current requirements of the HCAO.

i. Contractor shall provide reports to the City in accordance with any reporting standards promulgated by the City under the HCAO, including reports on Subcontractors and Subtenants, as applicable.

j. Contractor shall provide City with access to records pertaining to compliance with HCAO after receiving a written request from City to do so and being provided at least ten business days to respond.

k. Contractor shall allow City to inspect Contractor's job sites and have access to Contractor's employees in order to monitor and determine compliance with HCAO.

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l. City may conduct random audits of Contractor to ascertain its compliance with HCAO. Contractor agrees to cooperate with City when it conducts such audits.

m. If Contractor is exempt from the HCAO when this Agreement is executed because its amount is less than \$25,000 (\$50,000 for nonprofits), but Contractor later enters into an agreement or agreements that cause Contractor's aggregate amount of all agreements with City to reach \$75,000, all the agreements shall be thereafter subject to the HCAO. This obligation arises on the effective date of the agreement that causes the cumulative amount of agreements between Contractor and the City to be equal to or greater than \$75,000 in the fiscal year.

**2e. Limitations on Contributions.** Section 18.28 is hereby replaced in its entirety as follows:



**18.28. Limitations on Contributions.** Through execution of this Agreement, Contractor acknowledges that it is familiar with section 1.126 of the City's Campaign and Governmental Conduct Code, which prohibits any person who contracts with the City for the rendition of personal services, for the furnishing of any material, supplies or equipment, for the sale or lease of any land or building, or for a grant, loan or loan guarantee, from making any campaign contribution to (1) an individual holding a City elective office if the contract must be approved by the individual, a board on which that individual serves, or a board on which an appointee of that individual serves, (2) a candidate for the office held by such individual, or (3) a committee controlled by such individual, at any time from the commencement of negotiations for the contract until the later of either the termination of negotiations for such contract or six months after the date the contract is approved. Contractor acknowledges that the foregoing restriction applies only if the contract or a combination or series of contracts approved by the same individual or board in a fiscal year have a total anticipated or actual value of \$50,000 or more. Contractor further acknowledges that the prohibition on contributions applies to each prospective party to the contract; each member of Contractor's board of directors; Contractor's chairperson, chief executive officer, chief financial officer and chief operating officer; any person with an ownership interest of more than 20 percent in Contractor; any subcontractor listed in the bid or contract; and any committee that is sponsored or controlled by Contractor. Additionally, Contractor acknowledges that Contractor must inform each of the persons described in the preceding sentence of the prohibitions contained in Section 1.126. Contractor further agrees to provide to City the names of each person, entity or committee described above.

**2f. Protection of Private Information.** Section 18.32 Nondisclosure of Private Information is hereby replaced in its entirety, as follows:

**18.32 Protection of Private Information.** contractor has read and agrees to the terms set forth in San Francisco Administrative Code Sections 12M.2, "Nondisclosure of Private Information," and 12M.3, "Enforcement" of Administrative Code Chapter 12M, "Protection of Private Information," which are incorporated herein as if fully set forth. ~~Contractor agrees that any failure of Contractor to comply with the requirements of Section 12M.2 of this Chapter shall be a material breach of the Contract. In such an event, in addition to any other remedies available to it under equity or law, the City may terminate the Contract, bring a false claim action against the Contractor pursuant to Chapter 6 or Chapter 21 of the Administrative Code, or debar the Contractor.~~

**2g. Cooperative Drafting.** Section 18.34 is hereby added to the Agreement, as follows:

**18.34. Cooperative Drafting.** This Agreement has been drafted through a cooperative effort of both parties, and both parties have had an opportunity to have the Agreement reviewed and revised by legal counsel. No party shall be considered the drafter of this Agreement, and no presumption or rule that an ambiguity shall be construed against the party drafting the clause shall apply to the interpretation or enforcement of this Agreement.

**2g. Requiring Minimum Compensation for Covered Employees.** Section 18.35 is hereby added to the Agreement, as follows and applies only to transactions involving the purchase and sale of services:

**18.35. Requiring Minimum Compensation for Covered Employees**

a. Contractor agrees to comply fully with and be bound by all of the provisions of the Minimum Compensation Ordinance (MCO), as set forth in San Francisco Administrative Code Chapter 12P (Chapter 12P), including the remedies provided, and implementing guidelines and rules. The provisions of Chapter 12P are incorporated herein by reference and made a part of this Agreement as though fully set forth. The text of the MCO is available on the web at [www.sfgov.org/olse/mco](http://www.sfgov.org/olse/mco). A partial listing of some of Contractor's obligations under the MCO is set forth in this Section. Contractor is required to comply with all the provisions of the MCO, irrespective of the listing of obligations in this Section.

b. The MCO requires Contractor to pay Contractor's "Covered Employees" a minimum hourly gross compensation wage rate of \$12.43 for 2013 and to provide minimum compensated and uncompensated time off. The minimum wage rate may change from year to year and Contractor is obligated to keep informed of the then-current requirements. Any subcontract entered into by Contractor shall require the subcontractor to comply with the requirements of the MCO and shall contain contractual obligations substantially the same as those set forth in this Section. It is Contractor's obligation to ensure that any subcontractors of any tier under this Agreement comply with the requirements of the MCO. If any subcontractor under this Agreement fails to comply, City may pursue any of the remedies set forth in this Section against Contractor.

c. Contractor shall not take adverse action or otherwise discriminate against an employee or other person for the exercise or attempted exercise of rights under the MCO. Such actions, if taken within 90 days of the exercise or attempted exercise of such rights, will be rebuttably presumed to be retaliation-prohibited by the MCO.

d. Contractor shall maintain employee and payroll records as required by the MCO. If Contractor fails to do so, it shall be presumed that the Contractor paid no more than the minimum wage required under State law.

e. The City is authorized to inspect Contractor's job sites and conduct interviews with employees and conduct audits of Contractor

f. Contractor's commitment to provide the Minimum Compensation is a material element of the City's consideration for this Agreement. The City in its sole discretion shall determine whether such a breach has occurred. The City and the public will suffer actual damage that will be impractical or extremely difficult to determine if the Contractor fails to comply with these requirements. Contractor agrees that the sums set forth in Section 12P.6.1 of the MCO as liquidated damages are not a penalty, but are reasonable estimates of the loss that the City and the public will incur for Contractor's noncompliance. The

procedures governing the assessment of liquidated damages shall be those set forth in Section 12P.6.2 of Chapter 12P.

g. Contractor understands and agrees that if it fails to comply with the requirements of the MCO, the City shall have the right to pursue any rights or remedies available under Chapter 12P (including liquidated damages), under the terms of the contract, and under applicable law. If, within 30 days after receiving written notice of a breach of this Agreement for violating the MCO, Contractor fails to cure such breach or, if such breach cannot reasonably be cured within such period of 30 days, Contractor fails to commence efforts to cure within such period, or thereafter fails diligently to pursue such cure to completion, the City shall have the right to pursue any rights or remedies available under applicable law, including those set forth in Section 12P.6(c) of Chapter 12P. Each of these remedies shall be exercisable individually or in combination with any other rights or remedies available to the City.

h. Contractor represents and warrants that it is not an entity that was set up, or is being used, for the purpose of evading the intent of the MCO.

i. If Contractor is exempt from the MCO when this Agreement is executed because the cumulative amount of agreements with this department for the fiscal year is less than \$25,000, but Contractor later enters into an agreement or agreements that cause contractor to exceed that amount in a fiscal year, Contractor shall thereafter be required to comply with the MCO under this Agreement. This obligation arises on the effective date of the agreement that causes the cumulative amount of agreements between the Contractor and this department to exceed \$25,000 in the fiscal year.


3. **Effective Date.** Each of the modifications set forth in Section 2 shall be effective on and after the date of this Amendment.

4. **Legal Effect.** Except as expressly modified by this Amendment, all of the terms and conditions of the Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, Contractor and City have executed this Amendment as of the date first referenced above.

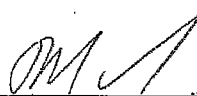
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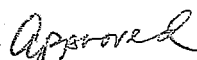
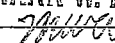
  
\_\_\_\_\_  
Ken Bukowski  
Acting Director, Department of Technology

**CONTRACTOR**

Motorola Solutions, Inc.

  
\_\_\_\_\_  
Name: Mark Schmidt  
Title: MSSI Vice President

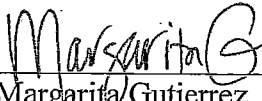
City vendor number: 12872

  
\_\_\_\_\_  
MARK W. ANTHONY  


Approved as to Form:

Dennis J. Herrera  
City Attorney

By:

  
Margarita Gutierrez  
Deputy City Attorney

Approved:

---

Jaci Fong  
Director of the Office of Contract  
Administration, and Purchaser

**CITY AND COUNTY OF SAN FRANCISCO  
OFFICE OF CONTRACT ADMINISTRATION**

**ASSIGNMENT AND ASSUMPTION AGREEMENT**

THIS ASSIGNMENT (this "Assignment") is made as of January 4, 2011, in San Francisco, California, by and between Motorola, Inc. ("Assignor") and Motorola Solutions, Inc. ("Assignee"). The City and County of San Francisco, a municipal corporation ("City") has requested that this document be executed to document the name change from "Motorola, Inc." to "Motorola Solutions, Inc." as part of a corporate reorganization which occurred January 4, 2011.

**RECITALS**

WHEREAS, Assignor is a party to the Agreement (as defined below); and

WHEREAS, Assignor desires to assign the Agreement, and Assignee desires to assume the Agreement, each on the terms and conditions set forth herein;

NOW, THEREFORE, in consideration of the promises and the mutual covenants contained in this Assignment, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor and Assignee agree as follows:

1. **Definitions.** The following definitions shall apply to this Assignment:

(a) **Agreement.** The term "Agreement" shall mean the Agreement dated September 22, 1997, identified as the "Citywide 800 MHz Radio System Project Agreement", between Assignor and City. The term "Agreement" shall include any amendments or modifications set forth in Appendix A attached hereto and made a part hereof.

(b) **Effective Date.** "Effective Date" shall mean January 4, 2011.

(c) **Other Terms.** Terms used and not defined in this Assignment shall have the meanings assigned to such terms in the Agreement.

2. **Assignment.** Assignor hereby assigns, transfers and conveys to Assignee all of Assignor's right, title and interest in and to the Agreement and all of Assignor's duties and obligations thereunder, to the extent arising on or after the Effective Date.

3. **Assumption.** Assignee hereby accepts the assignment transfer and conveyance set forth in Section 2 and agrees to perform all of Assignor's duties and obligations under the Agreement, to the extent arising on or after the Effective Date.

4. **Mutual Indemnities**

(a) **Assignor.** Assignor shall indemnify, defend and protect Assignee, and hold Assignee harmless from and against, any and all liabilities, losses, damages, claims, costs or expenses (including attorneys' fees) arising out of (a) any failure of Assignor to convey its interest pursuant to Section 2, free and clear of all third-party liens, claims or encumbrances or (b) any breach by Assignor of the Agreement or any other failure to perform or observe any of the duties

or obligations of Assignor thereunder, to the extent such breach or failure arises prior to the Effective Date.

(b) **Assignee.** Assignee shall indemnify, defend and protect Assignor, and hold Assignor harmless from and against, any and all liabilities, losses, damages, claims, costs or expenses (including attorneys' fees) arising out of any breach by Assignee of the Agreement or any other failure to perform or observe any of the duties or obligations thereunder assumed by Assignee pursuant to this Assignment.

5. **Governing Law.** This Assignment shall be governed by the laws of the State of California, without regard to its conflict of laws principles.

6. **Headings.** All section headings and captions contained in this Assignment are for reference only and shall not be considered in construing this Assignment.

7. **Entire Agreement.** This Assignment sets forth the entire agreement between Assignor and Assignee relating to the Agreement and supersedes all other oral or written provisions.

8. **Further Assurances.** From and after the date of this Assignment, Assignor and Assignee agree to do such things, perform such acts, and make, execute, acknowledge and deliver such documents as may be reasonably necessary or proper and usual to complete the conveyance contemplated by this Assignment or as may be required by City.

9. **Severability.** Should the application of any provision of this Assignment to any particular facts or circumstances be found by a court of competent jurisdiction to be invalid or unenforceable, then (a) the validity of other provisions of this Assignment shall not be affected or impaired thereby and (b) such provision shall be enforced to the maximum extent possible so as to effect the intent of Assignor, Assignee and City.

10. **Successors; Third-Party Beneficiaries.** Subject to the terms of the Agreement, this Assignment shall be binding upon, and inure to the benefit of, the parties hereto and their successors and assigns. Except as set forth in Section 12, nothing in this Assignment, whether express or implied, shall be construed to give any person or entity (other than City and the parties hereto and their respective successors and assigns) any legal or equitable right, remedy or claim under or in respect of this Assignment or any covenants, conditions or provisions contained herein.

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11. **Notices.** All notices, consents, directions, approvals, instructions, requests and other communications regarding this Assignment or the Agreement shall be in writing, shall be addressed to the person and address set forth below and shall be (a) deposited in the U.S. mail, first class, certified with return receipt requested and with appropriate postage, (b) hand delivered or (c) sent via facsimile (if a facsimile number is provided below). All communications sent in accordance with this Section shall become effective on the date of receipt. From time to time Assignor, Assignee or City may designate a new address for purposes of this Section by notice to the other signatories to this Assignment.

If to Assignor:

Patrick Heavey  
316 Spruce St.  
Half Moon Bay, CA 94019

If to Assignee:

Patrick Heavey  
316 Spruce St.  
Half Moon Bay, CA 94019

If to City:

[Insert Name of Department]  
[Insert Name of Contact Person]  
[Insert Address]  
San Francisco, CA [Insert ZIP]  
Fax: [Insert Fax Number, if fax notices are desired]

12. **Consent of City; No Release of Assignor; Waivers.** Each of Assignor and Assignee acknowledges that the prior written consent of City to this Assignment is required under the terms of the Agreement. City shall be a third party beneficiary of this Assignment (other than Section 4) and shall have the right to enforce this Assignment. Neither this Assignment nor the consent of City set forth below shall release Assignor in whole or in part from any of its obligations or duties under the Agreement if Assignee fails to perform or observe any such obligation or duty. Assignor has entered into this Assignment and obtained such consent of City based solely upon City's request and Assignor's independent investigation of Assignee's financial condition and ability to perform under the Agreement, and Assignor assumes full responsibility for obtaining any further information with respect to Assignee or the conduct of its business after the date of this Assignment. Assignor authorizes City, without notice or demand and without affecting Assignor's liability hereunder or under the Agreement to: (i) renew, modify or extend the time for performance of any obligation under the Agreement; (ii) take and hold security for the payment of any obligation under the Agreement and exchange, enforce, waive and release such security; and (iii) release or consent to an assignment by Assignee of all or any part of the Agreement.

IN WITNESS WHEREOF, Assignor and Assignee have each duly executed this Assignment as of the date first referenced above.

ASSIGNOR

ASSIGNEE

Motorola Solutions, Inc., formerly  
Motorola, Inc.  
Vendor No. 12872

Motorola Solutions, Inc.  
Vendor No. 12872

By

Title

MSSI Vice President

By

Title

MSSI Vice President

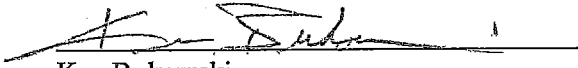
Approved  
MARK W. ANTHONY  
MWA

Subject to Section 12 of this Assignment, City hereby consents to the assignment and assumption described in Sections 2 and 3 of this Assignment.

[Signatures are continued on the next page.]

**CITY**

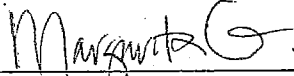
Recommended by:



Ken Bukowski  
Acting Director, Department of Technology

Approved as to Form:

Dennis J. Herrera  
City Attorney

By 

Margarita Gutierrez  
Deputy City Attorney

Approved:

---

Jaci Fong  
Director of Office of Contract Administration/  
Purchaser



## APPENDIX A

### Amendments

First Amendment	May 18, 1998,
Second Amendment	September 24, 1998,
Third Amendment	August 11, 1999,
Fourth Amendment	May 19, 2000,
Fifth Amendment	November 21, 2000,
Sixth Amendment	November 17, 2006, and
Seventh Amendment	April 15, 2013



 **FILE COPY**

1. Master agreement  
1997

**CITYWIDE 800 MHZ RADIO SYSTEM PROJECT AGREEMENT**

**BY AND BETWEEN**

**CITY AND COUNTY OF SAN FRANCISCO**

**AND**

**MOTOROLA, INC.**

Dated: September 22, 1997



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Exhibit C	Project User Equipment List
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Exhibit M	Equal Benefits Exception

## CITYWIDE 800 MHZ RADIO SYSTEM PROJECT AGREEMENT

THIS CITYWIDE 800 MHZ RADIO SYSTEM PROJECT AGREEMENT, dated as of September 22, 1997 ("Master Agreement"), is by and between MOTOROLA, INC., a Delaware corporation ("Contractor") and CITY AND COUNTY OF SAN FRANCISCO, a municipal corporation ("City"), acting by and through its DEPARTMENT OF TELECOMMUNICATIONS AND INFORMATION SERVICES ("DTIS").

### BACKGROUND

A. The City has an existing trunking radio system used by the City's Public Works and other City departments and agencies; and

B. City desires to upgrade and expand the existing 800 MHz trunking radio system by the acquisition and installation of a citywide 800 MHz trunking radio communication system; all of which would be combined into a seamless trunking radio communication system for the City; and

C. On May 2, 1996, the City issued an Invitation for Bids ("IFB") seeking a contractor to provide the proposed project; and

D. The IFB was a multi-step process, consisting of the following steps: (1) prequalification of the bidder, (2) submission of technical proposal and (3) submission of cost proposals; and

E. In connection with the first step of the bid process, only two bidders submitted prequalification statements; and

F. These two bidders advanced to the second step of the process; and

G. In connection with the second step of the bid process, the Contractor was the only bidder to submit a technical proposal; the other bidder informed the City that it did not wish to bid on the project; and

H. With the submission of one bid, the Purchaser recommended termination of the bid process and commencement of direct negotiations with the Contractor; and

I. Upon this recommendation, the bid process was terminated and the Board of Supervisors was so informed; and

J. The parties desire to enter into an agreement memorializing the terms and conditions for the acquisition, installation and delivery of the proposed project and the optional acquisition of certain additional equipment; and

K. Now, in consideration of the mutual covenants and promises set forth herein, it is agreed by the parties as follows:

## AGREEMENT

### ARTICLE 1

#### DEFINITIONS

**Section 1.01. Definitions.** Unless the context clearly otherwise requires, all terms used in this Master Agreement shall have the meanings specified in this Section, to be equally applicable to both the singular and plural forms of any of the terms herein defined. Words of any gender shall be deemed and construed to include all genders.

"ACCEPTANCE TEST PLAN" means the final, detailed testing plan by which the City and Contractor will test, via a live operational demonstration, all components of the Project, individually and collectively, to ensure that it works according to the Statement of Work and Services (including all published specifications) and meets or exceeds all the Performance Specifications.

"ADDITIONAL EQUIPMENT" shall have the meaning given such term in Section 4.02 hereof.

"ADDITIONAL EQUIPMENT PRICE SCHEDULE" means the schedule of Equipment prices for all the Equipment available for purchase by the City for the Project, attached hereto as Exhibit G.

"AFFILIATED PARTY" means any person or entity which directly or indirectly, through one or more intermediaries, controls, is controlled by or is under the common control with Contractor. As used above, the term "control" means the right and power, directly or indirectly, through one or more intermediaries, to direct or cause the direction of substantially all of the management and policies of a person or entity through ownership of voting securities or by contract.

"BACKBONE SITE" OR "SITE" means the geographic location where Fixed Network Equipment will be installed, in accordance with the Statement of Work and Services. Such location to be identified in the Statement of Work and Services by either (i) latitude and

longitude, (ii) commonly known street names and address, or (iii) other commonly known building references, which may include the room and floor numbers.

"**BACKBONE SITE COST**" shall have the meaning given such term in Section 4.05 hereof.

"**BASE SYSTEM**" means all the equipment that comprise the City's existing trunking radio system used by the City's Public Works and other City departments and agencies, as such equipment is listed in Appendix K attached to the Performance Specifications.

"**CHANGE ORDER**" means a written instrument, signed by the Project Manager and the General Manager, modifying the Statement of Work and Services.

"**CHRONIC FAILURE**" means the repeated and unplanned failure prior to Final Project Acceptance during the Reliability Period or any Extended Reliability Period of a system or subsystem, listed in the definition of "Major Failure," caused by Contractor or its subcontractor or its Equipment. The specific conditions of degraded operation that shall be considered in determining a "Chronic Failure" are identified in the Performance Specifications, Section 2.4.3, System Availability, as minor failures which lead to degraded operation of the Project.

"**CITY**" means the City and County of San Francisco, a municipal corporation.

"**CLARIFICATION**" means a document consisting of supplementary details, instructions or information issued by the Project Manager to Contractor, which document clarifies the Statement of Work and Services.

"**CONTRACTOR**" means Motorola, Inc., a Delaware corporation.

"**CONTROLLER**" means the Controller of the City and County of San Francisco.

"**CORPORATION**" means the City and County of San Francisco Finance Corporation or any successor in interest thereto.

"**COVERAGE ENHANCEMENT PHASE**" means the optional phase of Work, Services and Equipment that the City may elect to acquire as part of the whole Project as such Phase is further described in Section 3.03(c).

"**CPI**" means the Consumer Price Index for All Urban Consumers (base years 1982-1984 = 100) for the San Francisco-Oakland-San Jose area, published by the United States Department of Labor, Bureau of Labor Statistics.

"DAY" means calendar day, any and every day shown on the calendar, Sundays and holidays included, unless otherwise designated herein. This definition shall be applicable regardless of whether the term is capitalized.

"DEFECTIVE WORK" means work that (i) is faulty or deficient, (ii) does not conform to the Statement of Work and Services, (iii) does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Acceptance Test Plan, (iv) does not meet or exceed the Performance Specifications, or (v) has been damaged prior to the Final Acceptance of the Project.

"DETAIL DESIGN" means the final system design for the entire Project to be prepared and delivered by Contractor pursuant to Section 6.01 hereof.

"DTIS" means The Department of Telecommunications and Information Services of the City and County of San Francisco.

"800 MHZ PROJECT" means the upgrade and expansion of the Base System and acquisition and installation of a Citywide 800 MHz trunking radio communication system; all to be combined into a seamless trunking radio communication system for the City.

*REPLACED*  
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*1.*

"EQUIPMENT" means the hardware, software, furniture, housing and any other item required to install, operate, support and maintain the Project, which equipment shall be specified in the Statement of Work and Services. Equipment for the Project shall be classified as follows: (i) "Fixed Network Equipment": any equipment permanently installed at a specific site including trunked radio system, microwave transmission system, console control equipment and system manager equipment and terminals; (ii) "Mobile Equipment": any equipment installed in a vehicle for operation; (iii) "Portable Equipment": any equipment carried by personnel for operation; and (iv) "Test and Support Equipment": any equipment, which may be fixed, mobile, portable, or vehicular, required to check, accept, support, administer and maintain the Project.

"ESCROW AGREEMENT" shall have the meaning given such term in Section 11.04.

"EXTENDED RELIABILITY PERIOD" shall have the definition given such term in the definition of Reliability Period.

"FALL BACK PROCEDURES" are those manual procedures which require additional City personnel or significant additional man hours beyond those required of the system or subsystem had the system or the subsystem not failed.

"FINAL ACCEPTANCE CERTIFICATE" means final written acceptance of the Project, which must include all the following certifications by the City's Project Manager: (i) the

Project is complete, fully operational as an integrated system and performs in accordance with the Statement of Work and Services and any other applicable published specifications; (ii) the Project meets or exceeds the Performance Specifications; (iii) the Project passed all applicable Acceptance Test Plans; (iv) all training for the Project has been satisfactorily completed, (v) all documentation required by Article 13 hereof has been delivered, and (vi) the Reliability Period and the Extended Reliability Period, if applicable, has ended.

"FINAL ACCEPTANCE OF THE PROJECT" or "FINAL PROJECT ACCEPTANCE" means the date on which the City delivers to the Contractor the Final Acceptance Certificate.

"FINANCIAL TRUSTEE" means the bond trustee selected by the City to act as trustee for the lease revenue bonds to be issued to finance the acquisition of the Project or any successor in interest thereto.

"FREQUENCY COORDINATOR" shall have the meaning given such term in Section 15.02(d) hereof.

*Revised MOD 2*  
"GENERAL MANAGER" means the General Manager of the Division of Telecommunications of DTIS, or authorized representative or deputy.

"LABOR RATE SCHEDULE" means the hourly labor rates for the installation of any Additional Equipment or any Change Order, as such schedule is set forth in Exhibit H attached hereto.

"LICENSE" shall have the meaning given such term in Section 11.01 hereof.

"LOSSES" means any losses, liabilities, damages, cost and/or expenses (including reasonable attorneys fees).

"MAJOR FAILURE" means a total or partial failure of any systems or subsystems hereafter listed during the Reliability Period or any Extended Reliability Period, if applicable, of such magnitude that Fall Back Procedures are reasonably being instituted to continue operations of that particular system or subsystem. The pertinent systems and subsystems are as follows: the trunked radio system, the radio console system, the microwave transmission system, and the system manager terminals. The specific outage conditions that constitute a "Major Failure" are identified in the Performance Specifications, Section 2.4.3, System Availability.

"MASTER AGREEMENT" means this Citywide 800 MHz Radio System Project Agreement, dated as of September 22, 1997, by and between the City and Contractor, together with all Exhibits.



"**MASTER PROJECT SCHEDULE**" means the master time line for the acquisition, delivery and installation of the Project, as such schedule is set forth in Exhibit E attached hereto.

"**OPTIONAL PHASES**" shall mean the two separate optional phases of the Project defined herein as the "Coverage Enhancement Phase" and the "WDM Phase."

"**PARTIES**" means the City and the Contractor.

"**PAYMENT MILESTONE**" shall have the meaning given such term in Section 4.05 hereof.

"**PAYMENT SCHEDULE**" means the schedule of progress payments to be made by the City in connection with the Project, as such schedule is set forth in Section 4.05 hereof.

"**PERFORMANCE SPECIFICATIONS**" means the minimum specifications that the Project must meet or exceed, as such specifications are set forth in Exhibit A attached hereto.

"**PHASE**" means "Phase One of the Project," "Phase Two of Project" and, if the City elects to proceed with one or both the Optional Phases, then the selected Phase.

"**PHASE ONE OF PROJECT**" means the first subdivision of Work, Services and Equipment to be provided for the Project, as generally described in Section 3.03 hereof.

"**PHASE TWO OF PROJECT**" means the second subdivision of Work, Services and Equipment to be provided for the Project, as generally described in Section 3.03 hereof.

"**PRELIMINARY DESIGN**" means the preliminary system design of the Project as described and set forth in the Statement of Work and Services and the Project User Equipment List.

"**PROJECT**" shall have the meaning given such term in Section 3.01 hereof.

"**PROJECT COST ITEMIZATION SCHEDULE**" means the schedule itemizing the individual cost and expenses for the Project, as such schedule is set forth in Exhibit D attached hereto.

"**PROJECT MANAGER**" means that individual specified as the Project Manager for the respective parties, pursuant to Section 6.04 hereof.

"**PROJECT PRICE**" shall mean an amount not to exceed Thirty Six Million Five Hundred Forty Seven Thousand Three Hundred Sixty Five Dollars (\$36,547,365), as such

amount may be adjusted in strict accordance with the express provisions of this Master Agreement and Resolution No. 804-97.

"PROJECT USER EQUIPMENT" means the Mobile Equipment, Portable Equipment, Test and Support Equipment that the Contractor must provide as part of the Project, which Equipment is listed in Exhibit C attached hereto.

"PROPRIETARY" means any protected information, software, and other Equipment, including any of its subassemblies and not available for public use.

"PURCHASER" means the Director of Purchasing and Services of the City and County of San Francisco.

"RELATED PARTIES" means the City's employees, officials, agents, successors and/or assigns.

"RELIABILITY PERIOD" shall mean the period set forth in Section 7.03 hereof.

"REQUEST TO COMMENCE" means City's written notice to the Contractor to commence a Phase or part thereof, which notice shall be in the form attached hereto as Exhibit I.

"SECRETARY" means the Secretary of the Corporation, or authorized representative or assistant.

"SERVICES" means labor required to complete the Work, and to fully provide the Project in accordance with the Statement of Work and Services.

"SOFTWARE" means all the software needed to operate the Project. Such software shall be the latest version available unless otherwise requested by DTIS in writing. Software shall further mean (i) all instruction code sets, (ii) any related users manuals, (iii) training materials, help text, any other written or graphic materials of Contractor that describes the operation of the Software, and (iv) magnetic media, and optical media. At the request of DTIS, Contractor shall place any and all source codes and object codes into escrow.

"STATEMENT OF WORK AND SERVICES" means the written statement prepared by Contractor setting forth all work and services to be provided by Contractor in connection with the acquisition, installation and delivery of the Project. The Statement of Work and Services shall include all hardware configuration documents, including drawings and description of each major Equipment subsystem, principles of operation, electrical function drawings, circuit schematics, panel layout drawings, parts lists, system block drawings, cable runs and terminations.

"STOP WORK ORDER" means written notice of the General Manager ordering a certain activity or work connected with the Project to cease.

"SUBCONTRACTOR" means any person, firm, partnership, corporation, or combination thereof, or their respective duly authorized representative, who has or have entered into a contract with Contractor, to do any portion of the Project.

"SYSTEM CUTOVER" means when the proposed user departments have transitioned from their existing radio systems to the Project. The proposed user departments are as follows: DTIS, the Water Department, the Department of Recreation and Parks, the Department of Parking and Traffic, the Sheriff's Department, the Department of Public Health, the Fire Department, the Police Department and the Office of Emergency Services.

"TURN-KEY" means that the Project is fully functional, operational, ready for its intended use, meets or exceeds all the Performance Specifications and has passed all portions of the Acceptance Test Plan.

"UPGRADE" means modification to a Site and or the addition or provision of Equipment to enhance or add features or functionally not originally provided for in the Statement of Work and Services. This definition shall be applicable regardless of whether the term is capitalized.

"USER EQUIPMENT" means Mobile Equipment, Portable Equipment and Test and Support Equipment.

"WDN PHASE" means the optional Phase of Work, Services and Equipment that the City may elect to acquire as part of the whole Project as such Phase is further described in Section 3.03(d).

"WORK" means the implementation, assembly, installation, optimization, integration, required by this Master Agreement, whether completed or partially completed, including all labor, materials, equipment and services provided or to be provided by Contractor to fulfill Contractor's obligations hereunder. The Work may constitute the whole or part of the Project.

## ARTICLE 2

### TERM

**Section 2.01. Term of Master Agreement.** The term of this Master Agreement shall commence on September 22, 1997 and shall expire on September 21, 2007, unless sooner terminated by the City pursuant to the terms of this Master Agreement.

Section 2.02. Termination.

(a) City's Right to Terminate. The City shall have the right to terminate this Master Agreement as provided in and in accordance with the express terms of this Master Agreement. In addition to such termination rights, the City may terminate this Master Agreement, with or without cause, in whole or in part, by providing the Contractor with thirty (30) days' advance notice thereof.

(b) After receipt of a notice of termination, and except as otherwise directed by the City, the Contractor shall:

(i) Stop work under this Master Agreement on the date and to the extent specified in the notice of termination;

(ii) Place no further orders or subcontracts for materials, services, or facilities except as necessary to complete the portion of the work under this Master Agreement which is not terminated;

(iii) Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the notice of termination;

(iv) Assign to the City in the manner, at the times, and to the extent directed by the City, all of the right, title, and interest of the Contractor under the orders and subcontracts so terminated. The City shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;

(v) Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the City to the extent the City may require. City's approval or ratification shall be final for all the purposes of this clause;

(vi) Transfer title to the City, and deliver in the manner, at the times, and to the extent, if any, directed by the City, the work in progress, completed work, supplies, equipment, and other materials produced as a part of, or acquired in connection with the performance of the work terminated by the notice of termination, and the completed or partially completed work which, if the Master Agreement had been completed, would have been required to be furnished to the City;

(vii) Complete performance of such part of the work as shall not have been terminated by the notice of termination; and

(viii) Take such action as may be necessary, or as the City may direct, for the protection and preservation of the property related to this Master Agreement which is in the possession of the Contractor and in which the City has or may acquire an interest.

(c) Upon City's termination of this Master Agreement for convenience, Contractor will submit an invoice to City for the actual work completed and Equipment delivered, all of which the City has inspected, tested and accepted. City shall pay Contractor for the remaining unpaid amounts based on the Project Cost Itemization Schedule attached hereto.

(d) In no event shall City be liable for costs incurred by Contractor or any of its subcontractors after receipt of a notice of termination. Such non-recoverable costs include, but are not limited to, anticipated profits on the contract, post-termination employee salaries, post-termination administrative expenses, post-termination overhead, the costs of preparing and submitting the bid, attorney's fees or other costs relating to the prosecution of a claim or lawsuit, pre-judgment interest, or any other expense which is not reasonable or authorized under subsection (e) of this Section.

(e) This section shall not prohibit Contractor from recovering costs necessary to discontinue further work under this Master Agreement as provided for in subsection (b) of this Section, or costs authorized by City to settle claims from subcontractors, or costs necessary for preparation of Contractor's termination claim.

(f) In arriving at the amount due the Contractor under this clause there shall be deducted (i) all unliquidated advance or other payments on account theretofore made to the Contractor, applicable to the terminated portion of this Master Agreement, (ii) any claim which the City may have against the Contractor in connection with this Master Agreement, and (iii) the agreed price for, or the proceeds of sale of, any materials, supplies, or other items kept by the Contractor or sold, under the provisions of this clause, and not otherwise recovered by or credited to the City.

(g) Upon approval and payment of this invoice by City, City shall be under no further obligation to Contractor monetarily or otherwise.

### ARTICLE 3

#### THE PROJECT

**Section 3.01. Equipment, Labor and Services.** In consideration for the Project Price, Contractor shall provide all the following:

(a) all the Equipment, labor and services necessary to provide the Project as such equipment, labor and services are detailed in the Statement of Work and Services and the Performance Specifications.

- (b) All the Project User Equipment.
- (c) All the documentation, manuals and materials specified in Article 13 hereof and Appendix B of the Performance Specifications.
- (d) All the maintenance and support services specified in Section 14.02 hereof.
- (e) All the Software necessary to have an operational Project that meets the Performance Specifications together with cost to place any and all source codes for the Software in an escrow.
- (f) Such personnel necessary to provide all the training classes specified in Section 12.01 hereof.
- (g) Such personnel necessary for testing and inspecting the Project, as such inspection and tests are outlined in the Acceptance Test Plan.
- (h) All shipping, handling and freight cost and expenses incurred for the delivery of all parts, materials, and Equipment for the Project.
- (i) All taxes, impositions and fees imposed by any governmental entity on any part, material or Equipment for the Project.
- (j) All storage costs for all parts, materials and Equipment for the Project.

For purposes of this Master Agreement, all items referenced in (a) through (j) above shall be collectively referred to as the "Project." If the City elects to acquire any portion of the Coverage Enhancement Phase or the WDN Phase, that portion shall be deemed to be part of the Project for all purposes of this Master Agreement. To the extent the City elects to include the Coverage Enhancement Phase or the WDN Phase, the Project Price shall be adjusted in accordance with Section 4.01 hereof.

**Section 3.02. City's Responsibilities.** City shall perform the following coincident with the performance of this Master Agreement.

- (1) Provide a designated Project Manager.
- (2) Provide ingress and egress to City's facilities and/or sites as requested by Contractor and have such facilities available for installation of the equipment to be installed.
- (3) Provide adequate telephone lines for the installation and operation of the equipment as specified in the Statement of Work and Services.

(4) Provide adequate AC Power at 117 VAC + 10%, 60 Hz for the installation and operation of the equipment as specified in the Statement of Work and Services.

(5) Provide a designated work area with adequate heat and light, and a secure storage area for equipment delivered to the City. The City shall be solely liable for loss or damage to equipment prior to, during and following installation when such equipment is on or within City's vehicles.

**Section 3.03. The Project and Optional Phases.** The Project shall be acquired, constructed, and delivered in at least two separate phases. Phase One of the Project shall be divided into two parts. The City shall not be obligated to acquire either Phase or the parts of Phase One of the Project until it delivers a Request to Commence for the particular Phase and part and the Controller certifies that sufficient unencumbered funds have been appropriated and are available for the particular Phase or part. The City may expand the Project by electing to proceed with either or both of the Optional Phases. The description of each Phase is set forth below. The parties agree that these descriptions are general and are further defined in the Performance Specifications and the Statement of Work and Services. Contractor acknowledges and agrees that the City shall have the right to delete any Phase or part of Phase or increase or decrease the quantities of user equipment purchased in accordance with Section 4.01(c) hereof

(a) **Phase One of Project.**

(1) **Part One of Phase One.** Part One shall consist of the completion, delivery and approval of the Detail Design for the Project (exclusive of the Optional Phases).

(2) **Part Two of Phase One.** Part Two of Phase One of the Project consists of the acquisition and construction of an eight-Site, 23 channel simulcast trunking radio system for the City's Police, Fire, Public Health, Office of Emergency Services, Parking and Traffic, Recreation and Parks, Sheriff, Telecommunications and Information Services, and Water departments. The eight Sites requiring upgrades and Fixed Network Equipment are: (1) Central Radio Station, 1 Twin Peaks Boulevard, (2) Forest Hill water tank, 100 Mendosa Avenue, (3) A T & T facility at Bernal Heights, 99 Moultrie Street, (4) Fort Miley/VA Hospital, 43rd and Clement, (5) San Francisco State University, Thorton Hall, (6) One Market Plaza, 1 Market Street, (7) Building at Clay and Jones, 1250 Clay Street, and (8) Reservoir 2b/South Hill water tank at Oakridge and Alta Vista (Daly City). If one or more of these radio sites is unavailable, DTIS may select an alternate site in accordance with Section 6.07(e). Phase One of the Project shall also include all Equipment, Work, and Services required for: (1) the upgrade of DTIS Radio Division facilities at 901 Rankin Street for the establishment of an alarm monitoring station and equipment repair facility; (2) the trunking radio system; (3) the microwave transmission system; (4) the radio console system and all radio consoles listed in Exhibit C; (5) all user equipment for the category "other" as listed in Exhibit C; (6) all test equipment listed in Exhibit C; (7) all special areas of coverage listed as "mandatory" in Appendix D attached to

the Performance Specifications; (8) all technical training and system management training listed in Exhibit L; and (9) all maintenance and repairs required for the Fixed Network Equipment up to the start of the warranty period.

(3) **Civil Work for Phase One.** Contractor acknowledges that the guaranteed maximum price for the Site upgrade work and upgrade of DTIS Radio Division facilities at 901 Rankin St. shall not exceed Four Million One Hundred Thirty-Five Thousand Five Hundred Eighty-Eight Dollars (\$4,135,588), which amount is included as part of the total Project Price. This amount includes the Contractor's management fee. Prior to the commencement of this Work, the City may prepare a more detailed design. City shall cause Fluor Daniel, Inc. ("Fluor") to prepare an estimate for this work which shall remain sealed until the appropriate time, as indicated below. In such estimate, Fluor shall include a twenty percent (20%) management fee for the Contractor. Within fourteen (14) days of receipt of the City's final design documentation for this Work, Contractor shall notify the City whether the detailed design as whole is no greater than the original scope for which the guaranteed maximum price was submitted. In making such determination, Contractor must, in good faith, take into consideration both increases and reductions in the scope and analyze it in the aggregate. Based on this analysis, the parties shall follow either (A) or (B) below:

(A) **Cost of Scope exceeds Guaranteed Maximum Price.** If the Contractor reasonably concludes that the scope in the aggregate has increased, Contractor shall submit a new guaranteed maximum price for these services. Upon receiving this new guaranteed maximum price, the City may (1) reject it, (2) reduce the scope of the services or (3) accept the new guaranteed maximum price. If the City reduces the scope of the services to bring the cost below the guaranteed maximum price, the parties shall follow the procedure set forth in (B) below and Fluor shall revise its estimate. If the City accepts the new guaranteed maximum price, the City and Contractor shall open Fluor's estimate on the civil work. If the difference between Fluor's estimate and the guaranteed maximum price is less than ten percent, the City shall proceed with the subcontractor selected by the Contractor at a price not to exceed the new guaranteed maximum, which includes the twenty percent (20%) management fee for the Contractor. If the difference exceeds ten percent, the City shall have the right to proceed with the Contractor's subcontractor or require the Contractor to bid out the Civil Work in accordance with the procedure set forth below.

(B) **Guaranteed Maximum Price Remains the Same.** If the guaranteed maximum price for the civil work remains unchanged, Contractor shall submit to the City's Project Manager a revised detailed cost estimate for the civil work with a total price. Contractor's revised cost estimate shall conform to the format of the Project Cost Itemization Schedule and shall not be greater than the guaranteed maximum price. If the difference between Fluor's estimate and the guaranteed maximum price is less than ten percent, the City shall proceed with the subcontractor selected by the Contractor at a price not to exceed the



Contractor's new estimate which includes an additional twenty percent charge to cover the Contractor's management fee. If the difference exceeds ten percent, the City shall have the right to proceed with the Contractor's subcontractor or require the Contractor to bid out the Civil Work in accordance with the procedure set forth below.

Within ten (10) days of receipt of Contractor's revised cost estimate, City will either (1) notify Contractor of City's acceptance of the Contractor's revised cost estimate in which case the Project Price will be adjusted accordingly or (2) notify Contractor of the City's rejection of Contractor's revised estimate in which case Contractor shall, within thirty (30) days, submit to the City's Project Manager bids from three different certified MBE/WBE/LBE subcontractors for radio site upgrade work. After certification by the City that bidders are qualified to perform the work, Contractor shall select lowest qualified subcontractor and Project Price will be adjusted accordingly. The City shall reimburse Contractor for its actual cost for bidding this work, provided that such amount does not exceed \$25,000. City reserves the right to reject all bids and contract separately for this work with an MBE/WBE/LBE.

Upon the completion of the process set forth in this Section 3.03(a)(3) hereof, the Contractor shall submit to City the hourly rates for the services set forth in Exhibit H-2. In no way shall the above process relieve Contractor from its obligation to conform to Section 18.02, required MBE/WBE/LBE participation or its obligation to adhere to the Master Project Schedule. In no event shall the total Project Price be increased.

A more detailed description of Work, Services and Equipment required under Phase One of the Project is contained in Exhibit B attached hereto.

(b) Phase Two of Project. Phase Two of the Project shall include all Equipment, Work and Services required for: (1) all user equipment listed in Exhibit C attached hereto not previously purchased under Phase One of the Project; (2) all system documentation listed in Appendix B attached to the Performance Specifications; all warranty support; and all user training listed in Exhibit L attached hereto.

A more detailed description of Work, Services and Equipment required under Phase Two of the Project is contained in Exhibit B attached hereto.

(c) Optional Coverage Enhancement Phase. In addition to the two Phases of the Project, the City may elect to acquire certain Equipment and Services to provide enhanced coverage ("Coverage Enhancement Phase"). Subject to the Controller's certification of available funds, the City may purchase this Equipment and Services by sending a Request to Commence specifying the portion of the Phase that the City desires to purchase. The Coverage Enhancement Phase shall consist of all Equipment, Work, and Services required for: (1) all special areas of coverage listed as "optional" in Appendix D; (2) backbone radio site upgrade and Fixed Network Equipment (FNE) for radio sites at Potrero Hill water tower, 22nd and Carolina

and radio site at Presidio, 314 Deems Road; and the CERS Manager as defined in Section 2.3 of the Performance Specifications. The parties acknowledge that this Phase does not supplant Contractor's obligation to meet all the coverage requirements in the Performance Specifications for Phase One and Phase Two of the Project. To the extent the City elects to proceed with this Phase, in whole or in part, the Contractor shall increase the amount of its Payment Bond and Performance Bond by an amount equal to the increase in the Project Price. Contract shall commence work on this Phase upon receiving the requisite Request to Commence for this Phase. Until the Request to Commence is sent and the Controller certifies that sufficient funds are available for this Phase, the City shall not be obligated to purchase any portion of the Optional Coverage Enhancement Phase. To the extent that a Request to Commence is sent, the City obligation to purchase the items in the Phase shall be limited to those items set forth in the Request to Commence.

(d) Optional Wireless Data Network Phase.

(1) In addition to the above Phases, the City may elect to acquire the Wireless Data Network ("WDN Phase"). The WDN Phase is a five (5) channel eight site 800 MHz high speed wireless data network capable of transmitting data to and receiving data from mobile and portable computing terminals at a minimum raw data rate of 19.2 Kbps per channel. The WDN Phase shall be designed to meet the public safety data traffic loading requirements of the Police and Fire Departments through the year 2005. The WDN Phase shall provide sufficient radio frequency signal for 95% on street portable computing terminals coverage as defined in the Performance Specifications. The WDN Phase should use a combination of channel reuse and automatic cell transfer (site selection) techniques to maximize useable data throughput for the five channels allocated to the City.

(2) The WDN Phase shall include all Equipment, Work, and Services required to provide a complete and operational system. The WDN Phase shall consist of:

1. Redundant hot-standby radio network controller equipment to be located at the 911 Center at Margaret Hayward Playground;
2. High-speed data base stations to be located at the eight Sites identified in Phase One of the Project;
3. Any Site-to-Site inter-connectivity required but not previously provided in Phase One of the Project;
4. Any additional site upgrade required but not previously provided in Phase One of the Project;
5. Warranty support;
6. Technical and system management training;
7. Fifteen minute (minimum) Uninterruptable Power Supply for the Radio Network Controller;
8. Generator backed-up circuits for the data base stations.

The WDN Phase shall be capable of expansion to a minimum of 16 data base stations to support increases in sites, base stations, and channels to improve in-building coverage. The WDN Phase should deliver inbound and outbound messages and the associated acknowledgment within eight seconds for 95% of the time, at peak-hour traffic load of the City. Message prioritization techniques are desired to maximize data throughput capacity. In determining throughput, the number of channels, number of sites, and fixed-end equipment processing capabilities must be considered. The WDN Phase must be optimized to provide the required data throughput to/from a moving vehicle traveling at 55 MPH. The Contractor shall demonstrate the feasibility of the WDN Phase's system design through detailed analytical models, computer simulations, and actual performance tests. The models and simulations must demonstrate that the WDN Phase is capable of supporting the traffic load projected for the year 2005.

(3) The WDN Phase shall provide mobile and portable terminals inter-connectivity to the Police Department's computer-aided dispatch system, provided by Tiburon, Inc., and to other databases such as the San Francisco Police Department and San Francisco Fire Department Record Management Systems, the National Crime Information Center (NCIC), Police Information Network, California Law Enforcement Telecommunications System, and other databases through the computer-aided dispatch system.

(4) To acquire the WDN Phase, the City shall follow the following procedure: The City shall send written notice to the Contractor of its desire to acquire the WDN Phase. The City shall also submit with such notice a proposed supplement to the Performance Specifications. Within fifteen (15) days of receiving such documentation, the Contractor shall send written notice thereof to the City as to whether it can meet or exceed the Performance Specifications. To the extent Contractor cannot meet the Performance Specifications, the Contractor shall specify the reason why. Contractor shall also provide proposed revisions to the City's document. Upon this response, the City may accept or reject the revisions. Once the Performance Specifications are agreed upon by the parties, the Contractor shall be obligated to submit to the City the following documentation: (1) price for the Phase not to exceed the amount set forth in Section 4.01, (2) supplemental Statement of Work and Services, (3) a supplemental Acceptance Test Plan and (4) a supplemental Master Project Schedule. Upon receiving the Contractor's documentation, the City shall either accept or comment on the documentation. Unless unreasonable, Contractor shall incorporate all of the City's comments. After these documents are agreed upon by the parties, the City may send the Request to Commence on this Phase. Until the Request to Commence is sent and the Controller certifies that sufficient funds are available for this Phase, the City shall have no obligation to purchase the WDN Phase of the Project.

(e) **Additional Equipment Purchase.** In addition to and separate and apart from the Equipment to be purchased for the Project, the City may, but is not obligated to, purchase Additional Equipment from Contractor in accordance with Section 4.02(a) hereof. The City may purchase up to one million dollars worth of Additional Equipment per fiscal year under this Master Agreement without further approval of the Board of Supervisors.

**Section 3.04. State of the Art.** The Contractor acknowledges that the City desires to have the most current equipment and software for the Project at the time of installation. If Contractor has compatible improved equipment or software projects available thirty (30) days prior to shipment, Contractor shall immediately notify the City. Such notice must provide an assessment, to the extent such information is available, of the advantages, disadvantages and cost impact to the City, if any, of utilizing such alternative equipment or software. Within ten (10) Business Days, the City shall notify the Contractor as to whether it desires to utilize or disregard the alternative equipment or software.

## ARTICLE 4

### PRICING AND PAYMENT

#### **Section 4.01. Project Price.**

##### **(a) General Pricing.**

(i) In consideration for providing the Project, the City shall pay the Contractor the Project Price, which amount shall be due and payable in accordance with the Payment Schedule set forth in Section 4.05 hereof and this Section. The Project Price is Thirty Six Million Five Hundred Forty-Seven Thousand Three Hundred Sixty-Five Dollars (\$36,547,365), and is divided as follows: Part One of Phase One is One Million Three Hundred Ninety-Nine Thousand Two Hundred Eighty-Four Dollars (\$1,399,284), Part Two of the Phase One is Twenty-Two Million Nine Hundred Fifty-Seven Thousand Sixty-One Dollars (\$22,957,061), and Phase Two of the Project is Twelve Million One Hundred Ninety-One Thousand Twenty Dollars (\$12,191,020). To the extent the City elects to proceed with any part of an Optional Phase, the Project Price shall be augmented in accordance with (ii) and (iii) below. The total amount payable by the City for the Project shall not exceed the Project Price. The total amount payable by the City for each Phase and Part shall not exceed the amount allocated for such Phase or Part. The amount payable for each Phase and Part shall be subject to prior written certification by the Controller that sufficient unencumbered funds are available to pay for such Phase or Part. Except for Change Orders approved pursuant to Section 6.03 hereof, any cost overruns or unforeseen expenses incurred on the Project exceeding the Project Price shall be borne solely by the Contractor. The City has no liability or obligation to pay such cost or expenses.

(ii) **Coverage Enhancement.** If the City elects to purchase all or any portion of the Optional Phase, the Project Price shall be augmented by an amount not to exceed the price for the item purchased. The price for all parts of the Optional Phase are set forth in the Project Cost Itemization Schedule. The maximum price for this Phase in its entirety is Four Million Seven Hundred Twenty One Thousand Two Hundred Thirty-One Dollars (\$4,721,231).

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(iii) WDN Phase. If the City elects to purchase the WDN Phase, the Project Price shall be augmented by an amount agreed upon by the parties not to exceed One Million Sixty-Three Thousand Five Hundred Twenty-Eight Dollars (\$1,063,528). In determining the amount to be paid, the parties shall use the prices set forth in the Project Cost Itemization Schedule, Labor Rate Schedule and the Additional Equipment Price Schedule.

(b) Lowest Price Guarantee. Contractor represents and guarantees that City is receiving the highest, or equal to the highest, aggregate system discount that the Contractor has granted to any other person or entity on a similar 800 MHz trunked radio project. Except as otherwise required under prevailing wage requirements, Contractor represents and guarantees that the City hourly labor rates set forth in Exhibit H-1 are equal to or lower than the lowest rates previously provided to any other person or entity on an 800 MHz trunked radio project in the last two (2) years. Should the City discover that the Contractor has provided a higher system discount or provided any services at a lower price, City shall be entitled to receive an amount equal to two times the difference. The foregoing remedy is in addition to any other remedy the City has under the law. To the extent Contractor reduced the list price for any equipment prior to the shipment of that particular item, the City shall be entitled to receive the benefit of the lower price; and the total Project Price shall be adjusted accordingly.

(c) Value Engineering Pricing. The City may elect to reduce the scope of Project as hereinafter described. For any Backbone Equipment, the City may elect to reduce the scope of Project at any time prior to the City's approval of the Detail Design and Statement of Work and Services for the particular Backbone Equipment to be delivered by Contractor. For any other Equipment or Services, the City shall have the right to reduce such portion of the Project at any time prior to the delivery of the Equipment or the provision of the services by the Contractor. To reduce the scope of the Project, the City must send a letter to the Contractor's Project Manager and such letter must be executed by the City's Project Manager and the General Manager. Such letter shall clearly state the portion of the Project being reduced. Contractor shall review all requested scope changes. If Contractor determines that a requested scope change will affect its ability to meet the Performance Specifications, Contractor must immediately inform the City. Upon receiving such notice, the City will need to determine whether it wishes to proceed with proposed scope changes. If the City elects to proceed with the scope changes, the parties must agree upon mutually acceptable changes to the Performance Specifications. In connection with all requested scope changes, Contractor shall prepare an estimate of the cost of the Equipment and/or services being removed from the scope of the Project. Such estimate must be submitted within ten (10) days of receiving the City's scope reduction letter. Once the City receives the Contractor's estimate, the City shall, in writing, approve, disapprove or request further information regarding the estimate. If approved, the Project Price shall automatically be reduced by the amount of the estimate and the Detail Design and Statement of Work and Services shall be amended to reflect the scope change. Unless otherwise expressly agreed to by the Parties, Contractor shall continue to be fully responsible to ensure that the Project, as reduced, meets or exceeds the Performance Specifications.

**Section 4.02 Price of Additional Equipment.**

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(a) In addition to the Equipment purchased for the Project, the City may, but is not obligated to, purchase any additional Equipment ("Additional Equipment") subject to Section 3.03(e). For any Additional Equipment, City shall pay an additional amount over the Project Price. To the extent the Equipment to be purchased constitutes User Equipment, the amount payable by the City shall be based upon the Additional Equipment Price Schedule, attached hereto as Exhibit G, subject to the following discounts: Fixed Equipment—twenty-seven percent (27%), Mobile Equipment—twenty-seven percent (27%), Portable Equipment—twenty-seven percent (27%), Equipment parts—fifteen percent (15%), Batteries—discount given to the State of California under the Master Contract, dated February 1, 1997 (Contract No. 01CAC00408). To the extent the Equipment to be purchased constitutes Fixed Network Equipment, the amount payable by the City shall be based upon the price assigned to the particular piece of Equipment in the Project Cost Itemization Schedule. The prices set forth in the Additional Equipment Price Schedule and the Project Cost Itemization Schedule include all shipping, freight and handling cost to delivery the Equipment to the City. Any taxes, imposition or fee imposed by any governmental entity on the Additional Equipment shall be payable by the City upon delivery and installation of the Equipment and passage of the applicable portion of the Acceptance Test Plan. All purchases of Additional Equipment shall be subject to prior approval of the Purchaser and the Controller. If the Equipment is ordered prior to Final Acceptance of the Project, City shall pay for the Equipment in accordance with the Payment Schedule set forth in Section 4.05 hereof. If Equipment is ordered after Final Acceptance of the Project, City shall pay for the Equipment as follows: one hundred percent (100%) after delivery and installation of the Equipment and passage of the Acceptance Test Plan agreed upon by the parties for such piece of Additional Equipment. Should any Equipment on the price list become unavailable or obsolete, the City shall have the right to purchase any new item of Equipment that is functionally similar to the unavailable or obsolete Equipment. The price of the new item of Equipment shall equal the lesser of (i) the published list price of the Equipment less any applicable governmental discount (exclusive of federal discounts) and (ii) the price of the unavailable or obsolete Equipment. The Contractor acknowledges that this Master Agreement does not obligate the City to purchase any of the Additional Equipment from the Contractor. The City may elect to purchase such Equipment from any third party. Furthermore, the City reserves the right to purchase the Additional Equipment, but have a third party install such Equipment.

(b) Adjustment of Prices. All the prices in the Additional Equipment Price Schedule shall apply to all Additional Equipment that (i) the City orders by the second (2nd) anniversary of the execution of this Master Agreement and (ii) is scheduled for delivery by the third (3rd) anniversary of the execution of this Master Agreement. The price of any Additional Equipment that does not meet the above criteria shall be subject to an annual price adjustment based on the CPI for Information Processing Equipment. The prices for such Additional Equipment shall be initially adjusted on October 1, 1999. The adjustment shall be calculated by comparing the CPI published immediately preceding the Adjustment Date ("Adjustment Index") to the CPI

immediately preceding October 1, 1998 ("1998 Base Index"). If the Adjustment Index does not equal the 1998 Base Index, the prices shall be adjusted by multiplying the list price set forth in the Equipment Price Schedule by a fraction, the numerator of which shall be the Adjustment Index and the denominator of which shall be the 1998 Base Index. Commencing on October 1, 1999 and each October 1, thereafter ("Adjustment Date"), Contractor or the City shall compare the CPI published immediately preceding the Adjustment Date ("Adjustment Index") to the CPI published immediately preceding the prior Adjustment Date ("Base Index"). If the Adjustment Index does not equal the Base Index, the prices shall be adjusted by multiplying the price by a fraction, the numerator of which shall be the Adjustment Index and the denominator shall be the Base Index. In no event shall the price of any Equipment be increased at any one time more than six percent (6%). During the term of this Master Agreement, the prices shall not be increased, in the aggregate, more than eighteen percent (18%). No price adjustment shall be effective until party seeking the adjustment sends to the other party (i) a revised price schedule and (ii) all its calculations supporting the price adjustment. In the event a dispute arises with respect to a price adjustment, Contractor shall continue to deliver all the ordered Additional Equipment and install the same at the current prices, provided that the City segregates an amount equal to disputed amount in a separate account to be held by the City Treasurer until an agreeable settlement is reached. If the parties are unable to resolve the dispute within sixty (60) Days from the date the party receives notice of the adjustment, either party shall have the right to submit the matter to arbitration pursuant to Section 17.01.

(c) Available Equipment Not Listed in Additional Equipment Price Schedule. The City shall have the right to, but not be obligated to, purchase any Equipment which becomes available after the date hereof at the price set forth in the Contractor's U.S. Domestic Price Book published immediately preceding the City's written request to purchase such Equipment, subject to the following discounts: Fixed Equipment--twenty-seven percent (27%), Mobile Equipment--twenty-seven percent (27%), Portable Equipment--twenty-seven percent (27%), Equipment parts--fifteen percent (15%), Batteries--discount given to the State of California under the Master Contract, dated February 1, 1997 (Contract No. 01CAC00408).

#### **Section 4.03. Labor Costs.**

(a) Rates. The cost of any labor provided or hired by Contractor for the purpose of furnishing, installing, testing or repairing any Additional Equipment or existing equipment owned by the City or any proposed work in a Change Order shall be based on the hourly rates set forth in Exhibit H attached hereto. If the cost of any required labor is not specified in Exhibit H, DTIS and Contractor shall agree upon a mutually acceptable hourly rate for the labor, and such rate shall remain effective for the term of this Master Agreement. The labor rates shall not be adjusted for overtime or holiday work unless expressly pre-approved in writing by the General Manager, the Purchaser and the Controller. The City is not obligated to use the Contractor's labor to install or test any Additional Equipment purchased from Contractor.

(b) **Duration.** All the labor rates set forth above shall remain in effect until the third (3rd) anniversary of the execution of this Agreement. Commencing on October 1, 1999 and every October 1 thereafter (each an "Adjustment Date") until the termination of this Master Agreement, Contractor or the City shall have the right to adjust the labor rate in an amount not to exceed the percentage change in the CPI. For the purpose of calculating the appropriate adjustment, Contractor or the City shall compare the CPI published immediately preceding the Adjustment Date ("Labor Adjustment Index") to the CPI published immediately preceding the prior Adjustment Date ("Base Index"). If the Labor Adjustment Index has increased or decreased over the Base Index, the rates shall be adjusted by multiplying the rate by a fraction, the numerator of which shall be the Labor Adjustment Index and the denominator shall be the Base Index. In no event shall the rates be increased at any one time more than six percent (6%). During the term of this Master Agreement, the labor shall not be increased in the aggregate more than eighteen percent (18%). No rate adjustment shall be effective until the party seeking the adjustment sends to the other party (i) a revised price schedule and (ii) all its calculations supporting the rate adjustment. In the event a dispute arises with respect to a rate increase, Contractor shall continue to provide all the necessary labor to progress with the Project as scheduled at the current rates, provided that the City segregates an amount equal to disputed amount in a separate account to be held by the City Treasurer until an agreeable settlement is reached. If the parties are unable to resolve the dispute within sixty (60) Days from the date the party receives notice of the rate adjustment, either party shall have the right to submit the matter to arbitration pursuant to Section 17.01.

**Section 4.04. Wages and Payrolls.** The following provisions shall apply to the extent that Contractor is providing any labor for any portion of the Project that constitutes a "public work or improvement" as defined by the relevant sections of state and local laws.

(a) It is hereby understood and agreed that all provisions of Section 1770 *et seq.* of the California Labor Code are required to be incorporated into every contract for any public work or improvement. To the extent Contractor is providing labor services for any portion of the Project that constitutes a public work or improvement, the above-referenced Labor Code sections are incorporated into this Master Agreement.

(b) To the extent Contractor is providing labor services for any portion of the Project that constitutes a public work or improvement, Section 6.34 through 6.43 of the San Francisco Administrative Code are incorporated into this Master Agreement. These code sections include, but are not limited to, the following requirements:

(1) Contractor shall pay to all persons performing labor in and about the Project not less than the highest general prevailing rate of wages determined as set forth hereinafter for the respective crafts and employment, including such wages for holiday and overtime work.



(2) Contractor shall insert in every subcontract or other arrangement which it may make for the performance of any work or labor provided for in this Master Agreement, a provision that said subcontractor shall pay to all persons performing labor or rendering service under said subcontract or other arrangement the highest general prevailing rate of wages determined as set forth herein after for the respective crafts and employment, including such wages for holiday and overtime work.

(3) Contractor shall keep or cause to be kept an accurate record showing the name, place or residence, occupation, and per diem pay, of each person engaged in the execution of this Master Agreement, and every subcontractor who shall undertake the performance of any part of the work on the Project shall keep a like record of each person engaged. All of said records shall at all times be open to the inspection of such work of the City and its authorized representatives.

(4) Contractor shall submit its monthly certified payrolls to the City for the record.

(5) Should Contractor or any subcontractor who performs any part of the work herein required fail to or neglect to pay to the persons who shall perform labor under this Master Agreement, subcontract or other arrangement, the highest general prevailing rate of wages as herein specified, Contractor shall forfeit, and in the case of any subcontractor so failing or neglecting to pay said wage, Contractor and the subcontractor shall jointly and severally forfeit, to the City and County of San Francisco the sum of twenty-five dollars (\$25.00) per day for each laborer, worker or mechanic employed for each calendar day or portion thereof, while said person shall be so employed and not paid said highest general prevailing rate of wages. The City will deduct the amount which would otherwise be due on said payment the amount of said forfeiture or forfeitures as so certified.

(6) No person performing labor or rendering service in the performance of any contract or subcontract for the Project shall perform labor for a longer period than forty (40) hours per week, of five (5) days of eight (8) hours each, excepting those in crafts in which a shorter work day now prevails by agreement in private employment. Contractor or subcontractor who violates this provision shall be liable for the same penalties and forfeitures as those specified in Subparagraph 5 above for each laborer, mechanic or artisan employed for each calendar day or portion thereof wherein such laborer, mechanic or artisan is compelled or permitted to work more than the days and hours specified herein. In the event that emergency conditions shall arise making a change advisable during the performance of this Master Agreement, or any portion thereof, the hours and days of labor may be extended beyond the limits hereinabove expressed, but not to exceed an additional 8-hours per day, upon the written authority of the City. Failure of Contractor to perform its contract within the time provided shall not be deemed to constitute an emergency.

(c) Certification of Payroll Records, in accordance with Section 1776 of the California Labor Code:

(1) Contractor shall, and shall require that its subcontractors, keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with this Master Agreement.

(2) The payroll records shall be certified and shall be submitted to the City each month. Contractor's invoices shall not be processed until certified payroll records have been submitted up-to-date. In addition, the payroll records shall be available for inspection at all reasonable hours at the job site office of Contractor on the following basis:

(i) A certified copy of an employees payroll record shall be made available for inspection or furnished to such employee or its or her authorized representative on request.

(ii) A certified copy of all payroll records shall be made available for inspection or furnished upon request to a representative of the City.

(iii) A certified copy of all payroll records shall be made available upon request to the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through either the City and County of San Francisco, the Division of Apprenticeship Standards, or the Division of Labor Standard Enforcement. The public shall not be given access to such records at the job site office of Contractor.

(3) Contractor shall file a certified copy of the payroll records with the entity that requested such records within ten (10) days after receipt of a written request.

(4) Any copy of payroll records made available for inspection as copies and furnished upon request of the public or any public agency by the City and County of San Francisco, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address and social security number. The name and address of Contractor shall not be marked or obliterated.

(5) Contractor shall inform the City and County of San Francisco of the location of the payroll records, including the street address, city and county, and shall, within five (5) working days, provide a notice of a change of location and address.

(6) In the event of noncompliance with the requirements of said Section 1776, Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects Contractor must comply with said section. Should noncompliance still be evident after such 10-day period, Contractor shall, as a penalty to the City and County of

San Francisco, forfeit twenty-five dollars (\$25.00) for each calendar day, or a portion thereof of non-compliance, for each worker, until strict compliance is effected. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from progress payments then due.

(7) The responsibility for compliance with Section 1776 shall be on Contractor.

(d) A copy of the highest general prevailing wage rates will be posted at the Project site by the City, and such will be available for review at the appropriate City office.

**Section 4.05. Schedule of Payments.** The City shall make progress payments to Contractor in the amounts and upon the occurrence of the applicable milestone set forth below (each a "Payment Milestone"). Upon the occurrence of the applicable Payment Milestone, City shall pay the amount due and payable within thirty (30) days of receipt of the invoice from Contractor. The Payment Schedule for the Project is as follows:

(a) **Backbone Sites.** The Project Cost Itemization Schedule reflects the total cost for each Backbone Site, which cost includes the Equipment and labor cost, but excludes engineering costs ("Backbone Site Cost"). The Backbone Site Cost for each site shall be payable by the City in accordance with the following Payment Schedule: (1) twenty-nine percent (29%) of the Backbone Site Cost upon the complete system staging of the Site Equipment and passage of the applicable portion of the Acceptance Test Plan, (2) twenty-five percent (25%) of the Backbone Site Cost upon the final site acceptance and passage of the applicable portion of the Acceptance Test Plan, (3) thirty-five percent (35%) of the Backbone Site Cost upon final site acceptance for all Backbone Sites and passage of the applicable portion of the Acceptance Test Plan for the Backbone system, (5) ten percent (10%) of the Backbone Site Cost upon the delivery of the Final Acceptance Certificate for the Project, and (6) one percent (1%) of the Backbone Site Cost on the one-year anniversary of the delivery of the Final Acceptance Certificate.

(b) **Engineering Services.** The Project Cost Itemization Schedule reflects the total cost for all the Engineering Services (exclusive of non-professional services) for the entire Project ("Project Engineering Costs"). The Project Engineering Costs shall be due and payable by the City in accordance with the following Payment Schedule: (1) twenty-five percent (25%) Project Engineering Costs upon City's approval of the Detail Design and final Statement of Work and Services for all the Backbone Sites, (2) forty percent (40%) of the Project Engineering Costs upon the complete system staging of all the Equipment to be installed at all the sites and passage of all the applicable portions of the Acceptance Test Plan, (3) twenty-four percent (24%) of the Project Engineering Costs upon the Final Site Acceptance for all the Backbone Sites and passage of the applicable portion of the Acceptance Test Plan, (4) ten percent (10%) of the Project Engineering Costs upon the delivery of the Final Acceptance Certificate, and (5) one percent (1%) of the Project Engineering Costs on the one-year anniversary of the delivery of the Final Acceptance Certificate.

(c) **Portable and Mobile Equipment.** Progress payments for Portable and Mobile Equipment shall be as follows: (1) fifty percent (50%) of the Equipment Price upon delivery of the Portable Equipment to the designated site, inspection and passage of the applicable portion of the Acceptance Test Plan, (2) thirty-nine percent (39%) of the Equipment Price upon the City having beneficial use of such Equipment, (3) ten percent (10%) of the Equipment Price upon the delivery of the Final Acceptance Certificate for the Project, and (4) one percent (1%) of the Equipment Price on the one-year anniversary of the delivery of the Final Acceptance Certificate.

(d) **Subcontractors.** No progress payments shall be made for any subcontracted labor until the City has received a copy of the subcontract and expressly approves the subcontract. Progress payments for any subcontracted labor, other than Engineering Services and training, furnished for any Equipment shall be as follows: (i) ten percent (10%) of the contract amount upon the commencement of the subcontracted labor, (ii) eighty percent (80%) of the contract amount upon completion of all the work described in the subcontract and a certification of the City's Project Manager that the work has been completed and delivered to the City a copy of the subcontract(s) executed by Contractor and the subcontractor, and (iii) ten percent (10%) of the contract amount upon delivery of the Final Acceptance Certificate and the City's receipt from Contractor adequate evidence that Contractor has paid the subcontractor at least ninety percent (90%) of the amount due and payable under the subcontract.

(e) **Training.** The City shall pay the full amount of any training cost upon receiving an invoice covering such costs and upon satisfactory completion of training.

(f) **Miscellaneous Cost.** In the event Contractor incurs any cost or expense not covered above, the City shall pay the full amount of such cost or expense upon the delivery of the Final Acceptance Certificate.

**Section 4.06. Invoices.**

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(a) **Submitting Invoices.** At every Payment Milestone, Contractor shall have the right to submit an invoice to DTIS for the amount due and owing at such milestone. Invoiced amounts shall be based upon the Project-Cost Itemization Schedule subject to any change orders or any unwaived liquidated damages payable by Contractor. All invoices shall provide a detailed list of the cost. All invoices must be in a form acceptable to the General Manager. All amounts paid shall be subject to audit by the City pursuant to Section 4.12 hereof. All invoices shall be mailed or delivered to:

General Manager of the Division of Telecommunications  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, California 94124

(b) **Submitting False Claims; Monetary Penalties.** Contractor acknowledges and accepts that if it submits a false claim to the City, the Contractor shall be liable to the City for: (1) treble damages, (2) a civil penalty of up to \$10,000 for each False Claim, and (3) all cost and expenses to bring a civil action, including attorney fees. The Contractor shall be guilty of submitting a false claim if it: (a) knowingly presents or causes to be presented to an officer or employee of the City a false claim or request for payment or approval; (b) knowingly makes, uses, or causes to be made or used a false record or statement to get a false claim paid or approved by the City; (c) conspires to defraud the City by getting a false claim allowed or paid by the City; (d) knowingly makes, uses, or causes to be made or used a false record or statement to conceal, avoid, or decrease an obligation to pay or transmit money or property to the City; or (e) is a beneficiary of an inadvertent submission of a false claim to the City, subsequently discovers the falsity of the claim, and fails to disclose the false claim to the City within a reasonable time after discovery of the false claim.

(c) **Disallowance.** In the event Contractor claims or receives payment from the City for a service, reimbursement for which is later disallowed by City, Contractor shall promptly refund the disallowed amount to City upon City's request. At its option, City may offset the amount disallowed from any payment due or to become due to Contractor under this Master Agreement or any other agreement.

**Section 4.07. Payment Authorization.** Within thirty (30) Days after receipt of an invoice from Contractor, DTIS shall issue a payment authorization to the Controller or the Corporation, as applicable, for such amount as due Contractor subject to the following:

(a) **Payment Authorization.** A payment authorization will be issued based on the City Project Manager's certification that the Project has reached the prescribed milestone in Section 4.05.

(b) **No Representation.** The certification of the City's Project Manager once given is subject to (i) any continuing evaluations of the work for conformance with this Master Agreement, (ii) results of subsequent tests and inspections, (iii) minor deviations correctable prior to completion and (iv) specific qualifications expressed by the City's Project Manager. The issuance of a payment authorization will not be a representation that the City's Project Manager has (i) made an exhaustive or continuous on-Site inspection to check the quality or quantity of the work and Equipment, (ii) reviewed installation means, methods, techniques, sequences or procedures, and (iii) made an exhaustive or continuous on-site test of the performance of the Equipment or the Project.

(c) Continued Obligation to Replace. Notwithstanding any payment by the City, the Contractor shall have a continuing obligation to replace any unsatisfactory Equipment, work or material (i) until the expiration of all applicable warranties and (ii) to the extent required by the warranties, as such warranties are specified in Article 15 hereof.

(d) Change Orders. Only Change Orders completely approved and executed may be included on the payment authorization and only that portion of the Change Order work actually performed is to be submitted for payment.

#### **Section 4.08. Withholding Payment.**

(a) No Certification Can Be Made. If the Project Manager cannot make any required certification, the City may opt to withhold, in whole or in part, any payment. If the City is unable to authorize payment in the amount of the invoice, the City will notify Contractor in writing. If Contractor and the City cannot agree on a revised amount, the City will promptly issue a payment authorization for the amount it deems proper.

(b) Defective Work. The City may opt to withhold a portion of any payment, because of any defective work or Equipment not remedied within thirty (30) days of receiving notice thereof from the City, the withheld amount being prorated to the value of the defective work or Equipment. In determining the amount to withhold, the City may consider the affect of the defective work on the Project as a whole and if the defective work materially impacts the operation or progress of other portions of the Project. Contractor shall have the right to request a longer period of time to correct the defect if it can reasonably show that it is diligently pursuing the correction and the defect cannot be corrected within thirty (30) days.

(c) Third Party Claims. In connection with any third party claims filed or reasonable evidence indicating probable filing of such claims, the City may withhold any payment, in whole or in part, if Contractor fails to provide reasonable evidence that a legitimate dispute exists between Contractor and the third party and such dispute relates to the Project. In the event Contractor can provide such evidence, the City shall continue to make payments to Contractor subject to the resolution of the dispute. However, if the City is required to pay the third party, Contractor shall return to the City the amount payable to the third party within five (5) Days of receiving a written request from the City.

(d) Withholding No Effect on Surety. The failure or refusal of the City to withhold any monies from Contractor shall in no way impair the obligations of any surety or sureties under any bonds furnished under this Master Agreement.

**Section 4.09. Budget and Fiscal Provisions.** This Master Agreement is subject to the budget and fiscal provisions of the City's Charter. Charges will accrue only after prior written authorization is certified by the City Controller and any amount of the City's obligation

hereunder shall not at any time exceed the amount certified for the purpose and period stated in such advance authorization. This Section 4.09 shall control against any and all other provisions of this Master Agreement.

**Section 4.10. Appropriation.** If for any budgetary period of the City, the City fails to appropriate sufficient funds for the payment of any amounts due under this Master Agreement, the City shall have the right to terminate this Master Agreement. Upon any such termination, City shall return any Equipment the City has not paid for and for which no appropriation has been made by the City.

**Section 4.11. Guaranteed Maximum Costs.**

(a) **City's Obligations Limited To Certification Amount.** City's obligation hereunder shall not at any time exceed the amount certified by City for the purpose and period stated in such certification.

(b) **Gratuitous Services.** Except as may be provided by City ordinances governing emergency conditions, City and its employees and officers are not authorized to request Contractor to perform services or to provide materials, equipment and supplies that would result in Contractor performing services or providing materials, equipment and supplies that are beyond the scope of the services, materials, equipment and supplies agreed upon in this Master Agreement, and Contractor shall not perform any services or provide material, equipment or supplies beyond the scope of this Master Agreement unless this Master Agreement is amended in writing and approved as required by law to authorize the additional services, materials, equipment or supplies. City is not required to reimburse Contractor for services, materials, equipment or supplies that are provided by Contractor that are beyond the scope of the services, materials, equipment and supplies agreed upon in this Master Agreement and which were not approved by a written amendment to this Master Agreement with authorization by City.

(c) **Approval Required For Additional Funding.** City and its employees and officers are not authorized to offer or promise to Contractor additional funding for this Master Agreement that would exceed the maximum amount of funding provided for in this Master Agreement for Contractor's performance hereunder. Additional funding for this Master Agreement in excess of the maximum provided in this Master Agreement shall require lawful approval and certification by City. City is not required to honor any offered or promised additional funding for a contract which exceeds the maximum provided in the contract which requires lawful approval and certification of the Controller when the lawful approval and certification by the Controller has not been obtained.

(d) **Payments Must Be Authorized.** The Controller is not authorized to make payments on any contract for which funds have not been certified as available in the budget or by supplemental appropriation.

**Section 4.12. Audit and Inspection of Records.** Contractor agrees that the City, or an authorized representative, may audit and inspect, at all reasonable hours, Contractor's books and records as they pertain to this Master Agreement. Except as otherwise provided by law, the City will not release or divulge any proprietary information derived from such audit or inspection to third parties without the approval of Contractor. Said books and records shall be kept for three (3) years after the completion of this Master Agreement and shall be maintained and/or made available in San Francisco to the City's representative for the purpose of auditing or re-auditing these accounts; except that, if an audit is made within said three-year period and City claims that errors or omissions have occurred, the books and records shall be retained and made available until those matters are resolved. Contractor shall insert a clause containing all the provisions of this Section 4.12 in any subcontract in which payment thereunder could exceed Ten Thousand Dollars (\$10,000). The City shall not have the right to examine any portion of a book or record that reveals Contractor's actual cost for manufacturing any product or delivering any service, except subcontracting cost for a Project.

## ARTICLE 5

### MASTER PROJECT SCHEDULE

**Section 5.01. Master Project Schedule.** The Master Project Schedule for the Project is attached hereto as Exhibit E. The Contractor prepared the Master Project Schedule and represents and warrants to the City that it will meet all the dates specified in the Master Project Schedule and achieve Final Acceptance of the Project within nine hundred seventy-three (973) calendar days from the delivery of the initial Request to Commence by the City's Project Manager. The Contractor acknowledges and understands that the Master Project Schedule contains certain time-sensitive milestones ("**Critical Milestones**") that must be attained by certain dates; otherwise, the City will suffer financial harm. These Critical Milestones are as follows:

(1) Contractor shall complete Task No. 14.8 (TRS, MTS, SMC and RF Coverage ATP) within six hundred forty (640) calendar days from the initial Request to Commence by the City's Project Manager.

(2) Contractor shall complete Task No. 16.2.4 (CCE2 System Acceptance) within six hundred ninety-three (693) calendar days from the initial Request to Commence by the City's Project Manager.

(3) Contractor shall complete Task No. 17.2.1 (CCE1 Cut-over complete) within seven hundred forty-five (745) calendar days from the initial Request to Commence by the City's Project Manager.

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Amendment 4

(4) Contractor shall complete Task No. 19.2.1 (CCE2 Cut-over complete) within eight hundred seventy-nine (879) calendar days from the initial Request to Commence by the City's Project Manager.

(5) Contractor shall complete Task No. 25 (Final System Acceptance) within nine hundred seventy-three (973) calendar days from the initial Request to Commence by the City's Project Manager.

The above Task Nos. and parenthetical task names are the numbers and names set forth in the original Master Project Schedule attached to the Master Agreement. The initial Request to Commence shall be the Request to Commence for the commencement of the Detail Design. Notwithstanding the use of working days in the Master Project Schedule, Contractor acknowledges that the above dates are in fact calendar days. If Contractor fails to meet any Critical Milestone by the applicable date, the City shall have the right to terminate this Master Agreement after the expiration of the applicable cure period set forth in Section 5.02(c). Notwithstanding the right to cure, the Contractor acknowledges that the City will incur costs and expenses for each day Contractor fails to achieve a Critical Milestone. The parties acknowledge and agree that the amount of damages incurred by the City due to such delay shall be extremely difficult to fix. Accordingly, the parties agree that Five Thousand Dollars (\$5,000.00) for each day that the Contractor fails to meet any Critical Milestone constitutes a reasonable estimate of the additional costs and expenses and detriment that the City will incur therefrom. Accordingly, Contractor shall pay Five Thousand Dollars (\$5,000.00) to the City for each day that the Contractor fails to meet any Critical Milestone. Contractor and City acknowledge that the Critical Milestone dates may be extended due to any Unavoidable Delay. **NO LIQUIDATED DAMAGES SHALL BE REDUCED OR WAIVED BY THE CITY UNLESS FIRST APPROVED BY THE BOARD OF SUPERVISORS AND THE CORPORATION.** The City's receipt of liquidated damages for the delay shall not affect any other legal remedy the City may have for any other breach of this Master Agreement. Any action taken prior to a schedule date in the Master Project Schedule must be approved, in writing, by the City's Project Manager. The Contractor shall provide a method of properly tracking the progress of the Project at both a management and detailed technical level. Any changes in the Critical Milestone dates must be approved in writing by the City's Project Manager and the Controller prior to the Critical Milestone dates. Notwithstanding anything to the contrary hereinabove, Contractor shall not be liable for liquidated damages in an amount in excess of ten percent (10%) of the Project Price.

**Section 5.02. City's Right to Perform Work.**

(a) In the event Contractor cannot meet any scheduled time specified in the Master Project Schedule, the City may send written notice to Contractor notifying Contractor of such failure. The City shall specify in the notice the task(s) Contractor has failed to complete within the required time. If Contractor does not cure such default within thirty (30) Days of receiving such notice, the City can (i) elect to perform all the necessary Work or obtain the necessary Equipment

to complete the Work and/or the Project pursuant to subsection (b) below, (ii) terminate this Master Agreement, or (iii) exercise any other remedies specified under this Master Agreement. Notwithstanding the foregoing, if nature of default is such that it cannot be cured within thirty (30) days, then no default shall occur if Contractor submits a cure plan within ten (10) days of receiving the notice of default. In no event shall any cure plan contemplate a cure period longer than ninety (90) days. Contractor must diligently cure all defaults.

(b) If Contractor does not cure the default as above provided and in the event the City elects to perform the necessary Work or obtain the necessary Equipment, the City shall send written notice to Contractor, notifying Contractor of its intent to provide the necessary labor, services, material or equipment to ensure that the Project progresses in a timely manner. The notice must be sent to Contractor prior to the City taking any action or incurring any costs thereon. All cost and expenses incurred by the City shall be deducted from any monies due or which may thereafter become due under this Master Agreement. Notwithstanding the City's right to perform Contractor's obligations under this Master Agreement, the City shall not be obligated to do so and can continue to expect Contractor to perform without notice to Contractor. Furthermore, none of the warranties provided for the Project shall be affected in any way if the City makes the election under Section 5.02(a)(i), provided that Contractor will not be obligated to warrant any equipment not manufactured by Contractor and not set forth in the Project Cost Itemization Schedule. If the delay involves a Critical Milestone, liquidated damages shall continue to accrue until the City elects to perform the necessary Work. In the event the City elects to perform the Work, the City shall have the right to collect any accrued liquidated damages in addition to the cost of performing the Work.

### **Section 5.03. Delays.**

(a) **Unavoidable Delays.** An "Unavoidable Delay" is (i) any occurrence or happening that materially impairs Contractor's ability to perform its obligations within the prescribed time and (ii) falls within one of the following categories: acts of God; fires, floods, windstorms and tornadoes; epidemics; quarantine restrictions; labor shortages; wars and terrorist acts; riots; insurrections; strikes; lockouts; sit-downs; material shortages; fuel shortages; the Mayor declares a moratorium on the Project; freight embargoes; or priorities or privileges established for the manufacture, assembly or allotment of materials by order, decree, or otherwise of the United States or by any department, bureau, commission, committee, agent or administrator of any legally constituted public authority; provided, however, that none of the foregoing events shall constitute an Unavoidable Delay if it falls within any of the following: (i) any delay that could have been avoided by the exercise of care, prudence, foresight, preparation and diligence on the part of Contractor; (ii) any delay in the prosecution of parts of the work, which may in themselves be unavoidable but do not necessarily prevent or delay the prosecution of other parts of the work, nor the completion of the whole work within the time specified; (iii) any reasonable delays resulting from time required by the City's approval of plans submitted by Contractor and for the making of surveys, measurements and inspections; or (iv) any delay arising from

interruptions occurring in the prosecution of the Work due to reasonable interference from other contractors employed by the City which do not necessarily prevent the completion of the whole Work within the time specified.

(b) **Procedure.** Within ten (10) Days of the occurrence of an Unavoidable Delay, Contractor shall notify the City in writing of the delay and the nature and estimated length of the delay. Contractor shall also provide the City with a new Master Project Schedule. The new Master Project Schedule shall not be effective until approved in writing by DTIS. Until the new Master Project Schedule is approved, the existing Master Project Schedule shall remain in effect and liquidated damages shall accrue for failing to meet any Critical Milestones. Contractor's failure to notify on a timely basis, the City of any Unavoidable Delay shall constitute a waiver of Contractor's right to claim an Unavoidable Delay subsequently. At anytime prior to approval of the revised Master Project Schedule, the City shall have the right to review and contest any claim by Contractor of the pertinent Unavoidable Delay.

(c) **Unavoidable Delays caused by City.** To the extent the City is the cause of an Unavoidable Delay, Contractor shall have the right to recover any reasonable costs actually incurred by the Contractor due to the Unavoidable Delay. Contractor agrees to take such reasonable steps necessary to mitigate its actual costs.

## ARTICLE 6

### DESIGN, COMMENCEMENT AND INSTALLATION OF PROJECT

#### Section 6.01. Design and Work Documents.

(a) **Detail Design.** Contractor shall submit to the City's Project Manager the Detail Design for the entire Project in accordance with the Master Project Schedule. The Detail Design shall address in more detail all areas addressed in the Preliminary Design. The Detail Design shall include, but not limited to, all individual facility floor plans, equipment layouts, equipment elevation drawings, equipment termination drawings, cabling drawings, and power routing information to a level of detail comparable to that provided to a construction contractor as a work package. The City will send written comments to the Contractor in accordance with the Master Project Schedule. Contractor shall incorporate such comments into the Detail Design, unless it believes that such comments go beyond the agreed upon Preliminary Design. In such event, Contractor must send written notice to the City specifying the areas that such comments deviate from the Preliminary Design. Upon receiving such notice from the Contractor, City must decide whether to require such changes or not. To the extent such changes are made, the parties will effectuate such changes through the Change Order process. Unless otherwise directed by the City's Project Manger, no work shall commence on the Project until the Detail Design has been approved. No changes requested by the City to Detail Design shall relieve the Contractor from its ultimate and absolute obligation to ensure that the Project meets or exceeds the Performance

Specifications and passes all aspects of the Acceptance Test Plan. Unless Contractor sends the written notice required above, any increased work or additional Equipment required due to the further detailing of the design shall not allow the Contractor to submit a Change Order.

(b) **Development of Statement of Work and Services.** The Parties acknowledge and agree that the Statement of Work and Services attached hereto is based on the Preliminary Design and further development of the Statement of Work and Services will be necessary prior to commencing the Project. Contractor shall deliver to the City's Project Manager the final Statement of Work and Services for the Project in accordance with the Master Project Schedule. The City will send written comments to the Contractor in accordance with the Master Project Schedule. Contractor shall incorporate such comments into the Statement of Work and Services, unless it believes that such comments go beyond the agreed upon Preliminary Design. In such event, Contractor must send written notice to the City specifying the areas that such comments deviate from the Preliminary Design. Upon receiving such notice from the Contractor, City must decide whether to require such changes or not. To the extent City desires to make such changes, the parties will effectuate such changes through the Change Order process. Unless otherwise directed by the City's Project Manager, no Work shall commence on the Project until the City's Project Manager has approved the final Statement of Work and Services. No changes requested by the City to the Statement of Work and Services shall relieve the Contractor from its ultimate and absolute obligation to ensure that the Project meets or exceeds the Performance Specifications and passes all aspects of the Acceptance Test Plan. Unless Contractor sends the written notice required above, any increased work or additional Equipment required due to the further detailing of the Statement of Work and Services shall not allow the Contractor to submit a Change Order.

(c) **Delivery and Installation of Project.** Contractor shall deliver and install the Project in accordance with the Detail Design and the Statement of Work and Services subject to Clarifications and Change Orders that may be issued by DTIS from time to time. Contractor acknowledges that the City's approval of Contractor's Preliminary Design submitted during the contract negotiations, the final Statement of Work and Services and the Detail Design do not relieve Contractor of its ultimate and absolute obligation to ensure that the Project meets all the Performance Specifications and passes all portions of the Acceptance Test Plan. Accordingly, Contractor acknowledges and understands that it may need to modify and change the scope of the Statement of Work and Services if the Project fails to meet any portion of the Performance Specifications or fails to pass any portion of the Acceptance Test Plan. All costs and expenses of any Equipment or Work necessary to meet or exceed the Performance Specifications and pass all aspects of the Acceptance Test Plan shall be borne solely by Contractor and will not increase the Project Price. (For procedure covering these modifications to the Statement of Work and Services, see Section 7.04 hereof.)

**Section 6.02. Clarification.**

(a) **Insufficient Information.** In the event the Statement of Work and Services does not adequately detail or explain the Work that needs to be performed, or should any questions arise as to the meaning or intent of the Statement of Work and Services, the City's Project Manager shall send to Contractor a Clarification. The Clarification shall not constitute a Change Order. The Project Price will not be adjusted due to any Clarification.

(b) **Beyond the Statement of Work and Services.** Should Contractor reasonably believe that any Clarification of the City's Project Manager exceeds the scope of the Statement of Work and Services, Contractor shall have the right to submit a written claim to DTIS within ten (10) days of receiving the Clarification. Notwithstanding the submission of the claim, Contractor shall proceed with the Work specified in the Clarification if so requested by DTIS. DTIS shall review any submitted claims to determine whether the Clarification exceeds the scope of the Statement of Work and Services. Contractor's failure to submit a written claim prior to commencing the Work contemplated by the Clarification shall constitute a waiver by Contractor of any claim either for added cost or for extension of time arising therefrom.

**Section 6.03. Change Orders.**

(a) From time to time, the City shall have the right to submit a Change Order to Contractor. Within ten (10) Days of receiving a proposed Change Order, Contractor shall submit to DTIS a written cost estimate, which shall include any adjustments to the Project Price, the Master Project Schedule, Acceptance Test Plan or other obligations of the Contractor, as applicable. Should an adjustment to the Project Price be necessary, Contractor shall base such adjustment on the prices and costs contained in the Project Cost Itemization Schedule, the Additional Equipment Price Schedule and Labor Rate Schedule. Contractor shall not proceed with any work contemplated in any Change Order until it receives written notification to commence such work from the General Manager. All Change Orders resulting in an increase in the Project Price must be pre-approved, in writing, by the Controller and the Purchaser. Contractor shall commence the Work contemplated by the Change Order in accordance with the Master Project Schedule upon receiving written notice from DTIS. Contractor must proceed with the work contemplated by the Change Order even if the Parties disagree on the effect that such Change Order will have on Project Price, Master Project Schedule or the Acceptance Test Plan, provided the City has delivered to Contractor a written statement of its good faith estimate of the fair value of the cost of Change Order and its effect on the Master Project Schedule and Acceptance Test Plan. In such instance, the City agrees, upon completion of the work, to pay the Contractor the amount of the good faith estimate and Contractor's sole remedy as to the additional amounts is to file a claim against the City or submit the matter to arbitration pursuant to the terms of the Master Agreement. Any changes to the Statement of Work and Services necessary to ensure that the Project will meet the Performance Specification and pass all aspect of

the Acceptance Test Plan will not be subject to this Change Order procedure. Such changes shall be made pursuant to Section 7.04 hereof.

**Section 6.04. Project Managers; Meetings; and Reports.**

(a) **Project Managers.** Contractor and City shall each designate a Project Manager, who shall be available on a 24-hour basis every day of the week. The City and Contractor shall maintain the Project Manager until the one-year anniversary of the Final Acceptance of the Project. The initial Project Managers shall be:

see mod 1  
**CONTRACTOR: GEORGE NEWBY**  
**PAGER NO. 1 (800) SKYPAGE, NO. 33991**

**CITY: MITCHELL SUTTON**  
**PAGER NO. (415) 804-1115**

(b) **Qualifications.** The Contractor's Project Manager must be available on a 24-hour basis, seven days a week, after the Detail Design has been approved by the City. The Contractor's Project Manager shall have an office located in the City and County of San Francisco. During normal business hours, the Contractor's Project Manager shall be readily available to handle all Project related matters. The Contractor's Project Manager must live within eighty-five (85) miles of the boundaries of the City and County of San Francisco. The Contractor's Project Manager shall carry an activated pager at all times during the Project. Contractor's Project Manager shall have at least five years of experience in the installation and operation of the 800 MHz Trunked Radio Communication Systems and must have general knowledge of local governmental process, policy and procedures. The Contractor's Project Manager must also possess the ability and experience with government officials and public relations.

(c) **Changing Project Managers.** The City and Contractor shall use their best efforts to maintain the same Project Manager throughout the Project. However, if a party needs to replace its Project Manager, the party shall provide the other party written notice thereof at least fifteen (15) days prior to the date the Project Manager shall be replaced. Such notice shall provide all the required information above. DTIS shall have the right to require Contractor to replace any of its Project Managers by so notifying Contractor. Notwithstanding the foregoing, the parties have the right to appoint temporary Project Managers in connection with sick leave or reasonable vacations. Parties shall notify each other of any such temporary appointments.

(d) **Meetings.** From the commencement date of the Project until the Final Acceptance of the Project, the Project Managers shall meet on a weekly basis at such location and time designated by DTIS to discuss the progress of the Project. From the Final Acceptance of the

Project until the first anniversary of the Final Acceptance of the Project, the City Project Manager may call monthly meetings to discuss any operational problems or defects that DTIS has encountered. DTIS shall have the right to call a meeting at any time by providing Contractor forty-eight (48) hours written notice thereof. Such notice shall provide the time, place and the purpose of the meeting.

(e) **Progress Reports**. On the first business day of each month during any ongoing Project, the Contractor's Project Manager shall submit a progress report to the City's Project Manager, reporting all the Work completed and all the Equipment delivered to the City the previous month. The Contractor's Project Manager shall state in the report whether all the scheduled deadlines for the previous month were met.

(f) **Management of Project**. The City's Project Manager shall have the right to manage and direct any aspect of the Project as may be necessary, in his or her opinion, to safeguard the interest of the City. Prior to taking any management action, the City's Project Manager shall make a reasonable attempt to communicate all his or her concerns to the Contractor's Project Manager. In the event Contractor believes that any direction being given by the City's Project Manager shall impair the performance of the Project or any Equipment thereof, Contractor shall immediately inform the General Manager of DTIS. Notwithstanding the ability of City's Project Manager to manage the Project, Contractor shall not be relieved of any of its obligations or liabilities under this Master Agreement.

(g) **Right to Inspect**. From the commencement date of any Project until the Final Acceptance of the Project, the City's Project Manager or any other City employee or agent designated by the City's Project Manager may enter any Contractor area or facility where any part of the Project or Equipment is being manufactured, assembled, staged, tested or installed to inspect the Project or Equipment; provided, however, Contractor shall have the right to restrict access if it reasonably determines that it will jeopardize any confidential or proprietary information. Any such visit shall be in accordance with all Contractor's policies, procedures and security measures. City shall provide Contractor forty-eight (48) written notice of an inspection of any Contractor facilities. No notice is required for any other inspection by the City. Contractor shall make all necessary arrangements to facilitate any inspection of the Project and Equipment.

(h) **Right to Stop Work**. Subject to Section 16.01(a), General Manager shall have the right to stop any work on the Project, or any portion thereof; if (i) Contractor fails to correct any defects in any work or Equipment, or (ii) Contractor fails to carry out any portion of the Project in accordance with this Master Agreement. All stop work orders from the City shall be in writing and signed by the General Manager. The City shall specifically state the cause for the order to stop work. Upon receiving a stop work order, Contractor shall immediately cease working on that portion of the work specified in the order, until the cause for such order has been eliminated. The City's right to stop any work on the Project shall not give rise to a duty on the

part of the City to exercise this right for the benefit of Contractor or any other person or entity. In the event the General Manager orders work to be stopped without proper justification, City shall reimburse Contractor for the actual and direct costs incurred by Contractor due to the delay. Furthermore, the delay shall be considered to be an Unavoidable Delay.

**Section 6.05. Conditions to Commencement of Project.** Contractor shall not commence the manufacturing, installation or construction Project until all the following conditions have been met to the City's satisfaction:

(a) **Bonds.** DTIS has received evidence of the bonds required to be obtained by Contractor under Section 8.01 hereof.

(b) **Insurance.** DTIS has received the Certificates of Insurance required by Section 9.03.

(c) **Licenses, Approvals, etc.** Except as specified hereinafter or in the Statement of Work and Services, Contractor shall obtain all permits, licenses, authorizations and approvals for the commencement of the Project and all the related work, as required by any governmental bodies, agencies, commissions or departments having or claiming jurisdiction on the Project, including any permits, licenses, authorizations and approval required by any City department, agency or commission. In connection with any permits, licenses, or other documents required by the Federal Communication Commission ("FCC"), Federal Aviation Administration ("FAA") and California Aeronautical Division, the City shall be responsible for obtaining said licenses and permits; however, the Contractor shall complete all necessary forms for signature by the City. The City will then submit the form to the applicable governing body.

(d) **Request to Commence.** The City shall have delivered the initial Request to Commence.

(e) **Detail Design.** The City's Project Manager has approved the Detail Design for the Project, as set forth in Section 6.01 (a).

(f) **Statement of Work and Services.** The City's Project Manager has approved the Final Statement of Work and Services for the Project, as set forth in Section 6.01(b).

**Section 6.06. Staging and Preparation.** Contractor may stage, assemble, or prepare for the installation of, the Project at locations other than the specified installation Site. Contractor shall take full responsibility that all requirements of the Statement of Work and Services are met with respect to any staging, assembling, or preparation of the Project conducted outside the specified Site. Contractor shall confine all staging and operations at or near the Site to the areas permitted by law, ordinances, permits and this Master Agreement. Contractor shall not unreasonably encumber the Site with materials or Equipment. To the extent any portion of the Project is staged, assembled or prepared, outside of the boundaries of the City, Contractor shall



pay transportation, meal and lodging costs for up to four (4) individuals of the City. Contractor shall only pay for two (2) separate trips; each trip shall not be longer than five (5) days.

**Section 6.07. Sites.**

(a) **Site Access.** Unless approved in writing by the City's Project Manager, Site access will be limited for purposes of installation and testing of Equipment between the hours of 7:00 a.m. and 4:00 p.m., Monday through Friday, excluding holidays. At least fourteen (14) days prior to any Work being performed at any Site; the Contractor shall submit a schedule of work activities to be performed at such Site. Unless approved in writing by the City's Project Manager, no night work in any City facility will be allowed between the hours of 4:01 p.m. and 6:59 a.m.. Access to all Sites and systems must be coordinated and approved by the City's Project Manager even if these Sites are under the control of other City Departments or other agencies. No employee, agent and subcontractor of Contractor shall have the right to enter any Site or City facility until DTIS issues such person an identification card. Each authorized person shall maintain the card visible at all times while at any Site or DTIS facility.

(b) **Selection of Sites.** A list of all the Backbone Sites is set forth in the Statement of Work and Services.

(c) **Latent Conditions.** In the event that a Site does not meet normal soil conditions defined by Electronic Industries Association Standard RS-222 (latest revision) or should Contractor encounter latent subsurface or structural conditions at any Site differing from those indicated in the Statement of Work and Services, Contractor shall provide DTIS with immediate written notice of such conditions before they are further disturbed. Thereupon, Contractor and DTIS shall promptly investigate the conditions and, if found to be different, will adjust the plans, the Statement of Work and Services, the Master Project Schedule and the Project Price, as may be necessary, through the Change Order process. DTIS reserves the right to repair the Site or identify an alternative Site. In the event the additional cost are not covered by the Project Price, the amount payable under the Master Agreement shall not be in excess of the sum of the (i) the total cost of additional labor required to implement the change, and (ii) the total cost of additional Ancillary Equipment or material required due to Site change.

(d) **Changing or Reconfiguring Inadequate Sites.** Should Contractor or DTIS determine that the Sites or configurations selected for the 800 MHz Project will not meet the Performance Specifications or pass the Acceptance Test Plan, DTIS and Contractor shall select a new or replacement site or reconfigure the Site in question based on the following parameters: (i) not degrade or alter any of the existing operational capability, grade of service, reliability factor, or any installed function of the Project; and (ii) be based on proven radio propagation, actual radio coverage, and feasibility and availability studies. All additional costs and expenses incurred due to a change in Site shall be borne solely by Contractor. No adjustment shall be made to the Project Price due to such change.

(e) Unavailable Sites. In the event DTIS determines, for any reason, that a proposed Site contained in the Statement of Work and Services is no longer available or desirable, DTIS shall notify the Contractor of the unavailability of the Site and provide a list of alternative sites. Within fifteen (15) days of receiving such notice, Contractor shall notify DTIS of the Site that it desires to use for the Project. In such notice, Contractor shall provide a revised Statement of Work and Services. If necessary, Contractor shall also inform DTIS of any necessary adjustment to the Project Price and the Master Project Schedule. The price adjustment due to the Site change shall not exceed the sum of (i) the total price of additional labor required to implement the change and (ii) the total price of any additional Equipment or material necessary to implement the Site change. The foregoing process shall occur pursuant to the Change Order process.

(f) Additional Sites. If additional Sites are necessary for the Project to meet the Performance Specifications or pass all portions of the Acceptance Test Plan, Contractor shall be charged with the responsibility of finding such Sites and must pay all costs and expenses necessary to obtain such Sites for the Project. Contractor shall ensure that additional Sites remain available to the City so long as the City is using the Project. All additional cost and expenses (including any lease or acquisition costs) for any new additional Site shall be borne solely by the Contractor.

**Section 6.08. Security**. Contractor shall be responsible for the security of any City facilities and any Site when Contractor personnel or subcontracts are present. Contractor's responsibility shall include the obligation of securing the Site during and at the end of each working period. The cost of such security is included as part of the Project Price, and the City is not liable for any additional costs.

**Section 6.09. Deliveries**.

(a) Location and Time. Contractor shall deliver all Equipment and material at the locations specified by the City's Project Manager. All deliveries shall be made between the hours of 8:00 a.m. and 3:00 p.m., Monday through Friday, excluding holidays. Contractor shall not deliver any Equipment or material to any Site until such Equipment is ready to be installed at such Site and the City's Project Manager approves such delivery. The City shall not accept any deliveries unless Contractor is ready to begin installation. All Equipment shall be fully tested and certified to be operational prior to delivery to any installation Site.

(b) Manner of Shipment. All Equipment shall be packaged and crated in a manner to protect it from damage, including, but not limited to, abrasions, moisture and corrosion. All Equipment shall be labeled or stenciled showing contents and serial numbers, if any. All shipments shall be accompanied by a packing slip indicating items shipped. All Equipment, including subassemblies, modules, cards, parts, and any other Equipment, shall be shipped and

delivered with a Universal Product Code ("UPC") or other industry standard bar code format. The bar code shall identify the part number and serial number of the Equipment, or parts thereof.

*See mod # 2*

(c) **Title; Risk of Loss.** All User Equipment shall be shipped by Contractor F.O.B., to the designated delivery site in San Francisco, California, in accordance with the applicable shipping instructions. If a delay has occurred beyond the designated delivery date, Contractor shall provide reasonable notice to the City as to the new delivery date. Title to the User Equipment and risk of loss shall pass to the City upon the certification of the City's Project Manager that all the Equipment has been delivered. In connection with any Fixed Network Equipment, title shall pass upon certification of City's Project Manager that such Equipment has been installed; however, risk of loss for such Equipment and related material shall not pass to the City until Final Acceptance of the Project. Notwithstanding the foregoing, no title shall pass with respect to any Software being licensed to the City.

(d) **Inventory.** Contractor and the City shall each inventory all Equipment and material when delivered to an installation Site. Any discrepancies between the inventory lists shall be immediately resolved. A joint inventory list shall be prepared and maintained throughout the Project.

(e) **Storage.** No City facility or installation Site shall be used for storing any Equipment or material. At its sole cost, Contractor may obtain a local receiving/storage facility. Contractor shall not bill the City for any such storage costs unless the General Manager gives Contractor specific written direction to store the Equipment or Material.

**Section 6.10. Emergency Work.** At any time during the Project, the City shall have the right to make any emergency repairs or correction to any portion of the Project if (i) the City has first attempted to contact Contractor, and no one from Contractor is able to respond within four (4) hours of the call or (ii) such action is necessary in the interest of public safety. Contractor shall reimburse the City for all costs incurred by the City in connection with such actions taken. City may elect to offset any amounts owed against any future payment to Contractor.

**Section 6.11. Existing Systems and Equipment.**

(a) **Due Care.** Contractor shall take all advisable precautions to protect all existing equipment, facility and structure in any area in which Contractor is assembling or installing any portion of the Project. Contractor shall take particular care to configure and install mounting hardware so as not to cause damage to existing structures. Contractor shall be responsible for correcting any damage they may cause to any equipment, facility and structure to the condition prior to the time of damage. After the completion of the installation Work at a facility or Site, the Contractor shall be responsible for restoring the facility or Site to its original condition.

(b) **Interruption of Service.** Contractor shall ensure that no unscheduled interruption of service of the existing communications systems shall occur during the course of installation, testing, maintenance or servicing of the Project. If service or any part of service must be interrupted to install any part of the Project, Contractor shall schedule with the City's Project Manager times when service may be interrupted. The Project Manager must supervise all service interruptions. If any interruption of service occurs, Contractor must fully restore the existing system and ensure that the system is not degraded by the interruption. Should an unscheduled interruption of the system occur and last for longer than one (1) hour, the City's Project Manager may hire such experts, engineers or other individuals that the City's Project Manager believe are necessary to restore the existing system. Contractor shall reimburse the City for all costs and expenses incurred in hiring such individuals. The City shall have the right to offset such cost and expenses against future payments to the Contractor.

(c) **Modified Equipment or Systems.** Contractor shall be responsible for correction of deficiencies in any City or non-City equipment (which may prevent the Project from performing according to the Performance Specifications) which interfaces with or Contractor modifies as part of the Project.

(d) **Equipment Removal.** All existing equipment being replaced shall be removed and delivered to such location designated by the City's Project Manager.

#### **Section 6.12. Subcontractors.**

(a) **Form and Submission of Agreements.** Prior to subcontracting any portion of the Project, City must preapprove such subcontractor. All subcontracts shall be consistent with the terms and conditions of this Master Agreement. All subcontracts must separately state the amount the subcontractor is receiving and the amount the Contractor is receiving for managing the subcontractor. Prior to any subcontractor commencing on any work for the Project, Contractor shall provide the City a copy of the fully executed subcontract agreement. City shall not be liable for any amounts owed under any subcontract until such contract is approved by the City. The Contractor's management fee shall not be grounds for rejection of a subcontractor or subcontract.

(b) **Contractor Remains Obligated to Perform Work.** Notwithstanding the City's approval of any subcontract, Contractor shall remain fully responsible to perform all the work contemplated by the subcontract. Furthermore, Contractor shall supervise, coordinate, and perform all work performed by the subcontractor. No subcontract shall bind or purport to bind the City. Contractor shall be solely liable and responsible for any and all payments and other compensation to all subcontractors and their officers, employees, agents, and independent contractors.

**Section 6.13. Cooperation and Coordination with Other Work.** Contractor shall cooperate with all other contractors and workmen who may be employed by the City in the vicinity of the Project. Contractor shall conduct its operations so that it does not interfere with the contractors or workmen. Any difference or conflict that may arise between Contractor and other contractors or between Contractor and the workmen of the City in regard to their work, shall be adjusted and determined by DTIS. DTIS can request Contractor to suspend any part of its work or modify its work if necessary to facilitate the work of other contractors or workmen. In the event of such suspension or modification, Contractor shall have the right to make any claim for direct and actual costs incurred thereby. In addition, DTIS shall grant Contractor an extension of time in an amount equal to the period of delay caused by the incident. Any claim for cost or extension of time shall occur pursuant to the Change Order provisions herein.

**Section 6.14. Conduct Of Parties.** While on the premises of any other agency other than the City, Contractor shall comply with all rules and regulations of such agency, including all security requirements.

**Section 6.15. Barricades, Warning Signs and Lighting.** At all Sites and facilities where the Project is being installed, Contractor shall take all precautions necessary to protect the public and provide maximum safety for City operations. Contractor shall provide for the safe and proper routing of vehicular and pedestrian traffic in a manner that will minimize congestion and delay thereof. Contractor shall furnish, install and maintain all temporary signs, lights, barricades, cones, guard rail, runways, pavement, bridges, stairs, and other devices and facilities necessary to safeguard the general public and the Project. Such devices and facilities shall be relocated as necessary to accomplish the proper routing of traffic as the Project progresses. Upon conclusion of the need of such devices, Contractor shall remove them from the Site or facility.

**Section 6.16. Independent Contractor; Payment of Taxes and Other Expenses.**

(a) Contractor shall be deemed at all times to be an independent contractor and shall be wholly responsible for the manner in which Contractor performs the service required of Contractor by the terms of this Master Agreement. Contractor shall be liable for the acts and omissions of it, its employees and its agents. Nothing contained herein shall be construed as creating an employment or agency relationship between City and Contractor. Terms in this Master Agreement referring to direction from City shall be construed as providing for direction as to policy and the result of Contractor's work only and not as to the means by which such result is obtained.

(b) Should the City, in its discretion, or a relevant taxing authority such as the Internal Revenue Service or the State Employment Development Division, or both, determine that Contractor is an employee for purposes of collection of any employment taxes, the amounts payable under this Master Agreement shall be reduced by amounts equal to both the employee

and employer portions of the tax due (and offsetting any credits for amounts already paid by Contractor which can be applied against this liability). The City shall then forward those amounts to the relevant taxing authority. Should a relevant taxing authority determine a liability for past services performed by Contractor for the City, upon notification of such fact by the City, Contractor shall promptly remit such amount due or arrange with the City to have the amount due withheld from future payments to Contractor under this Master Agreement (again, offsetting any amounts already paid by Contractor which can be applied as a credit against such liability). A determination of employment status pursuant to the preceding two paragraphs shall be solely for the purposes of the particular tax in question, and for all other purposes of this Master Agreement, Contractor shall not be considered an employee of the City.

## ARTICLE 7

### INSPECTIONS, TESTING, AND ACCEPTANCE

#### Section 7.01. Acceptance Test Plans and Inspections.

(a) Acceptance Test Plans. The Contractor has prepared a general Acceptance Test Plan for testing the components of the Project, individually and collectively, which plan is attached hereto as Exhibit F. At least thirty (30) days prior to any Acceptance Test Plan procedure being implemented, the Contractor shall deliver to the City a more detailed acceptance test procedure which is consistent with the general Acceptance Test Plan attached hereto as Exhibit F and the Performance Specifications. All submitted Acceptance Test Plan procedure must be approved, in writing, by the City's Project Manager prior to any portion of such plan being implemented. Prior to the City's approval, the City shall have the right to modify the submitted plans and to add additional test requirements that verify compliance with the Performance Specifications.

(b) Right to Inspect all Aspects of Project. The City's Project Manager shall have the right to inspect and/or test, at any time all work, Equipment and materials to be provided for the Project, and the manufacture, assembly and installation of such Equipment and material, provided that the City gives reasonable notice and agrees to abide by reasonable restrictions regarding access to areas containing Contractor's proprietary and confidential information. The City's Project Manager inspection shall be based on compliance with (1) the Statement of Work and Services (2) Performance Specifications and (3) Acceptance Test Plan. The right of City's Project Manager's to inspect all aspect of the Project shall not relieve Contractor of its obligation to furnish material and workmanship in accordance with this Master Agreement. The City's Project Manager may reject any portion of the Project failing to meet any applicable standard.

(c) Defects Post-Inspection. Notwithstanding any previous inspection or acceptance of payment by the City for any Work, Equipment or material found to be in noncompliance with the Statement of Work and Services, Performance Specifications or the Acceptance Test Plan or is

defective before Final Acceptance of the Project, shall be repaired or replaced immediately by Contractor at its own cost and expense.

(d) Special Testing Tools. Whenever required by the Statement of Work and Services, Contractor shall furnish all tools, labor and material necessary to inspect any Equipment, work or material. Unless purchased by the City as part of the Project, Contractor shall provide all test Equipment needed to verify any Equipment, Site, or Project at its sole cost and expense. Test Equipment provided by Contractor for performance test shall be currently certified as "calibrated" by the test equipment manufacturer, or its authorized calibration service agent. Unless purchased by the City, all test Equipment shall remain the property of Contractor.

(e) Closing of Uninspected Work. Contractor shall not cover, or allow to be covered, any work before it has been approved by the Project Manager. Should any of the work be covered prior to such approval, the City's Project Manager shall have the authority to require the work to be uncovered for inspection and recovered after it has been approved. Any damage caused by having to uncover the finished work shall be repaired or replaced by Contractor at its sole cost and expense.

(f) Equipment Assembled Outside of City Limits. Subject to the provisions of Section 6.04(g), the City may inspect, at its expense, any Equipment being assembled outside of the boundaries of the City at the location that such Equipment is being assembled.

#### Section 7.02. Performance Test Procedure and Inspection.

(a) Notice of Completion, Testing and Inspection. Whenever any portion of the Project is complete and ready for testing (other than Final Acceptance testing), Contractor shall send written notice to the City. Upon receipt of such notice, City and Contractor shall set certain times and dates for testing such portion of the Project. In connection with any test or inspection, Contractor shall provide all necessary testing equipment and any of its personnel necessary for such test or inspection. Contractor shall notify the City's Project Manager of any test at least seven (7) days prior to the test. Such notification shall include the following information: (1) test date and time, (2) test type, (3) location, (4) Contractor's test personnel and (5) proposed test procedures. Contractor and DTIS shall perform the performance test according to the Acceptance Test Plan. Contractor and DTIS shall inspect the Equipment, Site or Project to ensure that it meets the Statement of Work and Services and the Performance Specifications. The City may, with good cause, require the Contractor to rerun any tests that produce a negative or inconclusive result, and such test shall also be at the cost of the Contractor. If the particular portion of the Project being tested or inspected either (1) fails to pass any portion of the Acceptance Test Plan or (2) does not meet the requirements in the Statement of Work and Services or the Performance Specifications, Contractor shall prepare a report, listing all the deficiencies, corrections that need to be made to the Project and the timeline for implementation of such corrections, which timeline shall not affect the Master Project Schedule. Within ten (10)

days of the test, Contractor shall deliver the report to the Project Manager for review and approval. Once the report is approved by the City's Project Manager, Contractor shall implement all the corrective measures and replace any defective Equipment. Upon completing all such steps, Contractor shall arrange with DTIS a mutually acceptable time and location for retesting the Project. In the event DTIS rejects any portion of the Project twice, DTIS may request Contractor to remove the rejected portion at Contractor's expense. Contractor shall be obligated to restore the premises to its original condition. If possible, DTIS may obtain that portion of the Project from another manufacturer and Contractor shall be liable for such procurement costs. Should Contractor fail to make any necessary corrections promptly or should the exigency of the situation require immediate repairs before Contractor can be notified, the City shall have the right to make the necessary repairs or replacements at the expense of Contractor.

(b) **Removal of Rejected Portions.** After any portion of the Project has been rejected twice, the City shall have the right to require the Contractor to remove the rejected items, by sending a written notice to Contractor. If Contractor fails to do so within five (5) days after such notice, the rejected item may be removed and stored by DTIS. The cost of removal and storage shall be charged to Contractor and deducted from the next payment to Contractor.

(c) **Use Not Acceptance.** Until Final Acceptance of the Project, the operation or use of any portion of the Project by the City whether for business, testing, profit, revenue or any other purpose, shall not constitute acceptance by the City of that portion of the Project.

(d) **Final Acceptance Testing.** When the Project as a whole is complete and ready for Final Acceptance testing, Contractor shall send written notice thereof to the City. Upon receipt of such notice, Contractor and DTIS shall establish certain dates and times for such test, which dates must be within fifteen (15) to thirty (30) days from the receipt date of the Contractor's notice. Should the City be unprepared to conduct such test within such time period, the warranties specified in Article 15 shall commence thirty (30) days from the receipt of the Contractor's notice to the City unless the Project fails to pass all aspects of the Final Acceptance testing. In the event the Project as a whole fails to pass the Final Acceptance tests as defined in the ATP when such tests are eventually performed, then the warranties shall commence on date of Final Acceptance of the Project.

**Section 7.03 Reliability Period.** The Reliability Period shall begin immediately after System Cutover of all user departments and shall continue for a period of ninety (90) days. If, during the Reliability Period, (1) the Project suffers a Major Failure prior to Final Project Acceptance, caused in whole or part by Contractor, Subcontractor's, or its Equipment, then Contractor shall remedy such failure and a new ninety (90) day Reliability Period shall begin only for the specific system or subsystem(s) (identified as one of the systems or subsystems under the definition of Major Failure that has failed or (2) any of the major systems or subsystems identified in the definition of Major Failure suffers a Chronic Failure prior to Final Project Acceptance, even if such failure does not create a Major Failure as defined, then Contractor shall

Appendix 4



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remedy such failure and a new ninety (90) day Reliability Period shall begin only for that specific system or subsystem which suffered such Chronic Failure (collectively the "Extended Reliability Period"); provided, however, in the event any system or subsystem failure is remedied, an Extended Reliability Period shall apply for such impacted systems or subsystems. In the event of extensive Major Failure or Chronic Failures the City may request after Contractor's remedy of such failure, re-testing such system or subsystems, and the Reliability Period for the Project re-start. Nothing herein shall be deemed to lessen Contractors responsibility for providing a fully functional Project upon Final Project Acceptance.

**Section 7.04. Equipment or Work That Complies With Statement of Work and Services But Fails to Meet the Performance Specifications or the Acceptance Test Plans.**

Contractor acknowledges and accepts that the City's approval of the Preliminary Design, the Detail Design and the final Statement of Work and Services does not relieve the Contractor from its ultimate and absolute obligation to ensure that the Project meets all aspects of the Performance Specifications and passes all portions of the Acceptance Test Plan. Contractor acknowledges that it is not sufficient to deliver the Project in accordance with the Statement of Work and Services and the Detail Design. Should any portions of the Project fail to meet the Performance Specifications or fail to pass any aspect of the Acceptance Test Plan, Contractor shall modify and revise the Statement of Work and Services in the manner necessary to meet the Performance Specifications and pass the Acceptance Test Plan. All proposed revisions to the Statement of Work and Services shall be submitted to the City's Project Manager. The City's Project Manager shall have the right to reject any proposed change that the City's Project Manager believes poses an unreasonable burden on the City. Such rejection shall not relieve Contractor from its obligation to meet the Performance Specifications and the Acceptance Test Plan. Contractor acknowledges and accepts that all cost and expenses to ensure the Project meets the Performance Specifications and passes all aspects of the Acceptance Test Plan shall be borne solely by the Contractor and will not increase the Project Price.

**ARTICLE 8**

**PERFORMANCE, LABOR AND MATERIAL BOND**

**Section 8.01. Security for Performance and Payment.**

**(a) Type of Bonds.**

(1) **Performance Bond.** From the commencement of the Project until Final Acceptance of the Project, Contractor shall obtain and maintain in full force and effect a performance bond in an amount equal to the Project Price, as adjusted from time to time, to secure Contractor's faithful performance of all the terms and conditions under this Master Agreement, as such terms and conditions pertain to the Project. Contractor shall deliver the performance bond to the City prior to the commencement of any work on the Project. To the

extent the City elects to acquire one or both of the Optional Phases, the Contractor shall increase the Performance Bond by an amount equal to the increase in the Project Price. Such Bond must be delivered prior to the commencement of work on the Optional Phase.

(2) **Payment Bond.** From the commencement of the Project until Final Acceptance of the Project, Contractor shall obtain and maintain in full force and effect a payment bond in an amount equal to the Project Price, as adjusted from time to time, to secure Contractor's obligation to pay any subcontractors, materialman or laborers who perform any work or provide any material for the Project. Contractor shall deliver the payment bond to the City prior to the commencement of any work on the Project. To the extent the City elects to acquire one or both of the Optional Phases, the Contractor shall increase the Payment Bond by an amount equal to the increase in the Project Price. Such Bond must be delivered prior to the commencement of work on the Optional Phase.

(3) **Fidelity Bond.** At the request of the General Manager, from the commencement of the installation of the Project until Final Acceptance of the Project, Contractor shall obtain and maintain in full force and effect a blanket fidelity bond covering all officers, employees and subcontractors, in an amount not less than \$100,000, with any deductible not to exceed \$1,000, including City and owners/tenants of premises where Contractor is installing the Project, as additional obligees or loss payees as their interest may appear.

(b) **Form of Bonds.** All bonds must be in form of coverage and issued by companies that are acceptable to the City.

## ARTICLE 9

### INSURANCE

**Section 9.01. Insurance.** Contractor shall obtain, pay for, and maintain in full force and effect during the term of this Master Agreement insurance as follows:

(a) Workers' compensation, including employers' liability insurance with limits not less than One Million Dollars (\$1,000,000) each accident, including occupational disease coverage, with a limit of One Million Dollars (\$1,000,000) per person subject to an aggregate limit of One Million Dollars (\$1,000,000) per annum;

(b) Commercial general liability insurance with limits not less than Twenty Million Dollars (\$20,000,000) combined single limit bodily injury, death, and property damage, including personal injury, contractual liability, independent contractors, broad-form property damage, and products and completed operations coverage;

(c) Business automobile liability insurance with limits not less than Five Million Dollars (\$5,000,000) each occurrence combined single limit of liability for bodily injury, and property damage, including owned and non-owned and hired automobile coverage, as applicable;

(d) Builders risk or equipment installation insurance, or an all-risk form, including coverages for earthquake and flood, for 100% of the replacement value of all materials, equipment and supplies which are part of the completed project, including coverage in storage and in transit, with any deductible not to exceed Twenty-five Thousand Dollars (\$25,000) each loss (2% earthquake or flood deductible).

(e) At the request of the General Manager, Contractor shall maintain, or cause to be maintained by subcontractor, consultants or others, the following insurance, as deemed appropriate by the General Manager:

- (1) Professional liability insurance for negligent acts, errors or omissions with respect to architectural, engineering or other professional or technical services required in the performance of this Master Agreement, with limits not less than Ten Million Dollars (\$10,000,000) each claim and annual aggregate and any deductible not to exceed Two Hundred Fifty Thousand Dollars (\$250,000) each claim.

To the extent the City elects to require the Contractor to carry the insurance specified in (e)(1) above, the City shall pay an additional amount not to exceed Two Hundred Ninety Thousand Dollars (\$290,000) for the Professional Liability Insurance. The above amounts payable are over and above the Project Price and are payable immediately.

**Section 9.02. Claims Made Coverage.** To the extent any insurance coverage required under this Section is purchased on a "claims-made" basis, after the term of this Master Agreement begins, such insurance shall cover all acts of Contractor during the term of this Master Agreement, and such insurance shall be continuously maintained until at least three (3) years beyond the expiration or termination of this Master Agreement, or Contractor shall purchase "tail" coverage, effective upon termination of any such policy or upon termination or expiration of this Master Agreement, to provide coverage for at least three (3) years from the expiration or termination of this Master Agreement.

**Section 9.03. Certificates of Insurance.** Certificates of Insurance, in form and with insurers acceptable to City, evidencing all coverage described in Section 9.01, shall be furnished to the City prior to the execution of this Master Agreement. The Certificates of Insurance shall provide that: (i) the City and County of San Francisco, its officers, agents, and employees are additional insureds (required for General Liability and Automobile Liability only); (ii) each policy is primary insurance with respect to any other insurance available to City as to any claim.

for which coverage is afforded under the policy; (iii) except for limits of liability, the policy apply separately to each insured against whom a claim is made or suit is brought (required for General Liability and Automobile Liability only) and (iv) state a deductible to the extent an amount is specified in Section 9.01 hereof.

**Section 9.04. Cancellation Or Lapse of Insurance.** All insurance required under this Master Agreement shall contain an endorsement requiring thirty (30) days prior written notice from the insurance company to City of cancellation, non-renewal, change in coverage, scope, or amount of any policy. Should Contractor fail to keep in effect at all times the insurance coverage required under Section 9.01, City may, in addition to and cumulative of any other remedies available at law, equity, or hereunder withhold payments to Contractor required under this Master Agreement in any amount sufficient to procure the insurance required herein.

**Section 9.05. Other Insurance Requirements.** All insurance policies required hereunder must be issued by insurance companies authorized to do business in the State of California, with a financial rating of at least an A-, VIII status as related in the most recent edition of Best's Insurance Reports. Upon written request by City, Contractor will provide to City policy extracts and policy form numbers to clarify an insurance certificate or as otherwise needed in the course of City's business activities.

**Section 9.06. Subcontractors.** To the extent that Contractor subcontracts any work, Contractor shall require such subcontractors to name the City and County of San Francisco, its officers, agents and employees as additional insured on all insurance policies carried by such subcontractors.

## ARTICLE 10

### INDEMNIFICATION

**Section 10.01. General Indemnity.** Contractor, on behalf of itself and its successors and assigns, shall hold harmless and indemnify the City, and its Related Parties, from and against any Losses incurred in connection with or arising directly or indirectly, in whole or in part, out of: (i) any accident, injury to or death of any person, or loss of or damage to any property, caused, in whole or part, by Contractor, its employees, subcontractors, agents or invitees in the course of installing, testing, maintaining or servicing any portion of the Project; (ii) any accident, injury to or death of any person, or loss of or damage to any property, in the course of performing any of its obligations under this Master Agreement; and (iii) any negligent or willful act or omission of Contractor, employees, subcontractors, its agents or invitees. In addition to Contractor's obligation to indemnify City, Contractor specifically acknowledges and agrees that it has an immediate and independent obligation to defend the City from any claim which actually or potentially falls within this indemnity provision even if such allegation is or may be groundless, fraudulent or false, which obligation arises at the time such claim is tendered to Contractor by

City and continues at all times thereafter. Contractor's obligations under this Section are irrevocable and shall survive the expiration or termination of this Master Agreement. The City shall provide Contractor with such information Contractor needs to defend any action.

**Section 10.02. Indemnity re Copyright, Patent, Trademark, Infringement.**

Contractor, on behalf of itself and its successors and assigns, shall hold harmless and indemnify the City and its Related Parties from and against any and all Losses incurred in connection with or arising directly or indirectly, in whole or in part, out of: (i) any claim or action, alleging that the Project, or portion thereof, infringes upon or otherwise violates any United States copyright, trade secret, trademark, patent, invention, proprietary information, non-disclosure agreement, or other rights of any third party; or (ii) a breach of any of the representations or warranties set forth in Section 15.03 hereof. Contractor's obligations under this Section are irrevocable and shall survive termination or expiration of this Master Agreement. If any Equipment or Software of the Project is held to constitute an infringement and the use thereof is enjoined, Contractor shall immediately, at Contractor's expense, and at the City's option either (i) procure for City the right to continue to use the Software or (ii) modify the Software so that it becomes non-infringing, while maintaining the same form, fit, function and quality or (iii) replace the Project or portions thereof so that it becomes non-infringing, (iv) remove the Project or portions thereof and refund the applicable amount of the Project Price or (v) substitute an equivalent product or products reasonably acceptable to City. The City agrees to provide Contractor with such information necessary to defend any action.

**ARTICLE 11**

**SOFTWARE**

**Section 11.01. Licenses.** Prior to the delivery of any portion of the Project that includes Software, Contractor shall identify such software and request the City to execute a License Agreement in substantially the form attached hereto as Exhibit J ("License"). All Licenses shall commence upon their execution and remain in effect until expressly terminated by the City. The expiration or termination of this Master Agreement shall not cause the termination of any executed License.

**Section 11.02. No Additional Payments.** Contractor hereby represents and covenants that the Project Price includes any and all fees and claims for royalties or other amounts that may be due to the Contractor or any third party for the Contractor or such third party's patent, trademark, copyright, trade secret, invention or other proprietary right or intellectual property right. Evidence of payment (or satisfaction) of royalties and other amounts in connection with the foregoing shall be submitted, upon request of the General Manager, as a necessary requirement in connection with the final estimate for payment for components in which such intellectual property rights are used. The City shall not make any additional license payments,

renewal payments, annual payments or maintenance and support payments for any Software for the Project.

**Section 11.03. Warranties.** Contractor hereby represents and warrants that it has full authority and right to provide to the City all the Software for the Project, and that the City shall have the unfettered, unconditional, perpetual right to use all such Software as part of the Project.

**Section 11.04. Source Code.** After the execution of any License and at the written request of the City, Contractor shall deposit one (1) copy of the source code into escrow, together with all applicable material. The form of Escrow Agreement is attached hereto as Exhibit K ("Escrow Agreement"). Contractor shall deliver one (1) copy of all updates, enhancements and releases into escrow prior to, or at the time such updates, enhancements and releases are provided to the City and otherwise insure that the source code(s) in escrow are identical to those of the Software being used by the City. Contractor shall provide an annual statement by the escrow holder of the contents of the escrow. In the event that the parties enter into an Escrow Agreement, such agreement shall be assignable by the City to the Financial Trustee, the Corporation or any other third party subject to and as provided in Section 11.06. The cost of such escrow shall be borne by Contractor.

**Section 11.05. Other Codes.** Concurrent with the execution of any License for any delivered Software, Contractor shall deliver to the City all instruction codes for the delivered Software Code.

**Section 11.06. Assignable.**

(a) **Consent Required.** With the prior written consent of Contractor, the City shall have the right to assign all Licenses to any third party. Contractor shall not unreasonably withhold its consent.

(b) **Consent for Assignment to Corporation and Financial Trustee.** City hereby represents to Contractor that the City intends to finance the Project with governmental securities secured by certain lease payments of the City. In connection with the financing, certain assignments of the Licenses between the City, the Corporation and the Financial Trustee will be necessary for the financing (collectively "Financing Assignments"). To allow the City to accomplish the proposed financing, Contractor hereby irrevocably consents to all the Financing Assignments.

(c) **Consent for Third Party Users.** In the event of a default on any of the governmental securities issued, in whole or in part, to finance the Project, Contractor hereby irrevocably consents to the assignment of all the Licenses to any other user of similar Projects or Equipment; provided that the user is not a direct competitor of Contractor in the 800 MHz trunked radio communication system business.

**Section 11.07. Conflicting Provisions.** Notwithstanding anything to the contrary in this Master Agreement, all terms and conditions of Article 11, Section 10.02 and Section 15.03 of this Master Agreement shall control over any conflicting or inconsistent provision of any executed License or Escrow Agreement.

**Section 11.08. Disclaimer of Patent License.** Nothing contained in this Master Agreement shall be deemed to grant, either directly or by implication, estoppel, or otherwise, any license under any patents or patent applications of Contractor, except that City shall have the normal non-exclusive royalty-free license to use that is implied, or otherwise arises by operation of law, in the sale of a product.

**Section 11.09. 2000 Compliant.** All Equipment supplied under this Master Agreement, individually and in combination, shall automatically and successfully transition into the year 2000 with the correct system date, including any leap year calculations. All Equipment supplied under this Master Agreement, individually and in combination, shall provide correct results when moving forward or backward in time through and beyond January 1, 2000. This requirement shall apply to any embedded technology, including, but not limited to information processing technology embedded in any Equipment that contributes to the Equipment's functionality by tracking, recording or displaying a system date. Contractor will fulfill its obligation hereunder pursuant to Section 8 of the License.

## ARTICLE 12

### TRAINING AND SUPPORT

#### Section 12.01. Training.

(a) **Project Training.** In connection with the Project and prior to Final Acceptance of the Project, Contractor shall provide the City training in the manner and in accordance with Exhibit L attached hereto.

(b) **Training Seminars.** In addition to the training classes described in subsection (a) above, Contractor shall provide technical training seminars for DTIS Radio Service Shop Supervisor(s) and any other staff specified by the City's Project Manager or the General Manager, dealing in efficient and safe procedure of managing a Radio Service Shop including handling and servicing practices for electrostatic discharge sensitive radios and Equipment, and demonstration of Contractor's Service Depot Facility. The training seminars shall include, but not limited to, the use of Automatic Test Equipment (ATE) for "go/no go" test and repair criterion and procedures applicable to trunked portable and mobile radios.

(c) Additional Training Classes and Seminars. In addition to the training classes described in subsections (a) and (b) above, Contractor shall provide additional training to and for any City staff, as may be required, in operating, maintenance, support, and managing the Project when so requested by the City. Contractor shall further invite the General Manager, the City's Project Manager and the DTIS personnel responsible for the Project to any technical class, seminar or show relating to any current or upcoming products related to the Project, including any changes or technological development that affect the Project. All transportation, meals and lodging incurred by any DTIS personnel attending the class, seminar or show shall be borne by the City.

## ARTICLE 13

### DOCUMENTATION FOR PROJECT

Section 13.01. Delivery of Documentation. Prior to the Final Acceptance of the Project, Contractor shall provide all the documents listed below:

(a) General Requirements. Contractor shall provide all the documentation specified in the Statement of Work and Services and Appendix B of the Performance Specifications.

(b) Operator's Manual. Contractor shall deliver to the City six (6) copies of the Operator's Manual for each different model of Equipment incorporated into the Project. Each of these manuals must include a complete description of the use of the particular Equipment and Project features. The manuals shall be written in easily comprehensible laymen's language for use by operations personnel.

(c) "As Builds." Contractor shall deliver to the City six (6) complete sets in hard printed copy and one (1) copy of the printed documentation in magnetic media of the "as built" documentation. The hard printed copy documentation shall be contained in three-ring binders for each different model of Equipment or off-the-shelf Equipment for the Project. The magnetic media "as built" documentation shall be submitted in 1.44 MB floppy diskette(s) formatted by MS-DOS. The documentation file format for drawings and schematics shall be done, exported, or translated to AutoCADD drawing files. The documentation file format for Equipment listings, unit pricing and other database documentation shall be done, exported, or translated to Microsoft Excel files. Instruction and maintenance manuals for any Equipment, identifiable by a Manufacturer Part Number, Index Code, or any other cross reference markings, may be supplied as published and need not be duplicated by magnetic media. Contractor may lock magnetic media files as "read only" files contained within the instruction or maintenance manuals that Contractor considers confidential. Each set for the Project, each major subsystem, each major circuit and each printed circuit, shall include the following information: (i) preventative and corrective maintenance, troubleshooting and overhaul procedures; (ii) complete "as built" containing mechanical, electronic and electrical engineering drawings, panel layout drawings,



physical Project layout drawings and schematic drawings; (iii) block and level one-line Project drawings, cross-connect tables, power and signal cable run drawings showing termination for each segment, with indicated normal voltage readings and levels; (iv) theory of operation, pictorial parts layout and parts lists; and (v) adjustments, tuning and alignment procedures.

(d) **Documentation for Custom Installation.** Contractor shall deliver to the City six (6) copies of the technical documentation of any custom installation, such as, routing of lines within Equipment cabinets, between Equipment cabinets and cables in the control consoles. This documentation shall be used by City technicians to maintain, modify and install the Equipment. This documentation shall consist of text and drawings sufficient to permit analysis of troubles and identification of defective components. The drawings shall have several degrees of increasing detail so as to enable the technician to move in logical steps from the broad overall view of the Project to the component level. References shall be shown on each drawing so as to lead forward to the next level of greater detail and backward to the less detailed and more inclusive drawings. All drawings at a given level of detail shall be in the same format and show termination which can be followed to related drawings at the same level. Each drawing shall have a title which can be found on a block in the next larger diagram and be identified with a number, which shall, where appropriate, indicate revisions. Numbers of related drawings shall be shown where needed. The drawings shall show interconnects (terminal by terminal) within the Project and, where possible, to related Equipment.

## ARTICLE 14

### PARTS, MAINTENANCE AND REPAIRS

#### Section 14.01. Replacement Parts.

(a) **Availability.** From the date of installation of each portion of the Project until the tenth (10th) anniversary of the Final Acceptance of the Project, Contractor shall use best efforts to maintain all replacement parts for all Equipment and components for the Project, which are manufactured by Contractor. Contractor shall use best efforts to ensure that compatible equipment that supports the expansion and/or enhancements of the Project until the tenth (10th) anniversary of the Final Acceptance of the Project is available to the City. In the event that Contractor can no longer stock any parts used in the Project, Contractor shall immediately send written notice thereof to the City. If Contractor decides to discontinue manufacturing subassemblies, modules, boards, frames, software or the model series equipment provided and installed for the Project, Contractor shall notify the City and shall provide the City with a reasonable amount of time to order and purchase the items before the Contractor ceases production of these items.

(b) **Part Orders.** All parts Equipment manufactured by Contractor shall be available, if in stock, within twenty-four (24) hours after placement of an order. Every day of the year Contractor shall provide 24-hour ordering facilities by telephone and cable service.

**Section 14.02. Maintenance and Repairs.**

(a) **Initial Maintenance and Repairs.** From installation of the Project until the Final Acceptance of the Project, Contractor shall provide 24-hour, seven (7) days-per-week maintenance and repair services for the entire Project. Every day of the year Contractor shall provide 24-hour toll-free telephone consultation serviced for maintenance and repair. Contractor shall respond to all maintenance and services request within four (4) hours of receiving a request for service from DTIS if so requested by DTIS. On the Final Acceptance of the Project and thereafter, DTIS shall assume all maintenance and repair responsibility. If requested by DTIS, Contractor shall immediately respond to any emergency repair on the Project. Contractor shall submit a recommended preventive maintenance program that ensures reliable system operation, identifying specific system and equipment, maintenance intervals and required specialized test equipment.

(b) **Maintenance and Repair Consultation.** From installation of any portion of the Project until the first (1st) anniversary of the Final Acceptance of the Project, Contractor's personnel shall be available for consultation at any Site, via telephone, or via correspondence regarding any maintenance or repair questions arising out of the Project. The cost arising from such consultation is included in the Project Price. For any maintenance and repair consultation after the first (1st) anniversary of the Final Acceptance of the Project, City shall be charged in accordance with the Labor Rate Schedule.

(c) **Maintenance and Repair Updates.** From the installation of any portion of the Project until the tenth (10th) anniversary of the Final Acceptance of the Project, Contractor shall use best efforts to notify DTIS of any changes to prescribed maintenance procedure for the Project or any portion thereof. All service notes or maintenance information that becomes available after Equipment delivery must be sent to DTIS. If changes in the maintenance procedure(s) cannot be successfully attained through written materials and requires personal instruction(s) from qualified Contractor representatives, Contractor shall provide, at its sole cost, personal instructions to DTIS's technicians responsible for the maintenance and repair of the pertinent portion of the Project. Contractor shall provide the training within the boundaries of the City. To the extent the City requires the assistance of any service technician in connection with any maintenance or repair update after the first (1st) anniversary of Final Acceptance of the Project, the City shall pay for the cost of such technician in accordance with the Labor Rate Schedule. The cost of any service technician needed on or before the first (1st) anniversary of the Final Project Acceptance is included as part of the Project Price.

(d) **Special Maintenance Tools**. Contractor shall provide DTIS with six (6) sets of all special tools, including those considered proprietary, required or necessary for the maintenance of any part of the Project. All sets of special tools shall include any servicing aids not normally used in the day-to-day operations of a radio service facility. Special tools shall include, but not limited to, any utility Software used to change the Project's attributes, such as user parameters, access levels, password development, Project statistics, logging and reporting, talk-group partitioning, dispatch console channel control panel and radio control panel topology, mode of operation, adjustment of input or output levels, and changing paging codes. Any utility Software specific to Contractor's system and not readily available from other third parties shall be provided by Contractor. Contractor shall provide the following special tools to DTIS: Radio Service Software(s), Computer Terminal to Radio Equipment Interface(s), Computer Terminal to Radio Equipment Interconnecting Cable(s), Test Equipment(s) Proprietary to Contractor Trunking Radio Systems. Contractor shall provide any new special tools required or necessary in connection with any new or changed maintenance and repair procedure.

(e) **Repair Facilities**. Until the fifth anniversary of the Final Acceptance of the Project, Contractor shall maintain or cause to be maintained complete maintenance and repair facilities or authorized maintenance and repair facilities within the geographical area of the San Francisco Bay Region. The City reserves the right to visit and inspect such repair facilities to verify compliance to manufacturer recommended standards of repairs and practices, including, but not limited to, adherence to electrostatic discharge precautions.

(f) **Maintenance Records**. During the applicable warranty period, the Contractor shall prepare a detailed repair statement for all system or Equipment failure. Such statement shall provide the following (1) Equipment and model number, (2) date reported, (3) date repaired, (4) components replaced, (5) cause of failure and (6) any previous failure of the particular piece of Equipment. Contractor shall deliver a copy of the repair statement to the City's Project Manager upon completion of the repair.

(g) **Engineering Changes**. Until the first anniversary of the Final Acceptance of Project, Contractor shall provide approved engineering changes and/or field modifications to those circuits, Equipment or functions that have failed more than once. Contractor shall incorporate these precise changes into any similar Equipment being purchased by the City, regardless of whether that Equipment has been accepted or unaccepted. The cost and expense in providing all the foregoing shall be borne by the Contractor. Contractor shall also revise all associated documents at no cost to City.

(h) **Priority Services**. In the event of an emergency that affects the San Francisco Bay Area, Contractor shall give the City Priority 1 Service. Contractor shall use best efforts in delivering all necessary Equipment, parts and personnel to the City, using all means of available transportation.

ARTICLE 15

REPRESENTATIONS AND WARRANTIES

Section 15.01. General Representations. Contractor hereby represents to the City and the Corporation as follows:

(a) Good Standing. Motorola, Inc. is a Delaware corporation in good standing in the State of Delaware and qualified to do business in the State of California.

(b) Authority. The officers of Contractor executing this Master Agreement are duly and properly in office and fully authorized to execute this Master Agreement.

(c) Ability to Perform. Contractor is fully capable and equipped to expand, furnish, install, optimize and integrate a new citywide 800 MHz trunking radio communication system for the City, which will serve as the City's radio communication system, and the foundation for future enhancements and upgrades for the City and County of San Francisco. Contractor is fully capable and equipped to deliver and install the Project and provide the City with a Turn-key Project.

Section 15.02. Basic Warranties. Contractor hereby warrants as follows:

(a) General. Contractor warrants that all Equipment and materials in the Project shall be free from defects in material, design, workmanship, and be of the kind and quality that performs in the manner described in the Statement of Work and Services, the published Equipment specifications, and any or all applicable Standards and Recommendations specified in the Statement of Work and Services. The foregoing warranty shall be effective for one (1) year commencing on the date of Final Project Acceptance. This one-year warranty shall not effect or limit any standard manufacturer's warranty for any item of Equipment in the Project.

(b) Codes and Standards. All Equipment shall conform to all applicable codes and standards set forth in the Statement of Work and Services. All Equipment shall be merchantable and fit for the purposes intended as specifically set forth in the Statement of Work and Services. The foregoing warranty shall be effective for one (1) year commencing on the date of Final Project Acceptance. This one-year warranty shall not effect or limit any standard manufacturer's warranty for the item of Equipment. This warranty shall not cover any changes in the codes and standards that occur after the date of the Final Project Acceptance.

(c) Radio Coverage. Upon the passage of the Final Acceptance Test Plan, the Equipment for the Project, shall operate as a complete system for the City, providing ninety-five percent (95%) or better radio coverage for base station-to-portable-in-building and portable-in-building-to-base station, within the geographic boundary of the City and County of San Francisco.

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as shown by the Contractor's computer predicted radio coverage maps, as defined in the Statement of Work and Services. Signal levels of 15, 23 or 30 dB above the signal level on the street, as specified for certain areas in Section 3.1.2 of the Performance Specifications, will be used to provide a margin for inside man-made structures. All actual base station radio coverage within the defined geographic boundaries of the City will meet or exceed the computer predicted radio coverage submitted by Contractor's Engineering Services for the Project. When actual radio coverage is less than predicted as proven by a mutually agreed upon testing process, a deficiency of the system shall deem to exist which the Contractor shall correct at its sole cost and expense. The radio coverage warranty shall be effective for one (1) year commencing on the date of Final Project Acceptance. The foregoing warranty shall not apply if the deficiency in the radio coverage is caused in whole by an element or a structure that did not exist prior to the Final Project Acceptance.

(d) Base Station Contours. Contractor shall provide computer predicted maps that show the areas with signal levels of 40 dBu, 25 dBu and 5 dBu for the Project. These maps will be submitted by the City to the Chairman of the National Public Safety Planning Administration Committee for Region 6 ("Frequency Coordinator") for approval. Contractor hereby warrants that the Project 40 dBu, 25 dBu and 5 dBu maps will be acceptable to the Frequency Coordinator and that the Project will meet all requirements of the Northern California Regional Communications Plan for Region 6, as amended from time to time. Should the Frequency Coordinator disapprove any part of the maps, Contractor shall be responsible for all changes necessary to the system design to gain the approval from the Frequency Coordinator. The base station 25 dBu and 5 dBu prediction maps shall be measured by actual radio testing by the Contractor. The base contour warranty shall be effective for one (1) year commencing on the date of the Final Project Acceptance.

(e) Compatibility Warranty. Contractor warrants that the Project is fully downward compatible with all the installed and existing Motorola Type II 800 MHz trunking equipment, and all the Motorola Type II user equipment of the Base System. Contractor further warrants that completion of the Project will not degrade or lessen any of the installed and existing Motorola Type II 800 MHz radio trunking functions and features (exclusive of Dynamic Failsoft and Table Driven Shared Service Algorithm features). The foregoing warranty assumes that the City shall maintain all its radio channels and the units per channel in place as of the date of this Master Agreement. Any reduction in the number of channels shall only affect the grade of service and no other features shall be affected.

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(f) Subcontractor Warranty. Contractor hereby warrants all labor, workmanship, materials and Equipment provided by any Subcontractors on any Project. This Subcontractor warranty shall be effective for one (1) year, commencing on the date of Final Project Acceptance. This warranty shall not effect or limit any warranty provided by the Subcontractor.

(g) Performance Specifications. Contractor warrants that all the Equipment for the Project and the Project itself meets or exceeds the Performance Specifications. The foregoing

warranty shall be effective for one (1) year commencing on the date of Final Project Acceptance. This one-year warranty shall not affect or limit any standard manufacturer's warranty for the item of Equipment.

(h) **Replacement Obligation.** Should any defects arise in the Project relating to work, Equipment or parts, under normal and proper use, during the warranty period, such defects shall be corrected by and at the expense of Contractor. In connection with all the warranties, Contractor shall supply all labor (including on-Site diagnosis or analysis of problems or defects) and materials and to correct any troubles or malfunctions at no cost to the City.

(i) **Disclaimer of Warranties.** The warranties contained in (a) through (h) shall be voidable if (i) the specific product is used by the City in a manner other than its normal and customary manner or (ii) the specific product has been subject to misuse by the City. Further, provided in each case, that the warranty shall not be voidable if the cause of the specific product's malfunction is not due to items described in (i) or (ii) of this Section.

(j) **Disclaimer of Implied Warranties.** The express warranties contained in this Master Agreement are given in lieu of all other implied warranties, which are specifically excluded, including, without limitation, the implied warranties of merchantability and fitness for a particular purpose.

**Section 15.03. Software Representations and Warranties.** Contractor hereby represents and warrants that it has full authority and right to provide to the City all the Equipment and Software which are a part of the Project, and that the City shall have the unfettered, unconditional, perpetual right to use all such Equipment and Software as part of the Project. Contractor hereby further represents and warrants that (i) none of the Software will infringe on any copyright or trade secret rights or any patent or other proprietary rights of a third party; (ii) Contractor is the owner of, or has sufficient license rights to, all Software; and (iii) Contractor has not previously granted any rights that are inconsistent with the rights to be granted to the City for any Software.

**Section 15.04. Assignment of Manufacturer's Warranties.** Contractor hereby assigns and transfers and hereby agrees to assign and transfer, to the City all of Contractor's right, title and interest in and to any warranties from the manufacturers, subcontractors or owners of each and every component for the Project, not manufactured by Contractor. Notwithstanding the pass-through of the manufacturer's warranties, Contractor is not relieved of any of its obligations under this Master Agreement.

## ARTICLE 16

### EVENTS OF DEFAULT; REMEDIES

**Section 16.01. Events of Default.** The following events shall each constitute a "Default" by Contractor:

(a) **Terms.** Contractor fails to comply with any term, covenant or condition of this Master Agreement and such failure continues for a period of thirty (30) days after written notice thereof from the City. In the event that the nature of the default is such that the Contractor cannot cure the default within thirty (30) days, then no default shall occur provided that Contractor submits a plan to cure such default. Such plan must be submitted within ten (10) days of the notice of default. In no event shall any cure plan contemplate a cure period longer than ninety (90) days. Contractor shall diligently cure all defaults.

(b) **Bankruptcy.** The appointment of a receiver, trustee or custodian to take possession of all or substantially all the assets of Contractor for the benefit of creditors, or any action taken or suffered by Contractor under any insolvency, bankruptcy, reorganization, moratorium or other debtor relief act or statute, whether now existing or hereafter amended or enacted.

(c) **Subcontractors.** Contractor fails to make any payments to any subcontractors or laborer providing any equipment, material or services in connection with the Project; and Contractor fails to provide the City sufficient evidence to support such nonpayment within ten (10) days of receiving written notice from the City.

(d) **Licenses and Source Code Escrow.** A breach of any term, covenant or condition in any License or Escrow Agreement and such breach is not cured within ten (10) days of receiving written notice thereof from the City.

**Section 16.02. Remedies.** In the event of a Default by Contractor, City shall have the right to exercise all remedies under the law including the following:

(a) **Termination.** The City shall have the right to terminate this Master Agreement by providing written notice to Contractor.

(b) **Specific Performance.** The parties acknowledge and agree that the services, work and Equipment being provided by Contractor for the Project are unique and the City could not obtain similar services, work and Equipment from another source without suffering irreparable harm. Accordingly, Contractor and the City agree that the City shall have the right to seek specific performance against Contractor on any portion of the Project due to Contractor's refusal to perform, unless such nonperformance is due to Contractor's bankruptcy.

(c) Remedy for Failure to Perform Under Contract. Should a Default arise under Section 16.01, the City shall have the right to perform the required work pursuant to Section 5.02 hereof.

(d) Other Remedies. All remedies available to the City for breach of this Master Agreement are cumulative (including, without limitation, termination of this Master Agreement, the right to damages and injunctive relief, and the right to procure components and take over work at Contractor's expense) and may be exercised concurrently or separately, and the exercise of any one remedy shall not be deemed an election of such remedy to the exclusion of other remedies.

**Section 16.03. Contractor/Limitation of Liability.**

(a) General. Except for intentional tort, personal injury or death, Contractor and City acknowledge and agree that Contractor's total liability, regardless of cause of action, under this Master Agreement shall not exceed one hundred percent (100%) of the Project Price (inclusive of Additional Equipment purchases), which amount shall be reduced by any consequential and incidental damages actually paid by Contractor under this Master Agreement or the 1992 Master Agreement (as hereinafter defined). Contractor's maximum liability is not contingent on the payment of any portion of the Project Price.

(b) Consequential and Incidental Damages. Contractor shall be responsible for consequential and incidental damages personal injury, including death, or property damage, due to Contractor's negligence or intentional acts or omissions, provided however such liability shall not exceed the Project Price (exclusive of Additional Equipment purchases) as such amount shall be reduced by any consequential or incidental damages actually paid by Contractor under the 1992 Master Agreement, dated as of February 5, 1992, between the City and Contractor ("1992 Master Agreement"). In exchange for Contractor agreeing to be responsible for consequential and incidental damages, the City shall enter into an amendment of the 1992 Master Agreement, providing for the limiting of incidental and consequential damages to the total Project Price (exclusive of Additional Equipment purchases), as such amount shall be reduced by any consequential or incidental damages actually paid by Contractor under this Master Agreement. Contractor's maximum liability is not contingent on the payment of any portion of the Project Price.

**Section 16.04. City/Limitation of Liability.** Except for liability for avoidable delays caused by City, City's obligations under this Agreement shall be limited to the payment of the compensation provided for in Section 4.01 of this Master Agreement. Notwithstanding any other provision of this Master Agreement, in no event shall City be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits, arising out of or in connection with this Master Agreement or the services performed in connection with this Master Agreement.



## ARTICLE 17

### ARBITRATION

**Section 17.01. Arbitration:** Contractor and City will attempt to settle any claim, dispute or controversy arising out of this Master Agreement through consultation and negotiation in good faith and mutual cooperation. Should the parties fail to reach an agreement within thirty (30) days, either City or the Contractor may elect to arbitrate any dispute or controversy arising under this Master Agreement by providing the other party fifteen (15) days' prior written notice thereof. In the event of any arbitration pursuant to this Master Agreement, the arbitration shall be conducted in the City and County of San Francisco, California, by three (3) arbitrators. City and Contractor shall each have the right to select one of the arbitrators. Once selected, the two arbitrators shall select a third arbitrator within fifteen (15) days. If the arbitrators cannot agree within such time frame, the parties shall be obligated to select two new arbitrators. Within ten (10) Days of the selection of the third arbitrator, the three (3) arbitrators shall establish, the rules by which the arbitration shall be conducted. This Master Agreement to arbitrate shall be self-executing. The arbitrators shall have no power to modify or enforce any provisions of this Master Agreement and their jurisdiction is limited accordingly. The expenses of arbitration shall be borne equally by City and Contractor, provided that each party shall be responsible for the fees and expenses of its own experts, evidence and attorneys. **The arbitration shall be non-binding on both parties.** Except as stated herein, arbitrations shall be conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association. If mutually acceptable to both parties, the parties may agree to some other form of non-binding alternative dispute resolution procedure.

## ARTICLE 18

### GENERAL PROVISIONS

**Section 18.01. Assignment.** Because the City has entered into this Master Agreement upon the basis of the particular abilities, services and equipment of Motorola, Inc., a Delaware corporation, may not assign or delegate, voluntarily or involuntarily, by operation of law or otherwise, any rights or obligations of Motorola, Inc. under this Master Agreement without the prior written consent of the General Manager, which consent may be given or withheld in the sole discretion of the General Manager. A change of ownership or control of Contractor or substantially all assets of Contractor shall be deemed an assignment of this Master Agreement. The City shall have the right to assign any and all its rights and obligations under this Master Agreement to the Financial Trustee, Corporation or any other third party subject to and as provided in Section 11.06. In the event of an assignment by the City, Contractor shall execute any and all documents that the City may request in connection with such assignment. This Master Agreement shall inure to the benefit of the City and its successors and assigns and shall be binding upon Contractor and its successors and assigns. Notwithstanding the foregoing,

Contractor may assign this Master Agreement to any subsidiary owned solely by Contractor provided such subsidiary is adequately capitalized to cover all obligations and liabilities under this Master Agreement. Contractor must notify the City of such assignment.

**Section 18.02. Required Minority Business Enterprise (MBE), Women Business Enterprise (WBE), and Local Business Enterprise (LBE).**

(a) Chapter 12D of the San Francisco Administrative Code, as amended from time to time, establishes the City's policy of encouraging and increasing the use and participation of Minority Business Enterprises (MBE), Women Business Enterprises (WBE), and Local Business Enterprises (LBE). Contractor is willing, agrees and hereby commits that it will subcontract portions of the Project under this Master Agreement, not related to Equipment cost, to qualified and certified MBE/WBE/LBE, from a list recommended by the San Francisco City and County Human Rights Commission (HRC). Contractor acknowledges and agrees that it is fully responsible for all firms that it selects from the list furnished by HRC to provide work and services on any Project. The failure of any of the selected firms to perform the contracted work shall not excuse Contractor from any of its obligations under this Master Agreement. Pursuant to Chapter 12D of the Administrative Code, the MBE/WBE subcontracting goals for this Project are 28% for MBEs and 5% for WBEs. Such goals may be reduced by HRC. These goals apply to the subcontracted portion of the overall Project.

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**Section 18.03. Equal Opportunity Employment and Business Practices; Liquidated Damages.**

(a) **12B and 12D.** Contractor agrees to comply fully with all provisions of Chapters 12B and 12D of the San Francisco Administrative Code, as amended from time to time. These chapters are incorporated herein and by reference made a part of this Master Agreement as though fully set forth herein.

(b) **Damages.** In the event that Contractor fails to comply in good faith with any of the provisions of Chapter 12D, Contractor shall be liable for liquidated damages for each violation in an amount equal to Contractor's net profit on the Master Agreement, or ten percent (10%) of the total amount of the Master Agreement, or One Thousand Dollars (\$1,000.00), whichever is greatest. The amount of liquidated damages imposed will be determined by the Director of HRC after investigation, pursuant to Section 12D.14(A)2 of the San Francisco Administrative Code. By entering into this Master Agreement, Contractor acknowledges and agrees that any liquidated damages assessed by the Director of HRC shall be payable to the City and County upon demand. Contractor further acknowledges and agrees that any liquidated damages assessed may be withheld from any monies due to Contractor on any contract or agreement with the City.

(c) **Compliance by Subcontractors.** In the event that the Director of HRC determines pursuant to Section 12D.14, that one or more of Contractor's subcontractors has failed to comply

in good faith with any of the provisions of Chapter 12B or 12D, Contractor agrees to withhold monies due the subcontractor in an amount equal to any liquidated damages assessed by the Director of HRC. By entering into this Master Agreement, Contractor acknowledges and agrees that it will incorporate into all of its subcontracts a provision permitting Contractor to withhold monies equal to any liquidated damages assessed by the Director of HRC.

(d) **Penalty.** Pursuant to Section 12B.2(h) of the San Francisco Administrative Code, a penalty of Fifty Dollars (\$50.00) for each person for each calendar day during which such person was discriminated against in violation of the provisions of this Master Agreement may be deducted from payments due to Contractor.

(e) **Exception Granted.** The Human Rights Commission has granted Contractor an exception from compliance with the City's Equal Benefits ordinance. A copy of such exception is attached hereto as Exhibit M.

**Section 18.04. Prohibited Interests.** Contractor states that it is familiar with provisions of Section 8.105 of the Charter of the City of San Francisco, and Section 87100 et seq. of the Government Code of the State of California, incorporated herein by reference and made a part hereof, and certifies that it does not know of any aspects of its business or personal practices that constitute a violation of said sections. No member of the Board of Supervisors of the City and County of San Francisco, officer or employee of the City and County of San Francisco during his or her tenure or for one year thereafter shall have an interest, direct or indirect, in this Master Agreement or the proceeds thereof. No officer, director, or employee of Contractor, nor any member of a Contractor officer's, director's, employee's or family, shall serve on a City board or committee, or hold any position that either by rule, practice or action nominates, recommends, or supervises Contractor's operations, or authorizes funding to Contractor.

**Section 18.05. Waiver.** The omission by either party at any time to enforce any default or right reserved to it, or to require performance of any of the terms, covenants or provisions hereof by the other party at the time designated, shall not be a waiver of any such default or right to which the party is entitled, nor shall it in any way affect the right of the party to enforce such provisions thereafter.

**Section 18.06. Notices.** All notices to be given by the parties hereto shall be in writing and served by depositing the same in the United States Post Office, postage prepaid and registered at the following addresses:

**CITY OR DTIS:**

General Manager  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, CA 94124

**with a copies to:**

Project Manager for the 800 MHz Project  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, CA 94124

City Administrator  
401 Van Ness Avenue, Room 402  
San Francisco, CA 94102

City Attorney's Office  
1390 Market Street, 6th Floor  
San Francisco, CA 94102-5408  
Attn: Victor L. Castillo

**CONTRACTOR:**

Motorola, Inc.  
1700 South Amphlett Boulevard, Suite 300  
San Mateo, CA 94402  
Attn: Project Manager for the San Francisco 800 MHz Project  
with copies to:

Motorola, Inc.  
9980 Carroll Canyon Road  
San Diego, CA 92131-1186  
Attn: Contract and Compliance

In the event a party desires to change its address, such party shall send written notice to the other party of at least ten (10) days prior to the time when the party wishes notices to be sent to the new address.

**Section 18.07. City Acting in Proprietary Capacity Only.** Contractor understands and agrees that the City is entering into this Master Agreement in its proprietary capacity and not as a

regulatory agency with police powers. Nothing in this Master Agreement shall limit in any way Contractor's obligation to obtain any required approvals from City departments, boards, or commissions having jurisdiction over the Project and its installation, repair, alteration or operation.

**Section 18.08. Evidence of Compliance.** To ensure that Contractor has complied or is complying with the requirements of this Master Agreement not readily enforceable through inspection and test of the Work, articles and materials, Contractor shall at any time when requested, submit to the City or the Project Manager properly authenticated documents or other satisfactory proofs of his or her compliance with such requirements.

**Section 18.09. Time of the Essence.** Time is of the essence with respect to the performance of each and all of the covenants, conditions and agreements of this Master Agreement.

**Section 18.10. Consent.** If consent or approval of City is required, such consent or approval must be given by the City Administrator of the City and County of San Francisco. If consent or approval is required by DTIS, such consent or approval must be given by the General Manager of DTIS. The giving of consent or approval in any one or more instances shall not be deemed to limit or excuse the need for such consent or approval in any other or subsequent instances.

**Section 18.11. MacBride Principles--Northern Ireland.** The City urges companies doing business in Northern Ireland to move towards resolving employment inequities and encourages such companies to abide by the MacBride Principles as expressed in San Francisco Administrative Code Section 12F.1 *et seq.* The City also urges San Francisco companies to do business with corporations that abide by the MacBride Principles. Contractor acknowledges that it has read and understands the above statement of the City concerning doing business in Northern Ireland.

**Section 18.12. Tropical Hardwood Ban.** The City urges companies not to import, purchase, obtain or use, for any purpose, any tropical hardwood or any tropical hardwood product.

**Section 18.13. Video Data Terminal Ordinance.** Contractor agrees to comply fully with all applicable provisions of the San Francisco VDT Ordinance 405-90, as amended from time to time. Said provisions are incorporated herein and by reference made a part hereof as though fully set forth. Contractor will provide the Equipment in accordance with the City's VDT Ordinance.

**Section 18.14. Drug Free Work Place.** If Contractor is required by its performance under this Master Agreement to comply with the Drug Free Work Place Act of 1988 (Pub. L.

100-690, Title V, Subtitle D), Contractor shall abide by all applicable terms and conditions of that Act.

**Section 18.15. Compliance With Americans With Disabilities Act.** Contractor acknowledges that, pursuant to the Americans with Disabilities Act (ADA), programs, services and other activities provided by a public entity to the public, whether directly or through a contractor, must be accessible to the disabled public. Contractor shall provide the services specified in this Master Agreement in a manner that complies with the ADA and any and all other applicable federal, state and local disability rights legislation. Contractor shall not discriminate against disabled persons in the provision of services, benefits or activities provided under this Master Agreement and further agrees that any violation of this prohibition on the part of Contractor, its employees, agents or assigns, shall constitute a material breach of this Master Agreement.

**Section 18.16. Burma (Myanmar) Business Prohibition.**

(a) Contractor is not the government of Burma (Myanmar), a person or business entity organized under the laws of Burma (Myanmar) or a "prohibited person or entity" as defined in Section 12J.2(G) of the San Francisco Administrative Code. Any items sold pursuant to this Master Agreement to the City and County of San Francisco are not made in Burma (Myanmar) as defined in Section 12J.4(A) of the San Francisco Administrative Code. The City reserves the right to terminate this Master Agreement for default if Contractor violates the terms of this Section 18.16.

(b) Chapter 12J of the San Francisco Administrative Code is hereby incorporated by reference as though fully set forth herein. The failure of Contractor to comply with any of its requirements shall be deemed a material breach of this Master Agreement. In the event that Contractor fails to comply in good faith with any of the provisions of Chapter 12J of the San Francisco Administrative Code, Contractor shall be liable for liquidated damages for each violation in an amount equal to Contractor's net profit under this Master Agreement, or 10% of the total amount of the contract, or \$1,000, whichever is greatest. Contractor acknowledges and agrees that the liquidated damages assessed shall be payable to the City upon demand and may be set off against any moneys due to the Contractor from any City contract.

**Section 18.17. Captions.** All the captions contained in this Master Agreement are for convenience in reference and are not intended to define or limit the scope of any provision of this Master Agreement.

**Section 18.18. Entire Agreement.** This Master Agreement sets forth the entire Master Agreement between the parties, and supersedes all other oral or written provisions relating to the Master Agreement. The request for proposal, the Contractor's proposal and subsequent drafts

shall have no effect for the purpose of interpreting the terms and conditions of this Master Agreement.

**Section 18.19. Conflicts and Inconsistency.** This Master Agreement consists of the agreement together with Exhibits A-M. To the extent an inconsistency exists between the agreement portion of the Master Agreement and its exhibits, the more restrictive clause shall control. To the extent the agreement portion of the Master Agreement is in direct conflict with one or more of the exhibits, the agreement portion of the Master Agreement shall control. To the extent an inconsistency exists between the exhibits in an area that is not addressed in the Master Agreement, the more restrictive clause shall control. To the extent the exhibits are in direct conflict in an area not addressed in the Master Agreement, the Performance Specifications shall control.

**Section 18.20. Governing Law.** This Master Agreement shall be governed by, interpreted in accordance with, and enforced pursuant to the internal laws of the State of California.

**Section 18.21. Jurisdiction and Venue.** The parties agree that the exclusive jurisdiction and venue of any action arising out of, or which concerns this Master Agreement, or to interpret or enforce this Master Agreement, shall be in the Superior Court of California for the City and County of San Francisco or the United States District Court for the Northern District of California. In the event of any litigation arising out of or which concerns this Master Agreement or to enforce or interpret this Master Agreement, the prevailing party shall be entitled to an award of its reasonable attorneys' fees and costs (including attorneys' fees and costs attributable to in-house counsel) in addition to any other remedy to which it may be entitled.

**Section 18.22. Interpretation.** The neuter gender includes the masculine and feminine, the masculine includes the feminine and neuter, and the feminine includes the masculine and neuter, and each includes corporation, partnership, trust or other legal entity, public or private, whenever the context so requires. The singular number includes the plural, and the plural the singular, whenever the context so requires. The use herein of the word "including," when following any general statement, term or matter, shall not be construed to limit such statement, term or matter to the specific items or matters set forth immediately following such word or to similar items or matters, whether or not nonlimiting language (such as "without limitation," or "but not limited to," or words of similar import) is used with reference thereto, but rather shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such general statement, term or matter.

**Section 18.23. Master Agreement Drafted by All Parties.** This Master Agreement is the result of arms-length negotiations between the parties and shall be construed to have been drafted by all parties such that any ambiguities in Master Agreement shall not be construed against either party.

**Section 18.24. Severability.** If any provision of this Master Agreement is determined to be invalid or unenforceable, the remaining provisions shall be enforceable to the maximum extent possible.

**Section 18.25. Meaning of Certain Phrases.** Unless expressly stated otherwise, the words "as directed," "as required," "as permitted," or words of like effect are used, shall be understood that the direction, requirement, or permission of the Project Manager is intended. Unless expressly stated otherwise, the words "sufficient," "necessary," "proper," and the like shall mean sufficient, necessary or proper in the judgment of the Project Manager. Unless expressly stated otherwise, the words "approved," "acceptable," "satisfactory," or words of like import shall mean approved by, or acceptable to, or satisfactory to the Project Manager.

**Section 18.26. Counterparts.** This Master Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which taken together shall constitute one and the same instrument.

**Section 18.27. Public Disclosure Laws.** This Master Agreement and all documents received in connection with the Master Agreement and the Project are subject to Public Disclosure Laws, including the City's Sunshine Ordinance.



IN WITNESS WHEREOF, the parties hereto have executed this Master Agreement on the day first mentioned above.


CITY:

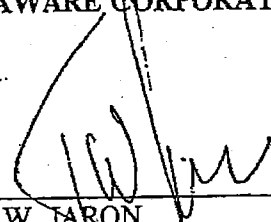
CONTRACTOR:

I have read and understood Sec. 61, City's statement urging companies doing business in Northern Ireland to move towards resolving employment inequities, encouraging compliance with the MacBride Principles, and urging San Francisco companies to do business with corporations that abide by the MacBride Principles.

CITY AND COUNTY OF  
SAN FRANCISCO, A  
MUNICIPAL CORPORATION

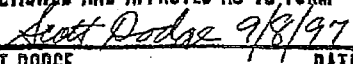
MOTOROLA, INC., A  
DELAWARE CORPORATION

  
WILLIE LEWIS BROWN, JR.  
Mayor


By:   
T. W. JARON  
Vice President and General Manager,  
Western Division

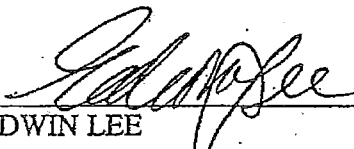
RECOMMENDED:

  
Director  
Department of Telecommunications  
and Information Services

REVIEWED AND APPROVED AS TO FORM  
  
SCOTT DODGE DATE 9/8/97  
MOTOROLA  
CONTRACTS AND COMPLIANCE DEPT.


**APPROVED:**

  
\_\_\_\_\_  
WILLIAM L. LEE  
City Administrator

  
\_\_\_\_\_  
EDWIN LEE  
Director of Purchasing

**APPROVED AS TO FORM:**

**LOUISE H. RENNE**  
City Attorney

By:   
\_\_\_\_\_  
VICTOR L. CASTILLO  
Deputy City Attorney

**EXHIBIT B: STATEMENT OF WORK AND SERVICES**

3. Exhibit B  
Statement of work and svcs

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## **EXHIBIT B: STATEMENT OF WORK AND SERVICES**

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### **Exhibit B: Statement of Work and Services for Project**

#### **1. PURPOSE OF STATEMENT OF WORK**

This Statement of Work and Services (SOW) describes the deliverables for the Citywide 800 MHz Radio System (CERS). The SOW contains information also included in the design review, equipment lists, various drawings, task table, time schedule, installation details, and other information determined relevant to the Project.

This SOW documents how the equipment shall be configured and what equipment and services shall be supplied. The SOW also describes the work involved in installation, installation standards to be followed, and Motorola's responsibilities in the completion of the Project. The use of the word "Motorola" in this document shall mean Motorola, Inc., and any of its Subcontractors. The use of "Performance Specification" in this document shall mean Exhibit A of the Citywide 800 MHz Radio System Project Agreement. All appendices referred to in this document are the appendices of the Performance Specifications. All definitions given in Article 1 of the Master Agreement apply to this SOW.

#### **1.1 SOW AMENDMENT PROCEDURE**

Motorola shall maintain the SOW with formal documentation denoting agreed upon changes. Two identical master copies are held: one by the City, the other by Motorola. SOW revisions will result from system changes or documentation updates, which will follow the Change Order process outlined in the Master Agreement Section 6.03.

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

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### 2. SYSTEM DESCRIPTION

#### 2.1 OVERALL CITYWIDE 800 MHZ RADIO SYSTEM

To meet the Performance Specifications the system shall use eight transmitter/receiver sites each equipped with 23 channels and configured in a simulcast mode. The backbone sites used are: (1) Central Radio Station, 1 Twin Peaks Boulevard, (2) Forest Hill water tank, 100 Mendosa Ave., (3) A T & T facility at Bernal Heights, 99 Moultrie St., (4) Fort Miley/ VA Hospital, Water tower 43rd and Clement, (5) San Francisco State University (Thornton Hall), (6) One Market Plaza, 1 Market St., (7) Building at Clay and Jones, 1250 Clay St. and (8) Reservoir 2b/South Hill water tank at Oakridge and Alta Vista (Daly City).

#### 2.2 TRUNKING RADIO SYSTEM DESCRIPTION

The following describes the Fixed Network Equipment (FNE) portion of the CERS for the City of San Francisco.

##### 2.2.1 Design Criteria:

Motorola's CERS system infrastructure is the product of several design choices selected to satisfy specific City needs and preferences. The fixed network is comprised of a Motorola Release 3.0 ASTRO mixed-mode SmartZone platform to support a single large-cell multi-site simulcast system.

The choices for appropriate redundancy are based upon both Motorola recommendations (the need for a Fault Tolerant SmartZone Controller, the need for Simulcast Prime Site Controller redundancy, the need for redundant TeNSr power supplies) and customer needs for increased Telecommunications Network Server (TeNSr) redundancy. During the detailed design phase of this Project a traffic loading study shall be executed using the detailed anticipated talkgroup structure ("fleetmap") and unit distribution that is developed.

##### 2.2.2 System Description:

The system design for the equipment provided to the City is based on a SmartZone release 3.0 ASTRO mixed-mode infrastructure. The fixed network consists of a single large-cell simulcast subsystem with twenty-three (23) channels at each of the eight (8) sites. Each of the simulcast transceivers communicate to local trunking controllers. Simulcast infrastructure equipment is to be provided. This equipment includes redundant Prime Controllers (and associated redundancy hardware), ASTRO-TAC 3000 comparators, trunking distribution equipment, and special channel bank equipment to interface remote simulcast sites to the prime simulcast site via a digital



## EXHIBIT B: STATEMENT OF WORK AND SERVICES

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microwave subsystem. One of the eight simulcast transceiver remote sites is to be co-located with the simulcast Prime site (currently targeted to be CRS). The repeaters being supplied are the QUANTAR version trunking repeater.

The center of control for the fixed network is a fault tolerant SmartZone controller. Associated with this controller at the prime site is a database server, a CADI server, and remote terminal servers that interface via an ETHERNET LAN to the SmartZone controller. An EMBASSY audio switch connects to the SmartZone controller via redundant RS422 links so that the SmartZone controller can exercise control over the audio routing within the switch to the radio sites and to the console locations.

The simulcast Prime Site is co-located with the SmartZone master site (CRS). A simulcast Prime Site consists of the main control and audio distribution hub for the simulcast subsystem. Main control is served by two 6809 Prime Controllers which operate in a Main / Standby manner. Switching between the controllers is accomplished through a TBAR switch. The Prime Controller supplies control data to the Remote Site Controllers and supplies "low speed data" to the Universal Simulcast Controller Interface (USCI).

Distribution of simulcast audio is accomplished through a distribution hub at the Prime simulcast site. The equipment includes the USCI, the Simulcast Distribution Amplifiers (SDA), and the ASTRO-TAC 3000 comparators. Voice audio sources through the comparators. The comparators connect to the USCI that combines the voice audio with trunking data originating from the Prime Site Controller ("low speed data"). The combination signal is routed through distribution amplifiers (SDA) that sends the common signal for each channel to multiple channel banks for distribution to each remote simulcast site. The USCI's contain a single card for each channel. Loss of a single card results in the loss of a single simulcast channel. The comparators are supplied one per channel. Loss of a complete comparator results in the loss of one simulcast channel. The SDA is supplied one amplifier per channel. Loss of one SDA card results in the loss of one simulcast channel. The TeNSr channel bank equipment includes redundant power supplies, redundant Central Processing Unit (CPU) cards, and 1xN redundant WAN cards.

Simulcast Remote sites consist of simulcast transceivers, a Global Positioning Satellite/Rubidium (GPS/RB) frequency standard, a Remote Site Controller, and TeNSr channel bank equipment. Loss of a remote site controller (or controller connection) would result in loss of the site's ability to process Inbound Signaling Words (ISW's) from subscriber (field) units. Should the microwave links be intact, loss of the remote site controller shall not affect the sites ability to transmit control channel data or voice communications, nor shall it affect the sites ability to serve as a receiver voting site for calls in progress. The frequency standard includes a backup crystal oscillator that serves to provide redundancy should the RB oscillator fail. Either the RB standard or

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

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the crystal oscillator will continue to function when a GPS satellite is not available. The TeNSr channel bank equipment is redundant in a similar manner to the Prime simulcast site (redundant power supplies, redundant CPU cards, and 1xN redundant WAN cards).

The simulcast infrastructure includes five (5) channels of the supplied twenty-three (23) equipped for encrypted ASTRO communications. The encrypted portion of the system includes Defense Encryption Standard - Output Feed Back (DES-OFB) encryption options for five (5) of the twenty-three (23) Digital Interface Units (DIU) located at the prime site. Six (6) key loaders are proposed to load the encryption key into the DIUs and the subscriber equipment (the fixed network transceivers are "transparent").

A telephone interconnect controller is equipped to provide five (5) channels of telephone interconnect on the trunking system. The control unit resides at the SmartZone prime site and includes functionality to control interconnect access based upon radio system traffic profiles. This interconnect unit is capable of expansion to twenty-one channels. Loss of the interconnect controller shall result in loss of telephone interconnect functionality on the system.

Antenna systems, mounting cabinets and racks, and power backup systems are provided for each site. The antenna systems provide redundancy by splitting channels between multiple antennas and combiners. The power system uses AC / UPS systems for controllers and other equipment that requires AC, and 48VDC for equipment compatible with DC (QUANTARs, TeNSr, ASTRO-TAC 3000 comparators, microwave radios).

The "Base System" identified in Appendix K shall be integrated into the CERS. The Base System shall appear as a second Zone on the Zone controller. Additional Central Controller boards, firmware, software, and channel bank equipment shall be supplied to interface the Base System into the CERS.

The existing Base System consists of 12 channels. Four of these channels shall be removed and their frequencies used elsewhere. The present Base System uses three MICOR stations and 9 MSF5000 stations. As the MICOR stations are not compatible with SmartZone we intend to use eight of the MSF5000's for the integration into the CERS.

The Base System shall be "hard partitioned". Three channels shall be partitioned to support existing Type I trunking fleets, subfleets, and subscriber users. Five channels shall be partitioned to support type II talkgroups and subscriber users. The existing 6809 controllers shall be programmed to control all type I trunking activity. The SmartZone Zone Controller shall control all type II trunking activity through the 6809 controller.

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

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Once integrated, the RCS shall have access to all Type II talkgroups and subscriber units affiliated with the Base System as allowed by level 4 users. Type I Fleets, Subfleets, and subscriber units shall be accessible via control stations as identified by the City. The 6809 controller shall contain the subscriber access control (SAC) for all Type I units.

The CERS shall adopt the "System ID" of the Base System to minimize reprogramming of existing Base System subscribers.

Motorola shall work with the City to develop the City's fleet map. There can be only one fleet map for the entire system. The fleet map (individual ID's and talkgroups) shall be divided into ranges (minimum of 3, maximum of 32). Each range shall be identified as Type I only (fleets, subfleets, and individual ID's), Type II analog only (talkgroups and individual ID's), and Digital capable (talkgroups and individual ID's). To insure maximum flexibility, Motorola shall assign console ID's in the "digital capable" range(s).

Motorola shall provide all training as defined in Exhibit L, Project Training.

### 2.3 MICROWAVE TRANSMISSION SYSTEM

The Microwave Transmission System (MTS) is configured as a three loop network providing highly reliable protection for all communications links between the prime site at CRS and the main dispatch center at CECC and all of the remote radio sites in the simulcast system. The first loop interconnects CRS with Forest Hill, San Francisco State University, Fort Miley, Clay Jones and One Market Plaza sites. The second loop interconnects CRS with Bernal Heights and South Hill sites. The third loop interconnects CRS with CECC using Bank America site for the alternate routing. The first two loops shall be supplied with all new microwave equipment for each link using repeater configurations at each remote site and terminal configurations at CRS. The third loop shall use the existing City microwave equipment to link CRS with CECC and CECC with Bank America, and add new microwave terminal equipment for the link between CRS and Bank America. Loop switching equipment shall be added at all sites where needed to provide route protection for each DS1 circuit that shall be installed. Existing microwave links between CRS and Hall of Justice and DTIS Rankin Street shall be used to transport circuits for dispatch and monitoring of the CERS system. Service channel equipment shall be included at all new sites and shall be interconnected to any existing service channel circuits as needed to provide the proper system continuity. Each RF link shall have one DS3 capacity (28 DS1) with all sites equipped for the maximum DS1 ports available for each respective configuration.

TENSr channel bank equipment shall be provided at all simulcast sites to interface with radio repeaters and remote controller equipment. Additional TENSr equipment shall be

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

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provided at CECC, Hall of Justice and DTIS Rankin Street to carry traffic for LAN connections, conventional channel logging audio, and remote operator dispatch connections. Almost all of these circuits shall be routed to corresponding TeNSr equipment at CRS. Multiple DS1 circuits shall be routed between CRS and CECC to carry traffic between the Embassy switch and CCE2 console equipment at CECC.

All necessary antennas, lines, and backup power necessary to make the MTS fully operational shall be supplied at each site as required. Final equipment configuration shall be determined during detailed design when the results of the physical path survey and the microwave frequency coordination study become available.

### 2.4 RADIO CONSOLE SYSTEM

The design for the console system for the City is centered on the Ambassador Electronics Bank (AEB), also referred to as the "audio switch". The AEB is located at the prime site. Connected to the audio switch are two concentrations of Console Control Equipment (CCE) also referred to as Central Electronics Banks (CEB's).

The first of these two concentrations, referred to as CCE1, consists of 5 CEB's. CCE1 is physically located at the prime site and connected to the audio switch via local E1 lines. Each CEB has two E1 lines for redundancy. CCE1 contains modules to support 49 Conventional base stations, 18 conventional Mutual Aid base stations, and 8 dispatch operator positions referred to as Console Terminal Equipment (CTE's). With exception of 1 local CTE (used for Department of Telecommunications and Information Services (DTIS) maintenance), all CTE's are remotet. Five positions are remotet via microwave to the Hall of Justice (HOJ), four for Department of Parking and Traffic (DPT), and one for the Sheriff Jail 9. One position is routed from the prime site to DTIS (901 Rankin Street) via microwave and then routed, via dedicated lines, to the Water Department. One position is remotet to DTIS (Rankin Street) via microwave to be used as a maintenance console. Each conventional Base Interface Module (BIM) has a logging recorder port as a standard feature. Thirty-nine of these logging recorder ports shall be routed from CRS to CECC via 4 wire microwave audio circuits to a City provided audio logging recorder.

The second concentration of CCEs are referred to as CCE2 and shall be located at the CECC. The five CEBs that comprise CCE2 are physically connected to the audio switch via T1 lines. Each CEB has 2 T1 lines for redundancy. These T1 lines originate at the prime site and are routed to CECC via microwave. Each CEB within CCE2 contains one BIM (City to define usage). Three of the five CEB's contain a Smart Phone Interface Module (SPI). Each SPI is routed to one of three consoles dedicated to the San Francisco Police Department (SFPD), San Francisco Fire Department (SFFD), and Department of Public Health (DPH). These five CEB's support 38 locally connected CTE's. Sixteen CTE's are for the SFPD, eight CTE's are for the SFFD, six

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

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CTE's are for the DPH, six CTE's are for the Office of Emergency Services (OES), and two CTE's for DTIS (one for maintenance and one for DTIS dispatch).

All CTE's, regardless of location, consist of a Console Interface Electronics (CIE) unit, Pentium PC with Ethernet LAN connection, 17" touch screen monitor, Dual headset jacks, dual foot switches, and a Personal Utility Control (PUC). The PUC is a hand held device (box) that has ten push-button switches. Associated with each switch are 2 LED's that reflect the status of the switch. The PUC interfaces to the CTE via a ten-foot cord. The PUC is used for controlling frequently used console functions such as but not limited to multiselect, All Call, Alert tones, Instant Transmit, and RTS/CTS.

Selected CTE's have a feature called Request-to-Send, Clear-to-Send (RTS/CTS). Only those console positions and talkgroups/conventional channels specifically identified by the City have this RTS/CTS feature. This feature is implemented as follows. Icons of RTS buttons are associated with radio resource windows. These buttons are mapped to relay contacts on 16 I/O modules in the CEB at CCE2. These relay contacts shall be wired to a MOSCAD Remote Terminal Unit (RTU). Pressing the RTS button causes the relay contacts to close. This closure is passed to the MOSCAD RTU which, through a preprogrammed logic matrix, produces an output that is wired to an input on the 16 I/O module. This input shall produce a visual indication on the desired console's radio resource (labeled RTS). This console operator presses a corresponding CTS button which is routed to the 16 I/O relay board, MOSCAD matrix, 16 I/O input and produce a visual CTS indication on the originating console. Space is provided in the CEB to add additional 16 I/O boards as required.

All programming and Alias data for the CTE's is stored in a PC server. The server connects to all CTE's via an industry standard Ethernet LAN. Remote operator CTE's shall connect to the LAN via microwave circuits and in the case of the water department via a dedicated line from the water department to DTIS on Rankin Street. Trunking talkgroups are recorded on a new Dictaphone® recorder that record each of the 23 trunked audio channels on 23 separate audio tracks. Trunking control channel data is recorded on a separate track. The control channel data is used to re-construct the talkgroup audio during play back.

In addition to the above hardware, Motorola shall provide:

1. A Spectracom external time standard for synchronization of the console clocks with 3 spare output ports.
2. Spares as defined in the equipment list.

With the exception of the Water Department, no console furniture is being provided. Four bays of furniture are supplied to meet the water department's requirements.

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### 2.5 CERS MANAGER (OPTIONAL - COVERAGE ENHANCEMENT PHASE)

Motorola shall provide a MOSCAD FAULT MANAGEMENT NETWORK to support the functionality of the Citywide 800 MHz Radio Manager (CERSM). The MOSCAD Network is the element manager that provides fault management for monitoring and control of various segments of RF site equipment, infrastructure/backbone network equipment as well as on-site environmental and security equipment. Specifically, MOSCAD monitors the City's new TRS, MTS and RCS fault activity functions. MOSCAD displays system configurations, and provides fault alarm monitoring and diagnostics for the following hardware:

1. SmartZone controller
2. Quantar Base stations
3. Voting Comparators
4. TeNSr Channel Bank Communication Server
5. Harris Farinon DVM Microwave
6. Gold Console Electronics
7. Efratom MFS GPS/Rb Standard
8. AC, DC, UPS and RF Power Systems
9. Discrete Alarms

The MOSCAD Network provides configuration management of the following hardware:

1. QUANTAR Repeaters
2. Harris Farinon 18 GHz M/W
3. TeNSr Communication Server
4. Request to Send Console Functionality

The components of MOSCAD Fault Management are: Master Centrals, MOSCAD Front End Processors, and MOSCAD Remote Terminal Units. The Central shall be a Graphic Master Central utilizing a MOSCAD MDLC-TCP/IP Gateway for transporting

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data to the Network Management level. The Central utilizes a Front End Processor to bridge between the central and the field RTU.

The Graphic Master Centrals (GMC) or Graphic Work Stations (GWS), are Windows NT based PC's with a Graphical User Interface software package to allow viewing and controlling of the entire system. The GWS is identical in graphics and functionality to the GMC, however the GWS is reliant on the GMC databases for information update and control, and is linked via a local LAN network to the GMC. The graphics display and database is based upon the WonderWare InTouch Windows application. The custom graphic screens depict current system status where the user can navigate from a macroscopic system view down to the individual site details. All system alarms, Change of States, and controls are time stamped, stored in the alarm history file, and printed for hard copy record keeping. The Graphic Master Central provides remote dial-up capability for secondary link redundancy to remote terminal units. The GMC also provides alphanumeric alarm paging. The paging software shall be the WIN911 from Specter Instruments. This package along with internal modems shall allow dial-up of any Motorola or equal RCC and send descriptive alarm messages on alphanumeric capable pagers (pagers not provided).

The MOSCAD system supports multiple GMC computer locations for fully redundant functioning nodes. Each GMC is capable of the full set of alarm and control capabilities and shall resume control when the primary GMC is not functioning.

The centrals shall support two printers connected to the computer; one for printing all alarms and the other for various custom reports. The alarms print out at the time the alarm is detected by the central. Logon/Logoff information is reported on the printer allocated for alarm printing.

Five MOSCAD Fault Manager System Graphic Master Centrals and one Graphic Work Station Centrals shall be supplied at the following locations:

- CECC - DTIS has a GMC and a GWS;
- DPW - DPW has a GMC
- CFAS - CFAS has a GMC
- RMF - DTIS has a GMC
- CRS - DTIS has a GMC.

Five Lap Top PC's are supplied for remote monitoring with dial-up features and diagnostic software. The Lap Tops are configured as Remote MOSCAD Centrals which rely on the GMC for real-time database information and alarm status.

The MOSCAD Front End Processor (FEP) is the bridge between the GMC and the MOSCAD Remote Terminal Units. The FEP is interfaced to the communication

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backbone via the Harris M/W radio service channel (Primary Link) via the RS-232 (9.6 Kbps) communication port. The FEP also provides a Dial-up Modem to interface to the PSTN to act as a Secondary Link to the remote M/W sites. A FEP is provided for all GMC(s) in the system. The FEP is an application specific device dedicated to RTU interrogation and to the routing of data messages to/from the GMC(s) as well as maintaining a real-time database of the MOSCAD system.

Seventeen (17) Remote Terminal Units (RTU), are provided for monitoring the CERS equipment, one each at; eight TRS sites, CCE2, DTIS, HOJ, San Bruno Jail, Moscone Center, San Francisco International Airport, three MUNI Tunnel sites. The RTU monitors and relays status and alarm information to the Centrals. The RTU is interfaced to the communication backbone via the Harris M/W radio service channel (Primary Link) via the RS-232 (9.6 Kbps) communication port. The RTU also provides a Dial-up Modem to interface to the PSTN to act as a Secondary Link to the remote M/W Orderwire link. The RTU(s) consists of Central Processor Units (CPU) housed in a 19" rack mount chassis, operating from a -48VDC source. The RTU utilizes a motherboard incorporating CPU(s) RS-232 and RS-485 interface ports dedicated to each of the site hardware electronics, together with local I/O modules for discrete hardware alarm/status.

### 2.6 MICROWAVE TRANSMISSION SYSTEM MANAGER (MTSM)

The Microwave Transmission System Manager (MTSM) is an integral part of the MOSCAD Master Graphic Central at DTIS. The MTSM retrieves status and alarm information from all MTS sites via local MOSCAD Front End Processor and the built-in monitoring features of the Harris Microwave SCAN supervisory control and alarm network via a MTS Orderwire circuit. SCAN permits monitoring, control, and overall visibility of the microwave system. MOSCAD displays MTS alarm and status conditions of any local or remote Harris Digital Versatility microwave equipment. Also, Harris M/W features a local SCAN Alphanumeric display and keyboard Test Panel and a parallel RS-232 port. The Test Panel is used to locally interrogate and control any other equipment in the M/W Network. Secondly, the MTS equipment parallel port interfaces to a MOSCAD Remote Terminal Unit for the communicating of all TRS site alarm/status to the CERSM/MTSM Centrals via a dial-up PSTN circuit.

### 2.7 MOBILE RADIOS

A mixture of 955 Analog and Digital mobile radios are provided to meet the specifications for User Equipment as listed in Exhibit C. Exhibit C specifies Type A and Type B mobile units supplied. The Type A are mobiles defined as units without Keypad features and with 8-Character Display, and Type B are units defined as units with Keypad features and 8-Character Alphanumeric Display. The Analog type mobile is the Motorola 15-Watt MCS2000 Model; Model II for Type A, and Model III



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for Type B. The digital type mobile is the Motorola 35 Watt ASTRO Digital Spectra Model; Model W4 for Type A, and Model A7 for Type B.

The mobile units are provided in Dash Mount and Trunk Mount configurations. The Control Units have a Mode System Selector, On/Off Power Switch, Power On Indicator, Transmit Indicator, Volume Control, System Busy Indicator - LED/Conventional, Audible/Trunking, Emergency Button, Select Call, Scan Control, External Speaker, Palm Microphone and 1/4 Wavelength Antenna. The control units of the same model are similar for both Dash Mount and Trunk Mount configurations.

Both the MCS2000 and ASTRO Digital Spectra mobile units are fully functional with the mobile Type TRS operations specified herein. The ASTRO Digital Spectra mobiles have the capability for digital Encryption operations and can be upgraded to APCO-25 CAI.

For the Special Operations Vehicles Motorola is providing ASTRO Digital Spectra Model III mobile units as above with additional features of; PTT input, Remote Mic (hand-held, mobile type), foot-switch and headset jack box.

### 2.8 PORTABLE RADIOS

A mixture of 3100 Analog and Digital portable radios are provided to meet the specifications for User Equipment as listed in Exhibit C. Exhibit C specifies the Type A and Type B portable units supplied. The Type A portables are defined as portables without Keypad and Display and Type B are portables with Keypad and 14-character Alphanumeric Display. The Analog portable is the Motorola 3-Watt MTS2000 Portable; Model I for the Type A portables, and Model III for the Type B portables. The digital portable is the Motorola 3-Watt ASTRO Digital XTS3000 Portable; Model I for the Type A portables, and Model III for the Type B portables.

For SFFD the Motorola Ruggedized ASTRO Digital Saber Model III portable units and batteries are provided. The ruggedized units are water-resistant and meet the requirements of the Performance Specifications for SFFD portables.

All portable units are equipped with Side PTT Bar, Transmit Indicator, Internal Microphone, (3) programmable Side Buttons, (1) Top Mounted Programmable Two Position Concentric Switch, Orange Emergency Button, (1) Top Mounted Programmable Three Position Toggle Switch, Illuminated 16 Position Mode Rotary Select Switch, Weather Sealed Universal Connector, Angled On/Off/Volume, Bi-Colored LED Indicator, Earphone Jack, Low Battery Alert Tone, Ruggedized (SFFD only) Ultra-High capacity Nickel Cadmium Battery, 1/2 Wavelength Whip (Flex) antenna, Black Leather Swivel Mount Carrying Case with T-strap.

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All three portable models are fully functional with the portable Type TRS operations specified herein. The ASTRO Digital XTS3000 and ASTRO Digital Saber portables have the capability for Encryption operations.

Portable accessories supplied are Speaker/Microphones (would result in lower talk-back radio coverage reliability), Battery Chargers (single and multi-unit), Spare Ultra-High capacity Nickel Cadmium Battery (standard and ruggedized), Battery Tester, and swivel case (would result in lower radio coverage reliability). Additional portable equipment supplied is 32 vehicular adapters with accessories for Water Department.

### **2.9 CONTROL STATION RADIOS**

A mixture of 147 Analog and Digital Control Stations are provided to meet the specifications for User Equipment as listed in Exhibit C. Those agencies requiring analog only operations are supplied Motorola Spectra Control Stations. Those agencies requiring digital operations are supplied Motorola ASTRO Digital Spectra Control Stations. Control stations are configured for local or wireline remote control. Those stations requiring rack mounting are supplied with 19-inch mounting panel. All stations are supplied with antenna and cables with "N" connectors.

The Local Control Stations are supplied with a front display/keyboard panel with control features to meet TRS requirements. The Remote Control Stations shall be Motorola DGT9000 Digital Remote Control consoles requiring 4-wire circuits to the stations. A maximum of six remotes in parallel are possible per Control Station.

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### 3. GENERAL PROVISIONS

All equipment supplied and work performed shall be in accordance with the Performance Specifications.

All work shall be performed in a manner consistent with high quality commercial practice and in accordance with Motorola's R56 "Quality Standards," and as detailed in Appendix F, Facilities Requirements.

Notwithstanding the materials and equipment list contained herein, Motorola shall furnish all necessary mounting hardware, fasteners, fixtures, cabling, connectors, and other equipment and hardware necessary to install the Motorola-supplied equipment, except where portions of the system are to be supplied by the City.

#### 3.1 MOTOROLA RESPONSIBILITIES

Motorola shall supply, install, optimize, and test the equipment, as ordered.

Motorola shall provide a secure warehouse, classroom, and mobile installation facility suitable for all seasons.

Motorola shall search, coordinate, and prepare licenses for the microwave frequencies to be implemented by the CERS. Motorola shall appoint a Program Manager to manage the implementation of the CERS. The Program Manager shall serve as a single point of contact for the City. All Motorola engineering, technical, and installation personnel shall report to the Program Manager.

The Motorola Program Manager shall prepare a detailed schedule based on Exhibit E, the Master Project Schedule. The Program Manager shall update the detailed schedule as the implementation progresses and provide the City with monthly progress reports.

#### 3.2 SUBSTITUTE EQUIPMENT

In the Exhibits to the Master Agreement, Motorola has identified all major equipment required to implement the system. If the City desires to supply substitute equipment, such equipment must be approved by Motorola as being compatible with the overall system design.

#### 3.3 STANDARDS OF WORK

All equipment provided for each site and the installation techniques used by Motorola for that equipment shall protect the system against earthquake damage and shall comply with the Uniform Building Code (UBC), Motorola Quality Standard-FNE Installation,

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National Electric Code (1990), NFPA 1221, and as detailed in Appendix F, Facilities Requirements.

### 3.4 SYSTEM AND EQUIPMENT LAYOUT

The overall system configuration shall be presented in the detailed design phase.

The specific layout of fixed equipment within each facility shall be provided by Motorola on a site-by-site basis during the detailed design phase and shall require both the City's and Motorola's approval prior to actual installation.

### 3.5 SYSTEM IMPLEMENTATION

System implementation includes civil construction, system engineering, equipment manufacture, staging, equipment delivery, installation, program management, and performance verification.

### 3.6 EXISTING CITY-OWNED EQUIPMENT

The City may identify existing City-owned hardware to be used within the radio system. Motorola shall use that hardware to the fullest possible extent.

### 3.7 RADIO COVERAGE

#### Coverage Maps

The shaded areas of the attached coverage maps show predicted coverage at ninety-five (95) percent reliability on the street and in areas that have 30db, 23 dB and 15 dB above the street level coverage to meet specified levels for in building coverage. The areas that may have less than 95% reliability are shown as non- shaded (white) areas. These areas are defined as follows: The 30 dB Area is that area enclosed by the Leavenworth Street on the west; the combination of Turk Street, Fifth Street and Howard Street on the south; the Embarcadero on the East; and Broadway on the North. The 23 dB Areas are defined in three parts. The first part is that area outside 30 dB area and bounded by the combination of Lyon Street, West Pacific Avenue, Arguello Boulevard, Fulton Street, Stanyan Street, Fell Street, Webster Street, Oak Street, Buchanan Street, Herman Street, Guerrero Avenue, on the West; Caesar Chavez Street (Army Street) on the South; the San Francisco Bay on the East and North. The second part is the area surrounding University of California at San Francisco (Medical Center) and is bounded by 7<sup>TH</sup> Avenue on the West; the combination of Kirkham Street and Medical Center boundary on the South; the combination of Medical Center boundary, Parnassus Avenue, and Stanyan Street on the East; and Lincoln Way on the North. The third part is the area surrounding San Francisco State University and bounded by the combination of Middlefield Drive and Lake Merced Boulevard on the West; the combination of Vidal Drive, Pinto Avenue, and Holloway Avenue on the South; 19<sup>TH</sup> Avenue on the

## **EXHIBIT B: STATEMENT OF WORK AND SERVICES**

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East; and Eucalyptus on the North. The 15 dB Area is the areas of the City and County of San Francisco not inside the defined 30 dB and 23 dB areas, or areas in the 23 dB area where predicted coverage is greater than 15 dB and less than 23 dB. This is the area bounded on the West by the Pacific Ocean and on the North and East by the San Francisco Bay and by the South by the San Francisco - San Mateo County Line.

### **3.8 CITY RESPONSIBILITIES**

1. The City is to perform the following services: Provide complete A & E Drawings for civil construction, and supply any changes as may be required to the A&E Drawings for the sites defined in 6.3.
2. Provide equipment facilities at the console and control station locations.
3. Ensure all department-provided sites meet applicable codes and standards and accommodate specified equipment.
4. Provide all electrical power to control station equipment locations so as not to require extension cords to any Motorola-supplied equipment. Motorola shall provide specific power requirements in the Detailed Design Document.
5. Provide technical information on existing systems to facilitate interfacing to the new system.
6. Provide all 800 MHz FCC licenses.
7. Provide backup AC power systems other than what is provided in the equipment list.

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### 4. PROJECT EXECUTION

#### 4.1 CONTRACT AWARD

Motorola shall begin the final order, planning, and implementation process of the CERS as soon as Motorola is provided with a completed "Request to Commence". Shipment of ordered equipment shall be according to the Master Project Schedule.

#### 4.2 PROJECT IMPLEMENTATION

The Motorola Program Manager shall coordinate, manage, and direct the implementation of the Project. The Program Manager shall provide on-site coordination to Motorola and the City during the entire system implementation process. Specifically, the Motorola Program Manager shall:

1. Develop, manage, and update the System Implementation Plan.
2. Conduct a complete inventory of all received equipment to ensure complete delivery.
3. Inspect the physical condition of all equipment to ensure that none has been damaged during shipment.
4. Ensure that all site preparation is complete and that all subsystems not provided by Motorola are operational and accepted by Motorola, prior to installing Motorola-provided equipment on site.
5. Coordinate between the City and the Motorola field implementation teams ensuring all on-site installation and integration/optimization tasks are performed within Project requirements.
6. Obtain City sign-off acceptance for the completed installation of each site
7. Verify that a given subsystem has been properly optimized and is ready for acceptance testing.
8. Keeping the City Project Manager apprised of current Project implementation status.
9. Provide progress reports as agreed to by Motorola and the City.
10. Participate in City Meetings as required.
11. Participate in and coordinate acceptance testing.

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12. Ensure the execution of the Project according to the Master Project Schedule.

### **4.3 PROJECT PHASING**

Motorola shall install the CERS Project in Phases. Phase 1 shall consist of the 8 site civil work, the 8 site fixed network equipment, console equipment, control station equipment, mobile units, portable units, mandatory special areas of coverage fixed equipment, system management equipment, training and test equipment as purchased by the City for inclusion into Phase 1. Phase 2 shall include all activities as required to implement all user equipment listed in Exhibit C and not previously purchased in Phase 1. An optional Coverage Enhancement Phase shall include optional backbone radio site upgrade and Fixed Network Equipment for radio sites at Potrero Hill Water tower, 22nd and Carolina, a radio site at Presidio, 314 Deems Rd; special areas of coverage as defined in Appendix D as "optional", and the CERSM. There is also an optional five channel 800 MHz Wireless Data Network (WDN) Phase that will be detailed in a WDN performance specification. Motorola shall acquire, construct, and deliver Phases 1 and 2, the Optional Coverage Enhancement Phase, and the WDN Phase in accordance with this SOW and the Master Agreement. This SOW shall be the guiding force for the implementation for all phases. All standards, requirements, procedures, activities, and processes described in this statement of work shall apply to all phases of this Project.

### **4.4 PROJECT KICK-OFF MEETING**

Upon contract award, Motorola shall schedule a Project Kick-off Meeting with the City.

### **4.5 DETAILED DESIGN DOCUMENT**

Motorola shall prepare and deliver to the City for approval, a Detailed Design Document in accordance with Exhibit E, Master Project Schedule. The Final Detailed Design Document as approved by the City and as thereafter modified in accordance with the change order process, shall automatically become part of this SOW.

The Detailed Design Document shall incorporate the following infrastructure and subscriber implementation task summaries:

1. Contract award
2. System order
3. Project administration
4. Civil work/tower installation
5. Factory staging

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6. Trunked system backbone installation
7. Microwave system installation
8. Acceptance Testing
9. Mobile and portable installation
10. Dispatch console installation
11. Dispatch console phaseover
12. Training
13. Department installation
14. Department transition
15. Department training
16. Interfaces to CAD, 911, PSTN, Recorders long term, instant recall recorders
17. Console and User Cutover Plan

### 4.6 FACTORY ORDER WRITE UP AND RELEASE

Upon City approval of the final system design and detailed equipment list, Motorola shall begin placing orders for equipment. This process ensures that equipment orders are consistent with equipment lists approved by the City. Although order is made upon contract award, shipment of equipment is based upon contract terms, the implementation plan and the, Master Project Schedule.

The equipment ship dates as detailed in the Master Project Schedule in the are planned around predetermined factory manufacturing duration's, factory staging and scheduled field installation for each subsystem.

### 4.7 SITE DOCUMENTATION

Site equipment floor plans and layouts shall be determined during the site planning process. Upon contract award, Motorola and the City will jointly determine the final site plans for all currently specified sites. Motorola shall submit the final site plans to the City for approval as part of the detailed design process. Upon signed approval of the final site plans for all sites Motorola shall incorporate the plans as appendices to the Statement of Work.



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### **4.8 FIXED EQUIPMENT STAGING AND TEST**

Prior to shipping, Motorola shall factory stage designated fixed equipment at Motorola's staging facility in Schaumburg, IL. A detailed list of the equipment to be staged shall be included in the factory staging documentation. Functional tests shall be conducted, and levels shall be optimized and documented prior to equipment breakdown and shipment. This task is intended to facilitate efficient on-site installation and is considered part of the system or subsystem acceptance test. System parameters and features shall be demonstrated to City personnel. All equipment shipped from staging shall be bar coded and labeled as required. Motorola shall stage the TRS, MTS, RCS and the MOSCAD systems

### **4.9 STAGED EQUIPMENT DELIVERY**

At the conclusion of factory staging, the equipment racks shall be transported to the local receiving/storage facility in San Francisco, CA. Motorola shall not ship any equipment to a site without City approval.

### **4.10 FIXED EQUIPMENT INSTALLATION**

Motorola shall provide, install, test, and cut-over the Citywide 800 MHz Radio System (CERS) City based on the final equipment list and detailed design as agreed upon by Motorola and the City.

All Motorola-supplied equipment shall be installed in accordance with Motorola's Fixed Equipment Quality Standards (R-56), and as detailed in Appendix F, Facilities Requirements. All buildings shall be in accordance with Zone 4 earthquake requirements.

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### 5. EQUIPMENT REQUIREMENTS

#### 5.1 MOUNTING PROVISIONS

Motorola-provided equipment, base stations, repeaters and central controllers shall be mounted in cabinets or racks designed for the product. All equipment racks shall be mounted and installed in accordance with UBC Zone 4 earthquake requirements.

#### 5.2 TECHNICAL REQUIREMENTS

All equipment furnished for all systems and subsystems shall meet or exceed FCC requirements. Equipment supplied by Motorola shall be new and unused, except where new City equipment is used for training or any other use designated by the City, then converted to permanent use.

#### 5.3 ENVIRONMENT

All FNE furnished under this Project operates in the temperature range of 0°C to +50°C except computer equipment which operates in the temperature range of +5°C to +35°.

#### 5.4 INTERFACES

Motorola shall identify the physical interface points where external systems shall connect to the CERS: i.e., punch block, connector, port, etc. Where applicable, Motorola shall define the interface protocol. Motorola shall not be responsible for the operation or performance of equipment or systems not provided and installed by Motorola. The point of demarcation shall be the aforementioned physical interface points.

#### 5.5 AC POWER REQUIREMENTS

City provided AC outlets will be three prong, twist-lock, grounded receptacles providing dedicated 115 VAC, 60 Hz, 20-amp service at Dispatch Center sites. Final detailed site power requirements and outlet locations and types shall be determined during final site plan approval, or as deemed necessary during Project implementation.

#### 5.6 GROUNDING

Equipment provided by Motorola shall be grounded as detailed in Appendix F, Facilities Requirements.

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### 5.7 ANTENNA SYSTEMS

Antenna systems (antennas, microwave dishes, transmission lines, antenna mounts and peripheral hardware) shall be installed at the sites by Motorola or its sub-contractors. Motorola shall install the antennas in accordance with the RF coverage design. Connectors utilized in all applications in this system are those connectors which the cable manufacturer recommends for the specific cable and application. All manufacturers' recommendations shall be strictly adhered to in the assembly of the system antenna equipment.

Weatherproofing of all connections shall meet or exceed manufacturer's recommendations and shall be in accordance with the recommendations contained in Motorola National Service Publication R56, "Quality Standards—FNE Installations".

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### **6. RADIO SITE DEVELOPMENT**

There are two specific divisions of site activities associated with the installation of the CERS. The first of these is site development in which the sites are prepared by the installation of shelter, tenant improvements, towers, electrical supply, HVAC, etc. The work associated with site development is defined in this section. The second division is the installation of Fixed Network Equipment at these sites and other locations.

#### **6.1 COMBINED TASK LIST**

The development work to be performed at the radio sites will be performed by a combined effort of the City and Motorola. In general, A&E design packages will be prepared by the City and provided to Motorola to receive fixed price construction bids. With City acceptance of the pricing, Motorola shall proceed with the construction.

#### **6.2 TERMS AND CONDITIONS**

The City will prepare and deliver to Motorola all Architectural and Engineering Drawing (A&E's) required for this Project for the sites defined in 6.3. Final and approved Architectural and Engineering Drawings will define final work packages.

Conduits, cable trays/troughs and site preparations, including availability of AC power is the responsibility of the City in facilities they provide.

Deviations from the scope of work and/or these terms and conditions shall be subject to the change order process.

It is agreed that all sites should conform to Motorola's R56 Installation and Quality Standards and as detailed in Appendix F, Facilities Requirements. Motorola reserves the right to inspect each location, not provided by Motorola, to ensure that it is in accordance with this agreement. Motorola shall not be required to bring any such areas up to standards.

#### **6.3 RADIO EQUIPMENT SITES**

The description of work and services for Radio Site Development is provided as a basis for the current understanding of Motorola's cost estimate. The City will provide Motorola with a complete set of A&E construction plans for the Radio Sites described below, and Motorola shall provide construction bids for the work. The A&E construction plans provided by the City shall replace this description for Site Development Construction and cost estimates shall be replaced in total with the construction bids.

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### 6.3.1 Transmitter Receiver Site Prime Site — CRS

#### Central Radio Station Remodel

The City is responsible for the following item in regards to Central Radio Station (CRS).

1. The City will obtain all required CRS plans.
2. The city will provide all Architectural and Engineering drawing (A&E's).
3. The City will obtain all access and construction agreements with CRS
4. The City will relocate existing equipment to another location within the building.
5. The City to obtain all permits required for construction.
6. City to provide sufficient floor space for equipment racks.

Motorola is responsible for the following item in regards to CRS.

1. Motorola shall complete bid package for remodel work
2. Motorola shall provide general improvements and remodeling of interior walls to create a technician work area with windows looking into transmitter room, a storeroom and adjustable shelving, walls extended from floor to ceiling, and static resistant floor covering.
3. Motorola shall provide remodeling of Men's and Ladies rest room areas to meet ADA codes.
4. Motorola shall provide a HVAC system for facility ventilation.
5. Motorola shall provide improvement of interior lighting, electrical power system, plumbing, fire protection; and security to accommodate architectural improvements and false ceiling replacement.
6. Motorola shall provide construction of a radio room to accommodate KALW radio station.
7. Motorola shall provide painting of the exterior and interior
8. Motorola shall provide external site improvements including fencing, storage container, and landscaping.

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9. Motorola to review alternatives to leaving existing trunking system at it present location.
10. Motorola shall provide new cable trays and seismic bracing to UBC zone 4 requirements.
11. Upgrade electrical service and provide new service panels appropriately sized. Remove two existing 200 Amp service panels
12. Motorola shall provide new halo ground ring around equipment room.
13. Motorola shall provide new external grounding field.

### General Assumptions regarding CRS.

1. Existing building and foundations do not require seismic analysis or strengthening.
2. CRS is free from hazardous materials
3. Final and approved A&E's will define final work packages.

### The City is responsible for the following item in regards to Tower #3.

1. City to provide lead and asbestos test results. Motorola acknowledges tower and concrete wall contain lead paint.
2. Provide tower lighting waiver from FAA.

### Motorola is responsible for the following item in regards to Tower #3.

1. Evaluate tower for corrosion and replace any corroded bolts to the extent that replacement can be accomplished during a normal inspection.
2. Evaluate tower cleaning/painting for 10-year life.
3. Evaluate tower for new loads, if necessary, one analysis.
4. Realign and install cable anchorage for existing cabling.
5. Pull temporary cable through existing 5-in. conduit to Tower #3 vault, if required.
6. Remove six antennas and coax from tower that are not in use.

### The City is responsible for the following items in regards to Tower #1.

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1. City to provide lead and asbestos test results. Motorola acknowledges tower and concrete wall contain lead paint.
2. City will remove corrugated asbestos wall around existing tower.

Motorola is responsible for the following item in regards to Tower #1.

1. Demolish tower, concrete walls, slab and tower foundations to 6 in. below grade.
2. Erect new 150-ft. tower consistent with Tower #3 adjacent to existing Tower #1 location.
3. Relocate existing Tower #1 and #2 antennas and dish to new tower.
4. Construct similar slab and wall 14 ft. high around new tower similar to walls around existing towers.
5. Provide electrical vault with ten 4-inch conduits from tower to building.
6. Provide 36-in. metal security door to wall for entry to tower.
7. Provide chain link fencing ceiling over wall area similar to existing structure.
8. Underground conduit with cable shall be removed to 6 in. below grade.
9. All demolition materials shall be removed to an approved dump site.
10. Relocate any active antennas to either Tower #3 or new Tower #1

The City is responsible for the following item in regards to Tower #2.

1. City to provide lead and asbestos test results Motorola acknowledges tower and concrete wall contain lead paint.
2. City will remove corrugated asbestos wall around existing tower.

Motorola is responsible for the following item in regards to Tower #2.

1. Demolish tower, concrete walls, slab and tower foundations to 6 in. below grade.
2. Underground conduit with cable shall be removed to 6 in. below grade.
3. All demolition materials shall be removed to an approved dump site.
4. Relocate any active antennas to either Tower #3 or new Tower #1

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The City is responsible for the following item in regards to the Generators.

1. City to verify the existing diesel underground storage tanks are adequate for new generators, and that the all required pumping equipment is in proper working order.
2. City to leave the two existing day tanks and tank pumping systems at CRS.

Motorola is responsible for the following item in regards to the Generators.

1. Motorola shall provide two 180 KVA diesel generators with foundations. Motorola shall remove the two existing 75KVA/60 kW generators for installation at other sites with indoor facilities.
2. Motorola shall convert existing garage door into exhaust area for the two new generators.
3. Motorola shall install two forced air intake systems for generators and mount on ceiling.
4. Install two new generator transfer panels.

General assumptions regarding CRS.

1. Existing buildings do not require seismic analysis or strengthening.
2. No landscaping or irrigation requirements.
3. Building plans and generator foundation plans are available.
4. Existing Towers #1, 2, and 3 structure, foundation, slab and wall plans are available.
5. CRS is an essential facility. No service interruptions are allowed unless pre-approved by City.

### 6.3.2 Transmitter Receiver Site Remote Site — Ft. Miley

The City is responsible for the following item in regards to Ft. Miley.

1. The City will acquire all necessary access and construction agreements with Ft. Miley.

Motorola is responsible for the following item in regards to Ft. Miley.



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1. Motorola shall provide a prefabricated concrete shelter with dual, redundant HVAC at grade within 100 ft. of water tank, 30 ft. x 12-ft. standard building package.
2. Motorola shall provide a 75 KVA/60 kW Generator (relocated from CRS) and a skid mounted 60 gallon fuel tank and an automatic transfer panel.
3. Motorola shall provide commercial electrical power from existing VA underground vault approximately 200 ft. away. Approximately 100 ft. will be across AC pavement parking lot.
4. Motorola shall provide an exterior grounding system.
5. Motorola shall provide an overhead coax cable tray from the building to the water tower.
6. Motorola shall provide a cable tray mounted on the water tank leg, with required coaxial cable attached to this tray. The cable tray shall be strapped to the tank leg.
7. Motorola shall mount the Microwave dishes on two legs of the water tank.
8. RF antenna mounts shall be mounted to the tank legs. An appropriately sized pipe structure shall extend to two feet above the top of the tank for antenna mounting.

### General Assumptions regarding Ft. Miley.

1. Water tank support structure will not require strengthening.
2. Building site is acceptable to the site owner and there are no major underground structures.
3. Water tank structure and foundation plans are available.

### 6.3.3 Transmitter Receiver Site Remote Site — One Market Plaza

The City is responsible for the following item in regards to One Market Plaza.

1. The City will obtain all required One Market Plaza plans.
2. The City will obtain all access and construction agreements with One Market Plaza.

Motorola shall install the following to these general scope definitions.

1. Ground system as required

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2. Motorola shall provide seismic bracing for equipment and cable trays.
3. Motorola shall provide cable trays.
4. Motorola shall provide cut-out with 16 knockouts for cabling through wall.
5. Motorola shall provide cabling and cable for approximately 50 feet from equipment room to roof top antenna locations.
6. Motorola shall provide conduit and cabling from the generator equipment room in the basement to the new equipment room on the roof.

### 6.3.4 Transmitter Receiver Site Remote Site — Forest Hill

The City is responsible for the following item in regards to Forest Hill.

1. The City will obtain all required Forest Hill plans.
2. The City will remove/relocate existing on site power/phone lines to existing buildings.
3. The City will provide commercial power to the existing PG&E pole.
4. The City will obtain all access and construction agreements for the Forest Hill site.
5. The City will determine if temporary burial of overhead air lines is acceptable.
6. The City will relocate temporarily the existing City communications building

Motorola is responsible for the following item in regards to Forest Hill.

1. 10 ft. X 12 ft. generator room located on the designated Sprint foot print
2. Motorola shall provide a prefabricated concrete building, 30 ft. x 12 ft.
3. Motorola shall provide 110 KVA generator and a skid mounted 60 gallon fuel tank.
4. Motorola shall provide an 80-ft. self-supporting monopole tower and relocate any active antennas to new monopole from existing tower.
5. Motorola shall remove existing 80-ft. tower, remove 8 ft. x 8-ft. foundation to 6 in. below grade, and remove tower and rubble from Forest Hill.

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6. Motorola shall provide underground commercial power to the prefabricated building from the PG&E pole.
7. Motorola shall provide a grounding system for new communications building and monopole.
8. Motorola shall remove from site a total three existing buildings and foundations.
  - A. Two existing operational communications buildings.
  - B. One City existing non-operational communications building.
  - C. Motorola plans to reuse one existing City abandoned building during installation and transition to the new communications building. It shall be removed at the completion of the installation.
9. Motorola shall provide new coaxial cabling to existing City communications building during decommissioning of existing two communications buildings.
10. Motorola shall remove existing tree as shown on Sprint plans.
11. Motorola shall provide 6 in. of Class II base with geotechnical fabric for a 10 ft. wide access road to site and monopole site for construction.
12. Motorola shall provide overhead cable trays/coax from building to monopole over existing air tanks.
13. Motorola shall provide temporary burial of overhead air lines and replacement overhead after construction complete.
14. Motorola shall provide plywood to cover air tank during construction.
15. Motorola shall provide the following as required for access to the monopole:
16. Relocate two 3/4" copper air lines
17. Raise 4 ft. x 5 ft. concrete vault 18 in. and add H-20 Bilco cover.
18. Raise five valve covers approximately 18 in.
19. Gravel area with 6 in. Class II with Geotechnical fabric.

### General assumptions regarding Forest Hill.

1. City will allow prefabricated building to be several feet above the existing water mains if necessary for approximately 12 ft.

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2. Existing tree can be removed.
3. Monopole, building and site do not require more than 12 in of recompaction.
4. Monopole, building and site do not require retaining walls.
5. Existing water tanks and air tank foundation plans are available.

### 6.3.5 Transmitter Receiver Site Remote Site — SF State University

The City is responsible for the following item in regards to SF State University.

1. The City will obtain all required SF State University plans.
2. The City will obtain all access and construction agreements with SF State University.
3. The City will provide a conduit path from the generator pad to the Motorola supplied automatic transfer switch to be located in the CERS equipment room (Thornton Hall, Room 138), approximately 50 feet.
4. The City will provide 208 VAC, 300 Amp, 3-phase commercial power to the CERS equipment room, with circuit breaker panel and utility outlets to be specified by Motorola.

Motorola shall install the following to general specifications, as this site is not completely defined at this date.

1. Motorola shall provide a concrete pad for installation of emergency generator and fuel tank, on ground level, adjacent to SFSU emergency generator.
2. Motorola shall provide cabling and any necessary conduit from equipment room to Thornton Hall rooftop antenna locations (Approximately 200 feet). Where required, cabling shall be plenum rated.
3. Motorola may install microwave radios and associated equipment in an additional space provided in Thornton Hall elevator penthouse, north side. This equipment shall be housed in outdoor cabinets, or equivalent, to provide isolation from the elevator control room environment.
4. Motorola shall install required microwave dishes on north wall to Thornton Hall elevator penthouse, to minimize visual impact to campus and surrounding community, and painted to match the building exterior.

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5. Motorola shall install a concrete pad and redundant split system HVAC units adjacent to the new emergency generator pad. Condenser lines and associated HVAC shall be installed on the east wall of Room 138.
6. Motorola shall provide equipment racks and cable trays, with seismic bracing per UBC Zone 4.
7. Motorola shall provide a 50 KVA/40 kW diesel generator, an automatic transfer switch, and a dual wall sub-base or skid mounted fuel tank. The tank shall be 60 gallons.

### 6.3.6 Transmitter Receiver Site Remote Site — Bernal Heights

The City is responsible for the following item in regards to Bernal Heights.

1. The City will obtain all required Bernal Hts. plans.
2. The City will obtain all access and construction agreements with Bernal Hts.
3. The City will relocate existing equipment to another location within the room to make room for new system as required.

Motorola is responsible for the following item in regards to Bernal Hts.

1. Motorola shall provide a new lighting system
2. Motorola shall provide equipment racks and cable trays seismically braced per UBC zone 4.
3. Motorola shall provide split-dual HVAC systems.
4. Motorola shall provide cut-out with 16 knockouts for cabling through wall.
5. Motorola shall provide cabling and cable for 175 ft. from equipment room to tower. Cable will be coiled at tower for AT&T installation.
6. Motorola shall provide materials for AT&T installation.
7. Motorola shall provide conduit and cable for new electrical service and emergency power service from existing generator room to equipment room (approximately 150 ft.).
8. Motorola shall provide grounding system for equipment room.

General Assumptions regarding Bernal Hts.

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1. Existing building and foundations do not require seismic analysis or strengthening.
2. Existing AT&T tower does not require analysis or strengthening.
3. AT&T will allow City to connect to the existing commercial and emergency power services.

### 6.3.7 Transmitter Receiver Site Remote Site — South Hill

The City is responsible for the following item in regards to South Hill.

1. The City will obtain all required South Hill plans.
2. The City will obtain all access and construction agreements for South Hill.

Motorola is responsible for the following item in regards to South Hill.

1. Motorola shall provide a pre-fabricated concrete building with a generator room. The building shall be 40 ft. x 12 ft. with two doors.
2. Motorola shall provide a 60-ft. triangular frame tower, foundation and lighting per FAA requirements. Tower shall be designed for 4 Daly City radio antennas, 3 CERS antennas and 4 microwave dishes (2 for CERS, 2 for Daly City) as per City provided drawings.
3. Motorola shall provide a cable bridge between building and tower.
4. Motorola shall provide a grounding system for the building and tower.
5. Motorola shall provide underground commercial power from existing pump house to the building via the access road. A trench shall be cut in the existing access road, conduit placed and trench filled and the access road restored.
6. Motorola shall provide a 75 KVA/60 kW generator and a skid mounted 60 gallon fuel tank (relocated from CRS) and an automatic transfer panel.

General assumptions regarding South Hill.

1. Normal soils.

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### 6.3.8 Transmitter Receiver Site Remote Site — Presidio (Optional Site - Coverage Enhancement Phase)

The City is responsible for the following item in regards to the Presidio.

1. Assist Motorola/Contractor in working with National Park Service, as they have their own building criteria and requirements. Develop the final scope of remodel as well as attending any subsequent workshops as required.

Motorola is responsible for the following item in regards to the Presidio Tower.

1. Motorola shall provide corrosion and paint inspection, replace corroded bolts, and remove corroded mounting brackets to the extent that replacement can be accomplished during a normal inspection.
2. Motorola shall provide structural analysis for strengthening the tower if required. Any tower strengthening work is NOT included.
3. Motorola shall provide new dual mode lighting for the tower if required by the FAA
4. Motorola shall provide removal of four non-essential existing antennas and cables.
5. Motorola shall provide installation of coax for Project with no painting or cleaning of tower.

Motorola is responsible for the following item in regards to the Presidio building.

1. Motorola shall provide emergency power in the garage space, and install a 60 KVA generator OR place an outdoor generator and a skid mounted 60-gallon fuel tank on a concrete slab in a walled area.
2. Motorola shall provide a concrete pad for a commercial power transformer, and two air-conditioning condensers in a walled area adjacent to existing building.
3. Motorola shall provide three insulated walls in center garage space with a 3 ft. x 6 ft 8 in metal door inside the garage area. The room shall be 20 ft. x 10 ft. with two air-conditioning units. NO ceiling treatment.
4. Motorola shall provide cable trays within equipment room.
5. Motorola shall provide a raised floor three to four in. with concrete and tile with a waterproof membrane below the new slab.

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6. Motorola shall provide a new lighting system for the equipment room.
7. Motorola shall provide a fire wall between equipment room and generator room if the indoor generator is selected.
8. Motorola shall provide removal of asbestos on hot water piping within the garage area only.
9. Motorola shall provide seismic analysis for essential building facility usage.
10. Motorola shall provide building strengthening for seismic retrofit up to a value of 118,685 dollars.
11. Motorola shall provide commercial electrical service to the Presidio radio site.
12. Motorola shall provide a grounding system for the equipment and tower.
13. Motorola shall provide a cable bridge between tower and building or underground conduit for transmission lines.

General assumptions regarding the Presidio.

1. UBC is recognized building requirements.
2. The City has no jurisdiction over construction at the Presidio.
3. Existing building and foundation plans are available.
4. Existing tower and foundation plans are available.
5. Asbestos removal is limited to hot water pipe insulation only.
6. Painting is limited to interior of building in renovation area.
7. No other improvements to buildings are included except for the renovation of garage area.

### **6.3.9 Transmitter Receiver Site Remote Site — Potrero Hill (Optional Site – Coverage Enhancement Phase)**

The City is responsible for the following item in regards to Potrero Hill.

1. The City will obtain all required Potrero Hill plans.
2. The City will obtain all access and construction agreements for Potrero Hill.



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3. The City will provide commercial power to the PG&E pole at the northeast corner of the site.

Motorola is responsible for the following item in regards to Potrero Hill.

1. Motorola shall provide a 30 ft. x 12 ft. (20x12 ft for equipment, 10x12 ft for generator) prefabricated reinforced concrete shelter building with an emergency generator room.
2. Motorola shall provide a 100 KVA generator and a skid mounted 60 gallon fuel tank.
3. Motorola shall provide an 8-ft. security fence with two 7-ft. gates.
4. Motorola shall provide a cable bridge between building and tank leg.
5. Motorola shall provide a cable ladder strapped to existing water tank leg.
6. Motorola shall provide commercial power. Power shall be acquired from northeast corner of site, PG&E overhead pole, and run underground 200 ft. to building.
7. Motorola shall provide microwave dish mounts below tank walk way.
8. Motorola shall provide RF antenna mounts above the water tank and attached to the tank as conditions allow.
9. Motorola shall provide clips and hangers for mounting of coax below walkways.

General Assumptions regarding Potrero Hill.

1. Water tank support structure will not require strengthening.
2. Building site is acceptable without major underground structures.
3. Water tank structure, foundation and reservoir plans are available.

### 6.3.10 901 Rankin Street Radio Shop Remodel

The City is responsible for the following item in regards to Rankin.

1. The City will obtain all required Rankin plans.
2. The city will provide all Architectural and Engineering drawing.

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3. The City will obtain all access and construction agreements with Rankin
4. The City will relocate existing equipment to another location in order to facilitate new construction.
5. The City to obtain all permits required for construction.

Motorola is responsible for the following item in regards to Rankin.

1. Motorola shall provide general improvements and remodeling of interior walls to create a technician work area, supervisors offices, immediate parts room, staging room, and training room with drop ceilings, sheet rock walls, insulation, effective lighting, and a static resistant floor covering.
2. Motorola shall provide electrical and communications renovations to accommodate architectural improvements.
3. Motorola shall provide remodeling of Men's and Ladies rest room areas to meet ADA codes.
4. Motorola shall provide floor and wall painting of interior of building.
5. Motorola shall provide a HVAC system for new office areas.
6. Motorola shall provide for replacement of the heating system for the shop area.
7. Motorola shall provide creation of a customer counter and receiving area with adjustable shelving.
8. Motorola shall provide construction within the technician's work area 3'x6' benches with 18"x 48" storage cabinets.

General Assumptions regarding Rankin.

1. Existing building and foundations do not require seismic analysis or strengthening.
2. Rankin is free from hazardous materials
3. Rankin will be completed at the conclusion and acceptance of all other civil work associated with this Project.
4. Final and approved A&E's will define final work packages.

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### 6.4 SITE DESIGN

Motorola's system design is predicated upon the successful acquisition and A&E design of all sites. In the event that alternate sites are necessary, Motorola shall review these alternative sites and make changes to the SOW and Detailed Design in accordance with section 6.07e of the Master Agreement.

The City will be responsible for acquiring all building permits necessary to support the implementation of the described work. The City will be responsible for the generation of all Environmental Impact Reports or Statements and for obtaining all and other approvals which may be necessary to support the Site acquisition, Site Development and radio tower installations required to complete the work herein.

Unless otherwise stated in this Statement of Work, the soil condition at the work site shall be considered as "Normal Soil" as defined in EIA/TIA-222-E.

The City shall pay all fees attached to said permits. The City will pay plan check fees, permit fees, water district fees, electrical service fees, sewer fees and permit application processing fees. Motorola shall pay for costs associated with the legal operation of the contractor's business including City business license fees, contractors license fees, general liability insurance, and workers compensation insurance in accordance with the Master Agreement.

Motorola's response does not provide for any environmental remediation at existing sites relating to contaminated soils, asbestos, and lead paint beyond what is specifically mentioned in this SOW.

Motorola-supplied fixed equipment shall be installed in accordance to Motorola's Fixed Equipment Quality Standards (R-56) and Appendix F, Facilities. Deviations from the (R-56) Quality Standards necessary to resolve site, lease, or economic restrictions, shall be made with the express knowledge and approval of the City.

Motorola shall prepare tower loading and structural analysis documentation of existing towers selected for use in the implementation of the new system. Current State of California PE stamped drawings will be available from the City for all existing towers.

Motorola presumes that all sites and locations where work will be taking place will be free of all Federal, State, or Local Agency identified hazardous waste, including, but not limited to: Asbestos, Gasoline, Oil, Diesel, PCBs, Industrial and Biological waste. Motorola shall make every reasonable effort to identify to the City any areas that it feels may contain any of this material, and upon seeing evidence that such material exists, will stop work on that site, provide written notice to the City, and work with the City to remediate the condition in accordance with section 6.07c of the Master Agreement.

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Motorola shall prepare site plans and drawings for review and approval of the City and submit them with the detailed design. Unless specified elsewhere in the Statement of Work, site design documentation for Motorola provided equipment and services shall include the following:

1. Rack and main distribution frame installation details including seismic methods.
2. Equipment rack placement including footprints of floor mounted equipment and wall locations if required.
3. Antenna placements and loading on existing buildings and towers. Documentation for new towers shall include this information.
4. Grounding rod and bus drawings that shall indicate connection to the City's existing grounds or the ground systems provided by Motorola.
5. Termination backboards.
6. Electrical (As applicable to Motorola-supplied equipment and services).
7. AC and DC power distribution panel details for system functions.
8. Circuit breaker location and load assignment.
9. AC and DC power wiring diagrams.
10. Site grounding bus, common ground point.
11. Battery placement and wiring details.
12. Emergency generators including transfer panels to distribution panel.
13. Warning signs in four languages warning of exposure to hazardous radiation in accordance with FCC rules.

Following successful completion of applicable inspections required by the City of San Francisco construction permit process, Motorola shall notify the City Project Manager in writing that the facility upgrade(s) and/or new sites are complete and ready for verification of compliance with the approved SOW, the Performance Specifications, and installation plans. An inspection of the work will be conducted by the City Project Manager or his authorized representative within 10 working days

Any deviations from the approved Statement of Work or installation plans shall be addressed in accordance with the "punch list" process. Upon notification of the correction of the punch list items, the City Project Manager or his authorized

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representative will verify correction of these punch list items within 10 working days. Verification of compliance with the approved Statement of Work, Performance Specifications, and installation plans shall be recorded and shall constitute site acceptance.

City building completion and site acceptance shall not be subject to the installation of equipment or hardware provided under other phases of the Project.

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### 7. FIXED NETWORK EQUIPMENT INSTALLATION

Motorola shall provide a detailed equipment list based upon the final system design in the Detail Design Document as agreed upon by Motorola and the City. Motorola shall install this equipment at the sites listed below:

#### 7.1 TRANSMITTER RECEIVER SITE PRIME SITE — CRS

Motorola shall provide, install, and optimize:

1. Smart Zone Controller
2. Trunked Terminals
3. Telco Interconnect
4. DIUs
5. Prime site controller, and Back up Prime site controller
6. T-Bar switch
7. Comparators
8. USCI equipment
9. Data Broadcast equipment
10. TeNSr Network Server
11. Simulcast test equipment
12. Remote site controller
13. GPS/RB frequency standard
14. Repeater stations
15. Antenna systems
16. Mutual Aid repeaters
17. Ambassador Electronics Bank
18. Conventional radio CEB's

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19. Logging Recording equipment
20. Spares
21. Racks
22. Manuals
23. Master Clock
24. Microwave equipment
25. MOSCAD fault management system w/terminal (Optional)
26. UPS system
27. CADI interface server

### **7.2 TRANSMITTER RECEIVER SITE REMOTE SITE — FT. MILEY**

Motorola shall provide, install, and optimize:

1. Remote site controller
2. TeNSr network server
3. Repeaters
4. GPS/RB frequency standard
5. Antenna systems
6. Racks
7. Microwave equipment
8. MOSCAD fault management component w/port for terminal (Optional)
9. UPS system

### **7.3 TRANSMITTER RECEIVER SITE REMOTE SITE — ONE MARKET PLAZA**

Motorola shall provide, install, and optimize:

1. Remote site controller

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2. TeNSr network server
3. Repeaters
4. GPS/RB frequency standard
5. Antenna systems
6. Racks
7. Microwave equipment
8. MOSCAD fault management component w/port for terminal (Optional)
9. UPS system

### **7.4 TRANSMITTER RECEIVER SITE REMOTE SITE — FOREST HILL**

Motorola shall provide, install, and optimize:

1. Remote site controller
2. TeNSr network server
3. Repeaters
4. GPS/RB frequency standard
5. Antenna systems
6. Racks
7. Microwave equipment
8. MOSCAD fault management component w/port for terminal (Optional)
9. UPS system

### **7.5 TRANSMITTER RECEIVER SITE REMOTE SITE — SF STATE UNIVERSITY**

Motorola shall provide, install, and optimize:

1. Remote site controller
2. TeNSr network server



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3. Repeaters
4. GPS/RB frequency standard
5. Antenna systems
6. Racks
7. Microwave equipment
8. MOSCAD fault management component w/port for terminal (Optional)
9. UPS system

### **7.6 TRANSMITTER RECEIVER SITE REMOTE SITE — BERNAL HEIGHTS**

Motorola shall provide, install, and optimize:

1. Remote site controller
2. TeNSr network server
3. Repeaters
4. GPS/RB frequency standard
5. Antenna systems
6. Racks
7. Microwave equipment
8. MOSCAD fault management component w/port for terminal (Optional)
9. UPS system

### **7.7 TRANSMITTER RECEIVER SITE REMOTE SITE — SOUTH HILL**

Motorola shall provide, install, and optimize:

1. Remote site controller
2. TeNSr network server
3. Repeaters

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4. GPS/RB frequency standard
5. Antenna systems
6. Racks
7. Microwave equipment
8. MOSCAD fault management component w/port for terminal (Optional)
9. UPS system

### **7.8 TRANSMITTER RECEIVER SITE REMOTE SITE — CLAY JONES**

Motorola shall provide, install, and optimize:

1. Remote site controller
2. TeNSr network server
3. Repeaters
4. GPS/RB frequency standard
5. Antenna systems
6. Racks
7. Microwave equipment
8. MOSCAD fault management component w/port for terminal (Optional)
9. UPS system

### **7.9 TRANSMITTER RECEIVER SITE REMOTE SITE — PRESIDIO (OPTIONAL SITE – COVERAGE ENHANCEMENT PHASE)**

Motorola shall provide, install, and optimize:

1. Remote site controller
2. TeNSr network server
3. Repeaters

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4. GPS/RB frequency standard
5. Antenna systems
6. Racks
7. Microwave equipment
8. MOSCAD fault management component w/port for terminal (Optional)
9. UPS system

### 7.10 TRANSMITTER RECEIVER SITE REMOTE SITE — POTRERO HILL (OPTIONAL SITE - COVERAGE ENHANCEMENT PHASE)

Motorola shall provide, install, and optimize:

1. Remote site controller
2. TeNSr network server
3. Repeaters
4. GPS/RB frequency standard
5. Antenna systems
6. Racks
7. Microwave equipment
8. MOSCAD fault management component w/port for terminal (Optional)
9. UPS system

### 7.11 RCS CONSOLES—INSTALLATION AND CUT-OVER

A cut-over plan shall be developed by Motorola and the City to ensure that the interruption of communications shall be minimized during the transition. The cut-over plan shall be submitted to the City for review and approval. Upon completion of installation for each of the 2 RCS systems that portion of the RCS system shall be tested in accordance with the acceptance test plan.

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### **7.11.1 Site 1: (CCE1) at The Prime Site**

Motorola shall provide, install, and optimize:

1. Console control equipment (CCE1)
2. TeNSr network server
3. UPS system
4. MOSCAD fault manager system (Optional)
5. DTIS operator position (local)
6. RCSM terminal

### **7.11.2 Site 2: Combined Dispatch (CCE2) at CECC.**

Motorola shall provide, install, and optimize:

1. Elite network server and LAN
2. RCS CAD interface server
3. Console control equipment (CCE2)
4. SFPD Console terminal equipment
5. SFFD Console terminal equipment
6. DPH Console terminal equipment
7. OES Console terminal equipment.
8. DTIS Console equipment.
9. PUC software and devices
10. Loop Switching equipment
11. TeNSr network server
12. MOSCAD fault management equipment w/terminal (Optional)
13. UPS system

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14. Backup control stations and antenna systems
15. SmartZone user terminal
16. Long term recording system

### **7.11.3 Site 3: DPT**

Motorola shall provide, install, and optimize:

1. Console terminal equipment (remote)
2. Elite LAN network
3. UPS system

### **7.11.4 Site 4: Sheriff**

Motorola shall provide, install, and optimize:

1. Console terminal equipment (remote) to CCE1
2. UPS system

### **7.11.5 Site 5: Water**

Motorola shall provide, install, and optimize:

1. Console terminal equipment (remote) to CCE1
2. Remote control units
3. Elite LAN network
4. Console furniture
5. UPS system
6. Integration of existing CCTV, paging, and PA systems

### **7.11.6 Site 6: Rankin Maintenance Facility (DET)**

Motorola shall provide, install, and optimize:

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1. CCE1 Console terminal equipment (remote)
2. Elite LAN network
3. TeNSr network server
4. TRSM terminal
5. RCSM terminal
6. MOSCAD fault management equipment w/terminal (Optional)
7. SmartZone terminal

### 7.12 COVERAGE ENHANCEMENT AREAS

#### 7.12.1 Hall of Justice

##### Jail Annex

Motorola shall provide, install, and optimize:

1. A Prism Plus bi-directional amplifier
2. An antenna into each floor of each pod
3. A MicroFill amplifier and leaky-feeder on the ground floor
4. Roof donor antenna

##### Underground Parking

Motorola shall provide, install, and optimize:

1. Prism Plus bi-directional amplifier
2. MicroFill amplifier
3. Leaky-feeder in an "S" configuration
4. Roof donor antenna

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

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### 7.12.2 San Bruno Jails

#### Jail #3

Motorola shall provide, install, and optimize:

1. Parabolic grid antenna
2. Prism Plus bi-directional amplifier
3. Parabolic grid antenna feeder for Jail #7 and Annex building
4. MicroFill amplifier
5. Panel antennas on each floor
6. Leaky-feeder in the basement area

#### Jail #7

Motorola shall provide, install, and optimize:

1. Prism Plus bi-directional amplifier
2. Antennas for each floor
3. Roof donor antenna

#### Annex

Motorola shall provide, install, and optimize:

1. Prism Plus bi-directional amplifier
2. Antennas spaced throughout the annex
3. Roof donor antenna

### 7.12.3 Moscone Center

Motorola shall provide, install, and optimize:

1. Prism Plus bi-directional amplifiers distributed throughout the center
2. Roof donor antenna

## **EXHIBIT B: STATEMENT OF WORK AND SERVICES**

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### **7.12.4 MUNI Tunnel Network**

Motorola shall provide, install, and optimize:

1. A MicroLite system with single mode 1310 dark fiber running from the Civic Center Station to the Portals at Twin Peaks, Sunset Tunnel, and Civic Center Station.
2. 3/4 in. leaky-feeder with bi-directional amplifiers at 1200 ft intervals throughout the tunnels.
3. Antennas and amplifiers located in the stations.
4. Andrew Corporation alarm modules tied to the BART alarm system.
5. An 8-hour UPS system.

### **7.12.5 San Francisco Airport**

City will provide circuits from the airport to CRS.

Motorola shall provide, install, and optimize:

1. Two 800 MHz Mutual Aid stations and related Antenna Systems
2. Two BIMS at CRS CEB



## **EXHIBIT B: STATEMENT OF WORK AND SERVICES**

---

### **8. SYSTEM INTEGRATION/SYSTEM OPTIMIZATION TASKS**

For the purpose of this document, the terms System Integration and System Optimization are considered synonymous. The term optimized is used to define the desired final status of a site or subsystem.

#### **8.1 GENERAL SYSTEM INTEGRATION TASKS**

System Integration for all systems includes the following tasks:

1. Install all required hardware and/or software.
2. Install, verify, and document all Product Service Directives (PSDs) as required.
3. Install, verify, and document all required board jumpers as required.
4. Verify and document the proper configuration and interconnection of all site components and interfaces.
5. Verify and document testing of all telco and/or microwave circuits.
6. Test all spare boards.
7. Verify that Department-supplied backup AC power systems (as available) conform to published Motorola equipment specifications and load requirements.
8. Adjust and document all end-to-end audio and data levels per manual.
9. Verify all system features and parameters.
10. Produce interface control document as described in the Performance Specifications

Any City equipment that requires replacement or removal shall be delivered to a City-identified location within the City and County of San Francisco.

#### **8.2 CENTRAL CONTROLLER INTEGRATION**

The following System Integration tasks shall be performed for SmartZone central controllers:

1. Verify card cage configurations are correct.
2. Test and verify all required interfaces (repeater, telco, modem, system manager, etc.).

## **EXHIBIT B: STATEMENT OF WORK AND SERVICES**

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3. Adjust and document all levels per manual.
4. Test manual operation of each board.
5. Test all boards under control of system software.
6. Test central channel selections.
7. Test voice channel selections.
8. Test call processing.
9. Test manual reset function.
10. Verify failsoft operation.
11. Test automatic reset function.
12. Test customer software options (including fleet map).
13. Test all switch over functions in the redundant controller configuration.

### **8.3 REPEATER INTEGRATION**

The following System Integration tasks shall be performed for SmartZone Trunked Repeaters:

1. Test repeater functions.
2. Set and document repeater levels (audio, RF and control).
3. Test call processing.
4. Test failsoft operation.
5. Test interconnect operation.
6. Test control channel operation.

Tasks 1, 2, and 3 shall be performed for all Mutual Aid stations in the analog mode.

### **8.4 INTEGRATION OF OTHER EQUIPMENT**

The following System Integration tasks shall be performed for the described equipment associated with the SmartZone Trunked System:

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

---

1. Modems/Channel Bank Equipment
2. Test and ensure the functional operation of the microwave on an end to end basis.
3. Verify Astro-Tac mounting configuration
4. Set all module levels on Astro-Tac subsystem
5. Verify and document all cross connections
6. Verify all LED functions
7. Test repeater control functions
8. Test central controller responses
9. Set and document levels on simulcast digital equipment.
10. System Phasing
11. Set, test, and document all audio delay parameters to minimize distortion due to destructive interference.
12. Phase all transmitters in the system to minimize destructive interference with the GPS/frequency standard.
13. Set console audio levels
14. Test Secure operations if applicable
15. Test console priority

### 8.5 RCS INTEGRATION

The following Systems Integration tasks shall be performed for console systems:

#### Central Electronics Bank

1. Test all new CEB interfaces for proper performance.
2. Test and document all CEB diagnostics.
3. Test all new console options at CEB.
4. Verify all new punch block assignments and cross connects.

## **EXHIBIT B: STATEMENT OF WORK AND SERVICES**

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### **Operator Positions**

1. Test all operator position for proper performance.
2. Test and document all operator diagnostics.
3. Test all console options at all operator positions.
4. Test operation of PUC at each position
5. Test 911 I/F
6. Test Recorder I/F
7. Test PSTN I/F
8. Test I/OS
9. Test RTS/CTS
10. Test CAD Interface
11. Test conventional channels

## **8.6 FIXED NETWORK EQUIPMENT TESTING**

### **8.6.1 Central Controllers**

Motorola shall complete the following tasks:

1. Install the site controller
2. Test repeater interface cables
3. Test telco interface cables
4. Test data modem interfaces
5. Install controller grounding
6. Terminate all necessary connections
7. Install and verify all board jumpers and straps
8. Ensure card cage configuration is correct

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

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9. Make sure repeater interfaces are correct
10. Verify telco interface is correct
11. Install and verify correct software
12. Install modifications
13. Install and verify all Product Service Bulletins (PSBs)
14. Measure and set DC power supplies
15. Test manual operation of each board
16. Test all spare boards
17. Test all boards under software control
18. Test control channel selections
19. Test voice channel selections
20. Test call processing
21. Test manual reset
22. Verify failsoft operation
23. Test auto reset
24. Test and verify modem interfaces
25. Test customer software options available at time of optimization
26. Test system manager's interface
27. Test centralized telephone interface shelf
28. Test console wireline interface
29. Test cross patch operations
30. Complete documentation (final package to the City)
31. Verify proper configuration of all software versions

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

---

### 8.6.2 Repeaters

Motorola shall complete the following tasks:

1. Install repeaters
2. Install all repeater interfaces
3. Install repeater grounding
4. Verify repeater configuration
5. Install all modifications
6. Install and verify all Product Service Bulletins (PSB)
7. Test repeater functions
8. Set repeater levels
9. Set system levels
10. Test all repeater interfaces
11. Test call processing
12. Test failsoft operation
13. Test control channel operation
14. Test end-to-end levels
15. Test data deviation
16. Complete documentation—(final package to the City)
17. Verify proper configuration of all software versions

### 8.6.3 Data Modems

Motorola shall complete the following tasks:

1. Install modems
2. Install modem interfaces

## **EXHIBIT B: STATEMENT OF WORK AND SERVICES**

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3. Install modem grounding
4. Set modem strapping
5. Test modem operation
6. Test end-to-end communications
7. Complete documentation—(final package to the City)
8. Verify proper configuration of all software versions

### **8.6.4 AstroTac 3000**

Motorola shall complete the following tasks:

1. Install card cages in rack
2. Install all cross-connects
3. Install Astro-Tac grounding
4. Verify rack configuration
5. Install all modifications
6. Install and verify all PSBs
7. Set system program/parameters
8. Set system end-to-end levels
9. Test data to and from Astro-Tac
10. Test Console Priority Interface (CPI) functions
11. Complete documentation—(final package to the City)
12. Verify proper configuration of all software versions

### **8.6.5 Audio Processing Shelves (USCI—DSM II)**

Motorola shall complete the following tasks:

1. Install audio processing shelves

## **EXHIBIT B: STATEMENT OF WORK AND SERVICES**

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2. Install all cross connects
3. Install grounding
4. Verify rack configuration
5. Install all modifications
6. Install and verify all PSBs
7. Set system end-to-end levels
8. Set system delays and audio phasing
9. Test all rack interfaces
10. Test call processing
11. Complete documentation—(final package to the City)

### **8.6.6 Console Interface Unit (CIU)**

Motorola shall complete the following tasks:

1. Install console interface units (CIUs)
2. Install all cross-connects
3. Install system grounding
4. Install all modifications
5. Install and verify all PSBs
6. Test key loader
7. Test and set clear audio
8. Test and set coded audio
9. Test call processing
10. Complete documentation—(final package to the City)



## **EXHIBIT B: STATEMENT OF WORK AND SERVICES**

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### **8.6.7 Microwave**

Motorola and its subcontractor shall complete the following tasks:

1. Install multiplex card units
2. Install power supply
3. Install all cross-connects
4. Install system alarms
5. Apply AC power
6. Install microwave grounding
7. Verify rack configurations
8. Verify all microwave interfaces
9. Test power supplies
10. Test radio, mux and alarm functions
11. Set radio and mux levels
12. Set system levels
13. Install and test loop switching equipment
14. Install dehydration system (if required)
15. Install all modifications
16. Install and verify all PSBs
17. Verify complete system end-to-end levels
18. Verify termination level strapping
19. Complete documentation—(final package to the City)

### **8.6.8 GPS Frequency Standard**

Motorola shall complete the following tasks:

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

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1. Install standard
2. Install all cabling and interfaces required
3. Install grounding
4. Run diagnostics
5. Install all modifications
6. Run and optimize
7. Complete documentation—(final package to the City)

### 8.6.9 Consoles

Motorola shall complete the following tasks:

1. Install all CEB interfaces and AEB equipment
2. Install console options
3. Install RCS interfaces
4. Install BIM and BIM interfaces
5. Install console grounding
6. Install all modifications
7. Install and verify all PSBs
8. Program CEB and operator positions
9. Test CEB diagnostics
10. Test operator position diagnostics
11. Install and Test all RCS0 interfaces
12. Test all console options
13. Set end-to-end trunked system levels
14. Complete documentation—(final package to the City)

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

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### 9. USER EQUIPMENT INSTALLATIONS

#### 9.1 CONTROL STATIONS FOR USER DEPARTMENTS

The City shall provide, install and optimize:

1. Emergency power
2. Space adequate to house control stations
3. Electrical outlets as specified by Motorola
4. Earth ground within 5' of control station location, if desired by Department
5. Environmental conditions for proper equipment operation

Motorola shall provide, install, and optimize:

1. Spectra Console and Astro Spectra Console
2. Remote Deskset DGT 9000
3. 800 MHz antenna
4. Antenna feed line and connectors (50 ft. average of feed line per site)
5. PolyPhaser lightning protection
6. AC power routing
7. Spare equipment

All control station radio checkout and programming tasks associated with control stations shall be performed by Motorola as detailed in Appendix F, Facilities Requirements. Motorola shall assist the City in developing its fleet map and radio configuration. Each user groups shall be limited to one template per control station type. Template revisions shall be limited to one per department control station type. The City Departments shall provide the required information in accordance with the Master Project Schedule. Once the template and configuration have been approved by City Project Manager, Motorola shall program all control stations. Any changes to the radio programming or template after City approval, due to City requested changes, will require a change order.

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

### 9.2 DEPARTMENT MOBILES

The Department will provide (if installation work is completed at department provided locations):

8. Space adequate to house Department equipment, during installation
9. Electrical outlets as specified by Motorola
10. Suitable location for mobile installations for all seasons

Motorola shall provide, install, and optimize:

11. MCS 2000 Model II and Astro spectra, Model A4 (dash mount Type A basic)
12. MCS 2000 Model III and Astro spectra, Model A7 (dash mount Type B with keypad)
13. MCS 2000 Model III and Astro spectra Model A7 (dash mount Type B with keypad and encryption)
14. MCS 2000 Model II and Astro spectra Model A4 (trunk mount Type A)
15. MCS 2000 Model III and Astro spectra Model A7 (trunk mount Type B with keypad)
16. MCS 2000 Model III and Astro spectra Model A7 (trunk mount Type B with keypad and encryption)

All mobile radio checkout, installation, and programming tasks shall be performed by Motorola as detailed in Appendix F, Facilities Requirements. Motorola shall assist the City in developing its fleet map and radio configuration. Each user group shall be limited to one template per mobile type. Template revisions shall be limited to one per department per mobile type. The City Departments shall provide the required information in accordance with the Master Project Schedule. Once the template and configuration have been approved by the City Project Manager Motorola shall program all mobiles. Any changes to the radio programming or template after City approval, due to City requested changes, will require a change order.

### 9.3 DEPARTMENT PORTABLE UNITS

Motorola shall provide, install, and optimize:

1. MTS 2000 Model I and Astro saber Model I (Type A basic)
2. MTS 2000 Model III and Astro saber Model III (Type B with keypad)

## **EXHIBIT B: STATEMENT OF WORK AND SERVICES**

---

3. MTS 2000 Model I and Astro saber Model I (Type B with keypad and encryption)
4. MTS 2000 Model I and Astro saber Model I (Type A with encryption)
5. Ruggedized ASTRO SABER Type II
6. Battery charger—single unit, rapid rate charge
7. Battery charger—multi unit, rapid rate charge
8. Portable radio battery intrinsically safe
9. Belt clips
10. Surveillance, earpiece, microphone and PTT
11. Vehicle adapter

All portable radio checkout and programming tasks associated with portable radios shall be performed by Motorola as detailed in Appendix F, Facilities Requirements. Motorola shall assist the City in developing its fleet map and radio configuration. Each user groups shall be limited to one template per portable type. Template revisions shall be limited to one per department per portable type. The City Departments shall provide the required information in accordance with the Master Project Schedule. Once the template and configuration have been approved by the City Project Manager Motorola shall program all portables. Any changes to the radio programming or template after City approval, due to City requested changes, will require a change order.

### **9.4 SPECIAL OPERATION VEHICLE EQUIPMENT**

Motorola shall provide, install and optimize:

1. Special operations vehicle equipment

### **9.5 TEST EQUIPMENT**

Motorola shall provide and optimize:

1. Test equipment

## EXHIBIT B: STATEMENT OF WORK AND SERVICES

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### 10. SYSTEM DOCUMENTATION

The following documentation shall be provided by Motorola for all subsystems:

1. Equipment inventory documentation, including serial numbers, physical location and final mode/channel configuration
2. Site inspection documentation
3. Equipment performance documentation
4. Copies of customer signed completion certificates
5. Drawings of all equipment rooms, layouts, wiring diagrams, punch block layouts, special circuits.
6. Supply drawings and documentation as specified in the Detail Design Document
7. Maintenance manuals including any applicable Product Service Bulletins
8. Documentation required in the CDRL

In the event a CDRL submittal is not approved, Motorola expects the City to provide sufficient dialogue detailing the document deficiencies and desired changes so Motorola can make a single revision to the document in order to obtain approval. Motorola would not expect to provide more than one revision for any CDRL submittal.

## **EXHIBIT B: STATEMENT OF WORK AND SERVICES**

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### **11. PROJECT CLOSE OUT**

Close office/warehouse facility, and archive documents.

## Coverage Maps Index

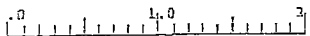
- M1 8 Site On Street Simulcast Base to Mobile
- M2 8 Site On Street Mobile to Voting Receiver
- M3 9 Site Presidio On Street Simulcast Base to Mobile
- M4 9 Site Presidio On Street Mobile to Voting Receiver
- M5 9 Site Potrero Hill On Street Simulcast Base to Mobile
- M6 9 Site Potrero Hill On Street Mobile to Voting Receiver
- M7 10 Site On Street Mobile Simulcast Base to Mobile
- M8 10 Site On Street Mobile to Voting Receiver
- M9 CRS Mutual Aid Base to Mobile
- M10 CRS Mutual Aid Mobile to Receiver
  
- P1 8 Site On Street Simulcast Base to Portable
- P2 8 Site On Street Portable to Voting Receiver
- P3 8 Site In Building Composite Simulcast Base to Portable
- P4 8 Site In Building Composite Portable to Voting Receiver
- P5 9 Site Presidio On Street Simulcast Base to Portable
- P6 9 Site Presidio On Street Portable to Voting Receiver
- P7 9 Site Presidio In Building Composite Simulcast Base to Portable
- P8 9 Site Presidio In Building Composite Portable to Voting Receiver
- P9 9 Site Potrero Hill On Street Simulcast Base to Portable
- P10 9 Site Potrero Hill On Street Portable to Voting Receiver
- P11 9 Site Potrero Hill In Building Composite Simulcast Base to Portable
- P12 9 Site Potrero Hill In Building Composite Portable to Voting Receiver
- P13 10 Site On Street Simulcast Base to Portable
- P14 10 Site On Street Portable to Voting Receiver
- P15 10 Site In Building Composite Simulcast Base to Portable
- P16 10 Site In Building Composite Portable to Voting Receiver
- P17 CRS Mutual Aid Base to Portable
- P18 CRS Mutual Aid Portable to Receiver
  
- F1 8 Site 40 dbu Field Strength Prediction
- F2 8 Site 25 dbu Field Strength Prediction
- F3 8 Site 5 dbu Field Strength Prediction
- F4 10 Site 40 dbu Field Strength Prediction
- F5 10 Site 25 dbu Field Strength Prediction
- F6 10 Site 5 dbu Field Strength Prediction



The following MOZAIK coverage maps were evaluated at 95% reliability and an audio quality of Circuit Merit 3 within the area of the City and County of San Francisco. The On Street maps show the system coverage for both portables and mobiles on the streets of the coverage area. As the city requested, the portable radios must meet specific in building requirements based on different locations within the city. These requirements are further explained below. There are four situations illustrated for both the on street and the in building coverage. The 8 site coverage area includes Clay Jones, One Market Plaza, CRS, Bernal Heights, South Hill, Forest Hill, SF State and the Fort Miley Water Tower. There are 2 different 9 site situations, both including the above 8 sites. One includes Potrero Hill and the other includes Presidio. The last site combination is all 10 sites. The Central Radio Mutual Aid site coverage map is the final set of maps included in each of the mobile and portable sections.

The portable in building composite maps are put together using three different building losses based on the City's recommendations. An area of 30 dB building loss is shown in the financial district. This area encompasses the Clay Jones and One Market Plaza Sites. 23 dB building losses cover the dense areas of San Francisco, including the Potrero Hill site, a small area by San Francisco State University, the vicinity of the Stonestown Shopping Center and the area surrounding the UC Medical Center. The remainder of the City has in building coverage predicted for 15 dB buildings.

The specific areas affected by each of these different building coverages are outlined on the detailed street map, and clearly labeled based on which building loss was used to predict coverage. The composite coverage maps show borders around each of these areas, as well as different color schemes to differentiate the three types of building loss. If it is not marked otherwise, the coverage predicted is for 15 dB buildings.



SCALE : 1.25 MILES PER INCH

Calculated values are derived using average loss values for surroundings. Some low lying heavily wooded or urban areas may result in lower values than those indicated.

**EXHIBIT C: PROJECT USER EQUIPMENT LIST**

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4. Exhibit C  
Equipment list

**EXHIBIT C: PROJECT USER EQUIPMENT LIST**

## EXHIBIT C: PROJECT USER EQUIPMENT LIST

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## EXHIBIT C: PROJECT USER EQUIPMENT LIST

### EQUIPMENT QUANTITY SUMMARY

Equipment Description	SFPD	SFFD	DPH	DPT	Sheriff	Water	RecPark	OES	Other	Totals
<b>User Equipment</b>										
<b>Radio Units</b>	1955	510	136	450	794	48	136	23	146	4198
<b>Portables</b>	1540	230	90	364	700	46	39	20	71	3100
MTS2000, Model I, w/o Kpd.	0	0	0	309	650	39	27	0	50	1075
ASTRO XTS3000, Model I, w/o Kpd.	1275	0	0	0	0	0	0	17	0	1292
ASTRO SABER, Model I, w/o Kpd, Ruggedized.	0	199	0	0	0	0	0	0	0	199
ASTRO XTS3000, Model I, w/o Kpd, w/Encrypt.	0	0	60	0	0	0	0	0	0	60
MTS2000, Model III, w/Kpd.	0	0	0	55	50	7	0		21	133
ASTRO XTS3000, Model III, w/Kpd.	175	0	0	0	0	0	0	3	0	178
ASTRO SABER, Model II, w/Kpd, Ruggedized.	0	25	0	0	0	0	0	0	0	25
ASTRO XTS3000, Model III, w/Kpd, w/ Encrypt.	90	0	30	0	0	0	12	0	0	132
ASTRO SABER, Model II, w/Kpd, w/ Encrypt, Ruggedized.	0	6	0	0	0	0	0	0	0	6
<b>Mobiles</b>	385	230	30	81	80	0	96	3	50	955
<b>Dash Mount</b>	274	0	30	81	80	0	96	3	50	614
MCS2000, Model II, w/o Kpd, Dash Mount.	0	0	0	0	0	0	0	0	0	0
ASTRO Spectra, Model A4, w/o Kpd, Dash Mount.	0	0	0	0	0	0	0	0	0	0
ASTRO Spectra, Model A4, w/o Kpd, Encrypt, Dash Mount.	0	0	0	0	0	0	0	0	0	0
MCS2000, Model III, w/Kpd, Dash Mount.	0	0	0	81	80	0	92	0	50	303
ASTRO Spectra, Model A7, w/Kpd, Dash Mount	249	0	0	0	0	0	0	3	0	252
ASTRO Spectra, Model A7, w/Kpd, Encrypt, Dash Mount	25	0	30	0	0	0	04	0	0	59
<b>Trunk Mount</b>	111	230	0	0	0	0	0	0	0	341
MCS2000, Model II, w/o Kpd, Trunk Mount.	0	0	0	0	0	0	0	0	0	0
ASTRO Spectra, Model A4, w/o Kpd, Trunk Mount.	0	0	0	0	0	0	0	0	0	0
ASTRO Spectra, Model A4, w/o Kpd, Encrypt, Trunk Mount.	0	0	0	0	0	0	0	0	0	0
MCS2000, Model III, w/Kpd, Trunk Mount.	0	0	0	0	0	0	0	0	0	0
ASTRO Spectra, Model A7, w/Kpd, Trunk Mount.	111	230	0	0	0	0	0	0	0	341
ASTRO Spectra, Model A7,	0	0	0	0	0	0	0	0	0	0

## EXHIBIT C: PROJECT USER EQUIPMENT LIST

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Equipment Description	SFPD	SFFD	DPH	DPT	Sheriff	Wafer	RecPark	OES	Other	Totals
w/Kpd, Encrypt, Trunk Mount										

## EXHIBIT C: PROJECT USER EQUIPMENT LIST

Equipment Description	SFPD	SFFD	DPH	DPT	Sheriff	Water	RecPark	OES	Other	Totals
Control Stations	30	50	16	5	14	2	5	15	10	147
ASTRO Spectra Console, w/Kpd	0	50	0	5	14	2	0	0	10	81
ASTRO Spectra Console, w/Kpd, Encrypt	30	0	16	0	0	0	5	15	0	66
Accessories										
Portables										
Battery	600	115	45	100	0	25	5	10	14	928
Charger, single	225	25	30	55	61	14	5	3	17	435
Charger, 6 unit	226	20	10	43	85	6	5	3	15	413
Shoulder Mike	1540	250	90	364	700	46	29	20	100	3139
Belt Clips	400	230	90	364	100	46	10	20	100	1360
Holsters	1540	0	90	364	700	0	39	0	100	2833
Antenna	1540	230	90	364	700	46	39	20	100	3129

## EXHIBIT C: PROJECT USER EQUIPMENT LIST

Equipment Description	SFPD	SFPD	DPH	DFT	Sheriff	Water	RecPark	OES	Other	Totals
Console Equipment	CCE2	CCE2	CCE2	CCE1	CCE1	CCE1	N/A	CCE2	BOTH	
Centracom Gold Elite										
Consoles	16	8	6	4	1	1	0	6	4	46
Local	16	8	6	0	0	0	0	6	3	39
Remote	0	0	0	4	1	1	0	0	1	7
Switched	0	0	0	0	0	0	0	0	0	0
Expansion Port	0	0	0	0	0	0	0	8	10	18
Local	0	0	0	0	0	0	0	4	10	14
Remote	0	0	0	0	0	0	0	4	0	4
Switched	0	0	0	0	0	0	0	0	0	0
System Managers	0	0	0	0	0	0	0	0	17	17
									[22]	[22]
RCSM Console Data Base Manager see note CDBM	0	0	0	0	0	0	0	0	[3]	[3]
Local	0	0	0	0	0	0	0	0	[2]	[2]
Remote	0	0	0	0	0	0	0	0	[1]	[1]
MTSM Moscad Fault Manager see note MTSN	0	0	0	0	0	0	0	0	[8]	[8]
Local	0	0	0	0	0	0	0	0	See note [3]	[3]
Remote	0	0	0	0	0	0	0	0	[5]	[5]
TRSM SmartZone Network Manager	0	0	0	0	0	0	0	0	6	6
Local	0	0	0	0	0	0	0	0	1	1
Remote	0	0	0	0	0	0	0	0	5	5
CERSM Moscad Fault Manager	0	0	0	0	0	0	0	0	11	11
Remote Terminals	0	0	0	0	0	0	0	0	6	6
Switched (portable)	0	0	0	0	0	0	0	0	5	5
System Manager Prntr	0	0	0	0	0	0	0	0	21	21
RCSM Expansion Ports	0	0	0	0	0	0	0	1	0	1
Local	0	0	0	0	0	0	0	1	0	1
Remote	0	0	0	0	0	0	0	0	0	0
Switched	0	0	0	0	0	0	0	0	0	0

Notes: CDBM-- The Console Data Base Manager and Alias Database Manager requires no hardware. It is software that operates on the maintenance operators position at CRS, CECC, and RMF.

MTSM- This is a software package only, operating on provided MOSCAD terminal.

Items between brackets [ ] are application software only.



## EXHIBIT C: PROJECT USER EQUIPMENT LIST

Equipment Description	SFPD	SFFD	DPH	DPT	Sheriff	Water	RecPark	OES	Other	Totals
Accessories										
Consoles										
17" touch screen	16	8	6	4	1	1	0	6	4	46
14" touch screen	0	0	0	0	0	0	0	0	0	0
Rack Mounted Screen	0	0	0	0	0	0	0	0	0	0
Desktop Mic, PTT	0	0	0	0	1	0	0	4	3	8
Headset, PTT	43	16	6	4	1	1	0	6	3	80
Headset, non-PTT	0	0	0	0	0	0	0	0	0	0
Footswitch	16	8	6	4	1	1	0	6	4	46
Pers. Utility Control	16	8	6	4	1	1	0	6	4	46
Jack Box	70	16	12	8	2	2	0	12	8	130
Mouse	16	8	6	4	1	1	0	6	4	46
Keyboard	16	8	6	4	1	1	0	6	4	46
User Ids	330	52	106	30	10	10	n/a	10	32	580
Remote Control Units	0	0	0	0	0	19	0	0	15	34
RTS/CTS	16	0	0	0	0	0	0	0	0	16
PSTN Interfaces	2	2	2	0	0	0	0	2	0	8
Loop start - console	1	1	1	0	0	0	0	0	0	3
Loop start - TRS	5	0	0	0	0	0	0	0	0	5
Recorder Ports	26	8	9	0	0	0	0	2	2	47
Conventional	20	7	8	0	0	0	0	2	2	39
PSTN	6	1	1	0	0	0	0	0	0	8
Trunked	0	0	0	0	0	0	0	0	0	0

## EXHIBIT C: PROJECT USER EQUIPMENT LIST

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### SAN FRANCISCO POLICE DEPARTMENT NOTES

1 mobile to be installed on a boat.  
50 mobiles shall be covert installations.  
27 mobile installations in Special Ops Vehicles.  
SFPD dispatch at CECC.  
Quantities include operational spares.

## **EXHIBIT C: PROJECT USER EQUIPMENT LIST**

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### **SAN FRANCISCO FIRE DEPARTMENT NOTES**

All portables shall be waterproof.  
Spare batteries shall be ruggedized.  
2 mobile installations on boats.  
Shoulder microphones shall be waterproof.  
SFFD dispatch at CECC.

# EXHIBIT C: PROJECT USER EQUIPMENT LIST

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## DEPARTMENT OF PUBLIC HEALTH NOTES

DPH dispatch at CECC

## **EXHIBIT C: PROJECT USER EQUIPMENT LIST**

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### **DEPARTMENT OF PARKING AND TRAFFIC NOTES**

DPT dispatch at HoJ (850 Bryant).

Consoles to be installed at site 12 (Hall of Justice)

## EXHIBIT C: PROJECT USER EQUIPMENT LIST

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### SHERIFF DEPARTMENT NOTES

Sheriff dispatch at Jail #9.

## **EXHIBIT C: PROJECT USER EQUIPMENT LIST**

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### **WATER DEPARTMENT NOTES**

Water dispatch at Site 104  
(1990 Newcomb).

32 vehicular adapters for portable radios shall be provided and installed.

## EXHIBIT C: PROJECT USER EQUIPMENT LIST

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### DEPARTMENT OF RECREATION & PARKS NOTES

10 mobiles require "horns and lights" paging feature.



## **EXHIBIT C: PROJECT USER EQUIPMENT LIST**

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### **OFFICE OF EMERGENCY SERVICES NOTES**

OES dispatch at CECC.

Consoles and RCSM to be installed at CECC (site 911).

## EXHIBIT C: PROJECT USER EQUIPMENT LIST

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### OTHER (DTIS SYSTEM MAINTENANCE AND SPARES)

DTIS dispatch consoles located at:

RMF (901 Rankin)

Prime Site (CRS, Twin Peaks)

CECC (2 consoles)

MTSMs provided at each MTS site. (Access Ports to MTS for Portable MTSMs acceptable)

1 TRSM and 1 CERSM provided at Prime Site.

1 RCSM provided at CECC.

1 RCSM co-located with CCE1.

2 TRSMs and 2 CERSMs provided at CECC.

1 TRSM, 1 MTSM, 1 RCSMs and 1 CERSM provided at RMF.

5 portable CERSMs shall be provided.

1 TRSM and 1 CERSM provided at CFAS

1 TRSM and 1 CERSM provided at DPW

## EXHIBIT C: PROJECT USER EQUIPMENT LIST

### 11. TEST EQUIPMENT QUANTITIES

#### Test Equipment

Note: All test equipment shall be delivered within 60 days or as soon thereafter as possible of contract award.

Description	Qty
Communications Systems Analyzer/Service Monitor - capable of testing the City's trunking formats/parameters	4
TTC FireBerd 6000, or equivalent	1
TTC T-Berd 209, or equivalent	2
DSO - (Tektronics TK 2212, or equivalent)	3
6-unit Battery Analyzer/Conditioner *	20
Laptop PC (same specifications as CERSM)	5
Black Box Serialtest Version 4.2 Diagnostic Software - Code TD113V	1
Microwave Frequency Counter/with Power Meter (to 26.5 GHz), EIP or equivalent	1
Microwave Spectrum Analyzer (to 26.5 GHz)	1
Patch Cords, SMA male to SMA male connectors, to 26.5 GHz	5
Encryption key loader (w/cables) *	6
Encryption test set (w/cables) *	2
TIMS hp 4935, or equivalent	4
Celwave Wideband Wattmeter, Mdl 4374, or equivalent	4
Power Meter, with 50 ohm power sensor (100KHz -26.5 GHz), -25 to +33 dBm power range.	1
Fluke 87 True RMS multimeters	3

\* Units to be shipped when radio units are delivered.

\*\* Equipped, as a minimum, with a 17 inch color monitor (supporting a minimum of 1024X768 pixels, non-interlaced, 0.28 maximum dot pitch, compliant with the City's VDT ordinance), 32 MB RAM, a 2 GB hard disk drive, a V.34 data modem, a 8X CD ROM reader, a 3.5" floppy disk drive, and suitable printing device (the workstations shall have sufficient memory and processing power to support the System Manager requirements of the CERS, the TRS, the MTS or the RCS (to insure interchangeability of System Manager CPUs). . IBM PC systems shall utilize a 150 MHz Pentium processor, minimum.).

**EXHIBIT C: PROJECT USER EQUIPMENT LIST**

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**EXHIBIT D: PROJECT COST ITEMIZATION SCHEDULE  
Phase I and II Summary**

5. Exhibit D  
Cost schedule

**Services**

<b>Site Upgrade Work (Construction, Construction Management)</b>		<b>\$ 4,135,588.00</b>
One Market Plaza	\$ 271,159.00	
Fort Miley	\$ 366,662.00	
South Hill	\$ 372,783.00	
Forest Hill	\$ 192,775.00	
CRS	\$ 1,617,368.00	
Bernal Heights	\$ 294,875.00	
SF State	\$ 354,396.00	
DTIS Radio Facility Upgrade	\$ 665,570.00	
Contracted Services (Installation, Programming)		\$ 975,196.00
Engineering (System Techs, Engineers, Optimizations)		\$ 2,153,220.00
System Integration (S.I. Personnel, Documentation, Warehouse)		\$ 1,493,449.00
Training		\$ 526,780.00
Freight		\$ 355,925.00
Warranty		\$ 128,311.00
<b>Total Services</b>		<b>\$ 9,768,469.00</b>

**Radio Subscriber Equipment**

Mobile Radio Equipment		\$ 2,348,230.00
Portable Radio Equipment		\$ 7,725,393.00
Control Stations		\$ 782,710.00
<b>Radio Subscriber Total</b>		<b>\$ 10,856,333.00</b>

**Fixed Network Equipment (8 Sites with Staging)**

Microwave System		\$ 7,766,676.00
Test Equipment		\$ 1,512,000.00
Dispatch Equipment		\$ 293,000.00
Coverage Enhancements:		\$ 1,666,995.00
Muni Tunnels	\$2,861,749	
Mandatory Special Areas	769,602	

**System Sub Total**

		\$ 35,494,824.00
<b>System Discount</b>		<b>\$ (1,055,625.00)</b>
<b>Net</b>		<b>\$34,439,199</b>

**Additions:**

Tax		\$ 1,933,166.00
Clay Jones Site Development		\$ 175,000.00

**System Total, phase 1 and phase 2**

**\$36,547,365**

**Exhibit D: Project Cost Itemization  
Phase I**

**Services**

<b>Site Upgrade Work (Construction, Construction Management)</b>		<b>\$ 4,135,588.00</b>
One Market Plaza	\$ 271,159.00	
Fort Miley	\$ 366,662.00	
South Hill	\$ 372,783.00	
Forest Hill	\$ 192,775.00	
CRS	\$ 1,617,368.00	
Bernal Heights	\$ 294,875.00	
SF State	\$ 354,386.00	
DTIS Radio Facility Upgrade	\$ 665,570.00	
<b>Contracted Services</b>		<b>\$ 23,550.00</b>
Training		\$ 375,495.00
Freight		\$ 200,000.00
Warranty		\$ 128,311.00
Engineering (System Techs, Engineers, Optimizations)		\$ 2,153,220.00
System Integration (S.I. Personnel, Documentation, Warehouse)		\$ 1,493,449.00
<b>Total Services</b>		<b>\$ 8,509,613.00</b>

**Radio Subscriber Equipment**

Mobile Radio Equipment		\$ 100,557.50
Portable Radio Equipment		\$ 139,400.80
Control Stations		\$ 49,809.00
Accessories		\$ 19,801.25
<b>Radio Subscriber Total</b>		<b>\$ 309,568.55</b>

Fixed Network Equipment (8 Sites with Staging)		\$ 7,766,676.00
Microwave System		\$ 1,512,000.00
Test Equipment		\$ 293,000.00
Dispatch Equipment		\$ 1,666,995.00
Coverage Enhancements:		\$ 3,631,351.00
Muni Tunnels	\$ 2,861,749.00	
Mandatory Special Areas	\$ 769,602.00	

<b>System Sub Total</b>		<b>\$ 23,689,203.55</b>
<b>System Discount</b>		<b>\$ (583,456.00)</b>
<b>Net</b>		<b>\$ 23,105,747.55</b>
<b>Additions</b>		
Tax		\$ 1,075,598.00
Clay Jones Site Development		\$ 175,000.00

<b><u>System Total, phase 1 only</u></b>		<b><u>\$ 24,356,345.55</u></b>
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**Exhibit D: Project Cost Itemization  
Phase II**

<b>Contracted Services (Installation, Programming)</b>	<b>\$ 951,646.00</b>
<b>Training</b>	<b>\$ 151,285.00</b>
<b>Freight</b>	<b>\$ 155,925.00</b>
<b>Total Services</b>	<b>\$ 1,258,856.00</b>

**Radio Subscriber Equipment**

<b>Mobile Radio Equipment</b>	<b>\$ 2,247,672.50</b>
<b>Portable Radio Equipment</b>	<b>\$ 7,566,190.95</b>
<b>Control Stations</b>	<b>\$ 732,901.00</b>

<b>Radio Subscriber Total</b>	<b><u>\$ 10,546,764.45</u></b>
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<b>System Sub Total, Phase 2 Only</b>	<b>\$ 11,805,620.45</b>
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<b>System Discount</b>	<b>\$ (472,169.00)</b>
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<b>Net</b>	<b>\$ 11,333,451.45</b>
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**Additions:**

<b>Tax</b>	<b>\$ 857,568.00</b>
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<b><u>System Total</u></b>	<b><u>\$ 12,191,019.45</u></b>
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**Exhibit D: Project Cost Itemization Schedule  
Optional Coverage Enhancement Phase**

**Services**

<b>Civil (Construction, Construction Management)</b>		<b>\$ 1,100,439.00</b>
Potero Reservoir	\$ 372,794.00	
Presidio	\$ 727,645.00	
<b>Engineering (System Techs, Engineers, Optimizations)</b>		<b>\$ 73,250.00</b>
<b>System Integration (S.I. Personnel, Documentation, Warehouse)</b>		<b>\$ 32,730.00</b>
<b>Freight</b>		<b>\$ 90,816.00</b>
<b>Warranty</b>		<b>\$ 9,118.00</b>

**Total Services** **\$ 1,306,353.00**

**Fixed Network Equipment** **\$ 788,930.00**

**Microwave System** **\$ 280,540.00**

**Total** **\$ 2,375,823.00**

**Additions:**

**Special Areas of Coverage** **\$ 1,561,602.00**

Candlestick	\$ 373,750.00
Jails 8 & 9	\$ 82,852.00
S.F. General Hospital	\$ 373,750.00
Central Medical	\$ 225,000.00
City Hall	\$ 225,000.00
Treasure Island Fire	\$ 93,750.00
Treasure Island Jail	\$ 93,750.00
Emergency Center	\$ 93,750.00

**System Total** **\$ 3,937,425.00**

**Less System Discount** **\$ (43,140.00)**

**Add Tax** **\$ 143,881.00**

**Total** **\$ 4,038,166.00**

**CERS Manager** **\$ 658,115.00**

    System Discount **\$ (28,562.00)**

    Taxes **\$ 53,512.00**

**CERS Manager Total** **\$ 683,065.00**

**Total Coverage Enhancement Phase** **\$ 4,721,231.00**



**Exhibit D: Project Cost Itemization Schedule  
Wireless Data Network Phase**

<b>Services</b>	<b>\$ 350,000.00</b>
<b>System Integration/Engineering Services</b>	
Project Management	
Engineering	
System Technologists	
Site inspection, installation, optimization	
Computer installation	
Acceptance Testing	
Documentation	
Training	
Warranty	
<b>Freight</b>	<b>\$ 11,000.00</b>
<b>Total Services</b>	<b>\$ 361,000.00</b>
<b>Fixed Network Equipment</b>	<b>\$ 663,682.00</b>
<b>Wireless Data Network Subtotal</b>	<b><u>\$ 1,024,682.00</u></b>
System Discount	<b>\$ (44,472.00)</b>
Taxes	<b>\$ 83,318.00</b>
<b>Wireless Data Network Net Total</b>	<b><u>\$ 1,063,528.00</u></b>

**Exhibit D: Project Cost Itemization Schedule  
Detail Cost Breakdown**

City and County of San Francisco		Citywide 800MHz Radio System Project (CERS)		Motorola Proposal for Bid No. 168		Rev. 7/97		Project Cost Itemization Schedule		Subcontracts		Total		Total	
Item #	Model	Qty	Per Unit	Total	Man-Hours	Labor Hrs	Rate	Total \$	Material Unit	Cost	Unit	Cost	Total \$	Cost	Costs
1								\$1,214,594.00					\$0.00		\$1,214,594.00
2		1						\$0.00				\$234,900.00	\$0.00	\$234,900.00	\$234,900.00
3		1						\$0.00				\$2,151,220.00	\$0.00	\$2,151,220.00	\$2,151,220.00
4		1						\$0.00				\$0.00	\$0.00	\$0.00	\$0.00
5		1						\$0.00				\$0.00	\$0.00	\$0.00	\$0.00
6		0						\$0.00				\$0.00	\$0.00	\$0.00	\$0.00
7		0						\$0.00				\$0.00	\$0.00	\$0.00	\$0.00
8		0						\$0.00				\$0.00	\$0.00	\$0.00	\$0.00
9															
10								\$526,780.00					\$0.00		\$526,780.00
11		0						\$0.00					\$0.00		\$0.00
12		0						\$0.00					\$0.00		\$0.00
13		0						\$0.00					\$0.00		\$0.00
14		0						\$0.00					\$0.00		\$0.00
15		0						\$0.00					\$0.00		\$0.00
16		0						\$0.00					\$0.00		\$0.00
17															
18															
19															
20															
21	****PORTABLES****														
22	****NT5000****														
23	H10X	1075						\$0.00				\$50.00	\$0.00	\$50.00	\$53,750.00
24	202H	1075						\$0.00				\$168,721.25	\$0.00	\$168,721.25	\$1,035,870.00
25	H223	1075						\$0.00				\$52,578.25	\$0.00	\$52,578.25	\$0.00
26	H43	1075						\$0.00				\$78,475.00	\$0.00	\$78,475.00	\$0.00
27	H37	1075						\$0.00				\$539,808.00	\$0.00	\$539,808.00	\$0.00
28	NTN0088	1075						\$0.00				\$43.80	\$0.00	\$43.80	\$47,085.00
29															\$1,976,387.50
30	****ASTRO XTS3000****														
31	H09DX	1292						\$0.00				\$0.00	\$0.00	\$0.00	\$64,600.00
32	H223	1292						\$0.00				\$1,297.35	\$0.00	\$1,297.35	\$1,599,656.20
33	H43	1292						\$0.00				\$34.31	\$0.00	\$34.31	\$44,328.52
34	Q241	1292						\$0.00				\$73.00	\$0.00	\$73.00	\$94,316.00
35	H37	1292						\$0.00				\$0.00	\$0.00	\$0.00	\$0.00
36	NTN0386	1292						\$0.00				\$876.00	\$0.00	\$876.00	\$1,131,792.00
37															\$56,599.60
38	****ASTRO SABER****														
39	H9DX	199						\$0.00				\$0.00	\$0.00	\$0.00	\$9,950.00
40	210H	199						\$0.00				\$1,314.00	\$0.00	\$1,314.00	\$261,486.00
41	H223AJ	199						\$0.00				\$42.35	\$0.00	\$42.35	\$28,327.65
42	H43	199						\$0.00				\$4.38	\$0.00	\$4.38	\$871.62
43	H409	199						\$0.00				\$73.00	\$0.00	\$73.00	\$14,527.00
44	Q241	199						\$0.00				\$546.02	\$0.00	\$546.02	\$21,790.50
45	H37	199						\$0.00				\$0.00	\$0.00	\$0.00	\$68,857.98
46	RTN7573	199						\$0.00				\$0.00	\$0.00	\$0.00	\$0.00
47	NLM4530	199						\$0.00				\$0.00	\$0.00	\$0.00	\$95,878.20
48		199						\$0.00				\$45.99	\$0.00	\$45.99	\$9,152.01
												\$5.84	\$0.00	\$5.84	\$1,162.16
															\$512,003.12

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours Per Unit	Labor Rate	Project Cost Itemization Schedule		Subcontracts Unit Cost	Total \$	Total \$	Total Cost
						Total \$	Material Unit Cost				
City and County of San Francisco											
Civilitywide 800MHz Radio System Project (CERS)											
Motorola Proposal for Bid No. 168											
49											
50	****ASTRO XTS3000**	Model 1 w/o Kpd w/Encrypt	60		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,000.00
51	H00UCBPM6 N	ASTRO DIG XTS 3000	60		\$0.00	\$1,237.35	\$0.00	\$74,241.00	\$0.00	\$0.00	\$74,241.00
52	H223	ALT: BATTERY ULTRA HIGH CAP NICD FM	60		\$0.00	\$34.31	\$0.00	\$2,058.60	\$0.00	\$0.00	\$2,058.60
53	H43	ENH: TRUNKED REMOTE MONITOR	60		\$0.00	\$4,980.00	\$0.00	\$4,980.00	\$0.00	\$0.00	\$4,980.00
54	Q006	ADD: APOC 25 COMMON AIR INTERFACE	60		\$0.00	\$31,900.00	\$0.00	\$21,900.00	\$0.00	\$0.00	\$31,900.00
55	Q274	ADD: DES-OFB AND DES-XL ENCRYPTION	60		\$0.00	\$39,814.20	\$0.00	\$39,814.20	\$0.00	\$0.00	\$39,814.20
56	H37	ADD: SMARTNET SYSTEM PACKAGE	60		\$0.00	\$663.57	\$0.00	\$62,560.00	\$0.00	\$0.00	\$62,560.00
57	NTN0306	CASE, CARRY HIGH ACTIVITY	60		\$0.00	\$43.80	\$0.00	\$2,628.00	\$0.00	\$0.00	\$2,628.00
SECTION TOTAL											
58			133		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$6,650.00
59	****NTS2000****	Model 1 w/o Kpd	133		\$0.00	\$663.60	\$0.00	\$128,158.80	\$0.00	\$0.00	\$128,158.80
60	H01DX	NTS2000 PORTABLE SERIES	133		\$0.00	\$638.75	\$0.00	\$84,953.75	\$0.00	\$0.00	\$84,953.75
61	204H	MTS2000 III 3W 805-870 MHZ	133		\$0.00	\$48.91	\$0.00	\$6,505.03	\$0.00	\$0.00	\$6,505.03
62	H223	ALT: BATTERY FACTORY MUTUAL	133		\$0.00	\$73.00	\$0.00	\$9,709.00	\$0.00	\$0.00	\$9,709.00
63	H43	ENH: TRUNKED REMOTE MONITOR	133		\$0.00	\$109.50	\$0.00	\$14,563.50	\$0.00	\$0.00	\$14,563.50
64	H46	ENH: ONE TOUCH BUTTON	133		\$0.00	\$14,669.50	\$0.00	\$66,797.92	\$0.00	\$0.00	\$66,797.92
65	H37	ADD: SMARTNET SYSTEM PACKAGE	133		\$0.00	\$502.24	\$0.00	\$5,823.40	\$0.00	\$0.00	\$5,823.40
66	NTN0038	CASE, 3.0" HI ACTIVITY ULTRA HI CAP	133		\$0.00	\$43.80	\$0.00	\$5,823.40	\$0.00	\$0.00	\$5,823.40
SECTION TOTAL											
67			178		\$0.00	\$0.00	\$0.00	\$8,900.00	\$0.00	\$0.00	\$8,900.00
68	****ASTRO XTS3000**	Model 1 w/o Kpd	178		\$0.00	\$1,575.35	\$0.00	\$288,212.30	\$0.00	\$0.00	\$288,212.30
69	H00UCHBPM7 N	ASTRO DIG XTS 3000 FULL FEATURE 800	178		\$0.00	\$34.31	\$0.00	\$6,107.18	\$0.00	\$0.00	\$6,107.18
70	H223	ALT: BATTERY ULTRA HIGH CAP NICD FM	178		\$0.00	\$73.00	\$0.00	\$12,994.00	\$0.00	\$0.00	\$12,994.00
71	H43	ENH: TRUNKED REMOTE MONITOR	178		\$0.00	\$109.50	\$0.00	\$19,491.00	\$0.00	\$0.00	\$19,491.00
72	H46	ENH: TRUNKED 1 BTN STATUS/MESSAGE	178		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
73	Q241	ENH: ANALOG OPERATION	178		\$0.00	\$976.00	\$0.00	\$155,928.00	\$0.00	\$0.00	\$155,928.00
74	H37	ADD: SMARTNET SYSTEM PACKAGE	178		\$0.00	\$43.80	\$0.00	\$7,796.40	\$0.00	\$0.00	\$7,796.40
75	NTN0381	CASE, CARRY HIGH ACTIVITY	178		\$0.00	\$43.80	\$0.00	\$7,796.40	\$0.00	\$0.00	\$7,796.40
SECTION TOTAL											
76			25		\$0.00	\$0.00	\$0.00	\$1,250.00	\$0.00	\$0.00	\$1,250.00
77	****ASTRO SABER****	Model II w/o Kpd	25		\$0.00	\$1,314.00	\$0.00	\$32,850.00	\$0.00	\$0.00	\$32,850.00
78	H90DX	ASTRO DIG SABER PORT SERIES	25		\$0.00	\$361.35	\$0.00	\$9,033.75	\$0.00	\$0.00	\$9,033.75
79	212H	ASTRO DIGITAL SABER II 800MHZ PORT	25		\$0.00	\$4.30	\$0.00	\$109.50	\$0.00	\$0.00	\$109.50
80	H223AJ	ALT: BATTERY, RUGGEDIZED FM	25		\$0.00	\$73.00	\$0.00	\$1,825.00	\$0.00	\$0.00	\$1,825.00
81	H43	ENH: TRUNKED REMOTE MONITOR	25		\$0.00	\$546.02	\$0.00	\$8,650.50	\$0.00	\$0.00	\$8,650.50
82	H46	ENH: TRUNKED ONE BUTTON STATUS/MSG	25		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
83	H469	ALT: RUGGEDIZED ASTRO DIGITAL SABER	25		\$0.00	\$481.80	\$0.00	\$12,045.00	\$0.00	\$0.00	\$12,045.00
84	Q241	ENH: ANALOG OPERATION	25		\$0.00	\$5.84	\$0.00	\$146.00	\$0.00	\$0.00	\$146.00
85	H37	ADD: SMARTNET SYSTEM PACKAGE	25		\$0.00	\$45.99	\$0.00	\$1,149.75	\$0.00	\$0.00	\$1,149.75
86	NLN4530	BELT LOOP, SWIVEL 3 INCH	25		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
87	NTN1573	CARRY CASE, LEATHER SWIVEL SNAP	25		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SECTION TOTAL											
88			132		\$0.00	\$0.00	\$0.00	\$6,600.00	\$0.00	\$0.00	\$6,600.00
89	****ASTRO XTS3000**	Model III w/Kpd w/Encrypt	132		\$0.00	\$1,675.35	\$0.00	\$221,146.20	\$0.00	\$0.00	\$221,146.20
90	H00UCHBPM7 N	ASTRO DIG XTS 3000 FULL FEATURE 800	132		\$0.00	\$34.31	\$0.00	\$4,526.92	\$0.00	\$0.00	\$4,526.92
91	H223	ALT: BATTERY ULTRA HIGH CAP NICD FM	132		\$0.00	\$73.00	\$0.00	\$9,636.00	\$0.00	\$0.00	\$9,636.00
92	H43	ENH: TRUNKED REMOTE MONITOR	132		\$0.00	\$109.50	\$0.00	\$14,454.00	\$0.00	\$0.00	\$14,454.00
93	H46	ENH: TRUNKED 1 BTN STATUS/MESSAGE	132		\$0.00	\$663.57	\$0.00	\$87,591.24	\$0.00	\$0.00	\$87,591.24
94	Q274	ADD: DES-OFB AND DES-XL ENCRYPTION	132		\$0.00	\$355.00	\$0.00	\$48,180.00	\$0.00	\$0.00	\$48,180.00
95	Q006	ADD: APOC 25 COMMON AIR INTERFACE	132		\$0.00	\$876.00	\$0.00	\$115,632.00	\$0.00	\$0.00	\$115,632.00
96	H37	ADD: SMARTNET SYSTEM PACKAGE	132		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty		Min Hours	Labor	Project Cost Itemization Schedule		Subcontract	Total	Total	Total
			Per Unit	Total			Material	Unit				
97	NTN9301	CARRY CASE, HIGH ACTIVITY	132	0			\$0.00	\$43.80		\$5,781.60	\$0.00	\$5,781.60
		SECTION TOTAL								\$5,781.60	\$0.00	\$5,781.60
98												
99	****ASTRO SABER****	Model II w/Key & Encrypt Rugged	6	0			\$0.00	\$0.00		\$300.00	\$0.00	\$300.00
100	H80DX	ASTRO DIG SABER PORT SERIES	6	0			\$1,314.00	\$0.00		\$7,884.00	\$0.00	\$7,884.00
101	Z12H	ASTRO DIG SABER II 800MHZ PORT	6	0			\$361.35	\$0.00		\$2,168.10	\$0.00	\$2,168.10
102	H232AJ	ALT. BATTERY, RUGGEDIZED FM	6	0			\$4.36	\$0.00		\$26.28	\$0.00	\$26.28
103	H43	ENH: TRUNKED REMOTE MONITOR	6	0			\$73.00	\$0.00		\$438.00	\$0.00	\$438.00
104	H46	ENH: TRUNKED ONE BUTTON STATUS/MSG	6	0			\$109.50	\$0.00		\$657.00	\$0.00	\$657.00
105	H489	ALT: RUGGEDIZED ASTRO DIGITAL SABER	6	0			\$346.02	\$0.00		\$2,076.12	\$0.00	\$2,076.12
106	Q274	ADD: DES OF-B AND DES-XL	6	0			\$663.57	\$0.00		\$3,981.42	\$0.00	\$3,981.42
107	Q006	ADD: APCO 25 COMMON AIR INTERFACE	6	0			\$365.00	\$0.00		\$2,190.00	\$0.00	\$2,190.00
108	H37	ADD: SMARTNET SYSTEM PACKAGE	6	0			\$481.80	\$0.00		\$2,890.80	\$0.00	\$2,890.80
109	NLNA630	BELT LOOP, SWIVEL 3 INCH	6	0			\$5.84	\$0.00		\$35.04	\$0.00	\$35.04
110	NTN7573	CARRY CASE, LEATHER SWIVEL SNAP	6	0			\$45.99	\$0.00		\$275.94	\$0.00	\$275.94
		SECTION TOTAL								\$275.94	\$0.00	\$275.94
111												
112	****MOBILE****	****DASH MOUNT****										
113	****MOBILE****	Model III, w/ Kpd	303	0			\$0.00	\$0.00		\$73,730.00	\$0.00	\$73,730.00
114	M01HX	MCS2000 HIGH SPEC MOBILE	303	0			\$693.50	\$0.00		\$210,130.50	\$0.00	\$210,130.50
115	Q22W	800MHZ 15W MODEL II	303	0			\$653.35	\$0.00		\$197,965.05	\$0.00	\$197,965.05
116	B620	ADD: PUSH SWITCH, EMERGENCY	303	0			\$25.65	\$0.00		\$7,741.65	\$0.00	\$7,741.65
117	G495	ADD: ANTENNA 1/4 WAVE 806-800MHZ	303	0			\$0.00	\$0.00		\$0.00	\$0.00	\$0.00
118	H43	ENH: TRUNKING REMOTE MONITOR	303	0			\$73.00	\$0.00		\$22,119.00	\$0.00	\$22,119.00
119	H46	ENH: ONE TOUCH BUTTON	303	0			\$109.50	\$0.00		\$33,178.50	\$0.00	\$33,178.50
120	H37	ADD: SMARTNET SYSTEM PACKAGE	303	0			\$466.25	\$0.00		\$139,243.75	\$0.00	\$139,243.75
		SECTION TOTAL								\$685,128.45	\$0.00	\$685,128.45
121												
122	****ASTRO SPECTRA****	Model A7, w/Keyd	252	0			\$0.00	\$0.00		\$63,000.00	\$0.00	\$63,000.00
123	T90DX	ASTRO DIG SPECTRA MOBILE SERIES	252	0			\$1,525.70	\$0.00		\$384,476.40	\$0.00	\$384,476.40
124	132W	35W 800 806-870 AT	252	0			\$397.85	\$0.00		\$100,258.20	\$0.00	\$100,258.20
125	W689	ADD: EXTERNAL EMERGENCY PUSHBUTTON	252	0			\$40.88	\$0.00		\$10,301.76	\$0.00	\$10,301.76
126	W432	ENH: 10 WATT AUDIO	252	0			\$10.95	\$0.00		\$2,759.40	\$0.00	\$2,759.40
127	G241	ENH: ANALOG OPERATION	252	0			\$0.00	\$0.00		\$0.00	\$0.00	\$0.00
128	G50	ENH: SMARTNET OPERATION	252	0			\$481.80	\$0.00		\$121,413.60	\$0.00	\$121,413.60
		SECTION TOTAL								\$602,209.36	\$0.00	\$602,209.36
129												
130	****ASTRO SPECTRA****	Model A7, w/Keyd & Encrypt	59	0			\$0.00	\$0.00		\$14,750.00	\$0.00	\$14,750.00
131	T90DX	ASTRO DIG SPECTRA MOBILE SERIES	59	0			\$1,525.70	\$0.00		\$90,016.30	\$0.00	\$90,016.30
132	132W	35W 800 806-870 AT	59	0			\$397.85	\$0.00		\$23,473.15	\$0.00	\$23,473.15
133	G800	ENH: ASTRO DIGITAL CAI	59	0			\$401.50	\$0.00		\$23,688.50	\$0.00	\$23,688.50
134	W689	ADD: EXTERNAL EMERGENCY PUSHBUTTON	59	0			\$40.88	\$0.00		\$2,411.92	\$0.00	\$2,411.92
135	W432	ENH: 10 WATT AUDIO	59	0			\$10.95	\$0.00		\$646.05	\$0.00	\$646.05
136	G274	ENH: DES-OF-BIDES-XL	59	0			\$663.57	\$0.00		\$39,150.63	\$0.00	\$39,150.63
137	G50	ENH: SMARTNET OPERATION	59	0			\$481.80	\$0.00		\$28,426.20	\$0.00	\$28,426.20
		SECTION TOTAL								\$222,567.75	\$0.00	\$222,567.75
138												
139	****MOBILE****	****TRUNK MOUNT****										
140	****MOBILE****	Model A7, w/Keyd	341	0			\$0.00	\$0.00		\$204,600.00	\$0.00	\$204,600.00
141	T90DX	ASTRO DIG SPECTRA MOBILE SERIES	341	0			\$1,525.70	\$0.00		\$520,263.70	\$0.00	\$520,263.70
142	132W	35W 800 806-870 AT	341	0			\$397.85	\$0.00		\$135,666.85	\$0.00	\$135,666.85
143	W689	ADD: EXTERNAL EMERGENCY PUSHBUTTON	341	0			\$40.88	\$0.00		\$13,940.08	\$0.00	\$13,940.08

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours Per Unit	Labor Hrs	Rate	Project Cost Itemization Schedule		Material Unit	Material Cost	Subcontracts Unit	Subcontracts Cost	Total \$	Total Costs
							Total \$	Total \$						
City and County of San Francisco														
Citywide 800MHz Radio System Project (CERS)														
Motorola Proposal for Bid No. 168														
143		ENH: 10 WATT AUDIO	341	0	0		\$0.00	\$0.00	\$10.95			\$0.00	\$3,733.95	\$3,733.95
144		ENH: ANALOG OPERATION	341	0	0		\$0.00	\$0.00	\$0.00			\$0.00	\$0.00	\$0.00
145		ENH: REMOTE MOUNT WITH 17FT CABLE	341	0	0		\$0.00	\$0.00	\$216.81			\$0.00	\$73,932.21	\$73,932.21
146		ENH: SMARTNET OPERATION	341	0	0		\$0.00	\$0.00	\$481.80			\$0.00	\$164,293.80	\$164,293.80
147		SECTION TOTAL											\$1,116,930.52	\$1,116,930.52
148		Model A7 w/ktcd & Encrypt	0	0	0		\$0.00	\$0.00	\$0.00		\$600.00	\$0.00	\$0.00	\$0.00
149		ASTRO DIG SPECTRA MOBILE SERIES	0	0	0		\$0.00	\$0.00	\$1,525.70			\$0.00	\$0.00	\$0.00
150		35W 800-870 AY	0	0	0		\$0.00	\$0.00	\$397.85			\$0.00	\$0.00	\$0.00
151		ENH: ASTRO DIGITAL CAI	0	0	0		\$0.00	\$0.00	\$401.50			\$0.00	\$0.00	\$0.00
152		ADD: EXTERNAL EMERGENCY PUSHBUTTON	0	0	0		\$0.00	\$0.00	\$40.88			\$0.00	\$0.00	\$0.00
153		ENH: 10 WATT AUDIO	0	0	0		\$0.00	\$0.00	\$10.95			\$0.00	\$0.00	\$0.00
154		ENH: DES-OFBIDES-XI	0	0	0		\$0.00	\$0.00	\$663.57			\$0.00	\$0.00	\$0.00
155		ENH: REMOTE MOUNT WITH 17FT CABLE	0	0	0		\$0.00	\$0.00	\$216.81			\$0.00	\$0.00	\$0.00
156		ENH: SMARTNET OPERATION	0	0	0		\$0.00	\$0.00	\$481.80			\$0.00	\$0.00	\$0.00
157		SECTION TOTAL											\$0.00	\$0.00
158		Local Control, w/ktcd	79	0	0		\$0.00	\$0.00	\$0.00			\$750.00	\$59,250.00	\$59,250.00
159		ASTRO SPECTRA	79	0	0		\$0.00	\$0.00	\$2,328.70			\$0.00	\$183,987.30	\$183,987.30
160		W7 25W 800MHZ	79	0	0		\$0.00	\$0.00	\$643.15			\$0.00	\$66,608.85	\$66,608.85
161		ADD: ANALOG ONLY MODE	79	0	0		\$0.00	\$0.00	\$0.00			\$0.00	\$0.00	\$0.00
162		ADD: CLOCK VU METER	79	0	0		\$0.00	\$0.00	\$75.00			\$0.00	\$5,767.00	\$5,767.00
163		ENH: SMARTNET OPERATION	79	0	0		\$0.00	\$0.00	\$481.80			\$0.00	\$38,062.20	\$38,062.20
164		ANTENNA, 8DB 3 ELEMENT YAGI	79	0	0		\$0.00	\$0.00	\$80.30			\$0.00	\$6,343.70	\$6,343.70
165		1/2" LDF HELIAX, POLY JKT, PER FOOT	3950	0	0		\$0.00	\$0.00	\$2.12			\$0.00	\$8,374.00	\$8,374.00
166		1/2" CONNECTOR, N PLUG LDF PLTD	168	0	0		\$0.00	\$0.00	\$32.85			\$0.00	\$5,496.24	\$5,496.24
167		CABLE WRAP, WEATHERPROOFING	79	0	0		\$0.00	\$0.00	\$27.38			\$0.00	\$2,161.02	\$2,161.02
168		SECTION TOTAL							\$46.54			\$0.00	\$3,676.66	\$3,676.66
169		Remote Control, w/ktcd	4	0	0		\$0.00	\$0.00	\$0.00			\$750.00	\$3,000.00	\$3,000.00
170		ASTRO SPECTRA	4	0	0		\$0.00	\$0.00	\$2,328.70			\$0.00	\$9,314.80	\$9,314.80
171		398.5-35W 800 MHZ	4	0	0		\$0.00	\$0.00	\$1,084.05			\$0.00	\$4,336.20	\$4,336.20
172		ADD: ANALOG ONLY MODE	4	0	0		\$0.00	\$0.00	\$0.00			\$0.00	\$0.00	\$0.00
173		ADD: CLOCK VU METER	4	0	0		\$0.00	\$0.00	\$75.00			\$0.00	\$292.00	\$292.00
174		ENH: SMARTNET OPERATION	4	0	0		\$0.00	\$0.00	\$481.80			\$0.00	\$1,927.20	\$1,927.20
175		ANTENNA, 8DB 3 ELEMENT YAGI	4	0	0		\$0.00	\$0.00	\$80.30			\$0.00	\$321.20	\$321.20
176		1/2" LDF HELIAX, POLY JKT, PER FOOT	200	0	0		\$0.00	\$0.00	\$2.12			\$0.00	\$424.00	\$424.00
177		1/2" CONNECTOR, N PLUG LDF PLTD	8	0	0		\$0.00	\$0.00	\$32.85			\$0.00	\$262.80	\$262.80
178		CABLE WRAP, WEATHERPROOFING	4	0	0		\$0.00	\$0.00	\$27.38			\$0.00	\$109.52	\$109.52
179		LIGHTNING ARRESTOR / SURGE	4	0	0		\$0.00	\$0.00	\$46.54			\$0.00	\$186.16	\$186.16
180		DESKSET, REMOTE, ASTRO DGT8000	19	0	0		\$0.00	\$0.00	\$672.35			\$0.00	\$12,774.65	\$12,774.65
181		ADAPTER, REMOTE, ASTRO DGT8000	4	0	0		\$0.00	\$0.00	\$560.35			\$0.00	\$2,261.40	\$2,261.40
182		SECTION TOTAL											\$39,361.93	\$39,361.93
183		Local Control, w/ktcd & Encrypt	51	0	0		\$0.00	\$0.00	\$0.00			\$750.00	\$38,250.00	\$38,250.00
184		ASTRO SPECTRA	51	0	0		\$0.00	\$0.00	\$2,328.70			\$0.00	\$118,763.70	\$118,763.70
185		W7 25W 800MHZ	51	0	0		\$0.00	\$0.00	\$643.15			\$0.00	\$43,008.65	\$43,008.65
186		ADD: ANALOG ONLY MODE	51	0	0		\$0.00	\$0.00	\$0.00			\$0.00	\$0.00	\$0.00
187		ADD: CLOCK VU METER	51	0	0		\$0.00	\$0.00	\$75.00			\$0.00	\$3,767.00	\$3,767.00
188		ENH: SMARTNET OPERATION	51	0	0		\$0.00	\$0.00	\$481.80			\$0.00	\$38,062.20	\$38,062.20
189		ANTENNA, 8DB 3 ELEMENT YAGI	51	0	0		\$0.00	\$0.00	\$80.30			\$0.00	\$4,116.30	\$4,116.30
190		1/2" LDF HELIAX, POLY JKT, PER FOOT	255	0	0		\$0.00	\$0.00	\$2.12			\$0.00	\$537.60	\$537.60
191		1/2" CONNECTOR, N PLUG LDF PLTD	102	0	0		\$0.00	\$0.00	\$32.85			\$0.00	\$3,350.70	\$3,350.70
192		CABLE WRAP, WEATHERPROOFING	51	0	0		\$0.00	\$0.00	\$27.38			\$0.00	\$1,396.30	\$1,396.30
193		LIGHTNING ARRESTOR / SURGE	51	0	0		\$0.00	\$0.00	\$46.54			\$0.00	\$2,373.66	\$2,373.66
194		DESKSET, REMOTE, ASTRO DGT8000	19	0	0		\$0.00	\$0.00	\$672.35			\$0.00	\$12,774.65	\$12,774.65
195		ADAPTER, REMOTE, ASTRO DGT8000	4	0	0		\$0.00	\$0.00	\$560.35			\$0.00	\$2,261.40	\$2,261.40
196		SECTION TOTAL											\$39,361.93	\$39,361.93
197		Local Control, w/ktcd & Encrypt	51	0	0		\$0.00	\$0.00	\$0.00			\$750.00	\$38,250.00	\$38,250.00
198		ASTRO SPECTRA	51	0	0		\$0.00	\$0.00	\$2,328.70			\$0.00	\$118,763.70	\$118,763.70
199		W7 25W 800MHZ	51	0	0		\$0.00	\$0.00	\$643.15			\$0.00	\$43,008.65	\$43,008.65
200		ADD: ANALOG ONLY MODE	51	0	0		\$0.00	\$0.00	\$0.00			\$0.00	\$0.00	\$0.00
201		ADD: CLOCK VU METER	51	0	0		\$0.00	\$0.00	\$75.00			\$0.00	\$3,767.00	\$3,767.00
202		ENH: SMARTNET OPERATION	51	0	0		\$0.00	\$0.00	\$481.80			\$0.00	\$38,062.20	\$38,062.20
203		ANTENNA, 8DB 3 ELEMENT YAGI	51	0	0		\$0.00	\$0.00	\$80.30			\$0.00	\$4,116.30	\$4,116.30
204		1/2" LDF HELIAX, POLY JKT, PER FOOT	255	0	0		\$0.00	\$0.00	\$2.12			\$0.00	\$537.60	\$537.60
205		1/2" CONNECTOR, N PLUG LDF PLTD	102	0	0		\$0.00	\$0.00	\$32.85			\$0.00	\$3,350.70	\$3,350.70
206		CABLE WRAP, WEATHERPROOFING	51	0	0		\$0.00	\$0.00	\$27.38			\$0.00	\$1,396.30	\$1,396.30
207		LIGHTNING ARRESTOR / SURGE	51	0	0		\$0.00	\$0.00	\$46.54			\$0.00	\$2,373.66	\$2,373.66
208		DESKSET, REMOTE, ASTRO DGT8000	19	0	0		\$0.00	\$0.00	\$672.35			\$0.00	\$12,774.65	\$12,774.65
209		ADAPTER, REMOTE, ASTRO DGT8000	4	0	0		\$0.00	\$0.00	\$560.35			\$0.00	\$2,261.40	\$2,261.40
210		SECTION TOTAL											\$39,361.93	\$39,361.93

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours Per Unit	Labor Hrs	Rev. 7/97		Material Unit Cost	Subcontracts Unit Cost	Total \$	Total \$	Total Cost
						Total	Rate					
City and County of San Francisco												
Citywide 800MHz Radio System Project (CERS)												
Monorail Proposal for Bid No. 168												
192	G50	ENH: SMARTNET OPERATION	51	0	0	\$0.00	\$481.80	\$24,571.80		\$0.00	\$24,571.80	
193	G274	ADD: DES OF/BIDES-XL	51	0	0	\$0.00	\$663.57	\$33,842.07		\$0.00	\$33,842.07	
194	G406	ENH: ASTRO DIGITAL CAL OPERATION	51	0	0	\$0.00	\$401.50	\$20,476.50		\$0.00	\$20,476.50	
195	TD66441	ANTENNA, 6DB 3 ELEMENT YAGI	51	0	0	\$0.00	\$90.30	\$4,095.30		\$0.00	\$4,095.30	
196	L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	2950	0	0	\$0.00	\$2.12	\$5,406.00		\$0.00	\$5,406.00	
197	TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	102	0	0	\$0.00	\$33.50	\$3,350.70		\$0.00	\$3,350.70	
198	TDN8289	CABLE WRAP, WEATHERPROOFING	51	0	0	\$0.00	\$27.38	\$1,396.58		\$0.00	\$1,396.58	
199	RLM264A	LIGHTNING ARRESTOR /SURGE	51	0	0	\$0.00	\$46.54	\$2,373.54		\$0.00	\$2,373.54	
SECTION TOTAL												
200						\$0.00	\$0.00	\$0.00	\$750.00	\$0.00	\$11,250.00	
201	***ASTRO SPECTRA**	Remote Control, w/40d & Encypt	15	0	0	\$0.00	\$2,328.70	\$34,930.50		\$0.00	\$34,930.50	
202	L90DX	ASTRO SPECTRA	15	0	0	\$0.00	\$1,084.05	\$16,260.75		\$0.00	\$16,260.75	
203	259L	399L5-35W 800 MHZ	15	0	0	\$0.00	\$73.00	\$1,095.00		\$0.00	\$1,095.00	
204	L114	ADD: CLOCK VU METER	15	0	0	\$0.00	\$663.57	\$9,953.55		\$0.00	\$9,953.55	
205	G274	ADD: DES OF/BIDES-XL	15	0	0	\$0.00	\$401.50	\$6,022.50		\$0.00	\$6,022.50	
206	G506	ENH: ASTRO DIGITAL CAL OPERATION	15	0	0	\$0.00	\$481.80	\$7,227.00		\$0.00	\$7,227.00	
207	G50	ENH: SMARTNET OPERATION	15	0	0	\$0.00	\$73.00	\$1,095.00		\$0.00	\$1,095.00	
208	TRY466	MOUNTING BRACKET EA 19"	15	0	0	\$0.00	\$80.30	\$1,204.50		\$0.00	\$1,204.50	
209	TD66441	ANTENNA, 6DB 3 ELEMENT YAGI	15	0	0	\$0.00	\$2.12	\$31.80		\$0.00	\$31.80	
210	L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	750	0	0	\$0.00	\$2.85	\$2,137.50		\$0.00	\$2,137.50	
211	TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	30	0	0	\$0.00	\$27.38	\$821.40		\$0.00	\$821.40	
212	TDN8289	CABLE WRAP, WEATHERPROOFING	30	0	0	\$0.00	\$46.54	\$1,396.20		\$0.00	\$1,396.20	
213	RLM264A	LIGHTNING ARRESTOR /SURGE	30	0	0	\$0.00	\$872.35	\$26,170.50		\$0.00	\$26,170.50	
214	L1751	DESIGN, REMOTE, ASTRO DGT9000	15	0	0	\$0.00	\$580.35	\$8,705.25		\$0.00	\$8,705.25	
215	L1752	ADAPTER, REMOTE, ASTRO DGT9000	15	0	0	\$0.00	\$580.35	\$8,705.25		\$0.00	\$8,705.25	
SECTION TOTAL												
216	***ACCESSORIES***					\$0.00	\$0.00	\$0.00		\$0.00	\$115,022.40	
217	***PORTABLE***					\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	
218	NTA7147	BATTERY FMIS ULTRA-HIGH CAP	142	0	0	\$0.00	\$110.96	\$15,766.32		\$0.00	\$15,766.32	
219	NTN171	CHARGER, 110V SINGLE COMPACT	150	0	0	\$0.00	\$65.70	\$9,855.00		\$0.00	\$9,855.00	
220	NTN177	CHARGER, 110V MULTI RAPID	152	0	0	\$0.00	\$492.75	\$74,908.00		\$0.00	\$74,908.00	
221	NMNG191	AUDIO ACC.REMOTE SPEAKERMIC	1237	0	0	\$0.00	\$67.16	\$82,405.32		\$0.00	\$82,405.32	
222	NTN171	CARRY ACC.BELT CLIP 3"	516	0	0	\$0.00	\$10.95	\$5,645.20		\$0.00	\$5,645.20	
223	NTN8038	CASE, 3.0" HI ACTIVITY ULTRA HI CAP	1191	0	0	\$0.00	\$43.80	\$52,165.80		\$0.00	\$52,165.80	
224	NAE5037	ANT. 1/2 WAVELENGTH WHIP	1237	0	0	\$0.00	\$24.09	\$29,799.33		\$0.00	\$29,799.33	
SECTION TOTAL												
226	***PORTABLE***					\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	
227	NTN8295	BATTERY, NICAD ULTRA HI CAP FM	657	0	0	\$0.00	\$137.97	\$90,646.29		\$0.00	\$90,646.29	
228	NTN168	CHARGER, 110V SINGLE ENH	280	0	0	\$0.00	\$23,725.00	\$6,646.20		\$0.00	\$6,646.20	
229	NTN177	CHARGER, 110V MULTI RAPID	241	0	0	\$0.00	\$492.75	\$119,752.75		\$0.00	\$119,752.75	
230	NMNG191	AUDIO ACC.REMOTE SPEAKERMIC	1692	0	0	\$0.00	\$67.16	\$113,161.92		\$0.00	\$113,161.92	
231	NTN8289	ATTACHMENT, REMOVABLE BELT CLIP	514	0	0	\$0.00	\$7.30	\$3,752.20		\$0.00	\$3,752.20	
232	NTN8381	CASE, CARRY HIGH ACTIVITY	1642	0	0	\$0.00	\$43.80	\$71,919.60		\$0.00	\$71,919.60	
233	NTN8386	CASE, CARRY HIGH ACTIVITY	1642	0	0	\$0.00	\$43.80	\$71,919.60		\$0.00	\$71,919.60	
234	NAE5037	ANT. 1/2 WAVELENGTH WHIP	1692	0	0	\$0.00	\$24.09	\$40,037.50		\$0.00	\$40,037.50	
SECTION TOTAL												
236	***PORTABLE***					\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	
237	NTN7058	BATTERY, ULTRA HI CAP RUGGEDIZED	115	0	0	\$0.00	\$113.15	\$13,012.25		\$0.00	\$13,012.25	
239	NTN4734	CHARGER, DESKTOP SINGLE UNIT 117V	26	0	0	\$0.00	\$164.98	\$4,124.50		\$0.00	\$4,124.50	

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Per Unit	Mean Hours	Labor Hrs	Rate	Rev: 7/97		Material		Subcontract	Total \$	Total \$	Total Costs
								Total \$	Unit Cost	Unit Cost	Cost				
City and County of San Francisco															
Citywide 800MHz Radio System Project (CERS)															
Motorola Proposal for Bid No. 168															
240	NTM796	CHARGER, DESKTOP MULTIL UNIT, 117V	20			0		\$376.24	\$11,504.80	\$0.00	\$0.00	\$0.00	\$11,504.80	\$0.00	\$11,504.80
241	NNM217	MICROPHONE, REMOTE SPEAKER	250			0		\$102.93	\$25,732.50	\$0.00	\$0.00	\$0.00	\$25,732.50	\$0.00	\$25,732.50
242	NTN2308	BELT CLIP ATTACHMENT, REMOVABLE	230			0		\$3,861.70	\$3,861.70	\$0.00	\$0.00	\$0.00	\$3,861.70	\$0.00	\$3,861.70
243	NTN7673	CARRY CASE, LEATHER SWIVEL SNAP	0			0		\$45.99	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$5,940.70
244	NAF5037	ANT, 1/2 WAVELENGTH WHIP	230			0		\$24.09	\$5,540.70	\$0.00	\$0.00	\$0.00	\$5,540.70	\$0.00	\$5,540.70
245	RYN109P	Soinwara / Manuals- MCS.MTS.XTS.SABER	1			0		\$27,243.41	\$27,243.41	\$0.00	\$0.00	\$0.00	\$27,243.41	\$0.00	\$27,243.41
246		ASTRO SPECTRA													\$91,019.86
SECTION TOTAL															
247		4. Radios Sites	1			0		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$11,481,183.80
248		Site 1: Central Radio Site (CRS) -	1			0		\$32,699.50	\$32,699.50	\$0.00	\$0.00	\$0.00	\$32,699.50	\$0.00	\$32,699.50
249		** SmartZone Controller **	1			0		\$251,376.50	\$251,376.50	\$0.00	\$0.00	\$0.00	\$251,376.50	\$0.00	\$251,376.50
250		FT ZONE CONTROLLER	1			0		\$6,409.40	\$6,409.40	\$0.00	\$0.00	\$0.00	\$6,409.40	\$0.00	\$6,409.40
251	T5396D	ADD. ALARM OUTPUTS	1			0		\$39,712.00	\$39,712.00	\$0.00	\$0.00	\$0.00	\$39,712.00	\$0.00	\$39,712.00
252	D150	ENH: EXPANDED RAM	1			0		\$15,330.00	\$15,330.00	\$0.00	\$0.00	\$0.00	\$15,330.00	\$0.00	\$15,330.00
253	D943	ENH: RADIO DISPATCH MIGHT	1			0		\$11,890.00	\$11,890.00	\$0.00	\$0.00	\$0.00	\$11,890.00	\$0.00	\$11,890.00
254	D698	ENH: DYNAMIC REGROUPING	1			0		\$6,570.00	\$6,570.00	\$0.00	\$0.00	\$0.00	\$6,570.00	\$0.00	\$6,570.00
255	D685	ENH: AIR TRAFFIC INFORMATION	1			0		\$3,650.00	\$3,650.00	\$0.00	\$0.00	\$0.00	\$3,650.00	\$0.00	\$3,650.00
256	D785	ENH: LICENSE, MULTIPLE APPLICATIONS	1			0		\$10,950.00	\$10,950.00	\$0.00	\$0.00	\$0.00	\$10,950.00	\$0.00	\$10,950.00
257	D717	ENH: CRITICAL USER SUPPORT	1			0		\$7,300.00	\$7,300.00	\$0.00	\$0.00	\$0.00	\$7,300.00	\$0.00	\$7,300.00
258	D967	ENH: STATUSMESSAGE	1			0		\$5,475.00	\$5,475.00	\$0.00	\$0.00	\$0.00	\$5,475.00	\$0.00	\$5,475.00
259	D341	ENH: DYNAMIC SHARED SERVICES	1			0		\$3,650.00	\$3,650.00	\$0.00	\$0.00	\$0.00	\$3,650.00	\$0.00	\$3,650.00
260	D41	ENH: SYS/CHNL UTIL TRACKING	1			0		\$32,850.00	\$32,850.00	\$0.00	\$0.00	\$0.00	\$32,850.00	\$0.00	\$32,850.00
261	D51	ENH: ZONE WATCH/GRID SCREEN	1			0		\$7,300.00	\$7,300.00	\$0.00	\$0.00	\$0.00	\$7,300.00	\$0.00	\$7,300.00
262	D52	ENH: ZONE WATCH/GRID SCREEN	1			0		\$36,500.00	\$36,500.00	\$0.00	\$0.00	\$0.00	\$36,500.00	\$0.00	\$36,500.00
263	D742	ENH: ZONEWATCH AFFILIATION DIS	1			0		\$70,080.00	\$70,080.00	\$0.00	\$0.00	\$0.00	\$70,080.00	\$0.00	\$70,080.00
264	D802	ADD: DIGITAL OPERATION	1			0		\$17,520.00	\$17,520.00	\$0.00	\$0.00	\$0.00	\$17,520.00	\$0.00	\$17,520.00
265	D900	ENH: SZM BASIC CADI & COMPUTER	1			0		\$104,871.80	\$104,871.80	\$0.00	\$0.00	\$0.00	\$104,871.80	\$0.00	\$104,871.80
266	D999	ENH: LICENSE SECURITY PARTITIONING	1			0		\$3,204.70	\$3,204.70	\$0.00	\$0.00	\$0.00	\$3,204.70	\$0.00	\$3,204.70
267	T5470C	SPARE BOARDS SET W/ 28MB CPU	1			0		\$5,956.80	\$5,956.80	\$0.00	\$0.00	\$0.00	\$5,956.80	\$0.00	\$5,956.80
268	TLN3276	6-FAN COLLING ASSEMBLY (HT)	1			0		\$53.29	\$53.29	\$0.00	\$0.00	\$0.00	\$53.29	\$0.00	\$53.29
269	TTN9117	ETHERNET INTERFACE MODULE (HT)	1			0		\$178.12	\$178.12	\$0.00	\$0.00	\$0.00	\$178.12	\$0.00	\$178.12
270	TKN9039	CABLE ZC TO MBX 50'	2			0		\$89.06	\$178.12	\$0.00	\$0.00	\$0.00	\$178.12	\$0.00	\$178.12
271	TKN9040	CABLE ZC TO AUDIO SWITCH 50'	1			0		\$28.93	\$28.93	\$0.00	\$0.00	\$0.00	\$28.93	\$0.00	\$28.93
272	TKN9256	CABLE RJ45-DB25/MALE STRAIGHT 29ASY	1			0		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
** Trunked Terminals **															
273	T5510	FIRST 6-SESSION USER SERVER	1			0		\$66,210.00	\$66,210.00	\$0.00	\$0.00	\$0.00	\$66,210.00	\$0.00	\$66,210.00
274	D985AB	ENH: LICENSE, E-MAIL 6 USER	1			0		\$2,628.00	\$2,628.00	\$0.00	\$0.00	\$0.00	\$2,628.00	\$0.00	\$2,628.00
275	T5511	ADDTL 6-SESSION USER SERVER	1			0		\$48,180.00	\$48,180.00	\$0.00	\$0.00	\$0.00	\$48,180.00	\$0.00	\$48,180.00
276	D985AB	ENH: LICENSE, E-MAIL 6 USER	1			0		\$2,628.00	\$2,628.00	\$0.00	\$0.00	\$0.00	\$2,628.00	\$0.00	\$2,628.00
277	T5719	HIGH-TIER DATABASE SERV-NEW	1			0		\$48,180.00	\$48,180.00	\$0.00	\$0.00	\$0.00	\$48,180.00	\$0.00	\$48,180.00
278	CLN6682	17" COLOR MONITOR 110/220V	1			0		\$1,314.00	\$1,314.00	\$0.00	\$0.00	\$0.00	\$1,314.00	\$0.00	\$1,314.00
279	T5515	ZONE MANAGER USER TERMINAL, 17" REM	6			0		\$4,161.00	\$24,886.00	\$0.00	\$0.00	\$0.00	\$24,886.00	\$0.00	\$24,886.00
280	CDN1316	ACCESSBLDR BASE UNIT-ETHRNT	1			0		\$1,963.70	\$1,963.70	\$0.00	\$0.00	\$0.00	\$1,963.70	\$0.00	\$1,963.70
281	CLN1318	8 PORT HI SPEED ASYNC MODULE	1			0		\$1,931.56	\$1,931.56	\$0.00	\$0.00	\$0.00	\$1,931.56	\$0.00	\$1,931.56
282	CLN1318	84KBPBS NEST CARD-RM16M	6			0		\$773.80	\$4,642.80	\$0.00	\$0.00	\$0.00	\$4,642.80	\$0.00	\$4,642.80
283	CLN1318	RM16M MODULE SHELF-110V	1			0		\$1,795.80	\$1,795.80	\$0.00	\$0.00	\$0.00	\$1,795.80	\$0.00	\$1,795.80
284	CLM6666	64KBPBS COMM DEVICE 110V	6			0		\$773.80	\$4,642.80	\$0.00	\$0.00	\$0.00	\$4,642.80	\$0.00	\$4,642.80
285	CLM6660	PRINTER 9600BPS 110V	6			0		\$2,336.00	\$14,016.00	\$0.00	\$0.00	\$0.00	\$14,016.00	\$0.00	\$14,016.00
286	TTN6100	BACK-UP CD MEDIUM UNIX 9.05	1			0		\$51.00	\$51.00	\$0.00	\$0.00	\$0.00	\$51.00	\$0.00	\$51.00
287	CLN6664	CBL 10' 2M USER SERVER TO MODEM	6			0		\$29.20	\$175.20	\$0.00	\$0.00	\$0.00	\$175.20	\$0.00	\$175.20
288	TKN9113	25CBL TERM TO PRTR-PARALLEL	6			0		\$43.80	\$262.80	\$0.00	\$0.00	\$0.00	\$262.80	\$0.00	\$262.80
289	TKN9139	** Telco Interconnect **													
290															

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

City and County of San Francisco		Citywide 800MHz Radio System Project (CERS)		Motorola Proposal for Bid No. 168		Rev: 7/97		Project Cost Itemization Schedule		Subcontracts		Total	
Item #	Model	Item Description	Qty	Man Hours Per Unit	Labor Hrs Rate	Total \$	Material Unit Cost	Total \$	Unit Cost	Total \$	Costs	Total \$	Costs
291	TDN06877A	CARD, PHONE LINE INTERFACE (PLIC)	2	0		\$0.00	\$1,371.00	\$3,942.00		\$3,942.00	\$0.00	\$3,942.00	\$0.00
292	TDN06879A	MODULE, DID FOR MBX	5	0		\$0.00	\$6,424.80	\$6,424.80		\$6,424.80	\$0.00	\$6,424.80	\$0.00
293	TDN06880A	CARD, TRUNKED REPEATER INTERFACE	1	0		\$0.00	\$4,102.60	\$4,102.60		\$4,102.60	\$0.00	\$4,102.60	\$0.00
294	TDN06893A	BASIC SPARES KIT FOR MBX	1	0		\$0.00	\$14,183.30	\$14,183.30		\$14,183.30	\$0.00	\$14,183.30	\$0.00
295	TDN06868A	SINGLE SHELF, MBX COMMON EQUIPMENT	1	0		\$0.00	\$24,371.05	\$24,371.05		\$24,371.05	\$0.00	\$24,371.05	\$0.00
296	TDN06871A	LICENSE, CONVERSION SOFTWARE	1	0		\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00
297	TDN06881A	POWER SUPPLY, 110VAC 60HZ, MBX	1	0		\$0.00	\$3,504.00	\$3,504.00		\$3,504.00	\$0.00	\$3,504.00	\$0.00
298	TDN06866A	110VAC DISTRIBUTION PANEL, MBX	1	0		\$0.00	\$438.00	\$438.00		\$438.00	\$0.00	\$438.00	\$0.00
299	TDN06834A	SYSTEM INTEGRATION	1	0		\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00
300	TDN06891A	BLOWER, 110VAC 60HZ FOR MBX	1	0		\$0.00	\$328.50	\$328.50		\$328.50	\$0.00	\$328.50	\$0.00
301	TDN06887	CABINET SHORT VENTED	1	0		\$0.00	\$985.50	\$985.50		\$985.50	\$0.00	\$985.50	\$0.00
302	TDN06899A	SPARE TRIC ASSEMBLY FOR MBX	2	0		\$0.00	\$4,102.60	\$8,205.20		\$8,205.20	\$0.00	\$8,205.20	\$0.00
303	TKN0634	100' CABLE MBX TO PUNCHBLOCK	1	0		\$0.00	\$124.10	\$124.10		\$124.10	\$0.00	\$124.10	\$0.00
304		** Audio Switch **											
305	B1042 C	GOLD SERIES AEB 3 CARD CAGE	1	0		\$0.00	\$50,503.59	\$50,503.59		\$50,503.59	\$0.00	\$50,503.59	\$0.00
306	K7628E	ADD: EXT PERF 3 CC GOLD AEB	1	0		\$0.00	\$963.60	\$963.60		\$963.60	\$0.00	\$963.60	\$0.00
307	K934AJ	ADD: ONE GOLD SERIES AMB CARD	6	0		\$0.00	\$9,744.77	\$58,468.62		\$58,468.62	\$0.00	\$58,468.62	\$0.00
308	X762AB	ADD: REDUNDANT ZONE INTERFACE	1	0		\$0.00	\$19,488.81	\$19,488.81		\$19,488.81	\$0.00	\$19,488.81	\$0.00
309	X909AJ	ADD: ASTRO SMARTZONE LICENSE	1	0		\$0.00	\$18,250.00	\$18,250.00		\$18,250.00	\$0.00	\$18,250.00	\$0.00
310	X759AA	ADD: SMARTZONE GOLD AEB SPARES	1	0		\$0.00	\$13,364.11	\$13,364.11		\$13,364.11	\$0.00	\$13,364.11	\$0.00
311	B1046	GOLD AEB RONT AEB POWER SUPPLY	1	0		\$0.00	\$9,744.77	\$9,744.77		\$9,744.77	\$0.00	\$9,744.77	\$0.00
312		** CRIS Tens; Network Server **					\$4,818.00	\$4,818.00		\$4,818.00	\$0.00	\$4,818.00	\$0.00
313		UNIVERSAL ENCLOSURE TENSIR/600	1	0		\$0.00	\$1,095.00	\$1,095.00		\$1,095.00	\$0.00	\$1,095.00	\$0.00
314	DSPREM891B	DC POWER SUPPLY 48 VDC	4	0		\$0.00	\$912.50	\$3,650.00		\$3,650.00	\$0.00	\$3,650.00	\$0.00
315	DSPREM8902	INTERFACE CARDS, 8 T1/E1 INTFC	8	0		\$0.00	\$1,642.50	\$13,140.00		\$13,140.00	\$0.00	\$13,140.00	\$0.00
316	DSPREM8920	CPU CTRL CARD W/2 T1/E1, RED 256	4	0		\$0.00	\$4,106.25	\$16,425.00		\$16,425.00	\$0.00	\$16,425.00	\$0.00
317	DSPREM8901	SERVER CARD, ADPCM	2	0		\$0.00	\$1,781.20	\$3,562.40		\$3,562.40	\$0.00	\$3,562.40	\$0.00
318	DSPREM8970	WAN CARD, DUAL T1/E1 INTERFACE	4	0		\$0.00	\$1,651.25	\$6,605.00		\$6,605.00	\$0.00	\$6,605.00	\$0.00
319	DSPREM8014	CSU PLUG IN MODULE	16	0		\$0.00	\$912.60	\$14,601.60		\$14,601.60	\$0.00	\$14,601.60	\$0.00
320	DSPREM812	VOICE CARD, 8 PORT, 4 WIRE EMMTO	11	0		\$0.00	\$1,368.75	\$15,056.25		\$15,056.25	\$0.00	\$15,056.25	\$0.00
321	DSPREM811B	DATA CARD, 10 PORT RS232C SUB-RATE	5	0		\$0.00	\$2,190.00	\$10,950.00		\$10,950.00	\$0.00	\$10,950.00	\$0.00
322		** DIU/Dialer Broadcast **											
323	CHR1009	CARDCAGE, DIU 3000	6	0		\$0.00	\$219.00	\$1,314.00		\$1,314.00	\$0.00	\$1,314.00	\$0.00
324	F2040	ASTRO DIU3000 HARDWARE	22	0		\$0.00	\$2,127.95	\$46,814.90		\$46,814.90	\$0.00	\$46,814.90	\$0.00
325	X005	ENH: ASTRO CAI OPERATION	22	0		\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00
326	X050	ADD: TRUNKING RELEASE SW.	22	0		\$0.00	\$2,529.45	\$55,647.90		\$55,647.90	\$0.00	\$55,647.90	\$0.00
327	C29	ADD: BATTERY REVERT CABLE	22	0		\$0.00	\$64.24	\$1,413.28		\$1,413.28	\$0.00	\$1,413.28	\$0.00
328	76771	ASTRO DES-0FB ENG CARTRIDGE	5	0		\$0.00	\$46.77	\$2,733.85		\$2,733.85	\$0.00	\$2,733.85	\$0.00
329	FLN0841	BLANK PANEL, DIU3000	1	0		\$0.00	\$21.17	\$21.17		\$21.17	\$0.00	\$21.17	\$0.00
330	FLN0840	CENTER PANEL, DIU3000 CARD CAGE	6	0		\$0.00	\$18.25	\$109.50		\$109.50	\$0.00	\$109.50	\$0.00
331	CDN6209	BLACK TEST HANDSET, DIU3000	1	0		\$0.00	\$40.15	\$40.15		\$40.15	\$0.00	\$40.15	\$0.00
332	FLN08200	6 OUTLET AC POWER STRIP	1	0		\$0.00	\$68.62	\$68.62		\$68.62	\$0.00	\$68.62	\$0.00
333	FLN08200	RSS, ASTRO DIG INTERFACE UNIT	1	0		\$0.00	\$255.50	\$255.50		\$255.50	\$0.00	\$255.50	\$0.00
334	FLN08053	PROGRAM CABLE, T5600T5620 SERIES	1	0		\$0.00	\$4.85	\$4.85		\$4.85	\$0.00	\$4.85	\$0.00
335	3000305B23	ADAPTER, 8 PIN MODULAR TO DB25	1	0		\$0.00	\$15.15	\$15.15		\$15.15	\$0.00	\$15.15	\$0.00
336	3000305B30	GDTL158AR2	10	0		\$0.00	\$354.78	\$3,547.80		\$3,547.80	\$0.00	\$3,547.80	\$0.00
337	DCGDTL158AR2	RACK I/O DATA BROADCAST BOX	10	0		\$0.00	\$218.00	\$2,180.00		\$2,180.00	\$0.00	\$2,180.00	\$0.00
338	DCGDTL486	25' CABLE DB TO DIU	32	0		\$0.00	\$18.62	\$595.84		\$595.84	\$0.00	\$595.84	\$0.00
339	FKN4120A	25' CABLE ZC TO DB	2	0		\$0.00	\$41.61	\$83.22		\$83.22	\$0.00	\$83.22	\$0.00
340	TKN9037A	Simulcast Prime Equipment											
341													
342													



# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	City and County of San Francisco	Item Description	Man Hours			Labor			Rev. 7/97			Subcontracts			Total	Total
				Qty	Per Unit	Total	Rate	Total	Unit	Cost	Total	Unit	Cost	Total	Unit		
343			** Primus Controllers	1	0	0		\$40,966.14	\$40,966.14	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40,966.14	\$0.00	\$40,966.14
344			SMARTNET #128 CHNL. CENTRAL	1	0	0		\$16,650.57	\$16,650.57	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$16,650.57	\$0.00	\$16,650.57
345			ADD: 21 CHANNEL CAPACITY	1	0	0		\$839.50	\$839.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$839.50	\$0.00	\$839.50
346			ADD: 5 RS232 PORTS	1	0	0		\$13,161.17	\$13,161.17	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$13,161.17	\$0.00	\$13,161.17
347			ENH: SIMULCAST PRIME SITE OPERATION	1	0	0		\$40.15	\$40.15	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.15	\$0.00	\$40.15
348			ADD: MANUAL PRIME SITE CONTROLLER	1	0	0		\$1,987.79	\$1,987.79	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,987.79	\$0.00	\$1,987.79
349			ADD: REDUNDANT CONTROLLER INTERFACE	1	0	0		\$13,691.15	\$13,691.15	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$13,691.15	\$0.00	\$13,691.15
350			ADD: SPARE BOARD FOR SIMUL. PRIME	1	0	0		\$64.75	\$64.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$64.75	\$0.00	\$64.75
351			ADD: SMARTNET# CTRL SVCS/DEPOT MAN	1	0	0		\$94.90	\$94.90	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$94.90	\$0.00	\$94.90
352			ALT: CABLE, 50'	1	0	0		\$104.39	\$104.39	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$104.39	\$0.00	\$104.39
353			ADD: 50 FT. RPTR INTERCONNECT CABLE	2	0	0		\$2,007.50	\$2,007.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,007.50	\$0.00	\$2,007.50
354			ENH: SMARTZONE OPER SIMULCAST PRIME	1	0	0		\$4,708.50	\$4,708.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4,708.50	\$0.00	\$4,708.50
355			ADD: ASTRO 2.0.3 MIXED MODE	1	0	0		\$547.50	\$547.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$547.50	\$0.00	\$547.50
356			SOFTWARE, PROGRAMMING ACCESS, 3.6"	1	0	0		\$462.09	\$462.09	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$462.09	\$0.00	\$462.09
357			EXTENDER BOARD AND HARDWARE	1	0	0		\$40,966.14	\$40,966.14	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40,966.14	\$0.00	\$40,966.14
358			SMARTNET #128 CHNL. CENTRAL	1	0	0		\$16,650.57	\$16,650.57	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$16,650.57	\$0.00	\$16,650.57
359			ADD: 21 CHANNEL CAPACITY	1	0	0		\$639.50	\$639.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$639.50	\$0.00	\$639.50
360			ADD: 6 RS232 PORTS	1	0	0		\$13,161.17	\$13,161.17	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$13,161.17	\$0.00	\$13,161.17
361			ENH: SIMULCAST PRIME SITE OPERATION	1	0	0		\$40.15	\$40.15	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.15	\$0.00	\$40.15
362			ADD: MANUAL PRIME SITE CONTROLLER	1	0	0		\$1,987.79	\$1,987.79	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,987.79	\$0.00	\$1,987.79
363			ADD: REDUNDANT CONTROLLER INTERFACE	1	0	0		\$54.75	\$54.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$54.75	\$0.00	\$54.75
364			ADD: SMARTNET# CTRL SVCS/DEPOT MAN	1	0	0		\$2,007.50	\$2,007.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,007.50	\$0.00	\$2,007.50
365			ENH: SMARTZONE OPER SIMULCAST PRIME	1	0	0		\$4,708.50	\$4,708.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4,708.50	\$0.00	\$4,708.50
366			ADD: ASTRO 2.0.3 MIXED MODE	1	0	0		\$1,131.50	\$1,131.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,131.50	\$0.00	\$1,131.50
367			** 1 BAR / Switch **	3	0	0		\$912.50	\$912.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$912.50	\$0.00	\$912.50
368			FRAME MASTER, 20 CHANNEL	2	0	0		\$912.50	\$912.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$912.50	\$0.00	\$912.50
369			PS 115VAC	1	0	0		\$109.50	\$109.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$109.50	\$0.00	\$109.50
370			POWER ALARM, REDUNDANT	2	0	0		\$31.94	\$31.94	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$31.94	\$0.00	\$31.94
371			POWER CABLE, 50039, P/S 2'	1	0	0		\$39.24	\$39.24	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.24	\$0.00	\$39.24
372			POWER CABLE FRAME, 3.0'	2	0	0		\$33.76	\$33.76	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$33.76	\$0.00	\$33.76
373			CABLE, POWER, 3.0' FRAME	1	0	0		\$45.52	\$45.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.52	\$0.00	\$45.52
374			POWER CABLE 6.0' FRAME	2	0	0		\$67.24	\$67.24	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$67.24	\$0.00	\$67.24
375			CABLE, CONTROL, 3' FRAME TO FRAME	2	0	0		\$890.60	\$890.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$890.60	\$0.00	\$890.60
376			CONTROL MODULE, WITH CONTACT	1	0	0		\$445.30	\$445.30	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$445.30	\$0.00	\$445.30
377			CONTROL MODULE, SLAVE	2	0	0		\$273.75	\$273.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$273.75	\$0.00	\$273.75
378			SWITCH MODULE, A/B ONLY	40	0	0		\$94.90	\$94.90	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$94.90	\$0.00	\$94.90
379			CABLE, CROSSOVER	20	0	0		\$11.88	\$11.88	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$11.88	\$0.00	\$11.88
380			BLANK MODULE	3	0	0		\$2,007.50	\$2,007.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,007.50	\$0.00	\$2,007.50
381			SWITCH FOR REDUNDANT TRNK CONTR	1	0	0		\$2,007.50	\$2,007.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,007.50	\$0.00	\$2,007.50
382			** Comparators **	23	0	0		\$2,701.00	\$2,701.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,701.00	\$0.00	\$2,701.00
383			ASTRO C&I COMPARTOR	23	0	0		\$2,044.00	\$2,044.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,044.00	\$0.00	\$2,044.00
384			ENH: DIGITAL AND ANALOG OPRN	23	0	0		\$3,431.00	\$3,431.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,431.00	\$0.00	\$3,431.00
385			ENH: S2 TRUNKING OPERATION	23	0	0		\$2,044.00	\$2,044.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,044.00	\$0.00	\$2,044.00
386			ENH: GPS SIMULCAST OPERATION	23	0	0		\$6,716.00	\$6,716.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$6,716.00	\$0.00	\$6,716.00
387			ENH: REMOTE STATUS CONTROL INTFC	23	0	0		\$3,650.00	\$3,650.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,650.00	\$0.00	\$3,650.00
388			ADD: 10 WIRELINE I/O PORTS-C&I	115	0	0		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
389			ADD: ASTRO V.24 WIRELINE INTERFACE	23	0	0		\$146.00	\$146.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$146.00	\$0.00	\$146.00
390			ADD: HARDWARE, RACKMOUNT	23	0	0		\$671.60	\$671.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$671.60	\$0.00	\$671.60
391			ALT: DC ONLY OP. DC TO DC CONVERTER	23	0	0		\$21.90	\$21.90	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$21.90	\$0.00	\$21.90
392			RS232 CABLE 25C 25' MIM	23	0	0		\$503.70	\$503.70	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$503.70	\$0.00	\$503.70
393			CABLE RJ45-RJ45 STRAIGHT 25' SYNC	23	0	0		\$42.34	\$42.34	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.34	\$0.00	\$42.34
394			TEST MICROPHONE	1	0	0		\$42.34	\$42.34	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.34	\$0.00	\$42.34

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Man Hours		Labor Hrs Rate	Rev. 7/97 Project Cost Itemization Schedule		Subcontracts Unit Cost	Total \$	Total Cost
			Qty	Per Unit		Total \$	Material Unit Cost			
395	HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	1	0	0	\$72.27		\$0.00	\$72.27	
396	TRN7736	CABLE FOR EXTERNAL SW SPEAKER	1	0	0	\$36.50		\$0.00	\$36.50	
397	RVAM1154	RSS. ASBTRTAC 3000 COMPARTOR	1	0	0	\$255.50		\$0.00	\$255.50	
398		PROGRAMMING CABLE, ASTRO COMPARATO	1	0	0	\$33.95		\$0.00	\$33.95	
399		** SECURE Items **								
400	T3011 X	SECURENET DES/DES-XL KEY LOADR	6	0	0	\$2,289.50		\$0.00	\$13,737.00	
401	C542	ADD: CABLE FOR CUI DIU PX300-S	6	0	0	\$54.75		\$0.00	\$328.50	
402	NLAN0658	BATTERY CHARGER, 1 UNIT/1 HOUR	6	0	0	\$163.52		\$0.00	\$981.12	
403	R2040	SYSTEM ANAL., EAMPS, DES, DVP, TOXO	2	0	0	\$21,644.50		\$0.00	\$43,289.00	
404		** USCIT SDA **								
405	T5100	SIMULCAST CONTROLLER I/F MODEM	3	0	0	\$3,139.00		\$0.00	\$9,417.00	
406	D625	ADD: USC1 CONTROLLER INTERFACE	23	0	0	\$781.10		\$0.00	\$17,965.30	
407	D567	ADD: SCI EXTENDER CARD	1	0	0	\$69.35		\$0.00	\$69.35	
408	NVWG3185	DIST AMP SHELF	3	0	0	\$1,003.75		\$0.00	\$3,011.25	
409	MVOLN3174	DISTRIBUTION AMPLIFIER	23	0	0	\$401.50		\$0.00	\$9,234.50	
410		** Data Broadcast **								
411	DGGDTL158AR2	GDTL158AR2	6	0	0	\$354.76		\$0.00	\$2,128.56	
412	DGGDTL486	RACK FIDATA BROADCAST BOX	6	0	0	\$21.90		\$0.00	\$131.40	
413	PKM120A	25' CABLE DB TO DIU	27	0	0	\$18.62		\$0.00	\$502.74	
414	TKN0037A	25' CABLE ZC TO DB	2	0	0	\$41.61		\$0.00	\$83.22	
415		** TenSI Network Server **								
416	DSPREM8918	UNIVERSAL ENCLOSURE TENSIR800	16	0	0	\$1,095.00		\$0.00	\$17,520.00	
417	DSPREM8902	DC POWER SUPPLY 48VDC	32	0	0	\$912.50		\$0.00	\$29,200.00	
418	DSPREM8801	CPU CNTRL CARD W/2 T1/E1, RED 256	32	0	0	\$4,106.25		\$0.00	\$131,400.00	
419	DSPREM8920	INTERFACE CARDS, 6 T1/E1 INTFC	16	0	0	\$1,642.50		\$0.00	\$26,280.00	
420	DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	16	0	0	\$1,781.20		\$0.00	\$28,499.20	
421	DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	16	0	0	\$1,651.25		\$0.00	\$26,420.00	
422	DSPREM812	GSU PLUG IN MODULE	64	0	0	\$912.50		\$0.00	\$58,400.00	
423	DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	32	0	0	\$2,190.00		\$0.00	\$70,080.00	
424	DSPREM83M2	DIGITAL SIMULCAST MEDEM-II	48	0	0	\$6,935.00		\$0.00	\$332,880.00	
425		** Sling Test Equipment **								
426	RTHP4934A	TRANSMISSION IMPAIRMENT TEST SET-HP	2	0	0	\$3,285.00		\$0.00	\$6,570.00	
427		AUDIO VOLTMETER, HP3400B	1	0	0	\$2,190.00		\$0.00	\$2,190.00	
428	ITTHP5060/6762	RACK ADAPTER, FULL HEIGHT HP	1	0	0	\$193.45		\$0.00	\$193.45	
429		OSCILLOSCOPE	1	0	0	\$3,571.89		\$0.00	\$3,571.89	
430		RACKMOUNT FOR 0180302E52	1	0	0	\$240.90		\$0.00	\$240.90	
431	DLN6200	6 OUTLET AC POWER STRIP	1	0	0	\$68.62		\$0.00	\$68.62	
432	L90ZX	SPECTRA DESKTOP STATION	1	0	0	\$3,190.00		\$0.00	\$3,190.00	
433	Z56L	16W 800 MHZ CONVENTIONAL	1	0	0	\$843.15		\$0.00	\$843.15	
434	54404698101	PLATE RACK MT	1	0	0	\$113.15		\$0.00	\$113.15	
435	0802578801	CONN T	1	0	0	\$10.77		\$0.00	\$10.77	
436		** Racks **								
437	TRN7342	SEVEN FOOT RACK	15	0	0	\$343.10		\$0.00	\$5,146.50	
438		** Power System **								
439	DQ031497BCA	UNITY ONE 60KVA, 15 MIN UPS	1	0	0	\$0.00		\$0.00	\$0.00	
440	DQ031497BCA	SYSTEM S-T-UP ZONE 1, 5X8	1	0	0	\$42,163.34		\$0.00	\$42,163.34	
441	DQTYP46S800313A	TWINPACK PLUS -48VOLT/600AMP	1	0	0	\$1,793.75		\$0.00	\$1,793.75	
442	DQ48TEL125FTR324	48V 508 A HR 4 TRAY BATTERY SYSTEM	1	0	0	\$36,978.68		\$0.00	\$36,978.68	
443	DQ4811100120	CIRCUIT BREAKER PANEL	6	0	0	\$4,804.86		\$0.00	\$28,829.16	
444	D51329120100	20AMP BREAKER	48	0	0	\$283.24		\$0.00	\$13,597.92	
445		Co-Located Remote Equipment **								
446		** Remota Controllers **								

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Man Hours		Labor		Project Cost Itemization Schedule		Total \$	Subcontracts Unit Cost	Total \$	Total Cents
			Qty	Per Unit	Total	Rate	Material	Unit				
447	TS293A	SIMULCAST 28 CHAN REMOTE CONTROLLER	1	0	0	0	\$20,741.49	\$20,741.49	\$0.00	\$20,741.49	\$20,741.49	
448	DB11	ADD: 21 CHANNEL CAPACITY	1	0	0	0	\$16,650.57	\$16,650.57	\$0.00	\$16,650.57	\$16,650.57	
449	DB55	ADD: MANUAL PRIME SITE CONTROLLER	1	0	0	0	\$40.15	\$40.15	\$0.00	\$40.15	\$40.15	
450	D179	ADD: SPARE BOARDS	1	0	0	0	\$7,090.48	\$7,090.48	\$0.00	\$7,090.48	\$7,090.48	
451	Z389	ADD: ASTRO 2.0.3 MIXED MODE	1	0	0	0	\$4,708.50	\$4,708.50	\$0.00	\$4,708.50	\$4,708.50	
452	*****	** Repeater	1	0	0	0	\$39,470.37	\$39,470.37	\$0.00	\$39,470.37	\$39,470.37	
453	DOMS205	GPS BX/CONTROLLER 28 CH	1	0	0	0	\$4,946.48	\$4,946.48	\$0.00	\$4,946.48	\$4,946.48	
454	C98ED	QUANTAR/QUANTRO FAMILY	23	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
455	001C	QUANTAR/QUANTRO CONFIGURATION	23	0	0	0	\$4,809.22	\$106,012.06	\$0.00	\$106,012.06	\$106,012.06	
456	X2750	ADD: 100W 800 MHZ OPERATION	23	0	0	0	\$803.00	\$18,469.00	\$0.00	\$18,469.00	\$18,469.00	
457	X097 A	ENH: S2809 ASTRO CAL TRK QTAR	23	0	0	0	\$63.51	\$1,460.73	\$0.00	\$1,460.73	\$1,460.73	
458	X337	ALT: CABLE 50FT REPEATER	23	0	0	0	\$730.00	\$16,780.00	\$0.00	\$16,780.00	\$16,780.00	
459	X088	ADD: GPS SIMULCAST	23	0	0	0	\$365.00	\$8,395.00	\$0.00	\$8,395.00	\$8,395.00	
460	X803	ADD: INTFC WIRELINE 9.6 KB	23	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
461	X113	ADD: HARDWARE, RACKMOUNT	23	0	0	0	\$158.87	\$3,677.01	\$0.00	\$3,677.01	\$3,677.01	
462	X113	ALT: DC ONLY OP. DG TO DC CONVERTER	23	0	0	0	\$42.34	\$211.70	\$0.00	\$211.70	\$211.70	
463	DSD0002A350	BIDIRECTIONAL SENSOR	5	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
464	FRN1001	TEST MICROPHONE	5	0	0	0	\$72.27	\$361.35	\$0.00	\$361.35	\$361.35	
465	HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5	0	0	0	\$36.50	\$182.50	\$0.00	\$182.50	\$182.50	
466	TRN7738	CABLE FOR EXTERNAL 6W SPEAKER	5	0	0	0	\$64.42	\$1,481.66	\$0.00	\$1,481.66	\$1,481.66	
467	TRN4599	DUAL PHONE LINE SUPPRESSOR	23	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
468	L1705	** Antenna System **	20	0	0	0	\$2.12	\$42.40	\$0.00	\$42.40	\$42.40	
469	TDN0014	1/2" LDF HELIAX, POLY JKT, PER FOOT	12	0	0	0	\$32.85	\$394.20	\$0.00	\$394.20	\$394.20	
470	L1709	1/2" CONNECTOR, N PLUG LDF PLTD	1300	0	0	0	\$6.734.00	\$8,734.00	\$0.00	\$8,734.00	\$8,734.00	
471	TDN0817	7/8" LDF HELIAX, POLY JKT, PER FOOT	12	0	0	0	\$80.30	\$963.60	\$0.00	\$963.60	\$963.60	
472	TDN0810	7/8" CONNECTOR, N PLUG (PLATED)	12	0	0	0	\$60.30	\$723.60	\$0.00	\$723.60	\$723.60	
473	TDN6874	7/8" CABLE GROUND CLAMP KIT	18	0	0	0	\$24.46	\$440.28	\$0.00	\$440.28	\$440.28	
474	TDN0964	7/8" SNAP IN HANGER KIT, 10PK	30	0	0	0	\$39.42	\$1,182.60	\$0.00	\$1,182.60	\$1,182.60	
475	TDN0972	7/8" CABLE HOISTING GRIP	6	0	0	0	\$35.60	\$213.60	\$0.00	\$213.60	\$213.60	
476	L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	350	0	0	0	\$3.07	\$1,074.30	\$0.00	\$1,074.30	\$1,074.30	
477	TDN0009	1/2" CONNECTOR, N PLUG S-FLEX PLTD	46	0	0	0	\$27.36	\$1,258.56	\$0.00	\$1,258.56	\$1,258.56	
478	TDN9209	CABLE WRAP, WEATHERPROOFING	6	0	0	0	\$1.38	\$8.28	\$0.00	\$8.28	\$8.28	
479	L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	350	0	0	0	\$12.23	\$4,280.50	\$0.00	\$4,280.50	\$4,280.50	
480	TDN9714	1/4" CONN, N PLUG S-FLEX (PLTD)	23	0	0	0	\$10.59	\$243.57	\$0.00	\$243.57	\$243.57	
481	TDN0715	1/4" CONN, BING PLUG S-FLEX (PLTD)	23	0	0	0	\$9.135.95	\$210,120.77	\$0.00	\$210,120.77	\$210,120.77	
482	DSTJ000BT	COMBINER, 805-1K MHZ, 8CH, CAV-FER CWA	4	0	0	0	\$6,007.90	\$24,031.60	\$0.00	\$24,031.60	\$24,031.60	
483	DSTJ000BT	COMBINER, 805-1K MHZ, 8CH, CAV-FER CWA	2	0	0	0	\$284.70	\$569.40	\$0.00	\$569.40	\$569.40	
484	DRX000Z4	RMC, 806-824 MHZ, 24CH, CWA	2	0	0	0	\$5,073.50	\$10,147.00	\$0.00	\$10,147.00	\$10,147.00	
485	RLX0039A	LIGHTNING SUPPRESSOR	2	0	0	0	\$659.48	\$1,318.96	\$0.00	\$1,318.96	\$1,318.96	
486	DSD000T6T1XT	BB TPL 6 DEG DOWN TILT	4	0	0	0	\$199.87	\$799.48	\$0.00	\$799.48	\$799.48	
487	DSD000B2A1000	BIDIRECTIONAL SENSOR	1	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
488	*****	** Racks **	9	0	0	0	\$343.10	\$3,087.90	\$0.00	\$3,087.90	\$3,087.90	
489	TRN7342	SEVEN FOOT RACK	9	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
490	*****	*****	1	0	0	0	\$80.30	\$80.30	\$0.00	\$80.30	\$80.30	
491	B1027	GOLD SERIES LICENSE MANAGER	1	0	0	0	\$2,920.00	\$2,920.00	\$0.00	\$2,920.00	\$2,920.00	
492	X283	ADD: GOLD ELITE OPR SFWR LIC	1	0	0	0	\$10,074.00	\$10,074.00	\$0.00	\$10,074.00	\$10,074.00	
493	X657AE	ADD: CONVI CHAN SFWR LIC	69	0	0	0	\$730.00	\$50,430.00	\$0.00	\$50,430.00	\$50,430.00	
494	X285	ADD: SMARTZONE ASTRO SFWR LIC	1	0	0	0	\$9,744.77	\$9,744.77	\$0.00	\$9,744.77	\$9,744.77	
495	BU044	GOLD SERIES AMB BOARD	10	0	0	0	\$18,250.00	\$182,500.00	\$0.00	\$182,500.00	\$182,500.00	
496	BU044	ELITE API	1	0	0	0	\$18,250.00	\$18,250.00	\$0.00	\$18,250.00	\$18,250.00	
497	BU044	ELITE API	1	0	0	0	\$18,250.00	\$18,250.00	\$0.00	\$18,250.00	\$18,250.00	
498	B1011 D	GOLD SERIES 4 CARD CAGE CEB	5	0	0	0	\$27,221.70	\$136,108.50	\$0.00	\$136,108.50	\$136,108.50	

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

City and County of San Francisco		Citywide 800MHz Radio System Project (CERS)		Motorola Proposal for Bid No. 168		Rev: 7/97		Project Cost Itemization Schedule		Subcontracts		Total	
Item #	Mold	Item Description	Qty	Man Hours Per Unit	Total	Material Unit Cost	Total \$	Unit Cost	Total \$	Unit Cost	Total \$	Total \$	Total Cost
499	K995 C	ALT: AIMI PAIR TRUNK	5			\$6,011.75	\$30,058.75		\$30,058.75		\$30,058.75		\$30,058.75
500	K037AD	ADD: EXPRESS SERVICE	5			\$1,448.05	\$7,240.25		\$7,240.25		\$7,240.25		\$7,240.25
501	K0655	ADD: DIAGNOSTIC INTERFACE	8			\$217.54	\$1,740.32		\$1,740.32		\$1,740.32		\$1,740.32
502	B1840	GOLD BASE INFO MODULE	81			\$634.37	\$51,393.97		\$51,393.97		\$51,393.97		\$51,393.97
503	K40BP	ADD: SUPERVISORY TAKE-OVER RELAY	51			\$59.13	\$3,015.63		\$3,015.63		\$3,015.63		\$3,015.63
504	K116AB	ENH: RETAIN TONE REMOTE CONTROL	51			\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
505	B1840	GOLD BASE INFO MODULE	18			\$634.37	\$11,418.66		\$11,418.66		\$11,418.66		\$11,418.66
506	K40BP	ADD: SUPERVISORY TAKE-OVER RELAY	18			\$59.13	\$1,064.34		\$1,064.34		\$1,064.34		\$1,064.34
507	K140AB	ENH: RETAIN TONE REMOTE CONTROL	18			\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
508	G3304	WWW BIM	1			\$1,007.40	\$1,007.40		\$1,007.40		\$1,007.40		\$1,007.40
509	DQNETCLOCK2OPT02	WWW RECEIVER WIRS232	1			\$1,971.00	\$1,971.00		\$1,971.00		\$1,971.00		\$1,971.00
510	DQOPT1	18" RACK MOUNT	1			\$168.63	\$168.63		\$168.63		\$168.63		\$168.63
511	DQD208	ANTENNA	1			\$267.91	\$267.91		\$267.91		\$267.91		\$267.91
512	DQD213	ANTENNA MOUNT	1			\$60.59	\$60.59		\$60.59		\$60.59		\$60.59
513	GR11218	LINKBUILDER FMS II 12-PORT	1			\$576.70	\$576.70		\$576.70		\$576.70		\$576.70
514	TDN1113	ETHERNET CABLE, 60'	5			\$63.95	\$319.75		\$319.75		\$319.75		\$319.75
515	CDN6210	SINGLE PORT WAN BRIDGE	4			\$1,259.47	\$5,037.88		\$5,037.88		\$5,037.88		\$5,037.88
516	CDN6213	V36 CABLE MALE/MALE 20FT	4			\$332.88	\$1,331.52		\$1,331.52		\$1,331.52		\$1,331.52
517	B1022	GOLD SERIES ELITE/GRT DESKTOP	4			\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
518	G011AB	ALT: MICROPHONE, DESK	1			\$65.41	\$65.41		\$65.41		\$65.41		\$65.41
519	K670	ADD: HEADSET JACK	1			\$160.60	\$160.60		\$160.60		\$160.60		\$160.60
520	K749AA	ADD: SECOND HEADSET JACK	1			\$160.60	\$160.60		\$160.60		\$160.60		\$160.60
521	K572AF	ADD: FOOTSWITCH	1			\$70.08	\$70.08		\$70.08		\$70.08		\$70.08
522	JDN6651	HEADSET, STARSET II W/PTT	1			\$261.34	\$261.34		\$261.34		\$261.34		\$261.34
523	TDN9927	HP PENT CPU 100Mhz CD ETH WINNT	1			\$3,149.95	\$3,149.95		\$3,149.95		\$3,149.95		\$3,149.95
524	TDN1765	TOUCHSCREEN MONITOR 17"	1			\$1,565.85	\$1,565.85		\$1,565.85		\$1,565.85		\$1,565.85
525	TDN8154	ML320T EPSON PRINTER	1			\$481.07	\$481.07		\$481.07		\$481.07		\$481.07
526	INVJAA01	PUC	1			\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
527			1			\$1,460.00	\$1,460.00		\$1,460.00		\$1,460.00		\$1,460.00
528			1			\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
529	SPQ34BCA0096	DATA CENTRAL APPLICATION	1			\$803.00	\$803.00		\$803.00		\$803.00		\$803.00
530	V511ABSF	ADD: DEVELOPMENT LABOR 2	1			\$603.00	\$603.00		\$603.00		\$603.00		\$603.00
531	SPQ34BCA	GRAPHIC MASTER CLUST DATA BASE PROG	1			\$73.00	\$73.00		\$73.00		\$73.00		\$73.00
532	V511AXSP	ADD: DEVELOPMENT LABOR	22			\$73.00	\$1,606.00		\$1,606.00		\$1,606.00		\$1,606.00
533	V511AXSP	ADD: DEVELOPMENT QUANTAR ALARMING	246			\$36.50	\$8,979.00		\$8,979.00		\$8,979.00		\$8,979.00
534	V511AXSP	ADD: DEVELOPMENT LABOR QUANTAR RSS	246			\$73.00	\$17,958.00		\$17,958.00		\$17,958.00		\$17,958.00
535	V511AXSP	ADD: DEVELOPMENT LABOR PREMISYS	44			\$73.00	\$3,212.00		\$3,212.00		\$3,212.00		\$3,212.00
536	V511AXSP	ADD: DEVELOPMENT LABOR EFRATOM GPS	10			\$73.00	\$730.00		\$730.00		\$730.00		\$730.00
537	V511AXSP	ADD: DEVELOPMENT LABOR I/O MODULE	32			\$146.00	\$4,672.00		\$4,672.00		\$4,672.00		\$4,672.00
538	V511AXSP	ADD: DEVELOPMENT LABOR HARRIS MM	36			\$73.00	\$2,628.00		\$2,628.00		\$2,628.00		\$2,628.00
539	V511AXSP	ADD: DEVELOPMENT LABOR REDUNDANT	22			\$219.00	\$4,818.00		\$4,818.00		\$4,818.00		\$4,818.00
540	V511AXSP	ADD: DEVELOPMENT LABOR 2ND LINK	17			\$73.00	\$1,241.00		\$1,241.00		\$1,241.00		\$1,241.00
541	SPQ34BCA	MOSCAD FRONT END PROCESSOR APPLICAT	1			\$73.00	\$73.00		\$73.00		\$73.00		\$73.00
542	V511AXSP	ADD: DEVELOPMENT LABOR PER SITE	17			\$54.76	\$930.75		\$930.75		\$930.75		\$930.75
543	SPQ34BCA0105	DATA ENG SVC (IN HOUSE 5 DAY)	5			\$6,022.50	\$30,112.50		\$30,112.50		\$30,112.50		\$30,112.50
544	SPQ34BCA0113	DATA ENG SVC (ONSITE 3 DAY 21)	4			\$5,767.00	\$23,068.00		\$23,068.00		\$23,068.00		\$23,068.00
545	SPQ34BCA0099	DETAILED SYSTEM IMPLEMENTATION	1			\$603.00	\$603.00		\$603.00		\$603.00		\$603.00
546	V511AFSP	ADD: DEVELOPMENT LABOR 6	3			\$4,015.00	\$12,045.00		\$12,045.00		\$12,045.00		\$12,045.00
547	SPQ34BCA0101	DATA ENG SVC (OPERATOR TRAINING)	1			\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
548	SPQ34BCA0101	DATA ENG SVC (M.A. TRAINING)	1			\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
549	SPQ34BCA0101	DATA ENG SVC (SYS OPERATOR MAN. SET)	1			\$1,204.50	\$1,204.50		\$1,204.50		\$1,204.50		\$1,204.50
550	ISDZ991G90	MOSCAD RTU SERVICE MANUAL	17			\$81.76	\$1,389.92		\$1,389.92		\$1,389.92		\$1,389.92

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

City and County of San Francisco		Citywide 800MHz Radio System Project (CERS)		Motorola Proposal for Bid No. 168		Rev: 7/97		Project Cost Itemization Schedule		Subcontracts		Total	
Item #	Model	Item Description	Qty	Man Hours	Labor	Total	Material	Total	Unit	Cost	Total	Total	Total
			Per Unit	Rate	Hours	\$	Cost	\$	Cost	\$	\$	\$	Costs
551		MOSCAD GRAPHIC CENTRAL	11	0		\$0.00	\$730.00	\$730.00			\$0.00	\$0.00	\$0.00
552	SPQ34BCA0096	DATA CENTRAL APPLICATION	11	0		\$0.00	\$730.00	\$730.00			\$0.00	\$0.00	\$0.00
553	V511AESP	ADD: DEVELOPMENT LABOR 2	11	0		\$0.00	\$6,475.00	\$6,475.00			\$0.00	\$0.00	\$0.00
554	V511AESP	ADD: DEVELOPMENT LABOR 7	11	0		\$0.00	\$730.00	\$730.00			\$0.00	\$0.00	\$0.00
555	SPQ34BCA0096	DATA CENTRAL APPLICATION	11	0		\$0.00	\$965.00	\$965.00			\$0.00	\$0.00	\$0.00
556	V511AESP	ADD: DEVELOPMENT LABOR 1	11	0		\$0.00	\$2,008.25	\$2,008.25			\$0.00	\$0.00	\$0.00
557	DQ6209542300010	28.8 LFSTYL PC CD	11	0		\$0.00	\$94.17	\$94.17			\$0.00	\$0.00	\$0.00
558	DQ201M	SHORT HAUL MODEM	11	0		\$0.00	\$94.17	\$94.17			\$0.00	\$0.00	\$0.00
559	DQ201FT	SHORT HAUL MODEM	11	0		\$0.00	\$73.00	\$73.00			\$0.00	\$0.00	\$0.00
560	FLN647ASP6654	LINE DRIVER CABLE	11	0		\$0.00	\$965.00	\$965.00			\$0.00	\$0.00	\$0.00
561	16742	MICROSOFT EXCEL SOFTWARE	11	0		\$0.00	\$730.00	\$730.00			\$0.00	\$0.00	\$0.00
562	SPQ34BCA0096	DATA CENTRAL APPLICATION	11	0		\$0.00	\$9,125.00	\$9,125.00			\$0.00	\$0.00	\$0.00
563	V511AESP	ADD: DEVELOPMENT LABOR 9	11	0		\$0.00	\$730.00	\$730.00			\$0.00	\$0.00	\$0.00
564	SPQ34BCA0096	DATA CENTRAL APPLICATION	3	0		\$0.00	\$2,920.00	\$2,920.00			\$0.00	\$0.00	\$0.00
565	V511AESP	ADD: DEVELOPMENT LABOR 5	3	0		\$0.00	\$4,197.50	\$4,197.50			\$0.00	\$0.00	\$0.00
566	15739	INTOUCH RUNTIME TWO 10 SOFTWARE	3	0		\$0.00	\$200.75	\$200.75			\$0.00	\$0.00	\$0.00
567	DQ6209542300010	28.8 LFSTYL PC CD	3	0		\$0.00	\$73.00	\$73.00			\$0.00	\$0.00	\$0.00
568	SPQ34BCA0096	DATA CENTRAL APPLICATION	3	0		\$0.00	\$2,920.00	\$2,920.00			\$0.00	\$0.00	\$0.00
569	V511AESP	ADD: DEVELOPMENT LABOR 6	3	0		\$0.00	\$3,942.00	\$3,942.00			\$0.00	\$0.00	\$0.00
570	SPQ34BCA0112	DATA ENG SVC (ONSITE 2 DAY Z1)	3	0		\$0.00	\$730.00	\$730.00			\$0.00	\$0.00	\$0.00
571	SPQ34BCA0096	DATA CENTRAL APPLICATION	5	0		\$0.00	\$5,475.00	\$5,475.00			\$0.00	\$0.00	\$0.00
572	V511AESP	ADD: DEVELOPMENT LABOR 7	5	0		\$0.00	\$200.75	\$200.75			\$0.00	\$0.00	\$0.00
573	DQ6209542300010	28.8 LFSTYL PC CD	5	0		\$0.00	\$1,443.94	\$1,443.94			\$0.00	\$0.00	\$0.00
574	F6900	MOSCAD FRONT END PROCESSOR	4	0		\$0.00	\$0.00	\$0.00			\$0.00	\$0.00	\$0.00
575	V651	MOSCAD EXTERNAL MODEM COMMUNICATIO	4	0		\$0.00	\$0.00	\$0.00			\$0.00	\$0.00	\$0.00
576	V410	ALT: NEMA TO RACKMOUNT	4	0		\$0.00	\$146.00	\$146.00			\$0.00	\$0.00	\$0.00
577	V425	REPLAGE B-SLOT MB W/BCPU+MO I/O	4	0		\$0.00	\$72.25	\$72.25			\$0.00	\$0.00	\$0.00
578	V245	ADD: MOSCAD GPU 300	28	0		\$0.00	\$113.15	\$113.15			\$0.00	\$0.00	\$0.00
579	V245	ADD: ASYNC RS232	32	0		\$0.00	\$693.50	\$693.50			\$0.00	\$0.00	\$0.00
580	V120	ADD: B MOD W/EXPANSION MODULE	1	0		\$0.00	\$4,774.20	\$4,774.20			\$0.00	\$0.00	\$0.00
581	V437	ADD: BA1 5V MODULE	10	0		\$0.00	\$1,443.94	\$1,443.94			\$0.00	\$0.00	\$0.00
582	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0		\$0.00	\$0.00	\$0.00			\$0.00	\$0.00	\$0.00
583	V651	ALT: NEMA TO RACKMOUNT	1	0		\$0.00	\$0.00	\$0.00			\$0.00	\$0.00	\$0.00
584	V274	DEL: 3 AMP PS AND BATTERY	3	0		\$0.00	\$113.15	\$113.15			\$0.00	\$0.00	\$0.00
585	V245	ADD: ASYNC RS232	2	0		\$0.00	\$339.45	\$339.45			\$0.00	\$0.00	\$0.00
586	V280	ADD: 60 DI. MODULE	2	0		\$0.00	\$277.40	\$277.40			\$0.00	\$0.00	\$0.00
587	V616	ADD: 1600 LATCH MODULE	2	0		\$0.00	\$375.95	\$375.95			\$0.00	\$0.00	\$0.00
588	V389	REPL: B-SLOT MB W/BCPU+MO	1	0		\$0.00	\$146.00	\$146.00			\$0.00	\$0.00	\$0.00
589	V428	ADD: CPU 300	2	0		\$0.00	\$972.36	\$972.36			\$0.00	\$0.00	\$0.00
590	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0		\$0.00	\$1,443.94	\$1,443.94			\$0.00	\$0.00	\$0.00
591	V104	ADD: 300/1200 BPS AUTO ANSWER	1	0		\$0.00	\$113.15	\$113.15			\$0.00	\$0.00	\$0.00
592	V345	ADD: ASYNC RS232	1	0		\$0.00	\$10.95	\$10.95			\$0.00	\$0.00	\$0.00
593	FRN4M00	FLAT OVAL 2.5M CABLE	36	0		\$0.00	\$36.50	\$36.50			\$0.00	\$0.00	\$0.00
594	FRN6727	LAN ADAPTER ASSEMBLY	7	0		\$0.00	\$52.56	\$52.56			\$0.00	\$0.00	\$0.00
595	FLN6457	CPU TO COMPUTER RS232 ASYNC 3M	1	0		\$0.00	\$32.85	\$32.85			\$0.00	\$0.00	\$0.00
596	FLN8259	COMPUTER ADAPT. 9 PIN TYPE TO RJ45	1	0		\$0.00	\$210.97	\$210.97			\$0.00	\$0.00	\$0.00
597	TDN9871	MODEM, DESKTOP, LIFESTYLE 28.8-PC	1	0		\$0.00	\$590.35	\$590.35			\$0.00	\$0.00	\$0.00
598	TDN9263	MODEM, 14,400 BPS V.32BIS	3	0		\$0.00	\$53.44	\$53.44			\$0.00	\$0.00	\$0.00
599	DQ6VMBMS0006	MODEM CABLE	4	0		\$0.00	\$438.00	\$438.00			\$0.00	\$0.00	\$0.00
600	F2316	MOSCAD PROGRAMMING TOOL BOX	1	0		\$0.00	\$385.00	\$385.00			\$0.00	\$0.00	\$0.00
601	V377	ENH: 3RD PARTY DRIVER	1	0		\$0.00	\$10.95	\$10.95			\$0.00	\$0.00	\$0.00
602	FLN65934	EXTERNAL DC PS TO MB CABLE	1	0		\$0.00	\$0.00	\$0.00			\$0.00	\$0.00	\$0.00

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Man Hours		Labor Hrs	Project Cost Itemization Schedule		Subcontract Unit	Total \$	Total Cost
			Qty	Per Unit		Total \$	Unit Cost			
City and County of San Francisco										
Citywide 800MHz Radio System Project (CERS)										
Motorola Proposal for Bid No. 168										
603										
604										
605		** Repairs **								
606	C98ED	QUANTAR/QUANTRO CRS	10	0	0	\$4,946.48	\$0.00	\$0.00	\$49,464.80	\$49,464.80
607	G07C	QUANTAR/QUANTRO CONFIGURATION	10	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
608	X750	ADD: 100W 800 MHZ OPERATION	10	0	0	\$4,609.22	\$0.00	\$0.00	\$46,092.20	\$46,092.20
609	X597 A	ENH: CONVENTIONAL ONLY QTR	10	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
610	X500	ADD: REPEATER OPERATION	10	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
611	X153	ADD: HARDWARE, RACK/MOUNT	10	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
612	X432	ADD: MANUAL, SERVICE	10	0	0	\$146.00	\$0.00	\$0.00	\$1,460.00	\$1,460.00
613	X173	ALT: DC ONLY OP. DC TO DC CONVERTER	10	0	0	\$146.00	\$0.00	\$0.00	\$1,460.00	\$1,460.00
614	D3DB802A350	BIDIRECTIONAL SENSOR	10	0	0	\$159.87	\$0.00	\$0.00	\$1,598.70	\$1,598.70
615	HMN1001	TEST MICROPHONE	1	0	0	\$42.34	\$0.00	\$0.00	\$42.34	\$42.34
616	HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	1	0	0	\$72.27	\$0.00	\$0.00	\$72.27	\$72.27
617	TRV7738	CABLE FOR EXTERNAL 6W SPEAKER	1	0	0	\$36.50	\$0.00	\$0.00	\$36.50	\$36.50
618	TRM589	DUAL PHONE LINE SUPPRESSOR	10	0	0	\$64.42	\$0.00	\$0.00	\$644.20	\$644.20
619		** Arama System **								
620	L1705	12" LDF HELIX, POLY JKT, PER FOOT	40	0	0	\$2.12	\$0.00	\$0.00	\$84.80	\$84.80
621	TDN0014	1/2" CONNECTOR, N PLUG LDF PLTD	22	0	0	\$72.27	\$0.00	\$0.00	\$722.70	\$722.70
622	L1709	7/8" LDF HELIX, POLY JKT, PER FOOT	1200	0	0	\$5.18	\$0.00	\$0.00	\$6,216.00	\$6,216.00
623	TDN0817	7/8" CONNECTOR, N PLUG (PLATED)	22	0	0	\$80.30	\$0.00	\$0.00	\$1,766.60	\$1,766.60
624	TDN0818	7/8" CONNECTOR, N JACK (PLATED)	22	0	0	\$80.30	\$0.00	\$0.00	\$1,766.60	\$1,766.60
625	TDN6674	7/8" CABLE GROUND CLAMP KIT	93	0	0	\$24.46	\$0.00	\$0.00	\$807.18	\$807.18
626	TDN0964	7/8" SNAP-IN HANGER KIT, TOPK	30	0	0	\$39.42	\$0.00	\$0.00	\$1,182.60	\$1,182.60
627	TDN6672	7/8" CABLE HOISTING GRIP	3	0	0	\$38.50	\$0.00	\$0.00	\$109.50	\$109.50
628	L1702	12" SUPERFLEX, POLY JKT, PER FOOT	150	0	0	\$3.07	\$0.00	\$0.00	\$460.50	\$460.50
629	TDN0609	1/2" CONNECTOR, N PLUG S-FLEX PLTD	96	0	0	\$37.78	\$0.00	\$0.00	\$3,606.08	\$3,606.08
630	TDN9289	CABLE WRAP, WEATHERPROOFING	11	0	0	\$27.38	\$0.00	\$0.00	\$301.18	\$301.18
631	L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	150	0	0	\$1.39	\$0.00	\$0.00	\$208.50	\$208.50
632	TDN9714	1/4" CONN, N PLUG S-FLEX (PLTD)	18	0	0	\$12.23	\$0.00	\$0.00	\$220.14	\$220.14
633	TDN9715	1/4" CONN, BNC PLUG S-FLEX (PLTD)	18	0	0	\$10.59	\$0.00	\$0.00	\$190.62	\$190.62
634	DSTJTB005T	XMTX COMBINER	2	0	0	\$6,323.26	\$0.00	\$0.00	\$12,646.52	\$12,646.52
635	D5JT6002T	XMTX CAVITY COMBNER 2 FREQ	0	0	0	\$3,084.54	\$0.00	\$0.00	\$0.00	\$0.00
636	DSRMC80012	RMC 800-824 MHZ, 12CH, GWA	1	0	0	\$2,182.70	\$0.00	\$0.00	\$2,182.70	\$2,182.70
637	DSRMC8004N	RMC 806-824MHZ, 4CH, GWA	0	0	0	\$1,549.08	\$0.00	\$0.00	\$0.00	\$0.00
638	RRX40099A	LIGHTNING SUPPRESSOR	4	0	0	\$47.46	\$0.00	\$0.00	\$189.80	\$189.80
639	D3DB806DXT	BB DUAL OMNI	2	0	0	\$1,729.37	\$0.00	\$0.00	\$3,458.74	\$3,458.74
640	D6JB806XT	BB DUAL OMNI	0	0	0	\$759.93	\$0.00	\$0.00	\$0.00	\$0.00
641	D3DB8082A1000	BIDIRECTIONAL SENSOR	2	0	0	\$159.87	\$0.00	\$0.00	\$319.74	\$319.74
642		** Racks **								
643	TRN7342	SEVEN FOOT RACK	5	0	0	\$343.10	\$0.00	\$0.00	\$1,715.50	\$1,715.50
644		Existing Trunk System Upgrades	1	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
645	T6132	SMARTZONE OF SIMULCAST PRIME	2	0	0	\$2,007.50	\$0.00	\$0.00	\$4,015.00	\$4,015.00
646										
647		Additional Spares								
648	T5716	REMOTE TERMINAL ACCESS SVR	1	0	0	\$3,358.00	\$0.00	\$0.00	\$3,358.00	\$3,358.00
649	Z331	ADD: 8 USER MODULE	1	0	0	\$1,971.00	\$0.00	\$0.00	\$1,971.00	\$1,971.00
650	CLN6866	6AKBP8S NEST CARD-RM16M	1	0	0	\$773.80	\$0.00	\$0.00	\$773.80	\$773.80
651	CLN6860	6AKBP8S COMM DEVICE 110V	1	0	0	\$773.80	\$0.00	\$0.00	\$773.80	\$773.80
652	D35900330	PS 115VAC	1	0	0	\$912.50	\$0.00	\$0.00	\$912.50	\$912.50
653	US58044	CONTROL MODULE, WITH CONTACT	1	0	0	\$867.24	\$0.00	\$0.00	\$867.24	\$867.24
654	US550083	POWER ALARM, REDUNDANT	1	0	0	\$912.50	\$0.00	\$0.00	\$912.50	\$912.50

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Man Hours		Labor		Project Cost Itemization Schedule		Subcontract Unit Cost	Total \$	Total \$	Total Costs
			Qty	Per Unit	Hrs	Rate	Material Unit Cost	Total \$				
653	DS580052	CONTROL MODULE, SLAVE	1	0	0	0	\$446.30	\$446.30	\$0.00	\$0.00	\$446.30	
654	DS580104	SWITCH MODULE, A/B ONLY	1	0	0	0	\$273.75	\$273.75	\$0.00	\$0.00	\$273.75	
655	CLM1195	SWITCH FOR REDUNDANT TRK CONTR	1	0	0	0	\$2,007.50	\$2,007.50	\$0.00	\$0.00	\$2,007.50	
656	CLM1181	FRU-CONTROL, COMPARTOR, TRK	1	0	0	0	\$2,356.00	\$2,356.00	\$0.00	\$0.00	\$2,356.00	
657	CLM1165	FRU-DSP DAUGHTER BOARD	1	0	0	0	\$948.00	\$948.00	\$0.00	\$0.00	\$948.00	
658	CLM1162	FRU-TPC	1	0	0	0	\$2,190.00	\$2,190.00	\$0.00	\$0.00	\$2,190.00	
659	CLM1160	FRU-WIRELINE COMPARTOR, TRK	1	0	0	0	\$730.00	\$730.00	\$0.00	\$0.00	\$730.00	
660	CLM1160	FRU-POWER SUPPLY W/ 12 V DC REVERT	1	0	0	0	\$1,533.00	\$1,533.00	\$0.00	\$0.00	\$1,533.00	
661	TLN3252	FRU-V24 WRUJ48	1	0	0	0	\$365.00	\$365.00	\$0.00	\$0.00	\$365.00	
662	CLM1163	ASTRO DIU3000 HARDWARE	1	0	0	0	\$2,127.95	\$2,127.95	\$0.00	\$0.00	\$2,127.95	
663	F204U	ENH: ASTRO GAI OPERATION	1	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
664	X008	ADD: TRUNKING RELEASE SW.	1	0	0	0	\$2,529.45	\$2,529.45	\$0.00	\$0.00	\$2,529.45	
665	X060	ADD: BATTERY REVERT CABLE	1	0	0	0	\$64.24	\$64.24	\$0.00	\$0.00	\$64.24	
666	C20	ASTRO DES-OFB ENC CARTRIDGE	1	0	0	0	\$546.77	\$546.77	\$0.00	\$0.00	\$546.77	
667	T5771	SPARE UNIVERSAL SCI	2	0	0	0	\$292.00	\$584.00	\$0.00	\$0.00	\$584.00	
668	T5307	DISTRIBUTION AMPLIFIER	1	0	0	0	\$401.50	\$401.50	\$0.00	\$0.00	\$401.50	
669	MWGLN3174	DC POWER SUPPLY 48 VDC	1	0	0	0	\$912.50	\$912.50	\$0.00	\$0.00	\$912.50	
670	DSPREM8902	GPU CNTRL CARD W/2 T1/T1, RED 286	1	0	0	0	\$4,106.25	\$4,106.25	\$0.00	\$0.00	\$4,106.25	
671	DSPREM8901	SERVER CARD, ADPCM	1	0	0	0	\$5,748.75	\$5,748.75	\$0.00	\$0.00	\$5,748.75	
672	DSPREM8970	DIGITAL SIMULCAST MEDIUM-II	1	0	0	0	\$6,935.00	\$6,935.00	\$0.00	\$0.00	\$6,935.00	
673	DSPREMDSM2	VOICE CARD, 8 PORT, 4 WIRE EAMTO	1	0	0	0	\$1,368.75	\$1,368.75	\$0.00	\$0.00	\$1,368.75	
674	DSPREM8119	INTERFACE CARDS, 8 T1/T1 INTFC	1	0	0	0	\$1,642.50	\$1,642.50	\$0.00	\$0.00	\$1,642.50	
675	DSPREM8920	WAN CARD, DUAL T1/T1 INTERFACE	1	0	0	0	\$1,551.25	\$1,551.25	\$0.00	\$0.00	\$1,551.25	
676	DSPREM8910	WAN CARD, DUAL T1/T1 INTERFACE	1	0	0	0	\$1,781.20	\$1,781.20	\$0.00	\$0.00	\$1,781.20	
677	DSPREM8914	CSU PLUG IN MODULE	1	0	0	0	\$912.50	\$912.50	\$0.00	\$0.00	\$912.50	
678	DSPREM812	DATA CARD, 10 PORT RS232C SUB-RATE	1	0	0	0	\$2,190.00	\$2,190.00	\$0.00	\$0.00	\$2,190.00	
679	DSPREM8220	GPS RX/CONTROLLER 28 GH	1	0	0	0	\$99,470.37	\$99,470.37	\$0.00	\$0.00	\$99,470.37	
680	DDMFS205	QUANTAR/QUANTRO FAMILY	1	0	0	0	\$4,946.46	\$4,946.46	\$0.00	\$0.00	\$4,946.46	
681	CS9D	QUANTAR/QUANTRO CONFIGURATION	1	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
682	001C	ADD: 100W 800 MHZ OPERATION	1	0	0	0	\$4,609.22	\$4,609.22	\$0.00	\$0.00	\$4,609.22	
683	X750	ENH: SZ6809 ASTR GAI TRK OTAR	1	0	0	0	\$603.00	\$603.00	\$0.00	\$0.00	\$603.00	
684	X097 A	ALT: CABLE 50FT REPEATER	1	0	0	0	\$63.51	\$63.51	\$0.00	\$0.00	\$63.51	
685	X337	ADD: GPS SIMULCAST	1	0	0	0	\$730.00	\$730.00	\$0.00	\$0.00	\$730.00	
686	X800	ADD: INTFC, WIRELINE, 9.6 KB	1	0	0	0	\$365.00	\$365.00	\$0.00	\$0.00	\$365.00	
687	X000	ALT: DC ONLY OP. DC TO DC CONVERTER	1	0	0	0	\$146.00	\$146.00	\$0.00	\$0.00	\$146.00	
688	X113	Additional Manuals	1	0	0	0	\$10.95	\$10.95	\$0.00	\$0.00	\$10.95	
689	SMARTZONE 2.0.3 OVERVIEW GUIDE	20	0	0	0	\$276.00	\$5,520.00	\$0.00	\$0.00	\$5,520.00		
690	SMARTZONE 2.0.3 INSTALL MANUAL	20	0	0	0	\$1,825.00	\$36,500.00	\$0.00	\$0.00	\$36,500.00		
691	SMARTZONE MGR 2.0.3 USER MANUAL	20	0	0	0	\$1,460.00	\$29,200.00	\$0.00	\$0.00	\$29,200.00		
692	MANUAL, TRUNKED SYS DUAL PATH	20	0	0	0	\$36.50	\$730.00	\$0.00	\$0.00	\$730.00		
693	MANUAL, SYS MANAGER OPERATING	20	0	0	0	\$146.00	\$2,920.00	\$0.00	\$0.00	\$2,920.00		
694	MANUAL, INSTR CC TRK SMARTNET II	20	0	0	0	\$7.30	\$146.00	\$0.00	\$0.00	\$146.00		
695	MAN INSTR SYS MANAGER OPERATOR	20	0	0	0	\$511.00	\$10,220.00	\$0.00	\$0.00	\$10,220.00		
696	MAN INSTR 001SSP263351	20	0	0	0	\$23.91	\$478.20	\$0.00	\$0.00	\$478.20		
697	MAN INSTR T3014DX DVP-XL KVL	20	0	0	0	\$12.23	\$244.60	\$0.00	\$0.00	\$244.60		
698	MANUAL, T50078X CONSOLE INTERFACE	20	0	0	0	\$27.38	\$547.60	\$0.00	\$0.00	\$547.60		
699	TENSR0000 REFERENCE GUIDE	20	0	0	0	\$18.26	\$365.00	\$0.00	\$0.00	\$365.00		
700	DIU3000 Owners/Install Manual	20	0	0	0	\$73.00	\$1,460.00	\$0.00	\$0.00	\$1,460.00		
701	MAN INSTR T1 EMBASSY SW SERV	20	0	0	0	\$357.80	\$7,156.00	\$0.00	\$0.00	\$7,156.00		
702	DIU3000 Service Manual	20	0	0	0	\$17.89	\$357.80	\$0.00	\$0.00	\$357.80		
703	DVIDVPIDES ENCRYPT MOD USERS	20	0	0	0	\$27.01	\$540.20	\$0.00	\$0.00	\$540.20		
704	MAN ASTRO DVIDVP DES SERVICE	20	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		



# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours Per Unit	Total	Revised 7/97 Project Cost Itemization Schedule	Material	Total \$	Subcontracts	Total \$	Total Cost
707		City and County of San Francisco Citywide 800MHz Radio System Project (CERS) Motorola Proposal for Bid No. 163									
708		DIU3000 Centacom Signalling Man.	20	0	\$0.00	\$73.00	\$1,460.00	\$0.00	\$0.00	\$1,460.00	
709		DIU3000 Trunked Operation Manual	20	0	\$0.00	\$73.00	\$1,460.00	\$0.00	\$0.00	\$1,460.00	
710		MANUAL, SERV QUANTAR/QUANTRO	20	0	\$0.00	\$146.00	\$2,920.00	\$0.00	\$0.00	\$2,920.00	
711		MAN INSTR QUANTAR 800	20	0	\$0.00	\$36.50	\$730.00	\$0.00	\$0.00	\$730.00	
712		ASTRO-TAC 2000 COMP RSS USER MANUAL	20	0	\$0.00	\$18.25	\$365.00	\$0.00	\$0.00	\$365.00	
713		ASTRO-TAG 2000 COMP FUNC MAN	20	0	\$0.00	\$36.50	\$730.00	\$0.00	\$0.00	\$730.00	
714		Microwave	6	0	\$0.00	\$49,687.00	\$298,002.00	\$135,000.00	\$163,002.00	\$461,002.00	
715		CRS SITE TOTAL						\$298,002.00	\$135,000.00	\$433,002.00	
716		Site 2: Bernal Heights --	1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
717		** Remote Controllers **	1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
718		SIMULCAST 28 CHAN REMOTE CONTROLLER	1	0	\$0.00	\$20,741.49	\$20,741.49	\$0.00	\$0.00	\$20,741.49	
719		ADD: 21 CHANNEL CAPACITY	1	0	\$0.00	\$16,650.57	\$16,650.57	\$0.00	\$0.00	\$16,650.57	
720		ADD: SPARE BOARDS	1	0	\$0.00	\$7,090.49	\$7,090.49	\$0.00	\$0.00	\$7,090.49	
721		ADD: ASTRO 2.03 MIXED MODE	1	0	\$0.00	\$4,708.50	\$4,708.50	\$0.00	\$0.00	\$4,708.50	
722		** Telus Network Server **	2	0	\$0.00	\$1,085.00	\$2,170.00	\$0.00	\$0.00	\$2,170.00	
723		UNIVERSAL ENCLOSURE TENSUR800	4	0	\$0.00	\$912.50	\$3,650.00	\$0.00	\$0.00	\$3,650.00	
724		DC POWER SUPPLY 48VDC	2	0	\$0.00	\$1,642.50	\$3,285.00	\$0.00	\$0.00	\$3,285.00	
725		INTERFACE CARDS, 8 T1/E1 INTFC	4	0	\$0.00	\$4,106.25	\$16,425.00	\$0.00	\$0.00	\$16,425.00	
726		CPU CNTRL CARD W/2 T1/E1, RED 256	2	0	\$0.00	\$4,781.20	\$9,562.40	\$0.00	\$0.00	\$9,562.40	
727		WAN CARD, DUAL T1/E1 INTERFACE	2	0	\$0.00	\$1,551.25	\$3,102.50	\$0.00	\$0.00	\$3,102.50	
728		WAN CARD, DUAL T1/E1 INTERFACE	2	0	\$0.00	\$912.50	\$1,825.00	\$0.00	\$0.00	\$1,825.00	
729		CSU PLUG IN MODULE	8	0	\$0.00	\$2,190.00	\$8,760.00	\$0.00	\$0.00	\$8,760.00	
730		DATA CARD, 10 PORT RS232C SUB-RATE	4	0	\$0.00	\$4,610.00	\$18,440.00	\$0.00	\$0.00	\$18,440.00	
731		DIGITAL SIMULCAST MEDEMI-I	6	0	\$0.00	\$3,358.00	\$20,148.00	\$0.00	\$0.00	\$20,148.00	
732		** Repeaters **	1	0	\$0.00	\$39,470.37	\$39,470.37	\$0.00	\$0.00	\$39,470.37	
733		GPS RX/CONTROLLER 28 CH	23	0	\$0.00	\$4,946.48	\$113,769.04	\$0.00	\$0.00	\$113,769.04	
734		QUANTAR/QUANTRO FAMILY	23	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
735		QUANTAR/QUANTRO CONFIGURATION	23	0	\$0.00	\$4,609.22	\$106,012.06	\$0.00	\$0.00	\$106,012.06	
736		ADD: 100W 800 MHZ OPERATION	23	0	\$0.00	\$803.00	\$18,469.00	\$0.00	\$0.00	\$18,469.00	
737		ENH: S26809 ASTR CAL TRK QTR	23	0	\$0.00	\$63.61	\$1,460.73	\$0.00	\$0.00	\$1,460.73	
738		ALT: CABLE, 50FT REPEATER	23	0	\$0.00	\$365.00	\$8,395.00	\$0.00	\$0.00	\$8,395.00	
739		ADD: GPS SIMULCAST	23	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
740		ADD: INTFC, WIRELINE, 9.6 KB	23	0	\$0.00	\$146.00	\$3,358.00	\$0.00	\$0.00	\$3,358.00	
741		ADD: HARDWARE, RACKMOUNT	23	0	\$0.00	\$159.87	\$3,677.01	\$0.00	\$0.00	\$3,677.01	
742		ALT: DC ONLY OP. DC TO DC CONVERTER	23	0	\$0.00	\$211.70	\$4,511.70	\$0.00	\$0.00	\$4,511.70	
743		BIDIRECTIONAL SENSOR	5	0	\$0.00	\$72.27	\$361.35	\$0.00	\$0.00	\$361.35	
744		TEST MICROPHONE	5	0	\$0.00	\$36.50	\$182.50	\$0.00	\$0.00	\$182.50	
745		6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5	0	\$0.00	\$64.42	\$322.10	\$0.00	\$0.00	\$322.10	
746		CABLE FOR EXTERNAL 6W SPEAKER	5	0	\$0.00	\$36.50	\$182.50	\$0.00	\$0.00	\$182.50	
747		DUAL PHONE LINE SUPPRESSOR	23	0	\$0.00	\$64.42	\$1,481.66	\$0.00	\$0.00	\$1,481.66	
748		** Antenna System **	20	0	\$0.00	\$2.12	\$42.40	\$0.00	\$0.00	\$42.40	
749		1/2" LDF HELIAX, POLY JKT, PER FOOT	12	0	\$0.00	\$32.85	\$394.20	\$0.00	\$0.00	\$394.20	
750		1/2" CONNECTOR, N PLUG LDF PLTD	900	0	\$0.00	\$5.18	\$4,662.00	\$0.00	\$0.00	\$4,662.00	
751		7/8" LDF HELIAX, POLY JKT, PER FOOT	12	0	\$0.00	\$80.30	\$963.60	\$0.00	\$0.00	\$963.60	
752		7/8" CONNECTOR, N PLUG (PLATED)	12	0	\$0.00	\$80.30	\$963.60	\$0.00	\$0.00	\$963.60	
753		7/8" CABLE GROUND CLAMP KIT	18	0	\$0.00	\$24.46	\$440.28	\$0.00	\$0.00	\$440.28	
754		7/8" CABLE GROUND CLAMP KIT	18	0	\$0.00	\$99.42	\$1,788.40	\$0.00	\$0.00	\$1,788.40	
755		7/8" SNAP-IN HANGER KIT, 10PK	6	0	\$0.00	\$36.50	\$219.00	\$0.00	\$0.00	\$219.00	
756		7/8" CABLE HOISTING GRIP	6	0	\$0.00	\$33.07	\$1,984.20	\$0.00	\$0.00	\$1,984.20	
757		1/2" SUPERFLEX, POLY JKT, PER FOOT	350	0	\$0.00	\$3.07	\$1,074.50	\$0.00	\$0.00	\$1,074.50	



# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Mnfd	Item Description	Man Hours		Labor Hrs	Rate	Project Cost Itemization Schedule		Subcontracts Unit	Total Cost	Total Cost
			Qty	Per Unit			Total \$	Unit Cost			
758	TDH0809	1/2" CONNECTOR, N PLUG S-FLEX (PLTD)	46	0	0	\$0.00	\$37.78		\$0.00	\$1,737.88	
759	TDH0289	CABLE WRAP, WEATHERPROOFING	6	0	0	\$0.00	\$27.38		\$0.00	\$164.28	
760	V1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	350	0	0	\$0.00	\$1.38		\$0.00	\$486.50	
761	TDH0714	1/4"CONN, N PLUG S-FLEX (PLTD)	29	0	0	\$0.00	\$12.23		\$0.00	\$354.67	
762	TDH0715	1/4"CONN, BNC PLUG S-FLEX (PLTD)	23	0	0	\$0.00	\$10.59		\$0.00	\$243.57	
763	DSTJ00008T	COMBINER 606-7K MHZ, 24CH, CWA	4	0	0	\$0.00	\$9,135.95		\$0.00	\$36,543.80	
764	RRX1089A	RMC 806-824 MHZ, 24CH, CWA	2	0	0	\$0.00	\$3,008.95		\$0.00	\$6,017.90	
765	RRX1089A	LIGHTNING SUPPRESSOR	2	0	0	\$0.00	\$47.45		\$0.00	\$94.90	
766	DS2B00676TLXT	BB TPL 6 DEG DOWN/TILT	2	0	0	\$0.00	\$2,536.76		\$0.00	\$5,073.50	
767	DS2B008241000	BIDIRECTIONAL SENSOR	4	0	0	\$0.00	\$159.87		\$0.00	\$639.48	
768	TRN7342	SEVEN FOOT RACK	9	0	0	\$0.00	\$343.10		\$0.00	\$3,087.90	
769	DOU73KH19MBS	3KVAC/3KW 24V IN, 120/240V OUT	1	0	0	\$0.00	\$3,968.28		\$0.00	\$3,968.28	
770	DQ7VW48S000313B	TWINPACK 48V/800A IM CAP 400A	1	0	0	\$0.00	\$25,746.37		\$0.00	\$25,746.37	
771	DS407EL126F1RZ24	48V 3BT A HR 3 TRAY BATTERY SYSTEM	1	0	0	\$0.00	\$3,765.34		\$0.00	\$3,765.34	
772	DQ9411100120	CIRCUIT BREAKER PANEL	6	0	0	\$0.00	\$1,699.44		\$0.00	\$10,196.64	
773	DS1329120100	20AMP BREAKER	38	0	0	\$0.00	\$22.63		\$0.00	\$859.94	
776	Bornell Heights	REMOTE TERMINAL UNIT				\$0.00	\$1,443.94		\$0.00	\$0.00	
777	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0	\$0.00	\$0.00		\$0.00	\$0.00	
778	V061	ALT: NEMA TO RACKMOUNT	1	0	0	\$0.00	\$113.15		\$0.00	\$905.20	
779	V345	ADD: ASYNC RS232	8	0	0	\$0.00	\$146.00		\$0.00	\$1,168.00	
780	V110	REPLACE 8-SLOT MB W/8CPU+RIO I/O	1	0	0	\$0.00	\$972.35		\$0.00	\$6,006.62	
781	V425	ADD: MOSCAD CPU 300	7	0	0	\$0.00	\$693.50		\$0.00	\$4,854.50	
782	V120	ADD: 8 MOD W/EXPANSIONMODULE	1	0	0	\$0.00	\$477.42		\$0.00	\$3,341.94	
783	V137	ADD: 8AI 5V MODULE	7	0	0	\$0.00	\$1,443.94		\$0.00	\$10,107.58	
784	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0	\$0.00	\$0.00		\$0.00	\$0.00	
785	V051	ALT: NEMA TO RACKMOUNT	1	0	0	\$0.00	\$146.00		\$0.00	\$1,168.00	
786	V380	REPL: 8-SLOT MB W/4CPU+4IO	1	0	0	\$0.00	\$240.80		\$0.00	\$1,926.40	
787	V274	DEL: 3 AMP PS AND BATTERY	1	0	0	\$0.00	\$972.35		\$0.00	\$7,378.75	
788	V425	ADD: CPU 300	2	0	0	\$0.00	\$113.15		\$0.00	\$905.20	
789	V345	ADD: ASYNC RS232	3	0	0	\$0.00	\$277.40		\$0.00	\$2,219.20	
790	V515	ADD: 60 DI MODULE	1	0	0	\$0.00	\$375.95		\$0.00	\$3,007.60	
791	F6900	ADD: 16DO LATCH MODULE	1	0	0	\$0.00	\$1,045.36		\$0.00	\$8,362.88	
792	V345	SERIES 300 CPU	1	0	0	\$0.00	\$113.15		\$0.00	\$905.20	
793	V104	ADD: ASYNC RS232	1	0	0	\$0.00	\$300.76		\$0.00	\$2,406.08	
794	V104	ADD: 2400 DIAL-UP	1	0	0	\$0.00	\$191.40		\$0.00	\$1,531.20	
795	F6900	LAN ADAPTER ASSEMBLY	12	0	0	\$0.00	\$96.50		\$0.00	\$772.00	
796	FRN6727	CPU RS-232 MULTIPLEXER INTF 1 TO 4	6	0	0	\$0.00	\$182.50		\$0.00	\$1,460.00	
797	FRN6727	MODEM, 14-40D BPS V.32BIS	6	0	0	\$0.00	\$580.35		\$0.00	\$4,642.80	
798	FRN6727	MODEM CABLE	1	0	0	\$0.00	\$23.36		\$0.00	\$186.88	
799	FRN6727	EXTERNAL DC PS TO MB CABLE	1	0	0	\$0.00	\$10.95		\$0.00	\$87.60	
800	FRN6727	Microwave	2	0	0	\$0.00	\$49,667.00		\$0.00	\$397,336.00	
801	FRN6727	BERNAL HEIGHTS TOTAL				\$0.00	\$0.00		\$0.00	\$1,443,314.00	
802	FRN6727	Site 3: Ft. Milley --				\$0.00	\$0.00		\$0.00	\$1,024,761.02	
803	FRN6727	** Remote Controllers **				\$0.00	\$0.00		\$0.00	\$399,362.00	
804	FRN6727	SIMULCAST 2B CHAN REMOTE CONTROLLER	1	0	0	\$0.00	\$20,741.49		\$0.00	\$20,741.49	
805	FRN6727	ADD: 21 CHANNEL CAPACITY	1	0	0	\$0.00	\$16,650.57		\$0.00	\$16,650.57	
806	FRN6727					\$0.00	\$0.00		\$0.00	\$0.00	
807	FRN6727					\$0.00	\$0.00		\$0.00	\$0.00	
808	FRN6727					\$0.00	\$0.00		\$0.00	\$0.00	

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours Per Unit	Total	Rev: 7/97	Project Cost Itemization Schedule	Material	Total	Subcontracts Unit Cost	Total	Total
								Cost	\$	Cost	\$	Costs
809	D179	ADD: SPARE BOARDS	1	0	0	\$7,090.49		\$7,090.49	\$0.00		\$7,090.49	\$7,090.49
810	Z360	ADD: ASTRO 2.0.3 MIXED MODE	1	0	0	\$4,708.50		\$4,708.50	\$0.00		\$4,708.50	\$4,708.50
811		** TANSr Network Server **	1	0	0	\$0.00		\$0.00	\$0.00		\$0.00	\$0.00
812	ISPREMB919	UNIVERSAL ENCLOSURE TENS/600	2	0	0	\$1,095.00		\$1,095.00	\$0.00		\$1,095.00	\$1,095.00
813	ISPREMB902	DC POWER SUPPLY 48 VDC	4	0	0	\$312.50		\$312.50	\$0.00		\$312.50	\$312.50
814	ISPREMB920	INTERFACE CARDS, 8 TY/E1 INTFC	2	0	0	\$1,642.50		\$1,642.50	\$0.00		\$1,642.50	\$1,642.50
815	ISPREMB901	GPU CNTRL CARD W/2 TY/E1, RED 256	4	0	0	\$4,106.25		\$4,106.25	\$0.00		\$4,106.25	\$4,106.25
816	ISPREMB014	WAN CARD, DUAL TY/E1 INTERFACE	2	0	0	\$1,781.20		\$1,781.20	\$0.00		\$1,781.20	\$1,781.20
817	ISPREMB010	WAN CARD, DUAL TY/E1 INTERFACE	2	0	0	\$1,551.25		\$1,551.25	\$0.00		\$1,551.25	\$1,551.25
818	ISPREMB12	CSU PLUG IN MODULE	8	0	0	\$912.50		\$912.50	\$0.00		\$912.50	\$912.50
819	ISPREMB220	DATA CARD, 10 PORT RS232C SUB-RATE	4	0	0	\$2,190.00		\$2,190.00	\$0.00		\$2,190.00	\$2,190.00
820	ISPREMDSM2	DIGITAL SIMULCAST MEDEEM-II	6	0	0	\$6,935.00		\$6,935.00	\$0.00		\$6,935.00	\$6,935.00
821		** Repairs **										
822	DOMFS205	GPS RX/CONTROLLER 2B CH	1	0	0	\$39,470.37		\$39,470.37	\$0.00		\$39,470.37	\$39,470.37
823	CS9ED	QUANTARQUANTRO FAMILY	23	0	0	\$4,946.48		\$4,946.48	\$0.00		\$4,946.48	\$4,946.48
824	001C	QUANTARQUANTRO CONFIGURATION	23	0	0	\$0.00		\$0.00	\$0.00		\$0.00	\$0.00
825	X750	ADD: 100W 800 MHZ OPERATION	23	0	0	\$4,609.22		\$4,609.22	\$0.00		\$4,609.22	\$4,609.22
826	X007 A	ENH: S26809 ASTRO CAL TRK QTR	23	0	0	\$803.00		\$803.00	\$0.00		\$803.00	\$803.00
827	X337	ALT: CABLE, 50FT REPEATER	23	0	0	\$63.51		\$63.51	\$0.00		\$63.51	\$63.51
828	X300	ADD: GPS SIMULCAST	23	0	0	\$730.00		\$730.00	\$0.00		\$730.00	\$730.00
829	X153	ADD: INTFC, WIRELINE, 9.6 KB	23	0	0	\$365.00		\$365.00	\$0.00		\$365.00	\$365.00
830	X153	ADD: HARDWARE, RACKMOUNT	23	0	0	\$0.00		\$0.00	\$0.00		\$0.00	\$0.00
831	X143	ALT: DC ONLY OP. DC TO DC CONVERTER	23	0	0	\$145.00		\$145.00	\$0.00		\$145.00	\$145.00
832	DSDB08B2A350	BIDIRECTIONAL SENSOR	23	0	0	\$159.87		\$159.87	\$0.00		\$159.87	\$159.87
833	HMN1001	TEST MICROPHONE	5	0	0	\$211.70		\$211.70	\$0.00		\$211.70	\$211.70
834	HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5	0	0	\$72.27		\$72.27	\$0.00		\$72.27	\$72.27
835	TRN7798	CABLE FOR EXTERNAL SW SPEAKER	5	0	0	\$36.50		\$36.50	\$0.00		\$36.50	\$36.50
836	TRN4509	DUAL PHONE LINE SUPPRESSOR	23	0	0	\$54.42		\$54.42	\$0.00		\$54.42	\$54.42
837		** Antenna System **										
838	L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	20	0	0	\$2.12		\$2.12	\$0.00		\$2.12	\$2.12
839	TDN0814	1/2" CONNECTOR, N PLUG LDF PLTD	12	0	0	\$32.85		\$32.85	\$0.00		\$32.85	\$32.85
840	L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	900	0	0	\$5.18		\$5.18	\$0.00		\$5.18	\$5.18
841	TDN0817	7/8" CONNECTOR, N PLUG (PLATED)	12	0	0	\$80.30		\$80.30	\$0.00		\$80.30	\$80.30
842	TDN0816	7/8" CONNECTOR, N JACK (PLATED)	12	0	0	\$80.30		\$80.30	\$0.00		\$80.30	\$80.30
843	TDN0674	7/8" CABLE GROUND CLAMP KIT	18	0	0	\$24.46		\$24.46	\$0.00		\$24.46	\$24.46
844	TDN0564	7/8" SNAP-IN HANGER KIT, 10PK	20	0	0	\$39.42		\$39.42	\$0.00		\$39.42	\$39.42
845	TDN0672	7/8" CABLE HOISTING GRIP	6	0	0	\$36.50		\$36.50	\$0.00		\$36.50	\$36.50
846	TDN0609	1/2" SUPERFLEX, POLY JKT, PER FOOT	350	0	0	\$3.07		\$3.07	\$0.00		\$3.07	\$3.07
847	TDN0208	1/2" CONNECTOR, N PLUG S-FLEX PLTD	46	0	0	\$37.78		\$37.78	\$0.00		\$37.78	\$37.78
848	TDN0208	CABLE WRAP, WEATHERPROOFING	6	0	0	\$27.39		\$27.39	\$0.00		\$27.39	\$27.39
849	L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	350	0	0	\$1.39		\$1.39	\$0.00		\$1.39	\$1.39
850	TDN0714	1/4" CONN, N PLUG S-FLEX (PLTD)	23	0	0	\$12.23		\$12.23	\$0.00		\$12.23	\$12.23
851	TDN0715	1/4" CONN, BNC PLUG S-FLEX (PLTD)	23	0	0	\$10.59		\$10.59	\$0.00		\$10.59	\$10.59
852	DSTJDB0008T	COMBINER, 806-1K MHZ BNC/CAV-FER CWA	4	0	0	\$9,135.95		\$9,135.95	\$0.00		\$9,135.95	\$9,135.95
853	DSRWC00024	RMIC 806-824 MHZ, 24GH, CWA	2	0	0	\$3,003.95		\$3,003.95	\$0.00		\$3,003.95	\$3,003.95
854	RRX4039A	LIGHTNING SUPPRESSOR	6	0	0	\$47.45		\$47.45	\$0.00		\$47.45	\$47.45
855	DSDB0816TLXT	BB TPL 6 DEG DOWN TILT	2	0	0	\$2,536.75		\$2,536.75	\$0.00		\$2,536.75	\$2,536.75
856	DRD08B82A1000	BIDIRECTIONAL SENSOR	4	0	0	\$159.87		\$159.87	\$0.00		\$159.87	\$159.87
857		** Racks **										
858	TRN7342	SEVEN FOOT RACK	9	0	0	\$343.10		\$343.10	\$0.00		\$343.10	\$343.10
859		** Power System **										
860	DGU73KH18MB5	3RVA33KW 24V IN, 120/240V OUT	1	0	0	\$3,968.28		\$3,968.28	\$0.00		\$3,968.28	\$3,968.28

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours	Labor Hrs	Rev. 7/97 Project Cost Itemization Schedule		Subcontracts Unit Cost	Total \$	Total \$	Total Costs
						Total \$	Material Unit Cost				
City and County of San Francisco											
Citywide 800MHz Radio System Project (CERS)											
Motorola Proposal for Bid No. 168											
861	DQ1WPA8900319B	TWINPACK -48V/800A IM CAP 400A	1	0	0	\$0.00	\$25,746.37	\$0.00	\$25,746.37	\$0.00	\$25,746.37
862	DS48TEL125F1R2Z4	48V 361 A HR 3 TRAY BATTERY SYSTEM	1	0	0	\$0.00	\$3,765.34	\$0.00	\$3,765.34	\$0.00	\$3,765.34
863	DQ0411100120	CIRCUIT BREAKER PANEL	6	0	0	\$0.00	\$285.24	\$0.00	\$1,698.44	\$0.00	\$1,698.44
864	DS1329120100	ZDAMP BREAKER	38	0	0	\$0.00	\$22.63	\$0.00	\$859.94	\$0.00	\$859.94
865	**REMOTE RF SITES**	REMOTE TERMINAL UNIT	1	0	0	\$0.00	\$1,443.94	\$0.00	\$1,443.94	\$0.00	\$0.00
866	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
867	V051	ALT: NEMA TO RACKMOUNT	7	0	0	\$0.00	\$113.15	\$0.00	\$792.05	\$0.00	\$0.00
868	V045	ADD: ASYNC RS232	7	0	0	\$0.00	\$146.00	\$0.00	\$1022.05	\$0.00	\$0.00
869	V046	REPLACE 8-SLOT MB W/8CPU+NO IO	1	0	0	\$0.00	\$5,834.16	\$0.00	\$5,834.16	\$0.00	\$0.00
870	V047	ADD: MOSCAD CPU 300	6	0	0	\$0.00	\$693.50	\$0.00	\$4107.66	\$0.00	\$0.00
871	V025	ADD: 8 MOD W/EXPANSION MODULE	1	0	0	\$0.00	\$3,341.94	\$0.00	\$3,341.94	\$0.00	\$0.00
872	V120	ADD: 8A16V MODULE	7	0	0	\$0.00	\$477.42	\$0.00	\$3304.36	\$0.00	\$0.00
873	V037	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0	\$0.00	\$1,443.94	\$0.00	\$1,443.94	\$0.00	\$0.00
874	F6900	ALT: NEMA TO RACKMOUNT	1	0	0	\$0.00	\$146.00	\$0.00	\$146.00	\$0.00	\$0.00
875	V051	DEL: 3 AMP PS AND BATTERY	1	0	0	\$0.00	(\$240.90)	\$0.00	(\$240.90)	\$0.00	\$0.00
876	V059	ADD: ASYNC RS232	1	0	0	\$0.00	\$972.36	\$0.00	\$972.36	\$0.00	\$0.00
877	V074	ADD: CPU 300	1	0	0	\$0.00	\$113.15	\$0.00	\$113.15	\$0.00	\$0.00
878	V045	ADD: ASYNC RS232	1	0	0	\$0.00	\$277.40	\$0.00	\$277.40	\$0.00	\$0.00
879	V046	ADD: 80 DI. MODULE	1	0	0	\$0.00	\$375.95	\$0.00	\$375.95	\$0.00	\$0.00
880	V300	ADD: 1600 LATCH MODULE	1	0	0	\$0.00	\$1,045.96	\$0.00	\$1,045.96	\$0.00	\$0.00
881	V016	ADD: ASYNC RS232	1	0	0	\$0.00	\$113.15	\$0.00	\$113.15	\$0.00	\$0.00
882	F6903	SERIES 300 CPU	1	0	0	\$0.00	\$300.76	\$0.00	\$300.76	\$0.00	\$0.00
883	V045	ADD: 2400 DIAL-UP	1	0	0	\$0.00	\$10.95	\$0.00	\$10.95	\$0.00	\$0.00
884	V104	FLAT OVAL 2.5M CABLE	2	0	0	\$0.00	\$36.50	\$0.00	\$73.00	\$0.00	\$0.00
885	F694400	LAN ADAPTER ASSEMBLY	9	0	0	\$0.00	\$182.50	\$0.00	\$1,636.50	\$0.00	\$0.00
886	FR05727	CPU RS-232 MULTIPLEXER INTF 1 TO 4	6	0	0	\$0.00	\$10.95	\$0.00	\$65.70	\$0.00	\$0.00
887	FR05734	EXTERNAL DC PS TO MB CABLE	1	0	0	\$0.00	\$49,687.00	\$0.00	\$49,687.00	\$0.00	\$0.00
888	FR05934	Microwave	2	0	0	\$0.00	\$99,394.00	\$0.00	\$99,394.00	\$0.00	\$144,334.00
889	FT Miley Harris	FT. MILEY TOTAL	0	0	0	\$0.00	\$22,500.00	\$0.00	\$22,500.00	\$0.00	\$1,096,548.52
890		Site 4: SF Slalo ...	1	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
891	** Remote Controllers **	SIMULCAST 28 CHAN REMOTE CONTROLLER	1	0	0	\$0.00	\$20,741.49	\$0.00	\$20,741.49	\$0.00	\$0.00
892		ADD: 24 CHANNEL CAPACITY	1	0	0	\$0.00	\$16,650.57	\$0.00	\$16,650.57	\$0.00	\$0.00
893		ADD: SPARE BOARDS	1	0	0	\$0.00	\$7,080.49	\$0.00	\$7,080.49	\$0.00	\$0.00
894		ADD: ASTRO 2.0.3 MIXED MODE	1	0	0	\$0.00	\$4,708.50	\$0.00	\$4,708.50	\$0.00	\$0.00
895		** Tensar Network Server **	2	0	0	\$0.00	\$1,095.00	\$0.00	\$2,190.00	\$0.00	\$0.00
896		UNIVERSAL ENCLOSURE TENSAR000	2	0	0	\$0.00	\$912.50	\$0.00	\$1,825.00	\$0.00	\$0.00
897	DSPREMB918	DC POWER SUPPLY 48 VDC	4	0	0	\$0.00	\$3,285.00	\$0.00	\$12,741.49	\$0.00	\$0.00
898	DSPREMB902	INTERFACE CARDS, 8 TYPE1 INTFC	2	0	0	\$0.00	\$4,106.26	\$0.00	\$8,212.52	\$0.00	\$0.00
899	DSPREMB920	CPU CNTRL CARD W/2 TYPE1 RED 286	4	0	0	\$0.00	\$1,781.20	\$0.00	\$7,080.49	\$0.00	\$0.00
900	DSPREMB901	WAN CARD, DUAL TYPE1 INTERFACE	2	0	0	\$0.00	\$1,551.25	\$0.00	\$3,102.50	\$0.00	\$0.00
901	DSPREMB014	CSU PLUG IN MODULE	2	0	0	\$0.00	\$912.50	\$0.00	\$1,825.00	\$0.00	\$0.00
902	DSPREMB010	DATA CARD, 10 PORT RS232C SUB-RATE	6	0	0	\$0.00	\$6,835.00	\$0.00	\$41,610.00	\$0.00	\$0.00
903	DSPREMB012	DIGITAL SIMULCAST MEDEM-II	6	0	0	\$0.00	\$39,470.37	\$0.00	\$39,470.37	\$0.00	\$0.00
904	DSPREMB220	** Repeater **	1	0	0	\$0.00	\$4,946.48	\$0.00	\$4,946.48	\$0.00	\$0.00
905	DSPREMB010	GPS RX/CONTROLLER 28 CH	23	0	0	\$0.00	\$113,768.04	\$0.00	\$113,768.04	\$0.00	\$0.00
906	DSPREMB012	QUANTAR/QUANTRO FAMILY	23	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
907	DSPREMB010	QUANTAR/QUANTRO CONFIGURATION	23	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
908	PG0MF3205		0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
909	CG01D		0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
910	CG01D		0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
911	CG01C		0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Project Cost Itemization Schedule  
Exhibit D

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours Per Unit	Labr Hrs	Rate	Total \$	Material Unit Cost	Total \$	Subcontracts Unit Cost	Total \$	Total Costs
912	X130	ADD: 100W 800 MHZ OPERATION	23	0	0		\$108,012.06				\$108,012.06	
913	X307 A	ENH: S26809 ASTR CAI TRK QIAR	23	0	0		\$18,469.00				\$18,469.00	
914	X337	ALT: CABLE, 50FT REPEATER	23	0	0		\$1,480.73				\$1,480.73	
915	X009	ADD: GPS SIMULCAST	23	0	0		\$730.00				\$730.00	
916	X009	ADD: INTFC. WIRELINE 9.6 KB	23	0	0		\$16,790.00				\$16,790.00	
917	X153	ADD: HARDWARE, RACKMOUNT	23	0	0		\$8,395.00				\$8,395.00	
918	X113	ALT: DC ONLY OP. DC TO DC CONVERTER	23	0	0		\$0.00				\$0.00	
919	53SD0862A350	BIDIRECTIONAL SENSOR	23	0	0		\$3,358.00				\$3,358.00	
920	HMN1001	TEST MICROPHONE	5	0	0		\$3,677.01				\$3,677.01	
921	H5N1000 R	8W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5	0	0		\$22.34				\$22.34	
922	TRN7738	CABLE FOR EXTERNAL SW SPEAKER	5	0	0		\$72.27				\$72.27	
923	TRN4569	DUAL PHONE LINE SUPPRESSOR	5	0	0		\$36.50				\$36.50	
924	*****	** Antenna System **	23	0	0		\$64.42				\$64.42	
925	L1705	12" LDF HELIAX, POLY JKT, PER FOOT	20	0	0		\$2.12				\$2.12	
926	TDN0014	12" CONNECTOR, N PLUG LDF PLTD	12	0	0		\$32.65				\$32.65	
927	L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	900	0	0		\$5.18				\$4,662.00	
928	TDN0017	7/8" CONNECTOR, N PLUG (PLATED)	12	0	0		\$60.30				\$60.30	
929	TDN0018	7/8" CONNECTOR, N JACK (PLATED)	12	0	0		\$983.60				\$983.60	
930	TDN0674	7/8" CABLE GROUND CLAMP KIT	18	0	0		\$24.46				\$24.46	
931	TDN0984	7/8" SNAP-IN HANGER KIT, 10PK	20	0	0		\$38.42				\$38.42	
932	TDN0972	7/8" CABLE HOISTING GRIP	6	0	0		\$36.50				\$36.50	
933	L1702	12" SUPERFLEX, POLY JKT, PER FOOT	350	0	0		\$3.07				\$1,074.50	
934	TDN0009	12" CONNECTOR, N PLUG S-FLEX PLTD	46	0	0		\$37.78				\$1,737.86	
935	TDN0289	CABLE WRAP, WEATHERPROOFING	6	0	0		\$27.30				\$164.28	
936	L1700	14" SUPERFLEX, POLY JKT, PER FOOT	350	0	0		\$1.39				\$486.50	
937	TDN0714	14" CONN, N PLUG S-FLEX (PLTD)	23	0	0		\$12.23				\$281.29	
938	TDN0715	14" CONN, BNC PLUG S-FLEX (PLTD)	23	0	0		\$10.59				\$243.57	
939	DSTJDU0008T	COMBINER, 806-1K MHZ, RCH, CAV-FER CWA	4	0	0		\$8,135.95				\$36,543.80	
940	D6RMC80024	RMG 806-824 MHZ, 24CH, CWA	2	0	0		\$3,003.95				\$6,007.90	
941	RXX1039A	LIGHTNING SUPPRESSOR	6	0	0		\$47.45				\$284.70	
942	DSD000676TLXT	BB TPL 6 DEG DOWN TILT	2	0	0		\$2,536.76				\$5,073.50	
943	*****	** Racks **	4	0	0		\$169.87				\$683.48	
944	TRV7342	SEVEN FOOT RACK	9	0	0		\$343.10				\$3,087.90	
945	*****	** Power System **	1	0	0		\$3,968.28				\$3,968.28	
946	DOUT3KH18M5S	3KV/30KV 24V IN, 120/240V OUT	1	0	0		\$25,746.37				\$25,746.37	
947	D31WP48S000313B	TWINPACK 48V/800A IM CAP 400A	1	0	0		\$3,765.34				\$3,765.34	
948	D340TEL126F1R224	48V 361 A HR 3 TRAY BATTERY SYSTEM	1	0	0		\$263.24				\$263.24	
949	DQ0641100120	CIRCUIT BREAKER PANEL	6	0	0		\$22.63				\$135.78	
950	D31320120100	20AMP BREAKER	36	0	0		\$1,699.44				\$60,379.44	
951	*****	** REMOTE RF SITES **	1	0	0		\$1,443.94				\$1,443.94	
952	F6300	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0		\$0.00				\$0.00	
953	V051	ALT: NEMA TO RACKMOUNT	1	0	0		\$0.00				\$0.00	
954	V045	ADD: ASTNG RS232	7	0	0		\$113.15				\$792.05	
955	V470	REPLACE B-SLOT MB W/BCPU/HO I/O	1	0	0		\$146.00				\$146.00	
956	V426	ADD: MOSCAD CPU 500	6	0	0		\$972.36				\$5,834.16	
957	V120	ADD: 8 MOD W/EXPANSION MODULE	1	0	0		\$693.50				\$693.50	
958	V437	ADD: BAI 5V MODULE	7	0	0		\$477.42				\$3,341.94	
959	F6600	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0		\$1,443.94				\$1,443.94	
960	V051	ALT: NEMA TO RACKMOUNT	1	0	0		\$0.00				\$0.00	
961	V069	REPL: B-SLOT MB W/ACPU+4I/O	1	0	0		\$146.00				\$146.00	

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

City and County of San Francisco		Citywide 800MHz Radio System Project (CBRS)		Microtera Proposal for Bid No. 166		Rev. 7/97		Project Cost Itemization Schedule		Subcontracts		Total	
Item #	Model	Qty	Per Unit	Total	Rate	Material	Unit	Cost	Total	Unit	Cost	Total	Cost
964	V274	1	0	\$0.00									\$0.00
965	V425	1	0	\$0.00									\$0.00
966	V345	1	0	\$0.00									\$0.00
967	V380	1	0	\$0.00									\$0.00
968	V510	1	0	\$0.00									\$0.00
969	V5933	1	0	\$0.00									\$0.00
970	V345	1	0	\$0.00									\$0.00
971	V104	9	0	\$0.00									\$0.00
972	FR14400	2	0	\$0.00									\$0.00
973	FR15727	2	0	\$0.00									\$0.00
974	FR15734	6	0	\$0.00									\$0.00
975	FR15864	1	0	\$0.00									\$0.00
977	SF State Harris	2	0	\$0.00									\$0.00
978	S.F. STATE TOTAL			\$12,699.50									\$12,699.50
979	Silo 5, Forest Hill	1	0	\$0.00									\$0.00
980	** Remote Controllers **	1	0	\$0.00									\$0.00
981	SIMULCAST 2B CHAN REMOTE CONTROLLER	1	0	\$0.00									\$0.00
982	T5292A	1	0	\$0.00									\$0.00
983	D611	1	0	\$0.00									\$0.00
984	D179	1	0	\$0.00									\$0.00
985	2300	1	0	\$0.00									\$0.00
986	** Ten8r Network Services **	2	0	\$0.00									\$0.00
987	DISPREM8918	2	0	\$0.00									\$0.00
988	DISPREM8902	4	0	\$0.00									\$0.00
989	DISPREM8920	2	0	\$0.00									\$0.00
990	DISPREM8901	4	0	\$0.00									\$0.00
991	DISPREM8914	2	0	\$0.00									\$0.00
992	DISPREM8910	2	0	\$0.00									\$0.00
993	DISPREM8912	8	0	\$0.00									\$0.00
994	DISPREM8920	4	0	\$0.00									\$0.00
995	DISPREM89M2	6	0	\$0.00									\$0.00
996	DISPREM89M2	1	0	\$0.00									\$0.00
997	DISPREM89M2	23	0	\$0.00									\$0.00
998	DISPREM89M2	23	0	\$0.00									\$0.00
999	DISPREM89M2	23	0	\$0.00									\$0.00
1000	DISPREM89M2	23	0	\$0.00									\$0.00
1001	DISPREM89M2	23	0	\$0.00									\$0.00
1002	DISPREM89M2	23	0	\$0.00									\$0.00
1003	DISPREM89M2	23	0	\$0.00									\$0.00
1004	DISPREM89M2	23	0	\$0.00									\$0.00
1005	DISPREM89M2	23	0	\$0.00									\$0.00
1006	DISPREM89M2	23	0	\$0.00									\$0.00
1007	DISPREM89M2	23	0	\$0.00									\$0.00
1008	DISPREM89M2	5	0	\$0.00									\$0.00
1009	DISPREM89M2	5	0	\$0.00									\$0.00
1010	DISPREM89M2	5	0	\$0.00									\$0.00
1011	DISPREM89M2	23	0	\$0.00									\$0.00
1012	DISPREM89M2	20	0	\$0.00									\$0.00
1013	DISPREM89M2	12	0	\$0.00									\$0.00
1014	DISPREM89M2	800	0	\$0.00									\$0.00
1015	DISPREM89M2			\$4,662.00									\$4,662.00

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Item #	Model	Item Description	Qty	Man Hours	Labor Hrs	Project Cost Itemization Schedule		Subcontract Unit Cost	Total \$	Total Costs
						Total \$	Material Cost			
1016	TDN8017	7/8" CONNECTOR, N PLUG (PLATED)	12	0	0	\$0.00	\$963.60	\$0.00	\$963.60	\$963.60
1017	TDN8018	7/8" CONNECTOR, N JACK (PLATED)	12	0	0	\$0.00	\$963.60	\$0.00	\$963.60	\$963.60
1018	TDN6674	7/8" CABLE GROUND CLAMP KIT	18	0	0	\$0.00	\$24.46	\$0.00	\$24.46	\$440.28
1019	TDN9864	7/8" SNAP-IN HANGER KIT, 10PK	20	0	0	\$0.00	\$39.42	\$0.00	\$39.42	\$788.40
1020	TDN6972	7/8" CABLE HOISTING GRIP	6	0	0	\$0.00	\$36.50	\$0.00	\$36.50	\$219.00
1021	L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	350	0	0	\$0.00	\$3.07	\$0.00	\$3.07	\$1,074.50
1022	TDN8008	1/2" CONNECTOR, N PLUG S-FLEX PLTD	46	0	0	\$0.00	\$37.78	\$0.00	\$37.78	\$1,737.88
1023	TDN8208	CABLE WRAP, WEATHERPROOFING	6	0	0	\$0.00	\$27.98	\$0.00	\$27.98	\$164.28
1024	L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	350	0	0	\$0.00	\$1.39	\$0.00	\$1.39	\$486.50
1025	TDN9714	1/4" CONN, N PLUG S-FLEX (PLTD)	23	0	0	\$0.00	\$12.23	\$0.00	\$12.23	\$281.29
1026	TDN9715	1/4" CONN, BNC PLUG S-FLEX (PLTD)	23	0	0	\$0.00	\$10.59	\$0.00	\$10.59	\$243.57
1027	DSTJDB008T	COMBINER, 806-4K MHZ, BNC, CAV-FER, CWA	4	0	0	\$0.00	\$9,135.95	\$0.00	\$9,135.95	\$36,543.80
1028	DSRMCB0024	FRNC 806-824 MHZ, 24CH, CWA	2	0	0	\$0.00	\$3,003.95	\$0.00	\$3,003.95	\$6,007.90
1029	RRX4039A	LIGHTNING SUPPRESSOR	6	0	0	\$0.00	\$47.45	\$0.00	\$47.45	\$284.70
1030	DSD806T1XY	BB TPL 6 DEG DOWNTILT	2	0	0	\$0.00	\$2,536.75	\$0.00	\$2,536.75	\$5,073.50
1031	D3DD002A1000	BIDIRECTIONAL SENSOR	4	0	0	\$0.00	\$159.87	\$0.00	\$159.87	\$639.48
1032	*** Racks ***	SEVEN FOOT RACK	9	0	0	\$0.00	\$343.10	\$0.00	\$343.10	\$3,087.90
1033	TRN7342	Power System **	1	0	0	\$0.00	\$3,968.28	\$0.00	\$3,968.28	\$3,968.28
1034	DUUT9KH19MBS	3KVA/3KW 24V IN, 120/240V OUT	1	0	0	\$0.00	\$25,746.37	\$0.00	\$25,746.37	\$25,746.37
1035	DGTWPA48S00313B	TWINPACK-48V/800A IM, CAP, 400A	1	0	0	\$0.00	\$3,765.34	\$0.00	\$3,765.34	\$3,765.34
1036	DS40T125F-TR24	48V 3BT JA HR 3 TRAY BATTERY SYSTEM	1	0	0	\$0.00	\$1,698.44	\$0.00	\$1,698.44	\$1,698.44
1037	D3RH1100120	CIRCUIT BREAKER PANEL	6	0	0	\$0.00	\$22.63	\$0.00	\$22.63	\$859.94
1038	D31325120100	20AMP BREAKER	36	0	0	\$0.00	\$23.89	\$0.00	\$23.89	\$859.94
1040	*** REMOTE RF SITES ***	REMOTE TERMINAL UNIT	1	0	0	\$0.00	\$1,443.94	\$0.00	\$1,443.94	\$0.00
1041	F0900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1042	V451	ALT: NEMA TO RACKMOUNT	1	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1043	V455	ADD: ASYNC RS232	7	0	0	\$0.00	\$113.15	\$0.00	\$113.15	\$792.05
1044	V418	REPLACE 8-SLOT MB W/RCPU+NO I/O	1	0	0	\$0.00	\$146.00	\$0.00	\$146.00	\$146.00
1045	V426	ADD: MOSCAD CPU 300	8	0	0	\$0.00	\$972.36	\$0.00	\$972.36	\$8,394.16
1046	V120	ADD: 8 MOD W/EXPANSION MODULE	1	0	0	\$0.00	\$693.50	\$0.00	\$693.50	\$0.00
1047	V437	ADD: 8AI 5V MODULE	7	0	0	\$0.00	\$477.42	\$0.00	\$477.42	\$3,341.94
1048	F6800	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0	\$0.00	\$1,443.94	\$0.00	\$1,443.94	\$0.00
1049	V051	ALT: NEMA TO RACKMOUNT	1	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1050	V550	REPL: 8-SLOT MB W/4CPU+4I/O	1	0	0	\$0.00	\$146.00	\$0.00	\$146.00	\$0.00
1051	V274	DEL: 3 AMP PS AND BATTERY	1	0	0	\$0.00	(\$240.90)	\$0.00	(\$240.90)	\$0.00
1052	V425	ADD: CPU 300	1	0	0	\$0.00	\$972.36	\$0.00	\$972.36	\$0.00
1053	V245	ADD: ASYNC RS232	1	0	0	\$0.00	\$113.15	\$0.00	\$113.15	\$0.00
1054	V816	ADD: 60 DI MODULE	1	0	0	\$0.00	\$277.40	\$0.00	\$277.40	\$0.00
1055	F8033	ADD: 1600 LATCH MODULE	1	0	0	\$0.00	\$375.95	\$0.00	\$375.95	\$0.00
1056	V454	SERIES 300 CPU	1	0	0	\$0.00	\$1,045.36	\$0.00	\$1,045.36	\$0.00
1057	V455	ADD: ASYNC RS232	1	0	0	\$0.00	\$113.15	\$0.00	\$113.15	\$0.00
1058	V704	ADD: 2400 DIAL-UP	1	0	0	\$0.00	\$300.76	\$0.00	\$300.76	\$0.00
1059	FRN4400	FLAT ADAPTER 2.5M CABLE	8	0	0	\$0.00	\$10.95	\$0.00	\$10.95	\$88.55
1060	FRN5727	LAN ADAPTER ASSEMBLY	2	0	0	\$0.00	\$36.50	\$0.00	\$36.50	\$73.00
1061	FRN5734	GPU RS-232 MULTIPLIER INTF 1 TO 4	6	0	0	\$0.00	\$182.50	\$0.00	\$182.50	\$1,095.00
1062	FRN5934	EXTERNAL DC PS TO MB CABLE	1	0	0	\$0.00	\$10.95	\$0.00	\$10.95	\$0.00
1063	Forest Hill Harris	Microwave	2	0	0	\$0.00	\$49,667.00	\$22,500.00	\$72,167.00	\$144,334.00
1064	FOREST HILL TOTAL					\$0.00	\$99,334.00	\$45,000.00	\$144,334.00	\$922,661.02
1065										
1066										

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Detail Cost Breakdown**

Item #	Model	Item Description	Qty	Man Hours	Labor	Project Cost Itemization Schedule		Material	Subcontracts	Total	Total	Total
						Per Unit	Total					
1067		City and County of San Francisco Citywide 800MHz Radio System Project (CERS) Motorola Proposal for Bid No. 166	1	0			\$32,699.30	\$0.00	\$271,159.00	\$0.00	\$271,159.00	\$303,858.50
1068		Site 6: One Market Plaza ** Remote Controller **	1	0			\$0.00	\$20,741.49		\$20,741.49	\$0.00	\$20,741.49
1069		SIMULCAST 28 CHAN REMOTE CONTROLLER	1	0			\$0.00	\$16,650.57		\$16,650.57	\$0.00	\$16,650.57
1070		ADD: 21 CHANNEL CAPACITY	1	0			\$0.00	\$7,090.49		\$7,090.49	\$0.00	\$7,090.49
1071		ADD: SPARE BOARDS	1	0			\$0.00	\$4,708.50		\$4,708.50	\$0.00	\$4,708.50
1072		ADD: ASTRO 210.3 MIXED MODE	1	0			\$0.00	\$1,095.00		\$1,095.00	\$0.00	\$1,095.00
1073		** Tenet Network Server **	2	0			\$0.00	\$3,650.00		\$3,650.00	\$0.00	\$3,650.00
1074		UNIVERSAL ENCLOSURE TENSUR/600	4	0			\$0.00	\$1,642.50		\$1,642.50	\$0.00	\$1,642.50
1075		DC POWER SUPPLY 48 VDC	2	0			\$0.00	\$4,106.25		\$4,106.25	\$0.00	\$4,106.25
1076		INTERFACE CARDS, 8 T1/E1 INTFC	4	0			\$0.00	\$3,662.40		\$3,662.40	\$0.00	\$3,662.40
1077		CPU CNTRL CARD W/2 T1/E1, RED 286	2	0			\$0.00	\$7,300.00		\$7,300.00	\$0.00	\$7,300.00
1078		WAN CARD, DUAL T1/E1 INTERFACE	2	0			\$0.00	\$912.50		\$912.50	\$0.00	\$912.50
1079		WAN CARD, DUAL T1/E1 INTERFACE	2	0			\$0.00	\$2,190.00		\$2,190.00	\$0.00	\$2,190.00
1080		CSU PLUG IN MODULE	8	0			\$0.00	\$6,760.00		\$6,760.00	\$0.00	\$6,760.00
1081		DATA CARD, 10 PORT RS232C SUB-RATE	4	0			\$0.00	\$41,610.00		\$41,610.00	\$0.00	\$41,610.00
1082		DIGITAL SIMULCAST MEDEMA-II	6	0			\$0.00	\$5,936.00		\$5,936.00	\$0.00	\$5,936.00
1083		** Repeaters **	1	0			\$0.00	\$39,470.37		\$39,470.37	\$0.00	\$39,470.37
1084		GPS RX/CONTROLLER 28 CH	1	0			\$0.00	\$4,948.48		\$4,948.48	\$0.00	\$4,948.48
1085		QUANTAROQUANTRO FAMILY	23	0			\$0.00	\$0.00		\$0.00	\$0.00	\$0.00
1086		QUANTAROQUANTRO CONFIGURATION	23	0			\$0.00	\$4,609.22		\$4,609.22	\$0.00	\$4,609.22
1087		ADD: 100W 800 MHZ OPERATION	23	0			\$0.00	\$803.00		\$803.00	\$0.00	\$803.00
1088		ENH: S26609 ASTR CAL TRK QIAR	23	0			\$0.00	\$63.51		\$63.51	\$0.00	\$63.51
1089		ALT: CABLE, 50FT REPEATER	23	0			\$0.00	\$730.00		\$730.00	\$0.00	\$730.00
1090		ADD: GPS SIMULCAST	23	0			\$0.00	\$365.00		\$365.00	\$0.00	\$365.00
1091		ADD: INTFC, WIRELINE, 9.6 KB	23	0			\$0.00	\$0.00		\$0.00	\$0.00	\$0.00
1092		ADD: HARDWARE, RACKMOUNT	23	0			\$0.00	\$146.00		\$146.00	\$0.00	\$146.00
1093		ALT: DC ONLY OP. DC TO DC CONVERTER	23	0			\$0.00	\$159.87		\$159.87	\$0.00	\$159.87
1094		BIDIRECTIONAL SENSOR	23	0			\$0.00	\$42.34		\$42.34	\$0.00	\$42.34
1095		TEST MICROPHONE	6	0			\$0.00	\$72.27		\$72.27	\$0.00	\$72.27
1096		6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5	0			\$0.00	\$36.50		\$36.50	\$0.00	\$36.50
1097		CABLE FOR EXTERNAL 6W SPEAKER	5	0			\$0.00	\$64.42		\$64.42	\$0.00	\$64.42
1098		DUAL PHONE LINE SUPPRESSOR	23	0			\$0.00	\$0.00		\$0.00	\$0.00	\$0.00
1099		** Antenna System **	20	0			\$0.00	\$2.12		\$2.12	\$0.00	\$2.12
1100		1/2" LDF HELIX, POLY JKT, PER FOOT	12	0			\$0.00	\$32.85		\$32.85	\$0.00	\$32.85
1101		1/2" CONNECTOR, N PLUG LDF PLTD	900	0			\$0.00	\$5.18		\$5.18	\$0.00	\$5.18
1102		7/8" LDF HELIX, POLY JKT, PER FOOT	12	0			\$0.00	\$80.30		\$80.30	\$0.00	\$80.30
1103		7/8" CONNECTOR, N PLUG (PLATED)	12	0			\$0.00	\$24.46		\$24.46	\$0.00	\$24.46
1104		7/8" CABLE GROUND CLAMP KIT	18	0			\$0.00	\$39.42		\$39.42	\$0.00	\$39.42
1105		7/8" SNAP-IN HANGER KIT, 10PK	20	0			\$0.00	\$36.50		\$36.50	\$0.00	\$36.50
1106		7/8" CABLE HOISTING GRIP	6	0			\$0.00	\$3.07		\$3.07	\$0.00	\$3.07
1107		1/2" SUPERFLEX, POLY JKT, PER FOOT	350	0			\$0.00	\$37.78		\$37.78	\$0.00	\$37.78
1108		1/2" SUPERFLEX, N PLUG S-FLEX PLTD	46	0			\$0.00	\$27.38		\$27.38	\$0.00	\$27.38
1109		CABLE WRAP, WEATHERPROOFING	350	0			\$0.00	\$1.38		\$1.38	\$0.00	\$1.38
1110		1/4" SUPERFLEX, POLY JKT, PER FOOT	23	0			\$0.00	\$12.23		\$12.23	\$0.00	\$12.23
1111		1/4" CONN, N PLUG S-FLEX (PLTD)	23	0			\$0.00	\$10.59		\$10.59	\$0.00	\$10.59
1112		1/4" CONN, BNC PLUG S-FLEX (PLTD)	4	0			\$0.00	\$9,135.95		\$9,135.95	\$0.00	\$9,135.95
1113		COMBINER, 806-1K/MHZ, BNC, CAV-FER CWA	2	0			\$0.00	\$3,009.86		\$3,009.86	\$0.00	\$3,009.86
1114		RMC 806-824 MHZ, 24CH, CWA	6	0			\$0.00	\$47.46		\$47.46	\$0.00	\$47.46
1115		REPX-039A	2	0			\$0.00	\$2,636.75		\$2,636.75	\$0.00	\$2,636.75
1116		LIGHTNING SUPPRESSOR	2	0			\$0.00	\$159.87		\$159.87	\$0.00	\$159.87
1117		BIB TPL 6 DEG DOWN TILT	4	0			\$0.00	\$639.48		\$639.48	\$0.00	\$639.48
1118		BIDIRECTIONAL SENSOR	4	0			\$0.00	\$0.00		\$0.00	\$0.00	\$0.00

Exhibit D  
Project Cost Itemization Schedule







# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours Per Unit	Total	Rev: 7/97 Project Cost Itemization Schedule		Subcontract	Total \$	Total \$	Total Costs
						Labor Hrs	Rate				
1170		City and County of San Francisco									
		Citywide 800MHz Radio System Project (CERIS)									
		Motorola Proposal for Bid No. 168									
		** Repeaters **									
1171	DCIMF5205	GPS RVC/CONTROLLER 28 CH	1	0	0		\$39,470.37		\$39,470.37	\$0.00	\$39,470.37
1172	CG9ED	QUANTARO/QUANTRO FAMILY	23	0	0		\$4,946.48		\$113,769.04	\$0.00	\$113,769.04
1173	CG1C	QUANTARO/QUANTRO CONFIGURATION	23	0	0		\$0.00		\$0.00	\$0.00	\$0.00
1174	X760	ADD: 100W 800 MHZ OPERATION	23	0	0		\$4,609.22		\$106,012.06	\$0.00	\$106,012.06
1175	X897 A	ENV: 828809 ASTR CAI TRK Q7AR	23	0	0		\$803.00		\$18,469.73	\$0.00	\$18,469.73
1176	X337	ENV: 828809 ASTR CAI TRK Q7AR	23	0	0		\$69.51		\$1,460.73	\$0.00	\$1,460.73
1177	X086	ALT: CABLE, 50FT REPEATER	23	0	0		\$730.00		\$16,790.00	\$0.00	\$16,790.00
1178	X089	ADD: GPS SIMULCAST	23	0	0		\$365.00		\$8,395.00	\$0.00	\$8,395.00
1179	X153	ADD: INTFC, WIRELINE, 9.5 ICB	23	0	0		\$0.00		\$0.00	\$0.00	\$0.00
1180	X113	ADD: HARDWARE, RACKMOUNT	23	0	0		\$146.00		\$3,358.00	\$0.00	\$3,358.00
1181	DSD0606ZA350	ADD: DC ONLY OP. DC TO DC CONVERTER	23	0	0		\$159.87		\$3,677.01	\$0.00	\$3,677.01
1182	HMN1001	BIDIRECTIONAL SENSOR	5	0	0		\$211.70		\$1,058.50	\$0.00	\$1,058.50
1183	HMN1000 R	TEST MICROPHONE	5	0	0		\$42.34		\$211.70	\$0.00	\$211.70
1184	TRN7730	8W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5	0	0		\$361.35		\$1,806.75	\$0.00	\$1,806.75
1185	TRN4509	CABLE FOR EXTERNAL BW SPEAKER	5	0	0		\$36.50		\$182.50	\$0.00	\$182.50
1186		DUAL PHONE LINE SUPPRESSOR	23	0	0		\$64.42		\$1,481.66	\$0.00	\$1,481.66
1187	L1705	** Antenna System **	20	0	0		\$2.12		\$42.40	\$0.00	\$42.40
1188	TDH0014	1/2" LDF HELIAX, POLY JKT, PER FOOT	12	0	0		\$394.20		\$4,730.40	\$0.00	\$4,730.40
1189	L1703	1/2" CONNECTOR, N PLUG LDF PLTD	450	0	0		\$5.78		\$2,599.00	\$0.00	\$2,599.00
1190	TDH0017	7/8" LDF HELIAX, POLY JKT, PER FOOT	12	0	0		\$80.30		\$963.60	\$0.00	\$963.60
1191	TDH0010	7/8" CONNECTOR, N PLUG (PLATED)	12	0	0		\$60.30		\$723.60	\$0.00	\$723.60
1192	TDH0074	7/8" CONNECTOR, N JACK (PLATED)	12	0	0		\$24.45		\$293.40	\$0.00	\$293.40
1193	TDN3864	7/8" CABLE GROUND CLAMP KIT	15	0	0		\$39.42		\$591.30	\$0.00	\$591.30
1194	TDN6872	7/8" SNAP-IN HANGING KIT, 10PK	6	0	0		\$36.50		\$219.00	\$0.00	\$219.00
1195	L1702	7/8" CABLE HOISTING GRIP	350	0	0		\$3.07		\$1,074.50	\$0.00	\$1,074.50
1196	TDN8009	1/2" SUPERFLEX, POLY JKT, PER FOOT	46	0	0		\$37.76		\$1,737.88	\$0.00	\$1,737.88
1197	TDN9209	1/2" CONNECTOR, N PLUG S-FLEX PLTD	6	0	0		\$27.30		\$164.28	\$0.00	\$164.28
1198	L1700	CABLE WRAP, WEATHERPROOFING	350	0	0		\$1.39		\$486.50	\$0.00	\$486.50
1199	TDN9714	1/4" SUPERFLEX, POLY JKT, PER FOOT	23	0	0		\$12.23		\$281.29	\$0.00	\$281.29
1200	TDN9715	1/4" CONN, N PLUG S-FLEX (PLTD)	23	0	0		\$10.59		\$243.57	\$0.00	\$243.57
1201	DSTJDR008T	COMBINER, 806-1K MHZ, BCH, CAV-FFR, CWA	4	0	0		\$9,135.95		\$36,543.80	\$0.00	\$36,543.80
1202	DSRMC00024	RMG 806-924 MHZ, 24CH, CWA	2	0	0		\$3,003.95		\$6,007.90	\$0.00	\$6,007.90
1203	RRX4039A	LIGHTNING SUPPRESSOR	6	0	0		\$47.45		\$284.70	\$0.00	\$284.70
1204	DSDB00616TLXT	BB TPL 6 DEG DOWN TILT	2	0	0		\$2,536.75		\$5,073.50	\$0.00	\$5,073.50
1205	USDR0082A1000	BIDIRECTIONAL SENSOR	4	0	0		\$159.87		\$639.48	\$0.00	\$639.48
1206	TRN7342	** Reels **	9	0	0		\$343.10		\$3,087.90	\$0.00	\$3,087.90
1207		SEVEN FOOT RACK	1	0	0		\$3,968.28		\$3,968.28	\$0.00	\$3,968.28
1208		** Power System **	1	0	0		\$25,746.37		\$25,746.37	\$0.00	\$25,746.37
1209	DQU730RH19MBS	3RVA25M 24V IN, 12024V OUT	1	0	0		\$3,765.34		\$3,765.34	\$0.00	\$3,765.34
1210	DQTYN740S800313B	TWINPACK-48V/800MA IM CAP 40DA	1	0	0		\$1,699.44		\$1,699.44	\$0.00	\$1,699.44
1211	D546TEL125F1R2Z4	4BY 361 A HR 3 TRAY BATTERY SYSTEM	8	0	0		\$22.63		\$181.04	\$0.00	\$181.04
1212	D08411100120	CIRCUIT BREAKER PANEL	38	0	0		\$22.63		\$860.14	\$0.00	\$860.14
1213	DST320120100	20AMP BREAKER	1	0	0		\$1,443.94		\$1,443.94	\$0.00	\$1,443.94
1214		REMOTE TERMINAL UNIT	1	0	0		\$0.00		\$0.00	\$0.00	\$0.00
1215	ES090	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0		\$0.00		\$0.00	\$0.00	\$0.00
1216	V051	ALT: NEMA TO RACKMOUNT	7	0	0		\$113.15		\$792.05	\$0.00	\$792.05
1217	V345	ADD: ASYNC RS232	1	0	0		\$146.00		\$146.00	\$0.00	\$146.00
1218	V410	REPLACE 8-SLOT MB W/8CPU-NO I/O	6	0	0		\$972.36		\$5,834.16	\$0.00	\$5,834.16
1219	V425	ADD: MOSCAD CPU 300	1	0	0		\$693.50		\$693.50	\$0.00	\$693.50
1220	V120	ADD: 8 MOD W/EXPANSION MODULE	1	0	0		\$0.00		\$0.00	\$0.00	\$0.00

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours Per Unit	Total	Labor Hrs Rate	Project Cost Itemization Schedule		Subcontracts Unit Cost	Total \$	Total Costs
							Material Unit Cost	Total \$			
1222	VA437	ADD: 8AL5V MODULE	7	0	0	0	\$477.42	\$3,341.94	\$0.00	\$0.00	\$0.00
1223	FS909	MOSCAD EXTERNAL MODERN COMMUNICATION	1	0	0	0	\$1,443.94	\$1,443.94	\$0.00	\$0.00	\$0.00
1224	V031	ALT: NEMA TO RACKMOUNT	1	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1225	V369	REPL: 8-SLOT MB WACPU-4110	1	0	0	0	\$146.00	\$146.00	\$0.00	\$0.00	\$0.00
1226	V274	DEL: 3 AMP PS AND BATTERY	1	0	0	0	(\$240.90)	(\$240.90)	\$0.00	\$0.00	\$0.00
1227	V425	ADD: CPU 300	1	0	0	0	\$972.36	\$972.36	\$0.00	\$0.00	\$0.00
1228	V345	ADD: ASYNC RS232	1	0	0	0	\$113.15	\$113.15	\$0.00	\$0.00	\$0.00
1229	V360	ADD: 60 DI MODULE	1	0	0	0	\$277.40	\$277.40	\$0.00	\$0.00	\$0.00
1230	V516	ADD: 18DO LATCH MODULE	1	0	0	0	\$376.95	\$376.95	\$0.00	\$0.00	\$0.00
1231	F0033	SERIES 300 CPU	1	0	0	0	\$1,045.36	\$1,045.36	\$0.00	\$0.00	\$0.00
1232	V245	ADD: ASYNC RS232	1	0	0	0	\$113.15	\$113.15	\$0.00	\$0.00	\$0.00
1233	V104	ADD: 2400 DIAL-UP	1	0	0	0	\$300.76	\$300.76	\$0.00	\$0.00	\$0.00
1234	FKH4400	FLAT DUAL 2.5M CABLE	9	0	0	0	\$10.95	\$98.55	\$0.00	\$0.00	\$0.00
1235	FRN6727	LAN ADAPTER ASSEMBLY	2	0	0	0	\$36.50	\$73.00	\$0.00	\$0.00	\$0.00
1236	FRN734	GPU R8-232 MULTIPLEXER INTF 1 TO 4	6	0	0	0	\$182.50	\$1,095.00	\$0.00	\$0.00	\$0.00
1237	FKR5934	EXTERNAL DC PS TO MB CABLE	1	0	0	0	\$10.95	\$10.95	\$0.00	\$0.00	\$0.00
1238											
1239	Clay Jones Harris	Microwave	2	0	0	0	\$49,667.00	\$99,334.00	\$72,500.00	\$45,000.00	\$144,334.00
1240		CLAY JONES TOTAL									\$721,357.92
1241		Site 8: South Hill	1	0	0	0	\$0.00	\$0.00	\$372,782.50	\$372,782.50	\$405,482.00
1242		Remain Contractors									\$20,741.49
1243	TK203A	SIMULCAST 28 CHAN REMOTE CONTROLLER	1	0	0	0	\$20,741.49	\$20,741.49	\$0.00	\$0.00	\$0.00
1244	D811	ADD: 21 CHANNEL CAPACITY	1	0	0	0	\$16,650.57	\$16,650.57	\$0.00	\$0.00	\$16,650.57
1245	D179	ADD: SPARE BOARDS	1	0	0	0	\$7,090.49	\$7,090.49	\$0.00	\$0.00	\$7,090.49
1246	Z309	ADD: ASTRO 2.0 3 MIXED MODE	1	0	0	0	\$4,708.50	\$4,708.50	\$0.00	\$0.00	\$4,708.50
1247		Trans Network Server	1	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1248	DSPREM0818	UNIVERSAL ENCLOSURE TENSUR800	2	0	0	0	\$1,095.00	\$2,190.00	\$0.00	\$0.00	\$2,190.00
1249	DSPREM0920	DC POWER SUPPLY 48 VDC	4	0	0	0	\$912.50	\$3,650.00	\$0.00	\$0.00	\$3,650.00
1250	DSPREM0920	INTERFACE CARDS & T1/E1 INTFC	2	0	0	0	\$1,642.50	\$3,285.00	\$0.00	\$0.00	\$3,285.00
1251	DSPREM0801	GPU CONTR CARD W/2 T1/E1, RED 296	4	0	0	0	\$4,106.25	\$16,425.00	\$0.00	\$0.00	\$16,425.00
1252	DSPTLMB0014	WAN CARD, DUAL T1/E1 INTERFACE	2	0	0	0	\$1,781.20	\$3,562.40	\$0.00	\$0.00	\$3,562.40
1253	DSPREM8010	GPU PLUG IN MODULE	6	0	0	0	\$1,651.25	\$9,907.50	\$0.00	\$0.00	\$9,907.50
1254	DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	4	0	0	0	\$912.50	\$3,650.00	\$0.00	\$0.00	\$3,650.00
1255	DSPREM03M2	DIGITAL SIMULCAST MEDEMI-I	6	0	0	0	\$2,190.00	\$13,140.00	\$0.00	\$0.00	\$13,140.00
1256		Repeater	6	0	0	0	\$6,935.00	\$41,610.00	\$0.00	\$0.00	\$41,610.00
1257											\$39,470.37
1258	DCIMF5205	GPS RVCONTROLLER 28 GH	1	0	0	0	\$39,470.37	\$39,470.37	\$0.00	\$0.00	\$39,470.37
1259	C091D	QUANTARQUANTRO FAMILY	23	0	0	0	\$4,945.48	\$113,769.04	\$0.00	\$0.00	\$113,769.04
1260	C01C	QUANTARQUANTRO CONFIGURATION	23	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1261	X750	ADD: 100W 800 MHZ OPERATION	23	0	0	0	\$4,609.22	\$106,012.06	\$0.00	\$0.00	\$106,012.06
1262	X097 A	ENH: S26909 ASTR CAI TRK QTR	23	0	0	0	\$803.00	\$18,468.90	\$0.00	\$0.00	\$18,468.90
1263	X237	ALT: CABLE 50FT REPEATER	23	0	0	0	\$69.51	\$1,602.73	\$0.00	\$0.00	\$1,602.73
1264	X000	ADD: GPS SIMULCAST	23	0	0	0	\$730.00	\$16,790.00	\$0.00	\$0.00	\$16,790.00
1265	X080	ADD: INTFC, WIRELINE, 9.6 KB	23	0	0	0	\$365.00	\$8,395.00	\$0.00	\$0.00	\$8,395.00
1266	X163	ADD: HARDWARE, RACKMOUNT	23	0	0	0	\$60.00	\$1,380.00	\$0.00	\$0.00	\$1,380.00
1267	X113	ALT: DC ONLY OP. DC TO DC CONVERTER	23	0	0	0	\$146.00	\$3,358.00	\$0.00	\$0.00	\$3,358.00
1268	DSJ00082A350	BIDIRECTIONAL SENSOR	23	0	0	0	\$159.87	\$3,677.01	\$0.00	\$0.00	\$3,677.01
1269	MMH1001	TEST MICROPHONE	5	0	0	0	\$42.34	\$211.70	\$0.00	\$0.00	\$211.70
1270	HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-P.A AUDIO	5	0	0	0	\$361.35	\$1,806.75	\$0.00	\$0.00	\$1,806.75
1271	TRN7738	CABLE FOR EXTERNAL 6W SPEAKER	5	0	0	0	\$72.27	\$361.35	\$0.00	\$0.00	\$361.35
1272	TRN4509	DUAL PHONE LINE SUPPRESSOR	23	0	0	0	\$38.50	\$885.00	\$0.00	\$0.00	\$885.00
1273											\$1,481.66

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours Per Unit	Rev: 7/97 Project Cost Itemization Schedule			Subcontracts	Total \$	Total \$	Total Costs
					Unit	Rate	Cost				
1271		City and County of San Francisco									
1272		Citywide 800MHz Radio System Project (CERS)									
1273		Motorola Proposal for BU No. 168									
1274		Antenna System **									
1275	L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	20		\$2.12	\$42.40		\$42.40	\$0.00	\$42.40	
1276	TDN0014	1/2" CONNECTOR, N PLUG LDF PLTD	12		\$32.85	\$394.20		\$394.20	\$0.00	\$394.20	
1277	L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	900		\$5.18	\$4,662.00		\$4,662.00	\$0.00	\$4,662.00	
1278	TDN0017	7/8" CONNECTOR, N PLUG (PLATED)	12		\$80.30	\$963.60		\$963.60	\$0.00	\$963.60	
1279	TDN0010	7/8" CONNECTOR, N JACK (PLATED)	12		\$80.30	\$963.60		\$963.60	\$0.00	\$963.60	
1280	TDN0674	7/8" CABLE GROUND CLAMP KIT	18		\$24.46	\$440.28		\$440.28	\$0.00	\$440.28	
1281	TDN0964	7/8" SNAP-IN HANGER KIT, 10PK	20		\$39.42	\$788.40		\$788.40	\$0.00	\$788.40	
1282	TDN0672	7/8" CABLE HOISTING GRIP	6		\$36.50	\$219.00		\$219.00	\$0.00	\$219.00	
1283	L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	350		\$3.07	\$1,074.50		\$1,074.50	\$0.00	\$1,074.50	
1284	TDN0909	1/2" CONNECTOR, N PLUG S-FLEX PLTD	46		\$37.78	\$1,737.88		\$1,737.88	\$0.00	\$1,737.88	
1285	TDN0209	CABLE WRAP, WEATHERPROOFING	6		\$27.38	\$164.28		\$164.28	\$0.00	\$164.28	
1286	TDN0714	1/4" SUPERFLEX, POLY JKT, PER FOOT	350		\$1.39	\$486.50		\$486.50	\$0.00	\$486.50	
1287	TDN0715	1/4" CONN, N PLUG S-FLEX (PLTD)	23		\$12.23	\$281.29		\$281.29	\$0.00	\$281.29	
1288	DS1J00008T	COMBINER, 806-1K MHZ, 24CH, CWA	4		\$10.59	\$42.36		\$42.36	\$0.00	\$42.36	
1289	RRX4039A	COMBINER, 806-1K MHZ, 24CH, CWA	2		\$9.135	\$18.27		\$18.27	\$0.00	\$18.27	
1290	DS1J00016T	LIGHTNING SUPPRESSOR	6		\$3,003.95	\$18,023.70		\$18,023.70	\$0.00	\$18,023.70	
1291	DSDB0002A1000	BI-DIRECTIONAL SENSOR	4		\$47.45	\$189.80		\$189.80	\$0.00	\$189.80	
1292		** Racks **			\$2,638.75	\$5,073.50		\$5,073.50	\$0.00	\$5,073.50	
1293		SEVEN FOOT RACK	9		\$159.87	\$1,438.83		\$1,438.83	\$0.00	\$1,438.83	
1294		** Power System **			\$343.10	\$3,087.90		\$3,087.90	\$0.00	\$3,087.90	
1295		3KVA/3KW 24V IN, 120/240V OUT	1		\$3,968.28	\$3,968.28		\$3,968.28	\$0.00	\$3,968.28	
1296		7W/10W 12V IN, 120/240V OUT	1		\$25,746.37	\$25,746.37		\$25,746.37	\$0.00	\$25,746.37	
1297		7W/10W 12V IN, 120/240V OUT	1		\$3,765.34	\$3,765.34		\$3,765.34	\$0.00	\$3,765.34	
1298		48V 361 A HR 3 TRAY BATTERY SYSTEM	6		\$283.24	\$1,699.44		\$1,699.44	\$0.00	\$1,699.44	
1299		CIRCUIT BREAKER PANEL	38		\$22.63	\$859.94		\$859.94	\$0.00	\$859.94	
1300		20AMP BREAKER									
1301		** REMOTE RF SITES **									
1302		REMOTE TERMINAL UNIT	1		\$1,443.94	\$1,443.94		\$1,443.94	\$0.00	\$1,443.94	
1303		MOSCAD EXTERNAL MODEM COMMUNICATIO	1		\$0.00	\$0.00		\$0.00	\$0.00	\$0.00	
1304		ALT: NEMA TO RACK MOUNT	1		\$0.00	\$0.00		\$0.00	\$0.00	\$0.00	
1305		ADD: ASYNC RS232	7		\$113.15	\$792.05		\$792.05	\$0.00	\$792.05	
1306		REPLACE B-SLOT MB W/BCPU+NO I/O	1		\$146.00	\$146.00		\$146.00	\$0.00	\$146.00	
1307		ADD: MOSCAD CPU 300	6		\$972.96	\$5,837.76		\$5,837.76	\$0.00	\$5,837.76	
1308		ADD: 8 MOD W/EXPANSION MODULE	1		\$693.60	\$693.60		\$693.60	\$0.00	\$693.60	
1309		ADD: 8A15V MODULE	7		\$477.42	\$3,341.94		\$3,341.94	\$0.00	\$3,341.94	
1310		MOSCAD EXTERNAL MODEM COMMUNICATIO	1		\$0.00	\$0.00		\$0.00	\$0.00	\$0.00	
1311		ALT: NEMA TO RACK MOUNT	1		\$0.00	\$0.00		\$0.00	\$0.00	\$0.00	
1312		REPL: B-SLOT MB W/BCPU+I/O	1		\$146.00	\$146.00		\$146.00	\$0.00	\$146.00	
1313		DEL: 3 AMP PS AND BATTERY	1		\$972.96	\$972.96		\$972.96	\$0.00	\$972.96	
1314		ADD: CPU 300	1		\$113.15	\$113.15		\$113.15	\$0.00	\$113.15	
1315		ADD: ASYNC RS232	1		\$277.40	\$277.40		\$277.40	\$0.00	\$277.40	
1316		ADD: 60 DI. MODULE	1		\$375.95	\$375.95		\$375.95	\$0.00	\$375.95	
1317		ADD: 1600 LATCH MODULE	1		\$1,045.96	\$1,045.96		\$1,045.96	\$0.00	\$1,045.96	
1318		SERIES 300 CPU	1		\$0.00	\$0.00		\$0.00	\$0.00	\$0.00	
1319		ADD: ASYNC RS232	1		\$113.15	\$113.15		\$113.15	\$0.00	\$113.15	
1320		ADD: 2400 DIAL-UP	1		\$300.76	\$300.76		\$300.76	\$0.00	\$300.76	
1321		FLAT OVAL, 2.5M CABLE	9		\$98.55	\$886.95		\$886.95	\$0.00	\$886.95	
1322		LAN ADAPTER ASSEMBLY	2		\$36.50	\$73.00		\$73.00	\$0.00	\$73.00	
1323		CPU RS-232 MULTIPLEXER INTF 1 TO 4	6		\$162.50	\$975.00		\$975.00	\$0.00	\$975.00	
1324		EXTERNAL DC PS TO MB CABLE	1		\$10.95	\$10.95		\$10.95	\$0.00	\$10.95	

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Min Hours		Labor		Rev 7/97		Project Cost Itemization Schedule		Subcontracts		Total	
			Qty	Per Unit	Total	Rate	Total	Unit	Total	Unit	Total	Cost	Cost	Cost
1325	South Hill Harris	Microwave	2	0	0		\$0.00	\$49,667.00			\$22,500.00	\$45,000.00	\$144,134.00	
1326		SOUTH HILL TOTAL										\$1,107,668.52		
1327		Site 9: Bank of America												
1328		Microwave	1	0	0		\$0.00	\$49,160.00			\$19,500.00	\$19,500.00	\$68,660.00	
1329		Site 9: Bank of America											\$68,660.00	
1330		B OF A TOTAL											\$13,032,111.94	
1331		RADIO SITE TOTALS												
1332		5: Dispatch Facilities												
1333		Site 1: CEGC at Turk	1	0	0		\$32,699.50	\$0.00			\$65,000.00	\$97,699.50		
1334		CEGC TENS NETWORK SERVER **	1	0	0		\$0.00	\$0.00			\$0.00	\$0.00		
1335		UNIVERSAL ENCLOSURE TENS/800	1	0	0		\$0.00	\$1,095.00			\$0.00	\$1,095.00		
1336		DC POWER SUPPLY 48 VDC	2	0	0		\$0.00	\$912.60			\$0.00	\$912.60		
1337		INTERFACE CARDS, B T1E1 INTFC	1	0	0		\$0.00	\$1,642.60			\$0.00	\$1,642.60		
1338		CPU CONTRL CARD W/2 T1E1, REG. 256	2	0	0		\$0.00	\$4,106.25			\$0.00	\$4,106.25		
1339		WAN CARD, DUAL T1E1 INTERFACE	1	0	0		\$0.00	\$1,781.20			\$0.00	\$1,781.20		
1340		WAN CARD, DUAL T1E1 INTERFACE	1	0	0		\$0.00	\$1,551.25			\$0.00	\$1,551.25		
1341		CSU PLUG IN MODULE	2	0	0		\$0.00	\$912.50			\$0.00	\$912.50		
1342		VOICE CARD, 8 PORT, 4 WIRE E&M TO	0	0	0		\$0.00	\$1,368.75			\$0.00	\$1,368.75		
1343		DATA CARD, 10 PORT RS232C SUB-RATE	1	0	0		\$0.00	\$2,190.00			\$0.00	\$2,190.00		
1344		DATA CARD, 2 PORT V.35	1	0	0		\$0.00	\$1,332.25			\$0.00	\$1,332.25		
1345		***** CEGC												
1346		ADD: CONV CHAN SFWR	5	0	0		\$0.00	\$146.00			\$0.00	\$146.00		
1347		ADD: TELEPHONE INTEG	3	0	0		\$0.00	\$73.00			\$0.00	\$73.00		
1348		HP PENT CPU 100MHZ SERVER	1	0	0		\$0.00	\$3,963.90			\$0.00	\$3,963.90		
1349		TOUCHSCREEN MONITOR 17"	1	0	0		\$0.00	\$1,565.85			\$0.00	\$1,565.85		
1350		LINKBUILDER FMS II 24-PORT TP	2	0	0		\$0.00	\$1,003.75			\$0.00	\$2,007.50		
1351		ETHERNET CABLE, 50'	40	0	0		\$0.00	\$87.79			\$0.00	\$87.79		
1352		RUB EXPANSION CABLE	1	0	0		\$0.00	\$43.80			\$0.00	\$43.80		
1353		SINGLE PORT WAN BRIDGE	1	0	0		\$0.00	\$1,269.47			\$0.00	\$1,269.47		
1354		V.35 CABLE MALE/MALE 20FT	1	0	0		\$0.00	\$83.22			\$0.00	\$83.22		
1355		M1320T EPSON PRINTER	1	0	0		\$0.00	\$481.07			\$0.00	\$481.07		
1356		ADD: GOLD ELITE OPR	38	0	0		\$0.00	\$2,920.00			\$0.00	\$2,920.00		
1357		GOLD SERIES 4 CARD CAGE CEB	5	0	0		\$0.00	\$27,221.70			\$0.00	\$27,221.70		
1358		ALT: AIMI PAIR TRUNK	5	0	0		\$0.00	\$8,011.75			\$0.00	\$8,011.75		
1359		ADD: EXPRESS SERVICE	5	0	0		\$0.00	\$1,449.05			\$0.00	\$1,449.05		
1360		ADD: DIAGNOSTIC INTERFACE	38	0	0		\$0.00	\$217.54			\$0.00	\$8,266.52		
1361		MODULE, SMART PHONE INTERFACE	5	0	0		\$0.00	\$995.72			\$0.00	\$4,977.60		
1362		GOLD BASE INFO MODULE	5	0	0		\$0.00	\$634.37			\$0.00	\$3,171.85		
1363		ADD: PTT OUTPUT RELAY (M LEAD)	5	0	0		\$0.00	\$59.13			\$0.00	\$295.65		
1364		GOLD SERIES ELITE/CRT DESKTOP	38	0	0		\$0.00	\$6,945.95			\$0.00	\$263,946.10		
1365		ALT: MICROPHONE, DESK	5	0	0		\$0.00	\$85.41			\$0.00	\$427.05		
1366		ADD: HEADSET JACK	38	0	0		\$0.00	\$160.60			\$0.00	\$6,102.80		
1367		ADD: SECOND HEADSET JACK	76	0	0		\$0.00	\$160.60			\$0.00	\$12,205.60		
1368		ADD: FOOTSWITCH	38	0	0		\$0.00	\$70.08			\$0.00	\$2,663.04		
1369		AUXILIARY INPUT/OUTPUT INTERFACE	73	0	0		\$0.00	\$992.07			\$0.00	\$7,336.56		
1370		HEADSET, STARGET II W/PTT	38	0	0		\$0.00	\$261.34			\$0.00	\$19,077.82		
1371		HP PENT CPU 100MHZ CD ETH WINNT	38	0	0		\$0.00	\$3,149.95			\$0.00	\$119,698.10		
1372		TOUCHSCREEN MONITOR 17"	38	0	0		\$0.00	\$1,565.85			\$0.00	\$59,502.30		
1373		MOUSEPAD, 5 PACK	8	0	0		\$0.00	\$36.50			\$0.00	\$292.00		
1374													\$292.00	
1375													\$292.00	

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	City and County of San Francisco	Model	Item Description	Qty	Man Hours	Labor Hrs	Rev: 7/97 Project Cost Itemization Schedule		Subcontracts Unit Cost	Total \$	Total \$	Total Cost
							Total \$	Material Unit Cost				
1376		DC92221024XXTR	NET GUARDIAN DDS2 24 CH 160IPM	1	0		\$0.00	\$45,795.09	\$0.00	\$45,795.09	\$45,795.09	
1377		DQJ928N	WORK STATION NETWORKED AUDIO	1	0		\$0.00	\$5,661.87	\$0.00	\$5,661.87	\$5,661.87	
1378		DR09917	FILE SERVER	1	0		\$0.00	\$5,610.78	\$0.00	\$5,610.78	\$5,610.78	
1379		75-01	SMI SETWR 1-10 SYS/HWR KEY	1	0		\$0.00	\$3,886.52	\$0.00	\$3,886.52	\$3,886.52	
1380		DRE2	ADD: RIM II WITH CABLES	1	0		\$0.00	\$511.00	\$0.00	\$511.00	\$511.00	
1381		T0N0465	PENTIUM PC	1	0		\$0.00	\$2,186.35	\$0.00	\$2,186.35	\$2,186.35	
1382		T9UDX	ASTRO DIG SPECTRA MOBILE SERIES	1	0		\$0.00	\$2,090.00	\$0.00	\$2,090.00	\$2,090.00	
1383		130W	35W 600 806-870 A4	1	0		\$0.00	\$401.60	\$0.00	\$401.60	\$401.60	
1384		6005	ENH: ASTRO DIGITAL CAI	1	0		\$0.00	\$722.70	\$0.00	\$722.70	\$722.70	
1385		651	ENH: ENHANCED SMARTNET OPERATION	1	0		\$0.00	(\$20.44)	\$0.00	(\$20.44)	(\$20.44)	
1386		W07	DEL: SPEAKER	1	0		\$0.00	(\$15.33)	\$0.00	(\$15.33)	(\$15.33)	
1387		W70	DEL: ANTENNA 800MHZ	1	0		\$0.00	(\$28.20)	\$0.00	(\$28.20)	(\$28.20)	
1388		W71	DEL: MICROPHONE	1	0		\$0.00	\$255.50	\$0.00	\$255.50	\$255.50	
1389		CYN6085	RSS XTS ASTRO SAB SPEC/CONSOLE	1	0		\$0.00	\$55.85	\$0.00	\$55.85	\$55.85	
1390		3000368B73	CABLE, SPECTRA TO RIB, EXOPT HIPWR	1	0		\$0.00	\$48,070.00	\$0.00	\$48,070.00	\$48,070.00	
1391		T99DX	ASTRO DIG SPECTRA MOBILE SERIES	23	0		\$0.00	\$196.98	\$0.00	\$196.98	\$196.98	
1392		130W	35W 600 806-870 A4	23	0		\$0.00	\$401.50	\$0.00	\$401.50	\$401.50	
1393		G003	ENH: ASTRO DIGITAL CAI	23	0		\$0.00	\$3,893.80	\$0.00	\$3,893.80	\$3,893.80	
1394		G43	ENH: SYSTEM, CONVENTIONAL	23	0		\$0.00	(\$20.44)	\$0.00	(\$20.44)	(\$20.44)	
1395		W07	DEL: SPEAKER	23	0		\$0.00	(\$15.33)	\$0.00	(\$15.33)	(\$15.33)	
1396		W70	DEL: ANTENNA 800MHZ	23	0		\$0.00	(\$28.20)	\$0.00	(\$28.20)	(\$28.20)	
1397		W71	DEL: MICROPHONE	23	0		\$0.00	\$3,003.95	\$0.00	\$3,003.95	\$3,003.95	
1398		DS36C80024	RMC 806-824 MHZ, 24CH, CWA	1	0		\$0.00	\$80.30	\$0.00	\$80.30	\$80.30	
1399		TD56441	ANTENNA, 60B 3 ELEMENT YAGI	1	0		\$0.00	\$75.92	\$0.00	\$75.92	\$75.92	
1400		RRX4049A	COAX PROTECTOR	1	0		\$0.00	\$18.35	\$0.00	\$18.35	\$18.35	
1401		TDNG673	1/2" CABLE-GROUND CLAMP KIT	3	0		\$0.00	\$2.12	\$0.00	\$2.12	\$2.12	
1402		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	100	0		\$0.00	\$108.60	\$0.00	\$108.60	\$108.60	
1403		TDNG677	1/2" CONNECTOR, N PLUG (MALE)	4	0		\$0.00	\$208.60	\$0.00	\$208.60	\$208.60	
1404		L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	150	0		\$0.00	\$10.59	\$0.00	\$10.59	\$10.59	
1405		TDN5715	1/4" CONN, BNC PLUG S-FLEX (PLTD)	24	0		\$0.00	\$17.70	\$0.00	\$17.70	\$17.70	
1406		TDNG658	1/4" CONN, MINI-UHF PLUG S-FLEX	24	0		\$0.00	\$53.29	\$0.00	\$53.29	\$53.29	
1407		DQGB13100	BUSB BAR	1	0		\$0.00	\$940.24	\$0.00	\$940.24	\$940.24	
1408		DQBPK1924VL1BR	BKR PNL W/18 3-AMP BKR'S	2	0		\$0.00	\$2,153.50	\$0.00	\$2,153.50	\$2,153.50	
1409		DQ11512TDORM	110A RACK MOUNT P.S.	1	0		\$0.00	\$146,000.00	\$0.00	\$146,000.00	\$146,000.00	
1410		IRVJAA00	PUC SOFTWARE SETUP	1	0		\$0.00	\$1,443.94	\$0.00	\$1,443.94	\$1,443.94	
1411		IRVJAA01	PUC	38	0		\$0.00	\$1,443.94	\$0.00	\$1,443.94	\$1,443.94	
1412		485CONSOLE/CEB	REMOTE TERMINAL UNIT****	1	0		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
1413		F6500	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
1414		V051	ALT: NEMA TO RACKMOUNT	1	0		\$0.00	\$491.80	\$0.00	\$491.80	\$491.80	
1415		V328	ADD: 16D128VAC/DC MODULE	2	0		\$0.00	\$113.15	\$0.00	\$113.15	\$113.15	
1416		V395	ADD: ASYNC RS232	1	0		\$0.00	\$376.95	\$0.00	\$376.95	\$376.95	
1417		V516	ADD: 16DD LATCH MODULE	2	0		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
1418				2	0		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
1419		CECC	MOSCAD FRONT END PROCESSOR	1	0		\$0.00	\$1,443.94	\$0.00	\$1,443.94	\$1,443.94	
1420		F6500	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
1421		V051	ALT: NEMA TO RACKMOUNT	1	0		\$0.00	\$113.15	\$0.00	\$113.15	\$113.15	
1422		V345	ADD: ASYNC RS232	7	0		\$0.00	\$146.00	\$0.00	\$146.00	\$146.00	
1423		V410	REPL: 6-SLOT MB W/BCPU+NO I/O	1	0		\$0.00	\$972.36	\$0.00	\$972.36	\$972.36	
1424		V425	ADD: CPU 300	6	0		\$0.00	\$1,443.94	\$0.00	\$1,443.94	\$1,443.94	
1425		F6500	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
1426		V051	ALT: NEMA TO RACKMOUNT	1	0		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours	Labor	Project Cost Itemization Schedule		Subcontracts	Total	Total	Total
						Hrs	Rate				
City and County of San Francisco											
Citywide 800MHz Radio System Project (CBRS)											
Motorola Proposal for Bid No. 166											
Rev: 7/97											
1428	V274	DEL-3 AMP PS AND BATTERY	1	0							
1429	V246	ADD: ASYNC RS232	1	0							
1430	V300	ADD: 60 DI. MODULE	1	0							
1431	V260	REPL: B-SLOT MB W/CPU+4110	1	0							
1432	V516	ADD: 1600 LATCH MODULE	1	0							
1433	F6933	SERIES 300 GPU	1	0							
1434	V345	ADD: ASYNC RS232	1	0							
1435	V104	ADD: 2400 DIAL-UP	1	0							
1436	FRM400	FLAT OVAL 2.5M CABLE	1	0							
1437	FRM5727	LAN ADAPTER ASSEMBLY	2	0							
1438	FLM6457	CPU TO COMPUTER RS232 ASYNC 3M	1	0							
1439	FLM8259	COMPUTER ADAPT. 9 PIN TYPE TO RJ45	1	0							
1440	TON0071	MODEM, DESKTOP, LIFESTYLE 28.8-K	1	0							
1441	DCGVMBSM0006	MODEM CABLE	1	0							
1442	F2316	MOSCAD PROGRAMMING TOOL BOX	1	0							
1443	V277	ENR: 3RD PARTY DRIVER	1	0							
1444	FRM6034	EXTERNAL DC PS TO MB CABLE	1	0							
SECTION TOTAL											\$1,278,452.94
1445		Site 2: DTIS	1	0							
1446		** DTIS Tech Network Services **	1	0							
1447		UNIVERSAL ENCLOSURE TENSER/800	1	0							
1448	DSPREM8918	DC POWER SUPPLY 48 VDC	1	0							
1449	DSPREM8902	INTERFACE CARDS, 8 T1/E1 INTFC	2	0							
1450	DSPREM8920	CPU GNRL CARD W/2 T1/E1, RED 266	2	0							
1451	DSPREM8801	WAN CARD, DUAL T1/E1 INTERFACE	1	0							
1452	DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	1	0							
1453	DSPREM8010	CSU PLUG IN MODULE	2	0							
1454	DSPREM812	VOICE CARD, 8 PORT, 4 WIRE ERM/TO	2	0							
1455	DSPREM8119	DATA CARD, 10 PORT RS232C SUB-RATE	1	0							
1456	DSPREM8220	DATA CARD, 2 PORT V.35	1	0							
1457	DSPREM8212		1	0							
1458			1	0							
1459			1	0							
1460	S293	ADD: GOLD ELITE OPR	1	0							
1461	B1822	GOLD SERIES ELITE/ORT DESKTOP	1	0							
1462	K817AD	ALT: MICROPHONE, DESK	1	0							
1463	K970	ADD: HEADSET JACK	1	0							
1464	K704AA	ADD: SECOND HEADSET JACK	1	0							
1465	K672AF	ADD: FOOTSWITCH	1	0							
1466	K2300P-SP	ADD: REMOTE OPERATOR	1	0							
1467	BDH6651	HEADSET, STARSET II/W/PT	1	0							
1468	TON9027	HP PENT GPU 100MZ CO ETH MINNT	1	0							
1469	TON1165	MODEM V.32BIS, 9600BPS, V.32 W/MNP5	1	0							
1470	TON0503	RACK ADAPTER, 19" RMTM LCD	1	0							
1471	TON0351	TO BASE-CROSS-OVER CABLE 15FT	1	0							
1472	CON6218	ETHERNET CABLE, 50'	3	0							
1473	CON6213	SINGLE PORT WAN BRIDGE	2	0							
1474	CON6219	V.35 CABLE MALE/MALE 20FT	1	0							
1475	CON6225	CABLE	1	0							
1476	TON9075	DDSMR64 STANDALONE	1	0							
1477	TON0164	ML320T EPSON PRINTER	1	0							
1478			1	0							
SECTION TOTAL											\$1,278,452.94
SECTION TOTAL											\$668,070.00
SECTION TOTAL											\$700,769.50
SECTION TOTAL											\$0.00
SECTION TOTAL											\$1,095.00
SECTION TOTAL											\$1,025.00
SECTION TOTAL											\$1,642.50
SECTION TOTAL											\$8,212.50
SECTION TOTAL											\$1,781.20
SECTION TOTAL											\$1,551.25
SECTION TOTAL											\$1,825.00
SECTION TOTAL											\$2,737.50
SECTION TOTAL											\$2,190.00
SECTION TOTAL											\$1,332.25
SECTION TOTAL											\$1,332.25
SECTION TOTAL											\$2,920.00
SECTION TOTAL											\$6,945.95
SECTION TOTAL											\$85.41
SECTION TOTAL											\$160.60
SECTION TOTAL											\$160.60
SECTION TOTAL											\$70.08
SECTION TOTAL											\$2,465.21
SECTION TOTAL											\$261.34
SECTION TOTAL											\$3,149.95
SECTION TOTAL											\$1,565.85
SECTION TOTAL											\$474.50
SECTION TOTAL											\$54.75
SECTION TOTAL											\$12.41
SECTION TOTAL											\$16.79
SECTION TOTAL											\$1,269.47
SECTION TOTAL											\$83.22
SECTION TOTAL											\$18.25
SECTION TOTAL											\$507.35
SECTION TOTAL											\$481.07

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours	Per Unit	Total	Labor Hrs	Rate	Rev. 7/97 Project Cost Itemization Schedule		Subcontract Unit Cost	Total \$	Total \$	Total Cost
									Material Unit Cost	Total \$				
1479	INV/AA01	PUC	1		0				\$0.00	\$1,460.00		\$1,460.00	\$0.00	\$1,460.00
1480	L1475	DESKTOP CONTROLLER TONE REMOTE CNTL	2		0				\$0.00	\$277.40		\$277.40	\$554.80	\$554.80
1481	E511	ENH: LOCAL INTERCOM	2		0				\$0.00	\$21.90		\$21.90	\$43.80	\$43.80
1482	E378	ALT: 4 WIRE AUDIO, 2 PAIRS	2		0				\$0.00	\$120.45		\$120.45	\$240.90	\$240.90
1483	E304	ADD: LINE OPERATED TX LIGHT	2		0				\$0.00	\$91.25		\$91.25	\$182.50	\$182.50
1484		ADD: SYSTEMWATCH II USERS GUIDE, SYSTEMWATCH II USERS	20		0				\$0.00	\$9.21		\$9.21	\$184.20	\$184.20
1485		MAN INSTR T1 EMBASSY SW SERV	20		0				\$0.00	\$18.25		\$18.25	\$365.00	\$365.00
1486		CENT ELITE DISPATCHERS GUIDE	20		0				\$0.00	\$23.94		\$23.94	\$478.80	\$478.80
1487		CENT ELITE ADMIN GUIDE	20		0				\$0.00	\$40.15		\$40.15	\$803.00	\$803.00
1488		ADM & CDM USERS' GUIDE	20		0				\$0.00	\$24.02		\$24.02	\$480.40	\$480.40
1489		ELITE/CLASSIC CIE MAINT MANUAL	20		0				\$0.00	\$80.30		\$80.30	\$1,606.00	\$1,606.00
1490		CEB MAINTENANCE MANUAL	20		0				\$0.00	\$73.00		\$73.00	\$1,460.00	\$1,460.00
1491		ELITE CEB INSTALL MANUAL	20		0				\$0.00	\$3.65		\$3.65	\$73.00	\$73.00
1492	6880352B52	MANUAL, TONE REMOTE	2		0				\$0.00	\$2,183.43		\$2,183.43	\$4,366.86	\$4,366.86
1493	B1014	GOLD CRT/TELTE OP SPARES	1		0				\$0.00	\$9,744.77		\$9,744.77	\$9,744.77	\$9,744.77
1494	B1044	GOLD SERIES AMB BOARD	1		0				\$0.00	\$1,830.84		\$1,830.84	\$1,830.84	\$1,830.84
1495	B1045	GOLD SERIES AEB TIMER	2		0				\$0.00	\$3,613.60		\$3,613.60	\$7,227.20	\$7,227.20
1496	B1013	GOLD SERIES SYS SPARES	2		0				\$0.00	\$4,015.00		\$4,015.00	\$8,030.00	\$8,030.00
1497	B1020	SPARE CEB POWER SUPPLY	1		0				\$0.00	\$4,279.26		\$4,279.26	\$4,279.26	\$4,279.26
1498	B1782	SPARE AIM	1		0				\$0.00	\$3,409.10		\$3,409.10	\$3,409.10	\$3,409.10
1499	B1070	CEB SPARES TRUNKINGS	1		0				\$0.00	\$2,418.49		\$2,418.49	\$2,418.49	\$2,418.49
1500	B1019	CEB SPARES CONVENTIONAL	1		0				\$0.00	\$694.37		\$694.37	\$694.37	\$694.37
1501	B1040	CEB SPARES INFC MODULE	4		0				\$0.00	\$146.00		\$146.00	\$584.00	\$584.00
1502	X507AE	ADD: CONY CHAN SFWR	4		0				\$0.00	\$146.00		\$146.00	\$584.00	\$584.00
1503	*****PTIS*****	MOSCAD FRONT END PROCESSOR	1		0				\$0.00	\$1,443.94		\$1,443.94	\$1,443.94	\$1,443.94
1504	F6100	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0				\$0.00	\$0.00		\$0.00	\$0.00	\$0.00
1505	V051	ALT: NEMA TO RACKMOUNT	1		0				\$0.00	\$113.16		\$113.16	\$113.16	\$113.16
1506	V045	ADD: ASYNC RS232	4		0				\$0.00	\$277.40		\$277.40	\$462.80	\$462.80
1507	V200	ADD: 80 DL MODULE	1		0				\$0.00	\$146.00		\$146.00	\$146.00	\$146.00
1508	V303	REPL: 8-SLOT MB W/ACPU-4/10	1		0				\$0.00	\$375.95		\$375.95	\$375.95	\$375.95
1509	V516	ADD: 1600 LATCH MODULE	1		0				\$0.00	\$972.36		\$972.36	\$2,917.08	\$2,917.08
1510	V426	ADD: CPU 300	3		0				\$0.00	\$1,443.94		\$1,443.94	\$4,331.82	\$4,331.82
1511	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0				\$0.00	\$0.00		\$0.00	\$0.00	\$0.00
1512	V031	ALT: NEMA TO RACKMOUNT	1		0				\$0.00	\$113.16		\$113.16	\$113.16	\$113.16
1513	V345	ADD: ASYNC RS232	1		0				\$0.00	\$293.63		\$293.63	\$293.63	\$293.63
1514	V104	ADD: ASYNC RS232	1		0				\$0.00	\$146.00		\$146.00	\$146.00	\$146.00
1515	V360	REPL: 6-SLOT MB W/ACPU-4/10	1		0				\$0.00	\$146.00		\$146.00	\$146.00	\$146.00
1516	F104400	FLAT OVAL 2.5M CABLE	5		0				\$0.00	\$36.50		\$36.50	\$182.50	\$182.50
1517	FRNR727	LAN ADAPTER ASSEMBLY	1		0				\$0.00	\$52.56		\$52.56	\$52.56	\$52.56
1518	FLNG657	CPU TO COMPUTER RS232 ASYNC 3M	1		0				\$0.00	\$32.85		\$32.85	\$32.85	\$32.85
1519	FLNR259	COMPUTER ADAPT, 9 PIN TYPE TO RJ45	1		0				\$0.00	\$210.97		\$210.97	\$210.97	\$210.97
1520	TUN9071	MODEM, DESKTOP, LIFESTYLE 28.8-PC	1		0				\$0.00	\$23.36		\$23.36	\$23.36	\$23.36
1521	DCJEVMSM0006	MODEM CABLE	1		0				\$0.00	\$488.00		\$488.00	\$488.00	\$488.00
1522	F2213	MOSCAD PROGRAMMING TOOL BOX	1		0				\$0.00	\$385.00		\$385.00	\$385.00	\$385.00
1523	V377	ENH: 3RD PARTY DRIVER	1		0				\$0.00	\$385.00		\$385.00	\$385.00	\$385.00
1524		SITE 2 TOTAL							\$0.00	\$7,000.00		\$7,000.00	\$7,000.00	\$7,000.00
1525		Site 3: DPT at HOJ	1		0				\$0.00	\$0.00		\$0.00	\$0.00	\$0.00
1526	*****HOJ TENSr Network Server**	HOJ TENSr Network Server	1		0				\$0.00	\$1,095.00		\$1,095.00	\$1,095.00	\$1,095.00
1527	DSPREMB918	UNIVERSAL ENCLOSURE TENSr/800	1		0				\$0.00	\$1,825.50		\$1,825.50	\$1,825.50	\$1,825.50
1528	DSPREMB902	DC POWER SUPPLY 48 VDC	2		0				\$0.00	\$0.00		\$0.00	\$0.00	\$0.00
1529									\$0.00	\$795,645.75		\$795,645.75	\$795,645.75	\$795,645.75







# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Materl	Item Description	Qty	Man Hours Per Unit	Labor Hrs Rate	Project Cost Itemization Schedule		Subcontracts Unit Cost	Total \$	Total \$	Total Costs
						Total \$	Material Unit Cost				
City and County of San Francisco Citywide 800MHz Radio System Project (CERS) Motorola Preprint for Bid No. 168											
1580	TDH113	ETHERNET CABLE, 50'	1	0	0.00	\$16.79	\$16.79		\$16.79	\$16.79	\$16.79
1581	01822	GOLD SERIES ELITE/CRT DESKTOP	1	0	0.00	\$6,945.95	\$6,945.95		\$6,945.95	\$6,945.95	\$6,945.95
1582	K011AB	ALT: MICROPHONE, DESK	1	0	0.00	\$85.41	\$85.41		\$85.41	\$85.41	\$85.41
1583	K97D	ADD: HEADSET JACK	0	0	0.00	\$160.60	\$160.60		\$160.60	\$160.60	\$160.60
1584	K70AAA	ADD: SECOND HEADSET JACK	1	0	0.00	\$70.08	\$70.08		\$70.08	\$70.08	\$70.08
1585	K57ZAF	ADD: FOOTSWITCH	1	0	0.00	\$2,465.21	\$2,465.21		\$2,465.21	\$2,465.21	\$2,465.21
1586	K238PSP	ADD: REMOTE OPERATOR	1	0	0.00	\$261.34	\$261.34		\$261.34	\$261.34	\$261.34
1587	0DNG651	HEADSET, STARSET II W/PTT	1	0	0.00	\$3,149.95	\$3,149.95		\$3,149.95	\$3,149.95	\$3,149.95
1588	TDH1165	HP PENT CPU 100Mhz CD ETH WINNT	1	0	0.00	\$1,565.85	\$1,565.85		\$1,565.85	\$1,565.85	\$1,565.85
1589	TDN9827	TOUCHSCREEN MONITOR 17"	1	0	0.00	\$36.50	\$36.50		\$36.50	\$36.50	\$36.50
1590	TDN9841	MOUSEPAD, 5 PACK	1	0	0.00	\$1,460.00	\$1,460.00		\$1,460.00	\$1,460.00	\$1,460.00
1591	INVJAS01	PUC	1	0	0.00						\$31,048.28
<b>SITE 6 TOTAL</b>											<b>\$1,750.00</b>
1592		Site 6: Water	1	0	0.00						\$1,750.00
1593		***** WATER									\$2,920.00
1594		ADD: GOLD ELITE OPR	1	0	0.00	\$6,945.95	\$6,945.95		\$6,945.95	\$6,945.95	\$6,945.95
1595	X289	GOLD SERIES ELITE/CRT DESKTOP	1	0	0.00	\$160.60	\$160.60		\$160.60	\$160.60	\$160.60
1596	01822	ADD: HEADSET JACK	1	0	0.00	\$160.60	\$160.60		\$160.60	\$160.60	\$160.60
1597	K97D	ADD: SECOND HEADSET JACK	1	0	0.00	\$70.08	\$70.08		\$70.08	\$70.08	\$70.08
1598	K70AAA	ADD: FOOTSWITCH	1	0	0.00	\$2,465.21	\$2,465.21		\$2,465.21	\$2,465.21	\$2,465.21
1599	K57ZAF	ADD: REMOTE OPERATOR	1	0	0.00	\$261.34	\$261.34		\$261.34	\$261.34	\$261.34
1600	K238PSP	HEADSET, STARSET II W/PTT	1	0	0.00	\$3,149.95	\$3,149.95		\$3,149.95	\$3,149.95	\$3,149.95
1601	BDH6551	HP PENT CPU 100Mhz CD ETH WINNT	1	0	0.00	\$1,565.85	\$1,565.85		\$1,565.85	\$1,565.85	\$1,565.85
1602	TDN9827	TOUCHSCREEN MONITOR 17"	1	0	0.00	\$36.50	\$36.50		\$36.50	\$36.50	\$36.50
1603	TDN1165	MODEM V.3225, 9600BPS, V.32 WINMPS	1	0	0.00	\$474.50	\$474.50		\$474.50	\$474.50	\$474.50
1604	TDN6503	MODEM V.3225, 9600BPS, V.32 WINMPS	1	0	0.00	\$54.75	\$54.75		\$54.75	\$54.75	\$54.75
1605	TDN8351	SINGLE PORT WAN BRIDGE	1	0	0.00	\$1,269.47	\$1,269.47		\$1,269.47	\$1,269.47	\$1,269.47
1606	CDNG210	10 BASE-CROSS-OVER CABLE 25FT	1	0	0.00	\$13.14	\$13.14		\$13.14	\$13.14	\$13.14
1607	CDNG219	CABLE	1	0	0.00	\$18.25	\$18.25		\$18.25	\$18.25	\$18.25
1608	CDNG225	CABLE	1	0	0.00	\$507.35	\$507.35		\$507.35	\$507.35	\$507.35
1609	TDN9875	DPS/MR64 STANDALONE	1	0	0.00	\$1,460.00	\$1,460.00		\$1,460.00	\$1,460.00	\$1,460.00
1610	INVJAM01	PUC	1	0	0.00						\$6,676.58
1611	61804 B	CC2 ENCL 2B 4HI FREESTANDING	2	0	0.00	\$3,338.29	\$6,676.58		\$6,676.58	\$6,676.58	\$6,676.58
1612	K750	ADD: LEFT SIDE FILLER PANEL	1	0	0.00	\$102.20	\$102.20		\$102.20	\$102.20	\$102.20
1613	K740	ADD: RIGHT SIDE FILLER PANEL	1	0	0.00	\$102.20	\$102.20		\$102.20	\$102.20	\$102.20
1614	K762	ADD: BOTH FOOT SUPPORTS	2	0	0.00	\$122.64	\$245.28		\$245.28	\$245.28	\$245.28
1615	L1009	CC2 WRITING SURF 2B RND EDGE	2	0	0.00	\$349.67	\$699.34		\$699.34	\$699.34	\$699.34
1616	ULN6199	RAIL RACK MOUNTING SHORT	4	0	0.00	\$48.18	\$192.72		\$192.72	\$192.72	\$192.72
<b>SITE 6 TOTAL</b>											<b>\$31,265.36</b>
<b>DISPATCH FACILITIES TOTAL</b>											<b>\$2,354,233.26</b>
1617		DISPATCH FACILITIES TOTAL									\$2,354,233.26
1618		6. Coverage Enhancement									\$192,400.00
1619		Site 1: HOJ									\$192,400.00
1620		BIDirectional Amplifier System Network	1	0	0.00		\$0.00		\$0.00	\$0.00	\$192,400.00
1621		*****SPECIAL AREAS**									\$0.00
1622		REMOTE TERMINAL UNIT	1	0	0.00	\$1,443.94	\$1,443.94		\$1,443.94	\$1,443.94	\$1,443.94
1623	F8300	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0.00	\$0.00	\$0.00		\$0.00	\$0.00	\$0.00
1624	V05H	ALT: NEMA TO RACKMOUNT	1	0	0.00	\$113.15	\$113.15		\$113.15	\$113.15	\$113.15
1625	V05H	ADD: ASYNC RS232	4	0	0.00	\$146.00	\$584.00		\$584.00	\$584.00	\$584.00
1626	V3H5	REPLACE 8-SLOT MB W/8CPU+NO I/O	1	0	0.00						\$0.00
1627	V418		1	0	0.00						\$0.00

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

City and County of San Francisco		Citywide 800MHz Radio System Project (CERS)		Motorola Proposal for Bid No. 168		Rev: 7/97		Project Cost Itemization Schedule		Subcontracts		Total	
Item #	Model	Item Description	Qty	Min Hours	Per Unit	Total	Rate	Unit	Cost	Unit	Cost	Unit	Cost
1600	V425	ADD: MOSCAD CPU 300	1	0		\$0.00	\$972.36		\$972.36		\$0.00		\$0.00
1601	V437	ADD: BAI SV MODULE	1	0		\$0.00	\$477.42		\$477.42		\$0.00		\$0.00
1602	F0800	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0		\$0.00	\$1,443.94		\$1,443.94		\$0.00		\$0.00
1603	V051	ALT: NEMA TO RACKMOUNT	1	0		\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
1604	V051	REPL: 8-SLOT MB W/4CPU+4I/O	1	0		\$0.00	\$146.00		\$146.00		\$0.00		\$0.00
1605	V274	DEL: 3 AMP PS AND BATTERY	1	0		\$0.00	(\$240.90)		(\$240.90)		\$0.00		\$0.00
1606	V345	ADD: ASYNC RS232	1	0		\$0.00	\$113.15		\$113.15		\$0.00		\$0.00
1607	V390	ADD: 60 DI. MODULE	1	0		\$0.00	\$277.40		\$277.40		\$0.00		\$0.00
1608	V516	ADD: 1600 LATCH MODULE	1	0		\$0.00	\$375.95		\$375.95		\$0.00		\$0.00
1609	V437	ADD: BAI SV MODULE	1	0		\$0.00	\$477.42		\$477.42		\$0.00		\$0.00
1610	V425	ADD: CPU 300	1	0		\$0.00	\$972.36		\$972.36		\$0.00		\$0.00
1611	F0800	SERIES 300 CPU	1	0		\$0.00	\$1,045.36		\$1,045.36		\$0.00		\$0.00
1612	V345	ADD: ASYNC RS232	1	0		\$0.00	\$113.15		\$113.15		\$0.00		\$0.00
1613	V104	ADD: 2400 DIAL-UP	1	0		\$0.00	\$101.08		\$101.08		\$0.00		\$0.00
1614	FRN4100	FLAT OVAL 2.5M CABLE	18	0		\$0.00	\$197.10		\$197.10		\$0.00		\$0.00
1615		HOJ TOTAL											\$192,400.00
1616		Site 2: San Bruno Jellis											
1617													
1618		BiDirectional Amplifier System Network	1	0		\$11,276.55			\$11,276.55		\$0.00		\$11,276.55
1619													
1620		***SPECIAL AREAS***											
1621	F0800	REMOTE TERMINAL UNIT	1	0		\$0.00	\$1,443.94		\$1,443.94		\$0.00		\$0.00
1622	V051	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0		\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
1623	V245	ALT: NEMA TO RACKMOUNT	1	0		\$0.00	\$113.15		\$113.15		\$0.00		\$0.00
1624	V245	ADD: ASYNC RS232	4	0		\$0.00	\$452.60		\$452.60		\$0.00		\$0.00
1625	V418	REPLACE 8-SLOT MB W/8CPU+NO I/O	1	0		\$0.00	\$146.00		\$146.00		\$0.00		\$0.00
1626	V425	ADD: MOSCAD CPU 300	1	0		\$0.00	\$972.36		\$972.36		\$0.00		\$0.00
1627	V637	ADD: BAI SV MODULE	1	0		\$0.00	\$477.42		\$477.42		\$0.00		\$0.00
1628	F0800	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0		\$0.00	\$1,443.94		\$1,443.94		\$0.00		\$0.00
1629	V051	ALT: NEMA TO RACKMOUNT	1	0		\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
1630	V369	REPL: 8-SLOT MB W/4CPU+4I/O	1	0		\$0.00	(\$240.90)		(\$240.90)		\$0.00		\$0.00
1631	V274	DEL: 3 AMP PS AND BATTERY	1	0		\$0.00	\$113.15		\$113.15		\$0.00		\$0.00
1632	V245	ADD: ASYNC RS232	1	0		\$0.00	\$277.40		\$277.40		\$0.00		\$0.00
1633	V390	ADD: 60 DI. MODULE	1	0		\$0.00	\$375.95		\$375.95		\$0.00		\$0.00
1634	V437	ADD: 1600 LATCH MODULE	1	0		\$0.00	\$477.42		\$477.42		\$0.00		\$0.00
1635	V425	ADD: CPU 300	1	0		\$0.00	\$972.36		\$972.36		\$0.00		\$0.00
1636	F0800	SERIES 300 CPU	1	0		\$0.00	\$1,045.36		\$1,045.36		\$0.00		\$0.00
1637	V345	ADD: ASYNC RS232	1	0		\$0.00	\$113.15		\$113.15		\$0.00		\$0.00
1638	V104	ADD: 2400 DIAL-UP	1	0		\$0.00	\$101.08		\$101.08		\$0.00		\$0.00
1639	FRN4100	FLAT OVAL 2.5M CABLE	18	0		\$0.00	\$197.10		\$197.10		\$0.00		\$0.00
1640		HOJ TOTAL											\$192,400.00
1641		Site 3: Moscone Center											
1642													
1643		BiDirectional Amplifier System Network	1	0		\$10,000.00			\$10,000.00		\$0.00		\$10,000.00
1644													
1645		***SPECIAL AREAS***											
1646	F0800	REMOTE TERMINAL UNIT	1	0		\$0.00	\$1,443.94		\$1,443.94		\$0.00		\$0.00
1647	V051	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0		\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
1648	V051	ALT: NEMA TO RACKMOUNT	1	0		\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
1649	V345	ADD: ASYNC RS232	4	0		\$0.00	\$452.60		\$452.60		\$0.00		\$0.00
1650	V418	REPLACE 8-SLOT MB W/8CPU+NO I/O	1	0		\$0.00	\$146.00		\$146.00		\$0.00		\$0.00
1651	V425	ADD: MOSCAD CPU 300	1	0		\$0.00	\$972.36		\$972.36		\$0.00		\$0.00
1652	V637	ADD: BAI SV MODULE	1	0		\$0.00	\$477.42		\$477.42		\$0.00		\$0.00
1653	F0800	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0		\$0.00	\$1,443.94		\$1,443.94		\$0.00		\$0.00
1654	V051	ALT: NEMA TO RACKMOUNT	1	0		\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
1655	V369	REPL: 8-SLOT MB W/4CPU+4I/O	1	0		\$0.00	(\$240.90)		(\$240.90)		\$0.00		\$0.00
1656	V274	DEL: 3 AMP PS AND BATTERY	1	0		\$0.00	\$113.15		\$113.15		\$0.00		\$0.00
1657	V245	ADD: ASYNC RS232	1	0		\$0.00	\$277.40		\$277.40		\$0.00		\$0.00
1658	V390	ADD: 60 DI. MODULE	1	0		\$0.00	\$375.95		\$375.95		\$0.00		\$0.00
1659	V437	ADD: 1600 LATCH MODULE	1	0		\$0.00	\$477.42		\$477.42		\$0.00		\$0.00
1660	V425	ADD: CPU 300	1	0		\$0.00	\$972.36		\$972.36		\$0.00		\$0.00
1661	F0800	SERIES 300 CPU	1	0		\$0.00	\$1,045.36		\$1,045.36		\$0.00		\$0.00
1662	V345	ADD: ASYNC RS232	1	0		\$0.00	\$113.15		\$113.15		\$0.00		\$0.00
1663	V104	ADD: 2400 DIAL-UP	1	0		\$0.00	\$300.76		\$300.76		\$0.00		\$0.00
1664	FRN4100	FLAT OVAL 2.5M CABLE	18	0		\$0.00	\$197.10		\$197.10		\$0.00		\$0.00
1665		SITE 2 TOTAL											\$203,676.55
1666		Site 3: Moscone Center											
1667													
1668		BiDirectional Amplifier System Network	1	0		\$10,000.00			\$10,000.00		\$0.00		\$10,000.00
1669													
1670		***SPECIAL AREAS***											
1671	F0800	REMOTE TERMINAL UNIT	1	0		\$0.00	\$1,443.94		\$1,443.94		\$0.00		\$0.00
1672	V051	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0		\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
1673	V051	ALT: NEMA TO RACKMOUNT	1	0		\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
1674	V345	ADD: ASYNC RS232	4	0		\$0.00	\$452.60		\$452.60		\$0.00		\$0.00
1675	V418	REPLACE 8-SLOT MB W/8CPU+NO I/O	1	0		\$0.00	\$146.00		\$146.00		\$0.00		\$0.00
1676		HOJ TOTAL											\$192,400.00
1677		Site 2: San Bruno Jellis											
1678													
1679		BiDirectional Amplifier System Network	1	0		\$10,000.00			\$10,000.00		\$0.00		\$10,000.00
1680													
1681		***SPECIAL AREAS***											
1682	F0800	REMOTE TERMINAL UNIT	1	0		\$0.00	\$1,443.94		\$1,443.94		\$0.00		\$0.00
1683	V051	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0		\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
1684	V051	ALT: NEMA TO RACKMOUNT	1	0		\$0.00	\$0.00		\$0.00		\$0.00		\$0.00
1685	V345	ADD: ASYNC RS232	4	0		\$0.00	\$452.60		\$452.60		\$0.00		\$0.00
1686	V418	REPLACE 8-SLOT MB W/8CPU+NO I/O	1	0		\$0.00	\$146.00		\$146.00		\$0.00		\$0.00
1687		HOJ TOTAL											\$192,400.00

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Mfr/Model	Item Description	Man Hours		Labor Hrs	Rate	Project Cost Itemization Schedule		Subcontracts Unit Cost	Total \$	Total Costs
			Qty	Per Unit			Total \$	Material Cost			
1680	V425	ADD: MOSCAD CPU 300	1	0	0	\$972.36	\$0.00	\$972.36	\$0.00	\$0.00	\$0.00
1681	V437	ADD: BAI 5V MODULE	1	0	0	\$477.42	\$0.00	\$477.42	\$0.00	\$0.00	\$0.00
1682	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0	\$1,443.94	\$0.00	\$1,443.94	\$0.00	\$0.00	\$0.00
1683	V051	ALT: NEMA TO RACKMOUNT	1	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1684	V369	REPL: 8-SLOT MB W/4CPU+4I/O	1	0	0	\$146.00	\$0.00	\$146.00	\$0.00	\$0.00	\$0.00
1685	V274	DEL: 3 AMP PS AND BATTERY	1	0	0	(\$240.90)	\$0.00	(\$240.90)	\$0.00	\$0.00	\$0.00
1686	V345	ADD: ASYNC RS232	1	0	0	\$113.15	\$0.00	\$113.15	\$0.00	\$0.00	\$0.00
1687	V900	ADD: 60 DI. MODULE	1	0	0	\$277.40	\$0.00	\$277.40	\$0.00	\$0.00	\$0.00
1688	V516	ADD: 16DO LATCH MODULE	1	0	0	\$375.95	\$0.00	\$375.95	\$0.00	\$0.00	\$0.00
1689	V437	ADD: BAI 5V MODULE	1	0	0	\$477.42	\$0.00	\$477.42	\$0.00	\$0.00	\$0.00
1690	V425	ADD: CPU 300	1	0	0	\$972.36	\$0.00	\$972.36	\$0.00	\$0.00	\$0.00
1691	F6933	SERIES 300 CPU	1	0	0	\$1,045.36	\$0.00	\$1,045.36	\$0.00	\$0.00	\$0.00
1692	V345	ADD: ASYNC RS232	1	0	0	\$113.15	\$0.00	\$113.15	\$0.00	\$0.00	\$0.00
1693	V104	ADD: 2400 DIAL-UP	1	0	0	\$300.76	\$0.00	\$300.76	\$0.00	\$0.00	\$0.00
1694	FRM4100	FLAT OVAL 2.5M CABLE	18	0	0	\$10.95	\$0.00	\$197.10	\$0.00	\$0.00	\$0.00
1695		SITE 3 TOTAL			0		\$32,699.50	\$0.00	\$0.00	\$0.00	\$0.00
1696		Site 4: Muni Tunnel Network	1	0	0						\$2,861,749.00
1697			1	0	0		\$0.00	\$0.00	\$2,861,749.00	\$0.00	\$2,861,749.00
1698		Bidirectional Amplifier System Network	1	0	0						\$0.00
1699	C89ED	QUANTAR/QUANTRO MUNI	6	0	0	\$4,948.48	\$0.00	\$29,678.88	\$0.00	\$0.00	\$0.00
1700	001C	QUANTAR/QUANTRO CONFIGURATION	6	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1701	X250	ADD: 600 20W PA	6	0	0	\$2,663.77	\$0.00	\$15,982.62	\$0.00	\$0.00	\$0.00
1702	X597 A	ENH: CONVENTIONAL ONLY Q1AR	6	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1703	X590	ADD: REPEATER OPERATION	6	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1704	X153	ADD: HARDWARE, RACKMOUNT	6	0	0	\$146.00	\$0.00	\$876.00	\$0.00	\$0.00	\$876.00
1705	X432	ADD: MANUAL SERVICE	6	0	0	\$159.87	\$0.00	\$959.22	\$0.00	\$0.00	\$959.22
1706	X113	ALT: DC ONLY OP. DC TO DC CONVERTER	6	0	0	\$42.34	\$0.00	\$253.80	\$0.00	\$0.00	\$253.80
1707	DISJ0802A950	BIDIRECTIONAL SENSOR	3	0	0	\$72.27	\$0.00	\$216.81	\$0.00	\$0.00	\$216.81
1708	FMAT001	TEST MICROPHONE	3	0	0	\$36.50	\$0.00	\$109.50	\$0.00	\$0.00	\$109.50
1709	H5N1000 R	16W AMPLIFIED EXTERNAL SPKR-PA AUDIO	3	0	0	\$64.42	\$0.00	\$193.26	\$0.00	\$0.00	\$193.26
1710	TRX7739	CABLE FOR EXTERNAL 5W SPEAKER	3	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1711	TRX4509	DUAL PHONE LINE SUPPRESSOR	1	0	0	\$343.10	\$0.00	\$343.10	\$0.00	\$0.00	\$0.00
1712	TRX7342	** Racks **	3	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1713	TRX7342	SEVEN FOOT RACK	3	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1714			0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1715		REMOTE TERMINAL UNIT	0	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1716	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	3	0	0	\$1,443.94	\$0.00	\$4,331.82	\$0.00	\$0.00	\$0.00
1717	V051	ALT: NEMA TO RACKMOUNT	3	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1718	V345	ADD: ASYNC RS232	12	0	0	\$113.15	\$0.00	\$1,357.80	\$0.00	\$0.00	\$0.00
1719	V418	REPLACE 8-SLOT MB W/4CPU+4 I/O	3	0	0	\$146.00	\$0.00	\$438.00	\$0.00	\$0.00	\$0.00
1720	V425	ADD: MOSCAD CPU 300	3	0	0	\$972.36	\$0.00	\$2,917.08	\$0.00	\$0.00	\$0.00
1721	V437	ADD: BAI 5V MODULE	3	0	0	\$477.42	\$0.00	\$1,432.26	\$0.00	\$0.00	\$0.00
1722	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	3	0	0	\$1,443.94	\$0.00	\$4,331.82	\$0.00	\$0.00	\$0.00
1723	V051	ALT: NEMA TO RACKMOUNT	3	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1724	V369	REPL: 8-SLOT MB W/4CPU+4I/O	3	0	0	\$339.45	\$0.00	\$1,018.35	\$0.00	\$0.00	\$0.00
1725	V274	DEL: 3 AMP PS AND BATTERY	3	0	0	(\$240.90)	\$0.00	(\$722.70)	\$0.00	\$0.00	\$0.00
1726	V345	ADD: ASYNC RS232	3	0	0	\$113.15	\$0.00	\$339.45	\$0.00	\$0.00	\$0.00
1727	V300	ADD: 60 DI. MODULE	3	0	0	\$277.40	\$0.00	\$832.20	\$0.00	\$0.00	\$0.00
1728	V516	ADD: 16DO LATCH MODULE	3	0	0	\$375.95	\$0.00	\$1,127.85	\$0.00	\$0.00	\$0.00
1729	V437	ADD: BAI 5V MODULE	3	0	0	\$477.42	\$0.00	\$1,432.26	\$0.00	\$0.00	\$0.00
1730			3	0	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Man Hours			Labor Hrs	Project Cost Itemization Schedule			Subcontract	Total \$	Total Costs
			Qty	Per Unit	Total		Total \$	Material Unit Cost	Unit Cost			
1731	V425	ADD: CPU 300	3	0	0	0	\$0.00	\$972.36		\$0.00	\$0.00	
1732	F0303	SERIES 300 CPU	3	0	0	0	\$0.00	\$1,045.36		\$0.00	\$0.00	
1733	V045	ADD: ASYNC RS232	3	0	0	0	\$0.00	\$113.15		\$0.00	\$0.00	
1734	V104	ADD: 2400 DIAL-UP	3	0	0	0	\$0.00	\$300.76		\$0.00	\$0.00	
1735	FKH400	FLAT OVAL 2.5M CABLE	36	0	0	0	\$0.00	\$10.95		\$0.00	\$0.00	
		SITE 4 TOTAL									\$2,944,690.37	
1736						0	\$10,000.00			\$0.00	\$10,000.00	
1737		Site 5: San Francisco International Airport - SFIA	1	0	0	0	\$0.00			\$192,402.00	\$192,402.00	
1738		Bidirectional Amplifier System Network	1	0	0	0	\$0.00			\$0.00	\$0.00	
1739		QUANTAR/QUANTRO SFIA	2	0	0	0	\$0.00	\$4,946.46		\$0.00	\$9,892.96	
1740	C98ED	QUANTAR/QUANTRO CONFIGURATION	2	0	0	0	\$0.00	\$0.00		\$0.00	\$0.00	
1741	D01C	ADD: 100W 800 MHZ OPERATION	2	0	0	0	\$0.00	\$4,809.22		\$0.00	\$9,218.44	
1742	X750	ENH: CONVENTIONAL ONLY QTAR	2	0	0	0	\$0.00	\$0.00		\$0.00	\$0.00	
1743	X597 A	ADD: REPEATER OPERATION	2	0	0	0	\$0.00	\$0.00		\$0.00	\$0.00	
1744	X380	ADD: HARDWARE, RACKMOUNT	2	0	0	0	\$0.00	\$0.00		\$0.00	\$0.00	
1745	X193	ADD: MANUAL SERVICE	2	0	0	0	\$0.00	\$146.00		\$0.00	\$292.00	
1746	X432	ALT: DC ONLY OP. DC TO DC CONVERTER	2	0	0	0	\$0.00	\$292.00		\$0.00	\$584.00	
1747	X113	BIDIRECTIONAL SENSOR	2	0	0	0	\$0.00	\$159.87		\$0.00	\$319.74	
1748	DSDB0882A350	TEST MICROPHONE	1	0	0	0	\$0.00	\$42.34		\$0.00	\$42.34	
1749	HMH1001	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	1	0	0	0	\$0.00	\$72.27		\$0.00	\$72.27	
1750	HSP1000 R	CABLE FOR EXTERNAL 6W SPEAKER	1	0	0	0	\$0.00	\$36.50		\$0.00	\$36.50	
1751	TRM7738	DUAL PHONE LINE SUPPRESSOR	2	0	0	0	\$0.00	\$64.42		\$0.00	\$128.84	
1752	TRM4569	Antenna System	2	0	0	0	\$0.00			\$0.00	\$0.00	
1753	L1705	1/2" LDF HELIX, POLY JKT, PER FOOT	40	0	0	0	\$0.00	\$2.12		\$0.00	\$84.80	
1754	TRM8914	1/2" CONNECTOR, N PLUG LDF PLTD	22	0	0	0	\$0.00	\$72.70		\$0.00	\$1,600.40	
1755	L1709	7/8" LDF HELIX, POLY JKT, PER FOOT	200	0	0	0	\$0.00	\$5.18		\$0.00	\$1,036.00	
1756	TDN8017	7/8" CONNECTOR, N PLUG (PLATED)	6	0	0	0	\$0.00	\$80.30		\$0.00	\$481.80	
1757	TDN8018	7/8" CONNECTOR, N JACK (PLATED)	6	0	0	0	\$0.00	\$80.30		\$0.00	\$481.80	
1758	TDN8674	7/8" CABLE GROUND CLAMP KIT	2	0	0	0	\$0.00	\$24.46		\$0.00	\$48.92	
1759	TDN8964	7/8" SNAP-IN HANGER KIT, 10PK	2	0	0	0	\$0.00	\$39.42		\$0.00	\$78.84	
1760	L1702	7/8" CABLE HOISTING GRIP	2	0	0	0	\$0.00	\$36.50		\$0.00	\$73.00	
1761	TDN8009	1/2" SUPERFLEX, POLY JKT, PER FOOT	15	0	0	0	\$0.00	\$3.07		\$0.00	\$46.05	
1762	TDN8209	1/2" CONNECTOR, N PLUS S-FLEX PLTD	6	0	0	0	\$0.00	\$37.78		\$0.00	\$226.68	
1763	L1700	CABLE WRAP, WEATHERPROOFING	20	0	0	0	\$0.00	\$27.38		\$0.00	\$547.60	
1764	TDN8714	1/4" SUPERFLEX, POLY JKT, PER FOOT	2	0	0	0	\$0.00	\$1.39		\$0.00	\$2.78	
1765	TDN8715	1/4" CONN, N PLUS S-FLEX (PLTD)	2	0	0	0	\$0.00	\$12.23		\$0.00	\$24.46	
1766	DS1J70002T	1/4" CONN, BNC PLUS S-FLEX (PLTD)	2	0	0	0	\$0.00	\$10.69		\$0.00	\$21.38	
1767	DS1J70005T	XMITR COMBINER	0	0	0	0	\$0.00	\$6,923.26		\$0.00	\$0.00	
1768	DS1J70002T	XMITR CAVITY COMBINER 2 FREQ	1	0	0	0	\$0.00	\$3,064.54		\$0.00	\$3,064.54	
1769	DS1J70002T	RMC 806-824 MHZ, 12CH, CWA	0	0	0	0	\$0.00	\$2,182.70		\$0.00	\$0.00	
1770	DS1J70002T	RMC 806-824 MHZ, 4CH, CWA	0	0	0	0	\$0.00	\$1,549.06		\$0.00	\$0.00	
1771	DS1J70002T	LIGHTNING SUPPRESSOR	2	0	0	0	\$0.00	\$47.46		\$0.00	\$94.90	
1772	DS1J70002T	BB DUAL OMNI	1	0	0	0	\$0.00	\$1,729.37		\$0.00	\$1,729.37	
1773	DS1J70002T	BB OMNI	0	0	0	0	\$0.00	\$759.93		\$0.00	\$0.00	
1774	DS1J70002T	BIDIRECTIONAL SENSOR	1	0	0	0	\$0.00	\$159.87		\$0.00	\$159.87	
1775	DS1J70002T	Reck's	1	0	0	0	\$0.00	\$343.10		\$0.00	\$343.10	
1776	DS1J70002T	SEVEN FOOT RACK	1	0	0	0	\$0.00	\$343.10		\$0.00	\$343.10	
1777	TRM7342	REMOTE TERMINAL UNIT	1	0	0	0	\$0.00	\$1,443.94		\$0.00	\$1,443.94	
1778	TRM7342	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0	0	\$0.00	\$0.00		\$0.00	\$0.00	
1779	TRM7342	SPECIAL AREAS	1	0	0	0	\$0.00	\$0.00		\$0.00	\$0.00	
1780	TRM7342	REMOTE TERMINAL UNIT	1	0	0	0	\$0.00	\$0.00		\$0.00	\$0.00	
1781	TRM7342	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0	0	\$0.00	\$0.00		\$0.00	\$0.00	

# Exhibit D: Project Cost Itemization Schedule Detail Cost Breakdown

Item #	Model	Item Description	Qty	Man Hours Per Unit	Total	Rev: 7/97	Project Cost Itemization Schedule	Miscellaneous	Total	Subcontract	Total	Total
						Labo	Unit	Cost	\$	Unit	\$	\$
						Hrs						
						Rate						
1782	V051	ALT: NEMA TO RACKMOUNT	1	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1783	V315	ADD: ASYNC RS232	4	0	0			\$113.15	\$452.60		\$0.00	\$0.00
1784	V413	REPLACE 8-SLOT MB W/8CPU+NO I/O	1	0	0			\$146.00	\$146.00		\$0.00	\$0.00
1785	V425	ADD: MOSCAD CPU 300	1	0	0			\$972.36	\$972.36		\$0.00	\$0.00
1786	V437	ADD: 8AI SV MODULE	1	0	0			\$477.42	\$477.42		\$0.00	\$0.00
1787	F6300	MOSCAD EXTERNAL MODEM COMMUNICATIO	1	0	0			\$1,443.94	\$1,443.94		\$0.00	\$0.00
1788	V051	ALT: NEMA TO RACKMOUNT	1	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1789	V369	REPL: 8-SLOT MB W/4CPU+4I/O	1	0	0			\$146.00	\$146.00		\$0.00	\$0.00
1790	V274	DEL: 3 AMP PS AND BATTERY	1	0	0			(\$240.90)	(\$240.90)		\$0.00	\$0.00
1791	V348	ADD: ASYNC RS232	1	0	0			\$113.15	\$113.15		\$0.00	\$0.00
1792	V380	ADD: 60 DI. MODULE	1	0	0			\$277.40	\$277.40		\$0.00	\$0.00
1793	V510	ADD: 16DO LATCH MODULE	1	0	0			\$375.95	\$375.95		\$0.00	\$0.00
1794	V437	ADD: 8AI SV MODULE	1	0	0			\$477.42	\$477.42		\$0.00	\$0.00
1795	V425	ADD: CPU 300	1	0	0			\$972.36	\$972.36		\$0.00	\$0.00
1796	F6303	SERIES 300 CPU	1	0	0			\$1,045.36	\$1,045.36		\$0.00	\$0.00
1797	V245	ADD: ASYNC RS232	1	0	0			\$113.15	\$113.15		\$0.00	\$0.00
1798	V103	ADD: 2400 DIAL-UP	1	0	0			\$300.76	\$300.76		\$0.00	\$0.00
1799	FKSM400	FLAT-OVAL 2.6M CABLE	18	0	0			\$197.10	\$197.10		\$0.00	\$0.00
1800		SITE & TOTAL										\$213,019.34
1801		COVERAGE ENH. TOTAL										\$3,776,166.26
1802		7. Warranty	1	0	0			\$128,311.00	\$128,311.00		\$0.00	\$128,311.00
1803		8. Maintenance	1	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1804		9. Documentation	1	0	0			\$44,390.00	\$44,390.00		\$0.00	\$44,390.00
1805		10. Test Equipment	1	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1806		Communication System Analyzer/Service Mon/Trunklin	4	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1807	02674/40774492	FireBird T1 Digital Link Analyzer	1	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1808	D07CCFireBird6000	FireBird Bit Error Analyzer	2	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1809	D07TCTBird209	IRP Digital Sampling Oscilloscope	3	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1810	R7RH54600	MTS2000 Battery Maintenance System	20	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1811	TDN9430	Ball Latitude Laptop PC	5	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1812	D0L314753AC	Microwave Frequency Counter/Power Meter - 26.5GHz	1	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1813	ICPH3548A	Microwave Spectrum Analyzer - 26.5GHz	1	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1814	ICPH1209A	Patch Cards, SMA-M to SMA-F to 26.5GHz	1	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1815	R7RH12501462	DBS-XL Encryption Keyboard	5	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1816	T3014X	8-Unit Battery Charger/Analyzer	6	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1817	NLNMB88	Encryption Test Set	2	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1818	R2014D/0900	RP TMS 4935	4	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1819	ICPH1209A	Calveva Wideband Walimeter	4	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1820	R7RH12501462	Power Meter - 26.5GHz, -65 to +44 dBm Power Range	1	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1821	T3014X	Fuke 87 True RMS Multimeter	3	0	0			\$0.00	\$0.00		\$0.00	\$0.00
1822	NLNMB88											\$0.00
1823	R2014D/0900											\$0.00
1824	R7RH1209A											\$0.00
1825	D0CNC474											\$0.00
1826	R7RH12501462											\$0.00
1827	D087											\$0.00
		GRAND TOTAL							\$293,000.00		\$0.00	\$293,000.00
		SYSTEM DISCOUNT (4.34% OF \$24,203,904)										\$ (1,055,625.00)
												\$38,138,899.50





















### Master Project Schedule

		1998				1999				2		
		Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	
ID	Task Name	Duratio	Start	Finish								
73	5.5 South Hill	102d	6/15/98	10/5/98								
74	5.5.1 Permits Issued	1d	5/18/98	5/18/98								
75	5.5.2 Install Pre-fab Building	50d	5/18/98	7/24/98								
76	5.5.3 Grading	50d	5/18/98	7/24/98								
77	5.5.4 Paving	50d	5/18/98	7/24/98								
78	5.5.5 Fencing	50d	5/18/98	7/24/98								
79	5.5.6 Commercial Power	50d	5/18/98	7/24/98								
80	5.5.7 Install Emergency Power and Fuel Supply	50d	5/18/98	7/24/98								
81	5.5.8 Exterior Grounding	50d	5/18/98	7/24/98								
82	5.5.9 Cable Ladder and Bridges	50d	5/18/98	7/24/98								
83	5.5.10 Install 60 ft. Tower	50d	5/18/98	7/24/98								
84	5.5.11 Microwave Ant. and Trans. line	50d	7/27/98	10/2/98								
85	5.5.12 RF Ant. and Trans. line	50d	7/27/98	10/2/98								
86	5.5.13 City and Motorola Inspection	1d	10/5/98	10/5/98								
87	5.5.14 Civil Construction Acceptance	0d	10/5/98	10/5/98								
88	5.6 SF State	61d	2/18/98	5/13/98								
89	5.6.1 Permits Issued	1d	2/18/98	2/18/98								
90	5.6.2 Site Building	44d	2/19/98	4/21/98								

**Task**

**Progress**

**Milestone**

**Summary**

**Rolled Up Task**

**Rolled Up Milestone**

Project: 800 MHz Project  
Date: 7/29/97

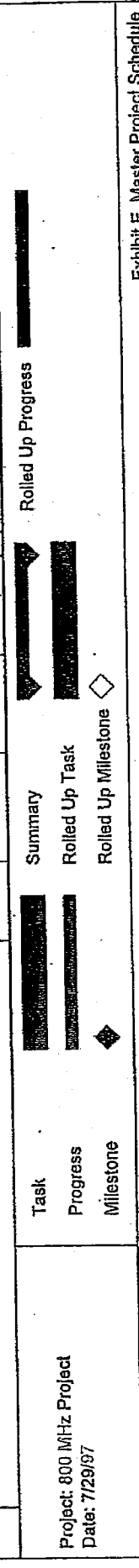
Revision: 1





### Master Project Schedule

ID	Task Name	Duratio	Start	Finish	1998				1999						
					Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4		
109	5.7.10 Microwave Ant. and Trans. line	15d	7/24/98	8/13/98											
110	5.7.11 RF Ant. and Trans. line	15d	7/24/98	8/13/98											
111	5.7.12 City and Motorola Inspection	1d	8/14/98	8/14/98											
112	5.7.13 Civil Construction Acceptance	0d	8/14/98	8/14/98											
113	5.8 Clay Jones	52d	2/18/98	4/30/98											
114	5.8.1 Site Inspection	10d	2/18/98	3/3/98											
115	5.8.2 Install Cable Trays, as required	22d	4/1/98	4/30/98											
116	5.8.3 Add Cable Potts, as required	22d	4/1/98	4/30/98											
117	5.8.4 Microwave Ant. and Trans. line	22d	4/1/98	4/30/98											
118	5.8.5 RF Ant. and Trans. line	22d	4/1/98	4/30/98											
119	5.8.6 Clay Jones Site Complete	0d	4/30/98	4/30/98											
120	6 901 RankIn Remodel	61d	8/17/98	11/9/98											
121	6.1 Permit Issued	1d	8/17/98	8/17/98											
122	6.2 Remodel	80d	8/18/98	11/9/98											
123	6.3 Remodel Complete	0d	11/9/98	11/9/98											
124	7 Fleet Map Configuration	252d	10/1/97	9/17/98											
125	7.1 City Supplied Configurations	120d	10/1/97	3/17/98											
126	7.2 Motorola Fleet Map and Template Construction	100d	3/18/98	8/4/98											













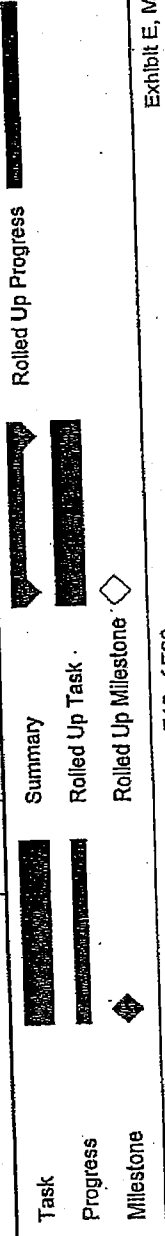






### Master Project Schedule

ID	Task Name	Duratio	Start	Finish	1998				1999					
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4		
253	15.10.2 Equipment Delivery	10d	4/17/98	4/30/98										
254	15.10.3 Cable Installation	10d	7/6/98	7/17/98										
255	15.10.4 Antenna Installation	5d	7/20/98	7/24/98										
256	15.10.5 Amplifier Implementation	5d	7/27/98	7/31/98										
257	15.10.6 System Testing	3d	3/24/99	3/26/99										
258	15.10.7 System Acceptance	3d	3/29/99	3/31/99										
259	15.11 Admin. Bldg.	273d	3/16/98	3/31/99										
260	15.11.1 Equipment Manufacture	30d	3/16/98	4/24/98										
261	15.11.2 Equipment Delivery	10d	4/27/98	5/8/98										
262	15.11.3 Cable Installation	15d	7/20/98	8/7/98										
263	15.11.4 Antenna Installation	5d	8/10/98	8/14/98										
264	15.11.5 Amplifier Implementation	5d	8/17/98	8/21/98										
265	15.11.6 System Testing	3d	3/24/99	3/26/99										
266	15.11.7 System Acceptance	3d	3/29/99	3/31/99										
267	15.12 San Francisco International Airport	123d	10/12/98	3/31/99										
268	15.12.1 Equipment Manufacture	30d	10/12/98	11/20/98										
269	15.12.2 Equipment Delivery	10d	11/23/98	12/4/98										
270	15.12.3 Cable Installation	15d	12/7/98	12/25/98										



**Task** **Summary** **Rolled Up Progress**

**Progress** **Rolled Up Task**

**Milestone** **Rolled Up Milestone**

Project: 800 MHz Project  
Date: 7/29/97

Revision: 1









**Master Project Schedule**

ID	Task Name	Duration	Start	Finish	1998				1999					
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4		
343	23.2 Verification Measurements	27d	2/14/00	3/21/00										
344	23.3 Contours Complete	1d	3/22/00	3/22/00										
345	24 Agreement to Begin Proof of Performance Testing	66d	3/1/00	5/31/00										
346	24.1 Proof of Performance Testing	66d	3/1/00	5/31/00										
347	24.2 Proof of Performance Testing Complete	0d	5/31/00	5/31/00										
348	25 Final System Acceptance CRITICAL MILESTONE	0d	5/31/00	5/31/00										
349	26 Job Close-out	5d	6/1/00	6/7/00										
350	27 Public Safety 800 Mhz Radio System Complete	0d	6/7/00	6/7/00										

Project: 800 Mhz Project Date: 7/29/97	Task	Summary	Rolled Up Progress
	Progress	Rolled Up Task	
	Milestone	Rolled Up Milestone	

Page E20 of E20

Exhibit E, Master Project Schedule

**EXHIBIT F: ACCEPTANCE TEST PLAN**

7. Exhibit F  
Acceptance test plan

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## EXHIBIT F: ACCEPTANCE TEST PLAN

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### 1. ACCEPTANCE TESTING

This Exhibit addresses the acceptance testing and final acceptance requirements of the CERS.

Motorola shall perform all tests necessary to demonstrate that the system fully and completely meets the requirements and specifications of the Master Agreement. All necessary personnel, labor, materials, documentation, and test equipment to perform all acceptance tests shall be provided by Motorola. All test plans must be reviewed and approved by the City prior to execution.

The City may, at its sole discretion, require the presence of City personnel to witness the testing of all or part of the CERS.

All acceptance re-testing will be done in accordance with Section 7.03 of the Master Agreement.

### 2. ACCEPTANCE TEST PLAN

Motorola shall prepare a detailed Acceptance Test Plan (ATP), and include it in the Detail Design. The ATP shall demonstrate that all system components, both individually and collectively, meet the CERS Exhibit A, Performance Specifications. The ATP shall also demonstrate the proper operation of the protection switching and/or fall-back modes for all critical system elements. The ATP shall include factory acceptance, staging, and field test sections. The field test section shall include equipment level, system level, and coverage testing elements. The test methodology and list of required test equipment shall be included in the Detail Design.

Detailed acceptance test procedures for all equipment and systems shall be developed by Motorola and presented to the City for review and approval at least 30 days prior to acceptance testing.

The City reserves the right to modify the test plans and to add additional test requirements that verify compliance with the Exhibit A, Performance Specifications. At the conclusion of testing (during Implementation), all test results shall be turned over to the City.

#### 2.1 FACTORY ACCEPTANCE TESTING

Motorola shall verify to the City that Factory Acceptance Testing has been conducted on all equipment provided for the CERS. Factory Acceptance Testing shall be conducted and acceptance criteria noted for each piece of equipment to be shipped. The equipment shall be tested prior to shipment and the test results recorded in a readily useable format. Equipment which does not meet the test criteria shall not be shipped without the express written approval of the City.



## EXHIBIT F: ACCEPTANCE TEST PLAN

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### 2.2 STAGING AREA ACCEPTANCE TESTING

The CERS is considered sufficiently complex to warrant system testing at Motorola's facility. The system shall be assembled and tested in a configuration as near as practical to the operational configuration in a staging area. All fixed electronic equipment shall be staged for CERS, with exception of the MTS, staging shall be conducted at CCSI. Staging test for the MTS shall be at the Harris facilities. The staging shall duplicate equipment organization and use actual cabling to be installed. Staging requirements for some sub-systems, such as the MTS, may be waived, upon express written approval from the City. Motorola shall provide, during Detail Design, a Staging Area Acceptance Test plan.

### 2.3 CIVIL ACCEPTANCE

Following successful completion of applicable inspections required by the City of San Francisco construction permit process, Motorola will notify the City's CERS project manager in writing that the facility upgrade(s) and/or new sites are complete and ready for verification of compliance with the approved Statement of Work and installation plans. An inspection of the work will be conducted by the City's CERS project manager or authorized representative within 10 workings days.

Any deviations from the approved Statement of Work or installation plans will be addressed in accordance with the "punchlist" process. Upon notification of the correction of the punch list items, the City PM or authorized representative will verify correction of these punchlist items within 10 working days, and said verification will constitute final acceptance.

City building completion and site acceptance will not be subject to the installation of equipment hardware provided under other phases of the project.

### 2.4 FIELD ACCEPTANCE TEST PLAN

Overview:

Motorola's Field Acceptance Test Plan is divided into three sections.

Section One - Site Compliance Tests

Section one deals with the physical installation of the fixed network equipment. This includes equipment mounting, grounding practices, antenna mountings, and RF coaxial

## EXHIBIT F: ACCEPTANCE TEST PLAN

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cable installation. A walk through inspection by representatives of the City and the Motorola project manager is planned for this portion of the ATP.

### Section Two - Performance Tests

Section two documents compliance with published specifications. It is our intent to provide documentation verifying compliance and showing recorded measurements. No witnessed tests are scheduled for this portion of the ATP. The City is encouraged to spot check any measurements they deem appropriate. The City will notify Motorola of any equipment test they desire prior to beginning the test to ensure appropriate test equipment is available to verify compliance.

### Section Three - RF Coverage

Section three is the R.F. coverage tests and documentation.

The Field Acceptance Test Plan is organized as follows:

1. Table of Contents.
2. Site Compliance Tests.
3. Performance Tests.
4. RF coverage tests.

Each section is concluded with a sign off sheet signifying compliance with agreed upon performance.

A word of caution is in order. Verifying compliance through system/equipment tests may require the system, or a portion thereof, to be disabled to perform the test. The ability to use the system will be impacted during these tests. Careful planning and notification of system users is highly recommended before performing tests.

# EXHIBIT F: ACCEPTANCE TEST PLAN

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# EXHIBIT F: ACCEPTANCE TEST PLAN

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### RF COVERAGE TESTS

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## **EXHIBIT F: ACCEPTANCE TEST PLAN**

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### **2.4.1 Site Compliance Test**

CITY AND COUNTY OF SAN FRANCISCO

FIELD

ACCEPTANCE TEST PLAN

SECTION 1

SITE COMPLIANCE TESTS

## EXHIBIT F: ACCEPTANCE TEST PLAN

---

### CENTRAL RADIO MASTER SITE INSTALLATION

#### ANTENNA MOUNTINGS

Both transmit and receive antennas are mounted on the tower in accordance with industry accepted mounting practices and manufactures installation instructions. Antenna installation conforms to the City approved antenna mounting diagrams. All antenna coaxial cables are labeled at both ends.

#### RF COAXIAL CABLE

All RF coaxial cables are installed in accordance with Motorola cabling installation practices as defined in Motorola publication **Quality Standards - FNE Installations**. All RF connectors are properly sealed to prevent moisture intrusion. All transmission lines are properly grounded at both ends of the runs. Lightning protection devices are installed in each transmission line. All coaxial cables are labeled at both ends.

#### EQUIPMENT RACKS & CABINETS

Equipment racks and cabinets are bolted together and physically attached to the floor in such a manner as to provide support in the event of violent earth movements. Equipment racks and cabinet mountings conform to UBC zone 4 earthquake standards.

Equipment racks and cabinets are grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

#### ZONE CONTROLLER

The Zone Controller cabinet is installed in accordance with installation instructions contained in the Zone Controller Technical Manual and conform with City approved rack Drawings.

#### DATA BASE SERVERS

The Data Base servers are installed in accordance with installation instructions contained in the Data Base Server Technical Manual and conform with City approved rack Drawings.

#### TRUNKING CENTRAL CONTROLLERS

Both the Prime Trunking Central Controller and the Redundant Prime Trunking Central Controller are installed in accordance with installation instructions contained in the Trunked Central Controller Technical Manual and conform with City approved rack Drawings.

## **EXHIBIT F: ACCEPTANCE TEST PLAN**

---

### **TRUNKING REMOTE SITE CONTROLLER**

The Remote Trunking Site Controller is installed in accordance with installation instructions contained in the Trunked Central Controller Technical Manual.

### **T-BAR SWITCH**

T-Bar switches for prime trunking controllers are installed in a rack in accordance with manufactures recommend installation instructions and in conformance to the Exhibit A, Performance Specifications and County of San Francisco approved rack mounting diagrams.

### **ASTRO-TAC COMPARATORS**

The Astro-Tac comparators are mounted in racks in accordance with the City approved racking diagrams and as per installation instructions found in the Astro-Tac technical manual.

### **UNIVERSAL SIMULCAST CONTROLLER INTERFACE (USCI)**

The USCI is mounted in a rack in accordance with City approved racking diagrams and as per installation instructions found in Motorola publication "Trunked Radio System Dual Path and Digital Path Simulcast Equipment" manual.

### **TeNSr CHANNEL BANKS**

The TeNSr channel banks are mounted in racks in accordance with the City approved racking diagrams and as per installation instructions found in the TeNSr technical manual.

### **QUANTAR REPEATERS**

All Quantar repeaters are installed in their designated racks in accordance with the City approved rack diagrams. Repeaters are installed in accordance with Motorola mounting instructions as defined in the Quantar installation manual.

### **TRANSMITTER COMBINERS**

Transmitter Combiners are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings. Insure each combine port is connected to the proper transmitter.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### RECEIVER MULTICOUPLERS

Receiver multicouplers are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings.

### DIGITAL INTERFACE UNITS (DIU)

Digital Interface Units are mounted in a rack in accordance with installation instructions found in the DIU technical manual and in conformance to the City approved rack mounting drawings.

### GPS RECEIVER AND FREQUENCY STANDARD

The GPS receiver and frequency standards are mounted in a rack in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MOSCAD ALARM AND CONTROL EQUIPMENT

The MOSCAD equipment is mounted in a rack in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MICROWAVE RADIO EQUIPMENT

All Microwave radio equipment is mounted in racks in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings. Microwave antennas are mounted on the tower in accordance with manufactures recommended installation instructions and in conformance to the City approved tower mounting diagrams.

### AMBASSADOR CEB (AUDIO SWITCH)

The Ambassador Central Electronics Bank and power supplies are mounted in a cabinet in accordance with the City approved rack mounting diagrams. The Ambassador Electronics Bank and power supplies are mounted in accordance with Motorola installation instructions as defined in the installation manual.

### CENTRACOM GOLD CENTRAL ELECTRONICS BANKS (CEBS)

All CEBS are mounted in racks in accordance with installation instructions found in the Centracom Gold series technical manual and in conformance to the City approved rack mounting drawings.



## EXHIBIT F: ACCEPTANCE TEST PLAN

---

### INTERCONNECT CABLING

Interconnect wiring within the racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

### EQUIPMENT GROUNDING

All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

## EXHIBIT F: ACCEPTANCE TEST PLAN

---

### FOREST HILL SITE INSTALLATION

#### ANTENNA MOUNTINGS

Both transmit and receive antennas are mounted on the roof in accordance with industry accepted mounting practices and manufactures installation instructions. Antenna installation conforms to the City approved antenna mounting diagrams. All antenna coaxial cables are labeled at both ends.

#### RF COAXIAL CABLE

All RF coaxial cables are installed in accordance with Motorola cabling installation practices as defined in Motorola publication **Quality Standards - FNE Installations**. All RF connectors are properly sealed to prevent moisture intrusion. All transmission lines are properly grounded at both ends of the runs. Lightning protection devices are installed in each transmission line. All coaxial cables are labeled at both ends.

#### EQUIPMENT RACKS & CABINETS

Equipment racks and cabinets are bolted together and physically attached to the floor in such a manner as to provide support in the event of violent earth movements. Equipment racks and cabinet mountings conform to UBC zone 4 earthquake standards.

Equipment racks and cabinets are grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

#### TRUNKING REMOTE SITE CONTROLLER

The Remote Trunking Site Controller is installed in accordance with installation instructions contained in the Trunked Central Controller Technical Manual.

#### TENSR CHANNEL BANKS

The TeNSr channel banks are mounted in racks in accordance with the City approved racking diagrams and as per installation instructions found in the TeNSr technical manual.

#### QUANTAR REPEATERS

All Quantar repeaters are installed in their designated racks in accordance with the City approved rack diagrams. Repeaters are installed in accordance with Motorola mounting instructions as defined in the Quantar installation manual.

## EXHIBIT F: ACCEPTANCE TEST PLAN

---

### TRANSMITTER COMBINERS

Transmitter Combiners are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings. Insure each combine port is connected to the proper transmitter.

### RECEIVER MULTICOUPLERS

Receiver multicouplers are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings.

### GPS RECEIVER AND FREQUENCY STANDARD

The GPS receiver and frequency standards are mounted in a rack in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MOSCAD ALARM AND CONTROL EQUIPMENT

The MOSCAD equipment is mounted in a rack in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MICROWAVE RADIO EQUIPMENT

All Microwave radio equipment is mounted in racks in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings. Microwave antennas are mounted on the tower in accordance with manufactures recommended installation instructions and in conformance to the City approved tower mounting diagrams.

### INTERCONNECT CABLING

Interconnect wiring within the racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

### EQUIPMENT GROUNDING

All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

**EXHIBIT F: ACCEPTANCE TEST PLAN**

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The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

## **EXHIBIT F: ACCEPTANCE TEST PLAN**

---

### **BERNAL HEIGHTS SITE INSTALLATION**

#### **ANTENNA MOUNTINGS**

Both transmit and receive antennas are mounted on the tower in accordance with industry accepted mounting practices and manufactures installation instructions. Antenna installation conforms to the City approved antenna mounting diagrams. All antenna coaxial cables are labeled at both ends.

#### **RF COAXIAL CABLE**

All RF coaxial cables are installed in accordance with Motorola cabling installation practices as defined in Motorola publication **Quality Standards - FNE Installations**. All RF connectors are properly sealed to prevent moisture intrusion. All transmission lines are properly grounded at both ends of the runs. Lightning protection devices are installed in each transmission line. All coaxial cables are labeled at both ends.

#### **EQUIPMENT RACKS & CABINETS**

Equipment racks and cabinets are bolted together and physically attached to the floor in such a manner as to provide support in the event of violent earth movements. Equipment racks and cabinet mountings conform to UBC zone 4 earthquake standards.

Equipment racks and cabinets are grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

#### **TRUNKING REMOTE SITE CONTROLLER**

The Remote Trunking Site Controller is installed in accordance with installation instructions contained in the Trunked Central Controller Technical Manual.

#### **TENSR CHANNEL BANKS**

The TeNSr channel banks are mounted in racks in accordance with the City approved racking diagrams and as per installation instructions found in the TeNSr technical manual.

#### **QUANTAR REPEATERS**

All Quantar repeaters are installed in their designated racks in accordance with the City approved rack diagrams. Repeaters are installed in accordance with Motorola mounting instructions as defined in the Quantar installation manual.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### TRANSMITTER COMBINERS

Transmitter Combiners are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings. Insure each combine port is connected to the proper transmitter.

### RECEIVER MULTICOUPLERS

Receiver multicouplers are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings.

### GPS RECEIVER AND FREQUENCY STANDARD

The GPS receiver and frequency standards are mounted in a rack in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MOSCAD ALARM AND CONTROL EQUIPMENT

The MOSCAD equipment is mounted in a rack in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MICROWAVE RADIO EQUIPMENT

All Microwave radio equipment is mounted in racks in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings. Microwave antennas are mounted on the tower in accordance with manufactures recommended installation instructions and in conformance to the City approved tower mounting diagrams.

### INTERCONNECT CABLING

Interconnect wiring within the racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

### EQUIPMENT GROUNDING

All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

## EXHIBIT F: ACCEPTANCE TEST PLAN

---

### CLAY JONES SITE INSTALLATION

#### ANTENNA MOUNTINGS

Both transmit and receive antennas are mounted on the tower in accordance with industry accepted mounting practices and manufactures installation instructions. Antenna installation conforms to the City approved antenna mounting diagrams. All antenna coaxial cables are labeled at both ends.

#### RF COAXIAL CABLE

All RF coaxial cables are installed in accordance with Motorola cabling installation practices as defined in Motorola publication **Quality Standards - FNE Installations**. All RF connectors are properly sealed to prevent moisture intrusion. All transmission lines are properly grounded at both ends of the runs. Lightning protection devices are installed in each transmission line. All coaxial cables are labeled at both ends.

#### EQUIPMENT RACKS & CABINETS

Equipment racks and Cabinets are bolted together and physically attached to the floor in such a manner as to provide support in the event of violent earth movements. Equipment racks and cabinet mountings conform to UBC zone 4 earthquake standards.

Equipment racks and cabinets are grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

#### TRUNKING REMOTE SITE CONTROLLER

The Remote Trunking Site Controller is installed in accordance with installation instructions contained in the Trunked Central Controller Technical Manual.

#### TENSR CHANNEL BANKS

The TeNSr channel banks are mounted in racks in accordance with the City approved racking diagrams and as per installation instructions found in the TeNSr technical manual.

#### QUANTAR REPEATERS

All Quantar repeaters are installed in their designated racks in accordance with the City approved rack diagrams. Repeaters are installed in accordance with Motorola mounting instructions as defined in the Quantar installation manual.



## EXHIBIT F: ACCEPTANCE TEST PLAN

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### TRANSMITTER COMBINERS

Transmitter Combiners are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings. Insure each combine port is connected to the proper transmitter.

### RECEIVER MULTICOUPLERS

Receiver multicouplers are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings.

### GPS RECEIVER AND FREQUENCY STANDARD

The GPS receiver and frequency standards are mounted in a rack in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MOSCAD ALARM AND CONTROL EQUIPMENT

The MOSCAD equipment is mounted in a rack in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MICROWAVE RADIO EQUIPMENT

All Microwave radio equipment is mounted in racks in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings. Microwave antennas are mounted on the tower in accordance with manufactures recommended installation instructions and in conformance to the City approved tower mounting diagrams.

### INTERCONNECT CABLING

Interconnect wiring within the Racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

### EQUIPMENT GROUNDING

All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### SAN FRANCISCO STATE UNIVERSITY INSTALLATION

#### ANTENNA MOUNTINGS

Both transmit and receive antennas are mounted on the tower in accordance with industry accepted mounting practices and manufactures installation instructions. Antenna installation conforms to the City approved antenna mounting diagrams. All antenna coaxial cables are labeled at both ends.

#### RF COAXIAL CABLE

All RF coaxial cables are installed in accordance with Motorola cabling installation practices as defined in Motorola publication **Quality Standards - FNE Installations**. All RF connectors are properly sealed to prevent moisture intrusion. All transmission lines are properly grounded at both ends of the runs. Lightning protection devices are installed in each transmission line. All coaxial cables are labeled at both ends.

#### EQUIPMENT RACKS & RACKS

Equipment racks and Racks are bolted together and physically attached to the floor in such a manner as to provide support in the event of violent earth movements. Equipment racks and cabinet mountings conform to UBC zone 4 earthquake standards.

Equipment racks are grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

#### TRUNKING REMOTE SITE CONTROLLER

The Remote Trunking Site Controller is installed in accordance with installation instructions contained in the Trunked Central Controller Technical Manual.

#### T-BAR SWITCH

T-Bar switches for the remote trunking site controllers are installed in a cabinet in accordance with manufactures recommend installation instructions and in conformance to the City approved rack mounting diagrams.

#### TENSR CHANNEL BANKS

The TeNSr channel banks are mounted in Racks in accordance with the City approved racking diagrams and as per installation instructions found in the TeNSr technical manual.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### QUANTAR REPEATERS

All Quantar repeaters are installed in their designated Racks in accordance with the City approved rack diagrams. Repeaters are installed in accordance with Motorola mounting instructions as defined in the Quantar installation manual.

### TRANSMITTER COMBINERS

Transmitter Combiners are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings. Insure each combine port is connected to the proper transmitter.

### RECEIVER MULTICOUPLERS

Receiver multicouplers are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings.

### GPS RECEIVER AND FREQUENCY STANDARD

The GPS receiver and frequency standards are mounted in a cabinet in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MOSCAD ALARM AND CONTROL EQUIPMENT

The MOSCAD equipment is mounted in a cabinet in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MICROWAVE RADIO EQUIPMENT

All Microwave radio equipment is mounted in Racks in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings. Microwave antennas are mounted on the tower in accordance with manufactures recommended installation instructions and in conformance to the City approved tower mounting diagrams.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### INTERCONNECT CABLING

Interconnect wiring within the Racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

### EQUIPMENT GROUNDING

All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### ONE MARKET PLAZA INSTALLATION

#### ANTENNA MOUNTINGS

Both transmit and receive antennas are mounted on the tower in accordance with industry accepted mounting practices and manufactures installation instructions. Antenna installation conforms to the City approved antenna mounting diagrams. All antenna coaxial cables are labeled at both ends.

#### RF COAXIAL CABLE

All RF coaxial cables are installed in accordance with Motorola cabling installation practices as defined in Motorola publication **Quality Standards - FNE Installations**. All RF connectors are properly sealed to prevent moisture intrusion. All transmission lines are properly grounded at both ends of the runs. Lightning protection devices are installed in each transmission line. All coaxial cables are labeled at both ends.

#### EQUIPMENT RACKS & RACKS

Equipment racks and Racks are bolted together and physically attached to the floor in such a manner as to provide support in the event of violent earth movements. Equipment racks and cabinet mountings conform to UBC zone 4 earthquake standards.

Equipment racks are grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

#### TRUNKING REMOTE SITE CONTROLLER

The Remote Trunking Site Controller is installed in accordance with installation instructions contained in the Trunked Central Controller Technical Manual.

#### T-BAR SWITCH

T-Bar switches for the remote trunking site controllers are installed in a cabinet in accordance with manufactures recommend installation instructions and in conformance to the City approved rack mounting diagrams.

#### TENSR CHANNEL BANKS

The TeNSr channel banks are mounted in Racks in accordance with the City approved racking diagrams and as per installation instructions found in the TeNSr technical manual.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### QUANTAR REPEATERS

All Quantar repeaters are installed in their designated Racks in accordance with the City approved rack diagrams. Repeaters are installed in accordance with Motorola mounting instructions as defined in the Quantar installation manual.

### TRANSMITTER COMBINERS

Transmitter Combiners are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings. Insure each combine port is connected to the proper transmitter.

### RECEIVER MULTICOUPLERS

Receiver multicouplers are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings.

### GPS RECEIVER AND FREQUENCY STANDARD

The GPS receiver and frequency standards are mounted in a cabinet in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MOSCAD ALARM AND CONTROL EQUIPMENT

The MOSCAD equipment is mounted in a cabinet in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MICROWAVE RADIO EQUIPMENT

All Microwave radio equipment is mounted in Racks in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings. Microwave antennas are mounted on the tower in accordance with manufactures recommended installation instructions and in conformance to the City approved tower mounting diagrams.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### INTERCONNECT CABLING

Interconnect wiring within the Racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

### EQUIPMENT GROUNDING

All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_



## EXHIBIT F: ACCEPTANCE TEST PLAN

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### SOUTH SITE INSTALLATION

#### ANTENNA MOUNTINGS

Both transmit and receive antennas are mounted on the tower in accordance with industry accepted mounting practices and manufactures installation instructions. Antenna installation conforms to the City approved antenna mounting diagrams. All antenna coaxial cables are labeled at both ends.

#### RF COAXIAL CABLE

All RF coaxial cables are installed in accordance with Motorola cabling installation practices as defined in Motorola publication **Quality Standards - FNE Installations**. All RF connectors are properly sealed to prevent moisture intrusion. All transmission lines are properly grounded at both ends of the runs. Lightning protection devices are installed in each transmission line. All coaxial cables are labeled at both ends.

#### EQUIPMENT RACKS & RACKS

Equipment racks and Racks are bolted together and physically attached to the floor in such a manner as to provide support in the event of violent earth movements. Equipment racks and cabinet mountings conform to UBC zone 4 earthquake standards.

Equipment racks are grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

#### TRUNKING REMOTE SITE CONTROLLER

The Remote Trunking Site Controller is installed in accordance with installation instructions contained in the Trunked Central Controller Technical Manual.

#### TENSR CHANNEL BANKS

The TeNSr channel banks are mounted in Racks in accordance with the City approved racking diagrams and as per installation instructions found in the TeNSr technical manual.

#### QUANTAR REPEATERS

All Quantar repeaters are installed in their designated Racks in accordance with the City approved rack diagrams. Repeaters are installed in accordance with Motorola mounting instructions as defined in the Quantar installation manual.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### TRANSMITTER COMBINERS

Transmitter Combiners are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings. Insure each combine port is connected to the proper transmitter.

### RECEIVER MULTICOUPLERS

Receiver multicouplers are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings.

### GPS RECEIVER AND FREQUENCY STANDARD

The GPS receiver and frequency standards are mounted in a cabinet in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MOSCAD ALARM AND CONTROL EQUIPMENT

The MOSCAD equipment is mounted in a cabinet in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MICROWAVE RADIO EQUIPMENT

All Microwave radio equipment is mounted in Racks in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings. Microwave antennas are mounted on the tower in accordance with manufactures recommended installation instructions and in conformance to the City approved tower mounting diagrams.

### INTERCONNECT CABLING

Interconnect wiring within the Racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### EQUIPMENT GROUNDING

All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### FORT MILEY WATER INSTALLATION

#### ANTENNA MOUNTINGS

Both transmit and receive antennas are mounted on the tower in accordance with industry accepted mounting practices and manufactures installation instructions. Antenna installation conforms to the City approved antenna mounting diagrams. All antenna coaxial cables are labeled at both ends.

#### RF COAXIAL CABLE

All RF coaxial cables are installed in accordance with Motorola cabling installation practices as defined in Motorola publication **Quality Standards - FNE Installations**. All RF connectors are properly sealed to prevent moisture intrusion. All transmission lines are properly grounded at both ends of the runs. Lightning protection devices are installed in each transmission line. All coaxial cables are labeled at both ends.

#### EQUIPMENT RACKS & RACKS

Equipment racks and Racks are bolted together and physically attached to the floor in such a manner as to provide support in the event of violent earth movements. Equipment racks and cabinet mountings conform to UBC zone 4 earthquake standards.

Equipment racks are grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

#### TRUNKING REMOTE SITE CONTROLLER

The Remote Trunking Site Controller is installed in accordance with installation instructions contained in the Trunked Central Controller Technical Manual.

#### TENSR CHANNEL BANKS

The TeNSr channel banks are mounted in Racks in accordance with the City approved racking diagrams and as per installation instructions found in the TeNSr technical manual.

#### QUANTAR REPEATERS

All Quantar repeaters are installed in their designated Racks in accordance with the City approved rack diagrams. Repeaters are installed in accordance with Motorola mounting instructions as defined in the Quantar installation manual.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### TRANSMITTER COMBINERS

Transmitter Combiners are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings. Insure each combine port is connected to the proper transmitter.

### RECEIVER MULTICOUPLERS

Receiver multicouplers are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings.

### GPS RECEIVER AND FREQUENCY STANDARD

The GPS receiver and frequency standards are mounted in a cabinet in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MOSCAD ALARM AND CONTROL EQUIPMENT

The MOSCAD equipment is mounted in a cabinet in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### MICROWAVE RADIO EQUIPMENT

All Microwave radio equipment is mounted in Racks in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings. Microwave antennas are mounted on the tower in accordance with manufactures recommended installation instructions and in conformance to the City approved tower mounting diagrams.

### INTERCONNECT CABLING

Interconnect wiring within the Racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

### EQUIPMENT GROUNDING

## EXHIBIT F: ACCEPTANCE TEST PLAN

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All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### SAN FRANCISCO INTERNATIONAL AIRPORT SITE INSTALLATION

#### ANTENNA MOUNTINGS

Both transmit and receive antennas are mounted on the tower in accordance with industry accepted mounting practices and manufactures installation instructions. Antenna installation conforms to the City approved antenna mounting diagrams. All antenna coaxial cables are labeled at both ends.

#### RF COAXIAL CABLE

All RF coaxial cables are installed in accordance with Motorola cabling installation practices as defined in Motorola publication **Quality Standards - FNE Installations**. All RF connectors are properly sealed to prevent moisture intrusion. All transmission lines are properly grounded at both ends of the runs. Lightning protection devices are installed in each transmission line. All coaxial cables are labeled at both ends.

#### EQUIPMENT RACKS

Equipment racks are bolted together and physically attached to the floor in such a manner as to provide support in the event of violent earth movements. Equipment racks and cabinet mountings conform to UBC zone 4 earthquake standards.

Equipment racks are grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

#### QUANTAR REPEATERS

All Quantar repeaters are installed in a cabinet in accordance with the City approved rack diagrams. Repeaters are installed in accordance with Motorola mounting instructions as defined in the Quantar installation manual.

#### TRANSMITTER COMBINERS

Transmitter Combiners are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings. Insure each combine port is connected to the proper transmitter.

#### RECEIVER MULTICOUPLERS

## EXHIBIT F: ACCEPTANCE TEST PLAN

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Receiver multicouplers are rack mounted in accordance with manufactures recommended instructions and in conformance to the City approved rack mounting drawings.

### MOSCAD ALARM AND CONTROL EQUIPMENT

The MOSCAD equipment is mounted in a cabinet in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

### INTERCONNECT CABLING

Interconnect wiring within the Racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

### EQUIPMENT GROUNDING

All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_



## **EXHIBIT F: ACCEPTANCE TEST PLAN**

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### **COMBINED EMERGENCY COMMUNICATIONS CENTER SITE INSTALLATION**

#### **ANTENNA MOUNTINGS**

Control station antennas are mounted on the tower in accordance with industry accepted mounting practices and manufactures installation instructions. Antenna installation conforms to the City approved antenna mounting diagrams. All antenna coaxial cables are labeled at both ends.

#### **RF COAXIAL CABLE**

All RF coaxial cables are installed in accordance with Motorola cabling installation practices as defined in Motorola publication **Quality Standards - FNE Installations**. All RF connectors are properly sealed to prevent moisture intrusion. All transmission lines are properly grounded at both ends of the runs. Lightning protection devices are installed in each transmission line. All coaxial cables are labeled at both ends.

#### **EQUIPMENT RACKS**

Equipment racks are bolted together and physically attached to the floor in such a manner as to provide support in the event of violent earth movements. Equipment racks and cabinet mountings conform to UBC zone 4 earthquake standards.

Equipment racks are grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

#### **TENSR CHANNEL BANKS**

The TeNSr channel banks are mounted in racks in accordance with the City approved racking diagrams and as per installation instructions found in the TeNSr technical manual.

#### **CONTROL STATIONS**

All control stations are installed in accordance with the City approved room layout diagrams. Control stations are installed in accordance with Motorola mounting instructions as defined in the installation manual.

#### **MOSCAD ALARM AND CONTROL EQUIPMENT**

The MOSCAD equipment is mounted in a rack in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### MICROWAVE RADIO EQUIPMENT

All Microwave radio equipment is mounted in racks in accordance with manufactures recommended installation instructions and in conformance to the City approved rack mounting drawings. Microwave antennas are mounted on the tower in accordance with manufactures recommended installation instructions and in conformance to the City approved tower mounting diagrams.

### CENTRACOM GOLD CENTRAL ELECTRONICS BANKS (CEBS)

All CEBS are mounted in racks in accordance with installation instructions found in the Centracom Gold series technical manual and in conformance to the City approved rack mounting drawings.

### INTERCONNECT CABLING

Interconnect wiring within the Racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

### EQUIPMENT GROUNDING

All Motorola supplied rack mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### DEPARTMENT OF PARKING AND TRAFFIC SITE INSTALLATION

#### CENTRACOM ELITE DISPATCH OPERATOR POSITIONS

All Centracom Elite series consoles are mounted in furniture in accordance with installation instructions found in the Centracom Gold series technical manual and in conformance to the City approved room layout drawings.

#### INTERCONNECT CABLING

Interconnect wiring within the Racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

#### EQUIPMENT GROUNDING

All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

# EXHIBIT F: ACCEPTANCE TEST PLAN

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## SHERIFFS DEPARTMENT SITE INSTALLATION

### CENTRACOM ELITE DISPATCH OPERATOR POSITIONS

All Centracom Elite series consoles are mounted in furniture in accordance with installation instructions found in the Centracom Gold series technical manual and in conformance to the City approved room layout drawings.

### INTERCONNECT CABLING

Interconnect wiring within the Racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

### EQUIPMENT GROUNDING

All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### WATER DEPARTMENT SITE INSTALLATION

#### CENTRACOM ELITE DISPATCH OPERATOR POSITIONS

All Centracom Elite series consoles are mounted in furniture in accordance with installation instructions found in the Centracom Gold series technical manual and in conformance to the City approved room layout drawings.

#### INTERCONNECT CABLING

Interconnect wiring within the Racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

#### EQUIPMENT GROUNDING

All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### DEPARTMENT OF TELECOMMUNICATIONS AND INFORMATION SERVICES SITE INSTALLATION

#### CENTRACOM ELITE DISPATCH OPERATOR POSITIONS

All Centracom Elite series consoles are mounted in furniture in accordance with installation instructions found in the Centracom Gold series technical manual and in conformance to the City approved room layout drawings.

#### INTERCONNECT CABLING

Interconnect wiring within the Racks, MDF, and between other equipment is installed in accordance with industry standard practices. All cables are cut to the proper length and in conformance to interconnect cabling diagrams found in Motorola's System Installation Guide. Each cable is labeled at both ends.

#### EQUIPMENT GROUNDING

All Motorola supplied rack and cabinet mounted equipment is properly grounded in accordance with Motorola grounding and bonding practices as defined in Motorola publication **Quality Standards - FNE Installations**.

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

#### CITY FIELD ACCEPTANCE TEST PLAN SIGN OFF SHEET

The attached document represents the Field Acceptance Tests required.

This document along with the following shall constitute Final Acceptance of the Citywide 800 MHz Radio System (CERS).

1. Completion of all facility work, system, component, hardware and software delivery, installation, testing, optimization, phaseover, documentation, and training.
2. Acceptance of the CERS, facilities, individual systems, and equipment by the City and the correction of defects.

**EXHIBIT F: ACCEPTANCE TEST PLAN**

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- 3. Written certification by Motorola of compliance with the Exhibit A, Performance Specifications, including RF coverage performance.
- 4. Successful completion of the 30-day Confidence test.
- 5. Successful completion of a 90 day Proof of Performance Test.

**FORMAT SIGN OFF**

This is to verify that the City and Motorola agree on the Scope of Work contained in the attached "FIELD ACCEPTANCE TEST PLAN".

City Representative: \_\_\_\_\_ Date: \_\_\_\_\_

Motorola Representative: \_\_\_\_\_ Date: \_\_\_\_\_

**COMPLETION ACCEPTANCE SIGN OFF**

Upon successful compliance with each section of the attached document, both the City and Motorola shall sign below signifying the system has successfully passed the FIELD ACCEPTANCE TEST.

City Representative: \_\_\_\_\_ Date: \_\_\_\_\_

Motorola Representative: \_\_\_\_\_ Date: \_\_\_\_\_

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### 2.4.2 Performance Test

CITY AND COUNTY OF SAN FRANCISCO

FIELD

ACCEPTANCE TEST PLAN

SECTION 2

PERFORMANCE TESTS



## **EXHIBIT F: ACCEPTANCE TEST PLAN**

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### **FIELD ACCEPTANCE TEST PLAN**

#### **ZONE CONTROLLER**

The Motorola Zone controller complies with the specifications set forth in Motorola's published specifications.

#### **ZONE MANAGER TERMINALS**

The Motorola Zone Manager terminals comply with the specifications set forth in Motorola's published specifications.

#### **TRUNKING PRIME CONTROLLERS**

The Motorola Prime trunking controllers comply with the specifications set forth in Motorola's published specifications.

#### **T-BAR SWITCH**

The T-BAR complies with the specifications set forth in the manufactures published specifications.

#### **TRUNKING REMOTE SITE CONTROLLERS**

The Motorola remote site trunking controllers comply with the specifications set forth in Motorola's published specifications.

#### **T-BAR SWITCH**

The T-BAR complies with the specifications set forth in the manufactures published specifications.

#### **ASTRO-TAC COMPARATORS**

The Astro-Tac comparators comply with the specifications set forth in Motorola's published specifications.

#### **UNIVERSAL SIMULCAST CONTROLLER INTERFACE (USCI)**

The USCI complies with the specifications set forth in Motorola's published specifications.

## **EXHIBIT F: ACCEPTANCE TEST PLAN**

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### **TENSR CHANNEL BANK EQUIPMENT**

The TeNSr channel bank equipment supplied complies with the specifications set forth in the manufactures published specifications.

### **QUANTAR REPEATERS**

The Quantar repeaters comply with the specifications set forth in Motorola's published specifications. Separate documentation is provided along with this document on actual measured values.

### **TRANSMITTER COMBINERS**

All Motorola supplied RF Transmitter Combining equipment complies with the specifications set forth in the suppliers specifications. Separate documentation is provided along with this document on actual measured values. Check and document forward and reflected power of each transmitter at the output of the combine.

### **RECEIVER MULTICOUPLERS**

All Motorola supplied RF Receive Multicoupler equipment complies with the specifications set forth in the supplier's specifications. Separate documentation is provided along with this document on actual measured values. Receiver will be checked for desensitization from it's associated transmitter, as well as the other transmitters on the site.

### **BI-DIRECTIONAL AMPLIFIERS (BDA)**

The BDA's comply with the specifications set forth in the manufactures published specifications.

### **DIGITAL INTERFACE UNITS (DIU)**

The DIUs comply with the specifications set forth in Motorola's published specifications.

### **GPS/FREQUENCY STANDARDS**

The GPS/Frequency comply with the specifications set forth in the manufactures published specifications.

### **MOSCAD ALARM AND CONTROL EQUIPMENT**

The MOSCAD equipment complies with the specifications set forth in Motorola's published specifications.

## **EXHIBIT F: ACCEPTANCE TEST PLAN**

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### **MICROWAVE RADIOS**

The Microwave radios comply with the specifications set forth in the manufactures published specifications.

### **AMBASSADOR AUDIO SWITCH**

The Ambassador audio switch complies with the specifications set forth in Motorola's published specifications.

### **CENTRAL ELECTRONICS BANK (CEB)**

The CEB complies with the specifications set forth in Motorola's published specifications.

### **CENTRACOM GOLD ELITE CONSOLE POSITIONS**

The Centracom Gold Elite Console positions comply with the specifications set forth in Motorola's published specifications.

### **BACK UP POWER SYSTEMS**

The battery system and UPS systems at each site will be tested to the final specifications of the detail design.

### **CAD INTERFACE TO SMARTZONE CONTROLLER**

The battery system and UPS systems at each site will be tested to the final specifications of the detail design.

### **CAD INTERFACE TO CONSOLE SYSTEM**

CAD Interface to the Console System will be tested to the final specifications of the detail design.

### **REDUNDANCY TESTING**

Redundant equipment as determined by the final detail design shall be tested at each site through out the system.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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The signatures below signify that the Motorola supplied equipment detailed above complies with the specifications set forth by the City.

City Representative \_\_\_\_\_ date \_\_\_\_\_

Motorola Representative \_\_\_\_\_ date \_\_\_\_\_

## **EXHIBIT F: ACCEPTANCE TEST PLAN**

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### **2.4.3 Radio Frequency (RF) Coverage Test**

CITY AND COUNTY OF SAN FRANCISCO

FIELD

ACCEPTANCE TEST PLAN

SECTION 3

RF COVERAGE  
TESTS

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### 1. COVERAGE TESTS

The follow section defines the Coverage Acceptance Test Plans for the CERS. Three basic categories of tests will be conducted to demonstrate the ability of the voice radio system to perform as designed. The initial tests will be made to demonstrate the subjective voice quality of the system over the desired coverage areas. Then a set of detailed signal level and Bit Error Rate (BER) measurements will be taken in the prescribed areas to evaluate the distribution of RF power levels BER for the specified configurations. The last set of measurements will be taken outside of the City boundaries to determine conformance with minimizing radiation in the direction of other radio users.

#### 1.1 COVERAGE TEST PREREQUISITES AND PREPARATION

The City and Motorola shall agree on the number of test vehicles and the test schedule well in advance of the commencement of testing to allow adequate preparation by both parties. Team members shall be assigned in advance and trained in the test procedures. Each test team shall consist of at least three people: a City representative a Motorola representative and an independent observer.

The City and Motorola shall supply the test vehicles and test team members for each vehicle. The test vehicle shall be of sufficient size to carry the team members and all the required test equipment in a safe manner. The test team representatives shall consist of a driver and at least one person to oversee the testing procedure. The driver and the overseer may be the same person.

Prior to the commencement of the test, the test equipment shall be installed in the test vehicle and thoroughly checked out, and all representatives shall be trained in the test procedures. FACTWare<sup>(SM)</sup> test grids of an area shall be prepared in advance for examination. The days and times of testing will be mutually agreed upon by Motorola and the City prior to testing.

### 2. DELIVERED AUDIO QUALITY TEST PLAN

Motorola will perform subjective audio quality testing within the coverage area of the optimized simulcast radio system using Circuit Merit evaluations by a field team composed of City and Motorola representatives. A vehicle and a driver supplied by the City and Motorola will be utilized. The field audio quality test team shall consist of an equal number of representatives from the City and Motorola plus one independent observer. The team members shall be trained and certified to evaluate audio quality by Circuit Merit. Also, a dispatcher will be assigned to provide pre-defined transmit audio test messages from the appropriate dispatch facility to the team in the field.

## EXHIBIT F: ACCEPTANCE TEST PLAN

The voice coverage service area will be divided into approximately 200 equal sized test grids to insure a relatively even distribution of test samples. The default test location for the subjective audio quality test is the approximate center of each grid, or if that is not practical, at some other mutually agreed upon test point within any particular grid. Only one test transmission will be evaluated at each test point. The test radio will be of the same type and configuration that will be most commonly used on the system. Attenuators shall be placed between the antenna and the unit as described for Voice Coverage Testing as appropriate for the area of the test to approximate portable in-building coverage.

- A) The subjective test will be conducted by the field audio quality team. This subjective test team will listen to an agreed upon five to ten second message while driving through each grid. They will then evaluate the received audio quality in this grid on a 1 to 5 scale, based on the Telecommunication Industry Association Standard below:

Circuit Merit Table

Circuit Merit	Grade of Circuit Performance
1	Signal not present or present less than half the time. Speech not perceptible.
2	Speech understandable only with considerable effort. Frequent repetition required for intelligible conversation.
3	Speech understandable with slight effort. Occasional repetitions required for clarification.
4	Speech easily understandable. Some continuous noise or distortion.
5	Speech perfectly understandable. Negligible noise or distortion.

- B) Each members score for each grid location will be recorded for evaluation and inclusion in the final test report. If the majority of the members of the audio quality test team agree that the audio quality equals or exceeds CM 3 for a grid, that grid will be declared passed. In the event that the test team cannot reach a majority opinion, then that test grid shall be considered to have failed. The criteria for acceptable performance will be to have at least 95% of the grids tested achieve CM3 or better.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### 3. VOICE COVERAGE ACCEPTANCE TEST PLAN

The Voice System Coverage Acceptance Test Plan (CATP) is designed to demonstrate that the Voice Coverage provided by the 800 MHz Trunked System has at least 95 percent coverage reliability. Ninety-five percent coverage reliability means that at least 95 percent of the area indicated as being in the coverage area is guaranteed to have radio communications with an audio quality of Circuit Merit 3 or better. A signal of -105 dBm or higher is required to provide Circuit Merit 3 audio quality. A Bit Error Rate (BER) of 2.62% or less is required to deliver a Circuit Merit 3 audio quality.

The coverage areas are illustrated in the coverage maps provided as part of Exhibit B, Statement of Work. The shaded area of each composite map illustrates the area of guaranteed radio coverage. The Mobile coverage is shown on one set of maps and will be referred to as the "Mobile Coverage". The other set of maps define areas of portable coverage on the street and in buildings with penetration losses up to 30 dB in the Downtown area, up to 23 dB in selected portions of the City and up to 15 dB in the remaining portion of the City's service area as shown by the shaded portions of the included composite in-building coverage maps. These maps will be referred to as "Portable on the street" maps and "Portable in building" maps.

The maps will be verified to reflect adjustments to the predication parameters identified during the detailed design. If the coverage reliability requirements or system design is changed, the coverage maps and CATP may require modification with the agreement of the City and Motorola to reflect the changes.

The Voice System Coverage Acceptance Test will consist of signal level and BER measurements for the mobile coverage area, the portable on the street area and, the portable in building coverage area. The Mobile Coverage Acceptance Test Plan is designed to evaluate signal level and BERs for a mobile configuration for the area of the City and County of San Francisco shown as covered on the mobile coverage maps. The Portable Coverage Acceptance Test Plan is designed to evaluate portable coverage on the street and in buildings within the City and County of San Francisco defined in the Portable Test Area section which follows.

Mobile and portable coverage testing will be conducted simultaneously from a moving vehicle. Portable with 30 dB, 23 dB, and 15 dB loss above the on the street signal level coverage measurements will be taken by coverage test equipment calibrated to simulate portable coverage inside these three types of building loss. The CATP will be conducted on public paved roads or other readily accessed public roads as shown on the San Francisco test grid map sets. Motorola reserves the right to test all additional inaccessible test grids within agreed areas up to the maximum number of test grids.



## EXHIBIT F: ACCEPTANCE TEST PLAN

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### 3.1 MOBILE COVERAGE TEST AREA

The mobile coverage test area is the area inside the borders of San Francisco that shows predicted coverage at ninety-five (95) percent reliability. Any area outside of the City and County of San Francisco borders or outside of the predicted coverage area will not be tested.

### 3.2 PORTABLE COVERAGE TEST AREA

The portable on the street coverage test area is the area inside the borders of San Francisco that shows predicted coverage at ninety-five (95) percent reliability on the street. Portable in building coverage test area is the area shown on the Composite Portable in building Coverage maps and is defined as that portion of San Francisco within the stated boundaries. Portable in building boundaries:

#### 30 dB Area

- Leavenworth Street on the West
- The combination of Turk Street, Fifth Street and Howard Street on the South.
- The Embarcadero on the East.
- Broadway on the North.

#### 23 dB Area

##### 1. Portion surrounding the downtown area

- The combination of Lyon Street, West Pacific Avenue, Arguello Boulevard, Fulton Street, Stanyan Street, Fell Street, Webster Street, Oak Street, Buchanan Street, Herman Street, Guerrero Avenue, on the West
- Caesar Chavez Street (Army Street) on the South.
- San Francisco Bay on the East and North.

##### 2. Portion surrounding University of California at San Francisco (Medical Center)

- 7<sup>TH</sup> Avenue on the West.
- The combination of Kirkham Street and Medical Center boundary on the South.
- The combination of Medical Center boundary, Parnassus Avenue, and Stanyan Street on the East.
- Lincoln Way on the North.

##### 3. Portion surrounding San Francisco State University

## EXHIBIT F: ACCEPTANCE TEST PLAN

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- The combination of Middlefield Drive and Lake Merced Boulevard on the West.
- The combination of Vidal Drive, Pinto Avenue, and Holloway Avenue on the South.
- 19<sup>TH</sup> Avenue on the East.
- Eucalyptus on the North.

### 15 dB Area

The areas of the City and County of San Francisco not inside the defined 30 dB and 23 dB areas or within the 23 dB areas where the predicted signal levels is less than 23 dB , but greater than 15 dB.. This is the area bounded on the West by the Pacific Ocean and on the North and East by the San Francisco Bay and by the South by the San Francisco - San Mateo County Line.

### 3.3 AREAS EXCLUDED FROM COVERAGE TESTING

The following areas are considered as inaccessible for coverage testing:

1. Federal Government property or military bases unless City provides access
2. Within roadway tunnels or similar structures

### 3.4 COVERAGE TEST EQUIPMENT

A quantitative method of measurement, called FACTWare<sup>(SM)</sup> (Fully Automated Coverage Test), will be used to test the radio system coverage. FACTWare<sup>(SM)</sup> equipment will be provided by Motorola for each test vehicle. Motorola shall provide the City with a copy of the receiver calibration certificate which clearly shows the period of calibration viability prior to conducting testing. No receiver shall be used for testing that has passed beyond its viability period. If calibration of the receiver is to be conducted on-site, the calibration for any reference standards used shall be provided. The FACTWare<sup>(SM)</sup> test package includes a calibrated test receiver and mobile whip antenna for sampling the RF signal, a Global Positioning System (GPS) receiver for instantaneous location information, and a portable computer to automatically conduct the test and store the results. This equipment allows a high rate of sampling and automated recording of signal level and BER measurements. The FACTWare<sup>(SM)</sup> package allows automatic and manual modes of sampling. In the automatic mode, a quasi-random method of selecting uniformly distributed test locations will be performed by FACTWare<sup>(SM)</sup>. The test locations will be uniformly distributed throughout the coverage area. Each specific test location within each tested grid will be automatically determined by FACTWare<sup>(SM)</sup> as the vehicle travels within the grid. When the computer detects that the vehicle has entered an untested grid based on information from the GPS receiver and stored grid information, it will begin the signal level and BER measurement on the outbound RF transmission from the transmitters.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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When the measurement is complete, the computer will provide a display of the results to the operator and store the information on disk along with the location information from the GPS receiver.

The manual mode may be used in the event of loss of GPS synchronization or coverage or to force a test measurement in a particular location within a grid. In the manual mode of FACTWare<sup>(SM)</sup>, an operator will be required to make the decision of where and when the measurement will take place. If the manual mode is to be used, an agreement between the Motorola and the City representatives will be made on where to take a measurement. In case of loss of GPS information, the default test location for a manual mode measurement is the approximate center of the grid, provided that it is within the coverage area.

The measurement will be determined by sampling signal level over a distance of 40 wavelengths (about 14 meters). For each sample, the computer commands the receiver to sample the RF signal. The receiver evaluates the signal and provides a signal level and BER number back to the computer. Over 500 samples of the signal will be obtained while the vehicle traverses the 14 meter distance. The average of these samples will be computed to determine a signal level and BER that is representative of the test location. An average of multiple samples is used rather than a single measurement to ensure that the measurement is not biased by taking a single sample that might be at a peak or null point on the radio wave. The resulting average will be referred to as the "signal level measurement" for that grid.

### 3.5 VOICE COVERAGE ACCEPTANCE TEST PLAN METHODOLOGY

Motorola will provide the FACTWare<sup>(SM)</sup> calibrated measurement equipment for each vehicle and test team representatives. An adequate number of test sets will be provided to conduct the mobile coverage test and the portable-in-building coverage test at the same time. The test team representatives will conduct the test and operate the test equipment.

This test will be used to evaluate the voice system coverage area.

The coverage test area as defined above will be subdivided into a uniform pattern of test grids distributed over the coverage area in which one signal level and BER measurement per grid will be taken. Grid size will be approximately 400 feet by 400 feet in the 30 dB area, 800 feet by 800 feet in the 23 dB area and 1600 feet by 1600 feet in the remainder of the area.

Only grids which are predicted to be mostly covered will be tested, unless otherwise mutually agreed by Motorola and the City. In no case will a signal measurement be

## EXHIBIT F: ACCEPTANCE TEST PLAN

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recorded as part of the coverage test at a location that the coverage map shows to be outside of the coverage area.

Coverage will be evaluated based upon receiver signal measurements acquired by calibrated measurement equipment. During the field test, a Motorola supplied FACTWare<sup>(SM)</sup> equipment package will be placed in a vehicle which will travel to each of the test grids. At each test location while the vehicle is moving, a signal measurement will be made by the equipment and stored on disk.

The mobile and portable test procedures will be the same but the tests will occur independently on separate test sets. The hardware configurations will also be the same except that the portable test setup will include a 11 dB attenuator between the antenna and the calibrated receiver to compensate for the less efficient portable antenna. The 11 dB accounts for the loss associated with a portable whip antenna while the portable is in a swivel case on the hip. The building loss will be accounted for by adding 30 dB, 23 dB or 15 dB additional loss to the measured signal in the defined areas. Even though the test is conducted from a vehicle traveling on the street, the portable test results, because of the 11 dB attenuator and the added loss, will be the same as if the test were conducted inside a building with that amount of loss. No testing will be conducted inside buildings. Should the decision be made to change the basis of the coverage prediction to account for portable antenna loss greater of less than 11 dB, the test equipment shall be modified to reflect that change for the current 11dB attenuation.

The ATP will only be conducted once unless the test is found to be unreliable because of equipment malfunction or failure. The ATP will be re-conducted for the portion of the test affected by the equipment malfunction or failure.

No major adjustments to simulcast parameters will be allowed during RF coverage testing. The City reserves the right, at its sole discretion, to require RF coverage to be completely reinitiated should it determine that major system adjustments were performed during RF coverage testing.

### 3.6 SIGNAL LEVEL TESTING PROCEDURE

The Mobile Coverage Test and the Portable-In-Building Coverage Test will be conducted simultaneously wherever practical. Portable-in-building testing will not be performed outside of the designated portable-in-building coverage area. The test procedure is the same for both tests, and the Pass/Fail criteria is the same for both tests. The mobile test procedure is presented below. The portable-in-building test procedure differs only in the use of attenuation to simulate portable-in-building conditions.

- A) FACTWare<sup>(SM)</sup> equipment will be provided by Motorola for each of the test vehicles and will gather signal data which will be stored and analyzed. The

## EXHIBIT F: ACCEPTANCE TEST PLAN

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results will be immediately available and summary results will be printed at a later date. At the end of each day of testing, the signal data files will be duplicated. The City and Motorola will each receive a copy of the files each day. These file will be in computer format.

- B) The test team shall ensure that all base stations required to conduct the day's testing are in a continuous transmit mode.
- C) The test team shall program the FACTWare<sup>(SM)</sup> computer for the frequencies involved in testing, using one or more of the 23 channels assigned to the City, verify proper operation of the equipment, then drive to the beginning point of that day's route.
- D) Calibration of the test equipment shall be verified weekly or on request of either Motorola or the City project staff. Calibration shall be witnessed by Motorola and the City project technical staff.
- E) As the vehicle moves through each test grid, a signal measurement will be taken and the results will be displayed. The measurement will normally be triggered automatically by the GPS receiver. In some instances it may be necessary for the operator to manually initiate the measurement.
- F) If the Grid signal is equal to or better than -105 dBm or 2.62% BER, that grid for that configuration will be declared passed. If the Grid signal is less than -105 dBm or greater than 2.62% BER, the grid for that configuration will be declared failed.

### 3.7 SPECIAL COVERAGE AREA TESTS

Acceptance testing for each special area will be designed primarily to prove that the installed system works as intended by the specifications. Each of the mandatory special coverage areas (Hall of Justice, San Bruno Jails, Moscone Center, Muni Tunnel Network and San Francisco International Airport) will have a custom designed configuration to match the needs at each respective location. Tunnel and in-building coverage design objectives will include a minimum signal level and circuit merit quality for users anywhere within the identified coverage areas. Each design will also take into consideration the maximum loading that can be experienced while maintaining the desired level of service. The following tests will be performed at each location after final optimization of each installation:

- a. RF signal levels throughout the coverage area will be recorded using automated signal gathering and processing equipment. A successful test will be that 95% or more of the averaged samples taken meet or exceed the design level criteria.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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- b. Circuit Merit quality tests will consist of making calls and recording circuit merit values on both ends. The coverage areas will be divided into square grids (typically 100 by 100 feet) and data recorded for each grid. A successful test will be that 95% of the tested areas will attain CM3 or better.
- c. A loading test will be performed consisting of filling the system with the designed maximum number of carriers and recording that signal levels or C/I ratios do not degrade below the minimums required to maintain the desired service in the specified areas.

City personnel will be notified before each test is to be performed so they may schedule personnel to participate in the activity. All records will be collected at the end of each set of tests to be included in the final test reports.

RF coverage testing of Optional Special Areas of Coverage will be conducted to evaluate or confirm where adequate coverage by the CERS is achieved. Should the decision be made by the City that coverage requires improvement by the installation of equipment, this will be accomplished as agreed by the City and Motorola. Following the installation of equipment the area shall be retested as above for acceptance by the City.

#### 4. WIDE AREA RADIATION TESTS

Additional signal levels shall be measured outside the jurisdictional boundaries of San Francisco along major highways throughout the San Francisco Bay Area to develop a database for resolving frequency sharing issues with other users in adjacent public safety jurisdictions. FACTWare<sup>(SM)</sup> test grids will be developed to collect signal level measurements approximately at one mile intervals along all main highway routes enclosed by the 5 dBu coverage areas produced by the installed CERS. Test routes will be reviewed with the City until mutual agreement is obtained. The test team will be comprised of at least one representative from both the City and Motorola. Signal levels will be automatically recorded in computer files using the same configuration of FACTWare<sup>(SM)</sup> test equipment that was used for the detailed signal level tests performed within the City and County of San Francisco boundaries. The data files will be analyzed to determine the actual field strengths produced by CERS along each route with particular attention given to the boundaries of nearby counties which may be affected by the current frequency allocations in the Northern California 800 MHz Regional Communications Plan for Region 6. Any grids that record a signal level below the sensitivity of the test equipment will be considered to have a field strength of less than 5 dBu.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### 5. ANALYZING DATA AND GENERATING REPORTS

During the subjective audio quality field tests, logs will be kept by both the City and the Motorola field test teams detailing the exact location of each test, the time of the test, the date of the test, the members of the field test team, the Circuit Merit value assigned to each field test location by team member, the pass/fail status for each test location, and any other pertinent information.

During the voice system signal level and BER test, FACTWare<sup>(SM)</sup> computer files are generated which include the signal level and BER averages for each test grid. This data will be placed in a computer spread sheet during the analysis phase and summaries will be compiled.

A report outlining each test and test results will be submitted to the City by Motorola. An illustrative map will be supplied with the report. The time frame for the report submission will be agreed to by the City and Motorola. This report will include a form which is to be signed by both the City and Motorola indicating the acceptance of the coverage provided by the 800 MHz voice subsystem which has been tested. A sample of such a form follows, showing coverage acceptance.

### 6. VOICE COVERAGE ACCEPTANCE CRITERIA

The acceptance criteria will be based on the subjective demonstration that CM3 audio quality is available for 95% of the design coverage area.

For each signal level and BER test (mobile and portable on street, and portable in-building) if 95% of the grids tested within the coverage area pass, then that coverage test will be declared passed. In the event that the coverage ATP is passed but a portion of the 5% of permitted failed grids occur in other than a random distribution, Motorola will investigate the causes of the failures and make adjustments and/or recommend alternative solutions for improving the coverage. The City will be responsible for choosing a solution and incurring all costs associated with implementing the selected solution.

The wide area signal level and BER data will be collected and the test grids displayed in a format to correlate the associated dBu levels of prediction maps supplied to the Region 6 NPSPAC frequency coordination committee.

The City will have the option to accept the coverage at any time prior to the completion of any Coverage Acceptance Test.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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The acceptance by the City of the mobile coverage of the system, portable on the street coverage and portable in-building coverage of the system will constitute coverage acceptance of the 800 MHz Mobile Voice System.



## EXHIBIT F: ACCEPTANCE TEST PLAN

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### Sample Acceptance of Coverage Verification Test

San Francisco CERS Mobile Voice System

Total number of test grids: \_\_\_\_\_

Total number of grids passing: \_\_\_\_\_

Percent of test grids passing: \_\_\_\_\_

The undersigned, being a duly authorized representative of the City, hereby attests that the foregoing results are true and accurate, and that either the test results have been approved by the City or that the City has deemed the radio coverage for the 800 MHz Mobile Voice System acceptable for normal system operation; thus signifying the acceptance of the system's trunking radio coverage performance.

City

MOTOROLA, INC.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name

\_\_\_\_\_  
Name

\_\_\_\_\_  
Position

\_\_\_\_\_  
Position

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### 3. CONFIDENCE TEST

Motorola, during Detail Design, shall provide a Confidence Test Plan.

Motorola shall perform a 30-day Confidence Test to ensure that all hardware and software defects have been corrected prior to placing the CERS into public safety service and entering final proof of performance testing. The full integrated operation of the CERS, including all individual systems, shall be demonstrated during this test. The test shall be designed to demonstrate the reliability, long-term stability, and maintainability of the system. The CERS shall operate for 30 consecutive calendar days without a major failure during this period as defined in section 7.03 of the Master Agreement.

The confidence test shall also demonstrate the long-term stability of the simulcast operation of the CERS, including the RF reference sources, simulcast alignment and optimization components, MTS, and TRS. Manual optimization, alignment, or adjustment of the CERS or individual systems, including remote adjustments via the simulcast optimization features of the CERS, shall not be permitted during the test. This test shall ensure that the CERS does not require frequent manual adjustment to maintain the level of performance required by Exhibit A, Performance Specifications.

Any major failure or performance degradation which requires a manual adjustment of the simulcast features of the CERS during the 30-day test period shall require that the test be terminated, corrective action taken, and the entire 30-day test reinitiated.

### 4. FINAL ACCEPTANCE

Motorola shall provide, during Detail Design, a Final Acceptance Plan.

Motorola shall demonstrate to the City's satisfaction that the equipment fulfills all requirements of the Exhibit A, Performance Specifications. Final acceptance shall require, but not be limited to, the following:

1. Completion of all facility work, system, component, hardware and software delivery, installation, testing, optimization, documentation, and training.
2. Acceptance of the CERS, facilities, individual systems, and equipment by City and the correction at Motorola's sole expense of workmanship and operational/performance defects.
3. Written certification by Motorola of compliance with the Exhibit A, Performance Specifications, including RF coverage performance.
4. Successful completion of the 30-day Confidence Test.
5. Successful completion of a 90-day Proof of Performance Test.

## EXHIBIT F: ACCEPTANCE TEST PLAN

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### 5. PROOF OF PERFORMANCE TEST PLAN

Motorola shall prepare and include in the Detail Design a Proof of Performance Test Plan (PPTP). A Proof of Performance test is defined as a full operational test of the CERS conducted for a minimum of 90 consecutive calendar days. This 90 day period is defined in section 7.03 of the Master Agreement. This testing is to ensure that all elements of the CERS work together to provide a complete, operational, and reliable system which satisfies the Exhibit A, Performance Specifications.

The PPTP shall also demonstrate the long-term stability of the CERS, including the RF reference sources, simulcast alignment and optimization features, the MTS, and the TRS. Manual optimization, alignment, or adjustment of the CERS or its constituent systems, including remote adjustments of the simulcast optimization features, shall not be permitted during the test. This test shall demonstrate that the CERS meets the long-term stability requirements and does not require constant manual adjustment to satisfy the Exhibit A, Performance Specifications.

Motorola shall submit a PPTP in the Detail Design. A final PPTP shall be developed and presented to the City for review and approval at least 30 calendar days prior to PPTP execution. The City reserves the right to modify the test plan and to add additional test requirements that verify compliance with the Exhibit A, Performance Specifications.

The Proof of Performance test may be initiated, upon City approval, after the CERS' constituent systems have successfully passed acceptance testing and have been integrated with existing City equipment and systems. This period will likely occur at a time when the system has been cutover to public safety service and is handling design traffic.

Any major failure or performance degradation which requires a manual adjustment of the simulcast functionality of the CERS during the 90-day test period shall require that the test be terminated, corrective action taken, and the entire 90-day test reinitiated.





EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

City and County of San Francisco		Citywide 800MHz Radio System Project (CRIS)		Additional Equipment Price Schedule		Rev. 7/97		Material		Subcontracts		Total		Total		Total	
Item #	Model	Item Description	Qty	Man Hours	Per Unit	Labor Hrs	Rate	Total	Unit Cost	Unit	Cost	Unit	Cost	Total	Total	Total	Costs
43	****ASTRO XTS3000**	Model I w/o Kdp	1						\$0.00		\$50.00			\$2,811.96		\$50.00	\$2,861.96
44	H09UCH9PW7 N	ASTRO DIG XTS 3000 FULL FEATURE 800	0					\$0.00	\$1,875.35								
45	H223	ALT: BATTERY ULTRA HIGH CAP NICD FM	0					\$0.00	\$34.31								
46	H43	ENH: TRUNKED REMOTE MONITOR	0					\$0.00	\$73.00								
47	H46	ENH: TRUNKED 1 BTN STATUS/MESSAGE	0					\$0.00	\$109.50								
48	Q241	ENH: ANALOG OPERATION	0					\$0.00	\$0.00								
49	H37	ADD: SMARTNET SYSTEM PACKAGE	0					\$0.00	\$878.00								
50	NTN03B1	CASE, CARRY HIGH ACTIVITY	0					\$0.00	\$43.80								
51	****ASTRO SABER***	Model II w/o Kdp	1					\$0.00	\$0.00		\$50.00			\$2,741.08		\$50.00	\$2,791.88
52	H9DX	ASTRO DIG SABER PORT SERIES	0					\$0.00	\$1,314.00								
53	212H	ASTRO DIGITAL SABER II 800MHZ PORT	0					\$0.00	\$361.35								
54	H223AJ	ALT: BATTERY, RUGGEDIZED FM	0					\$0.00	\$4.36								
55	H43	ENH: TRUNKED REMOTE MONITOR	0					\$0.00	\$73.00								
56	H46	ENH: TRUNKED 1 BTN STATUS/MSG	0					\$0.00	\$109.50								
57	H499	ALT: RUGGEDIZED ASTRO DIGITAL SABER	0					\$0.00	\$346.02								
58	Q241	ENH: ANALOG OPERATION	0					\$0.00	\$0.00								
59	H37	ADD: SMARTNET SYSTEM PACKAGE	0					\$0.00	\$401.80								
60	NLM4530	BELT LOOP, SWIVEL 3 INCH	0					\$0.00	\$5.84								
61	NTN7573	CARRY CASE, LEATHER SWIVEL SNAP	0					\$0.00	\$45.99								
62	****ASTRO XTS3000**	Model III w/Kdp w/Encypt	1					\$0.00	\$0.00		\$50.00			\$3,840.53		\$50.00	\$3,890.53
63	H09UCH9PW7 N	ASTRO DIG XTS 3000 FULL FEATURE 800	0					\$0.00	\$1,675.35								
64	H223	ALT: BATTERY ULTRA HIGH CAP NICD FM	0					\$0.00	\$34.31								
65	H43	ENH: TRUNKED REMOTE MONITOR	0					\$0.00	\$73.00								
66	H46	ENH: TRUNKED 1 BTN STATUS/MESSAGE	0					\$0.00	\$109.50								
67	Q274	ADD: DES-OFF AND DES-XL ENCRYPTION	0					\$0.00	\$663.57								
68	C806	ADD: APCO 25 COMMON AIR INTERFACE	0					\$0.00	\$365.00								
69	H37	ADD: SMARTNET SYSTEM PACKAGE	0					\$0.00	\$976.00								
70	NTN03B1	CASE, CARRY HIGH ACTIVITY	0					\$0.00	\$43.80								
71	****ASTRO SABER***	Model II w/Kdp & Encypt Rugged	1					\$0.00	\$0.00		\$50.00			\$3,770.45		\$50.00	\$3,820.45
72	H9DX	ASTRO DIG SABER PORT SERIES	0					\$0.00	\$1,314.00								
73	212H	ASTRO DIGITAL SABER II 800MHZ PORT	0					\$0.00	\$361.35								
74	H223AJ	ALT: BATTERY, RUGGEDIZED FM	0					\$0.00	\$4.36								
75	H43	ENH: TRUNKED REMOTE MONITOR	0					\$0.00	\$73.00								
76	H46	ENH: TRUNKED 1 BTN STATUS/MSG	0					\$0.00	\$109.50								
77	H499	ALT: RUGGEDIZED ASTRO DIGITAL SABER	0					\$0.00	\$346.02								
78	Q274	ADD: DES OFF AND DES-XL	0					\$0.00	\$663.57								
79	C806	ADD: APCO 25 COMMON AIR INTERFACE	0					\$0.00	\$365.00								
80	H37	ADD: SMARTNET SYSTEM PACKAGE	0					\$0.00	\$976.00								
81	NLM4530	BELT LOOP, SWIVEL 3 INCH	0					\$0.00	\$5.84								
82	NTN7573	CARRY CASE, LEATHER SWIVEL SNAP	0					\$0.00	\$45.99								
83	****MOBILE*****	****DASH MOUNT****	1					\$0.00	\$0.00		\$250.00			\$2,011.15		\$250.00	\$2,261.15
84	****MC5200****	Model III w/Kdp	1					\$0.00	\$0.00		\$50.00			\$2,011.15		\$50.00	\$2,061.15
85	MD1HX	MC5200 HIGH SPEC MOBILE	0					\$0.00	\$693.50								
86	B22W	800MHZ 15W MODEL II	0					\$0.00	\$653.35								
87	B688	ADD: PUSH SWITCH, EMERGENCY	0					\$0.00	\$25.55								
88	G495	ADD: ANTENNA 1/4 WAVE 806-900MHZ	0					\$0.00	\$0.00								
89	H43	ENH: TRUNKED REMOTE MONITOR	0					\$0.00	\$73.00								
90	H46	ENH: ONE TOUCH BUTTON	0					\$0.00	\$109.50								
91	H37	ADD: SMARTNET SYSTEM PACKAGE	0					\$0.00	\$456.25								

EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

Item #	Model	Item Description	Qty	Man Hours	Total	Rate	Labor	Rev# 707	Total	Material	Subcontracts	Total	Total
				Per Unit		Hrs				Unit	Unit		Costs
92	****ASTRO SPECTA**	Model A7, w/tpd	1		0	\$0.00			\$2,457.10	\$0.00	\$750.00	\$2,457.10	\$2,707.18
93	T99DX	ASTRO DIG SPECTRA MOBILE SERIES			0	\$0.00				\$1,525.70			
94	132W	35W 800 806-870 AT			0	\$0.00				\$397.85			
95	W688	ADD: EXTERNAL EMERGENCY PUSHBUTTON			0	\$0.00				\$40.88			
96	W432	ENH: 10 WATT AUDIO			0	\$0.00				\$10.95			
97	G241	ENH: ANALOG OPERATION			0	\$0.00				\$0.00			
98	G50	ENH: SMARTNET OPERATION			0	\$0.00				\$481.80			
99	****ASTRO SPECTA**	Model A7, w/tpd & Encrypt	1		0	\$0.00			\$3,522.25	\$0.00	\$750.00	\$3,522.25	\$3,772.25
100	T99DX	ASTRO DIG SPECTRA MOBILE SERIES			0	\$0.00				\$1,525.70			
101	132W	35W 800 806-870 AT			0	\$0.00				\$397.85			
102	G805	ENH: ASTRO DIGITAL CAI			0	\$0.00				\$407.50			
103	W688	ADD: EXTERNAL EMERGENCY PUSHBUTTON			0	\$0.00				\$40.88			
104	W432	ENH: 10 WATT AUDIO			0	\$0.00				\$10.95			
105	G274	ENH: DES-OF-BIDES-XL			0	\$0.00				\$663.57			
106	G50	ENH: SMARTNET OPERATION			0	\$0.00				\$481.80			
107	****MOBILE*****	****TRUNK MOUNT*****			0	\$0.00				\$0.00			
108	****ASTRO SPECTA**	Model A7, w/tpd	1		0	\$0.00			\$2,673.99	\$0.00	\$600.00	\$2,673.99	\$3,273.99
109	T99DX	ASTRO DIG SPECTRA MOBILE SERIES			0	\$0.00				\$1,525.70			
110	132W	35W 800 806-870 AT			0	\$0.00				\$397.85			
111	W688	ADD: EXTERNAL EMERGENCY PUSHBUTTON			0	\$0.00				\$40.88			
112	W432	ENH: 10 WATT AUDIO			0	\$0.00				\$10.95			
113	G241	ENH: ANALOG OPERATION			0	\$0.00				\$0.00			
114	W496	ENH: REMOTE MOUNT WITH 17FT CABLE			0	\$0.00				\$216.81			
115	G50	ENH: SMARTNET OPERATION			0	\$0.00				\$481.80			
116	****ASTRO SPECTA**	Model A7, w/tpd & Encrypt	1		0	\$0.00			\$3,735.06	\$0.00	\$600.00	\$3,735.06	\$4,335.06
117	T99DX	ASTRO DIG SPECTRA MOBILE SERIES			0	\$0.00				\$1,525.70			
118	132W	35W 800 806-870 AT			0	\$0.00				\$397.85			
119	G805	ENH: ASTRO DIGITAL CAI			0	\$0.00				\$407.50			
120	W688	ADD: EXTERNAL EMERGENCY PUSHBUTTON			0	\$0.00				\$40.88			
121	W432	ENH: 10 WATT AUDIO			0	\$0.00				\$10.95			
122	G274	ENH: DES-OF-BIDES-XL			0	\$0.00				\$663.57			
123	W496	ENH: REMOTE MOUNT WITH 17FT CABLE			0	\$0.00				\$216.81			
124	G50	ENH: SMARTNET OPERATION			0	\$0.00				\$481.80			
125	****CONT STATION	*****			0	\$0.00				\$0.00			
126	****SPECTRA*****	Local Control, w/tpd	1		0	\$0.00			\$3,915.84	\$0.00	\$750.00	\$3,915.84	\$5,037.46
127	L99DX	ASTRO SPECTRA			0	\$0.00				\$2,028.70			
128	258L	WT 25W 800MHZ			0	\$0.00				\$843.15			
129	G241	ADD: ANALOG ONLY MODE			0	\$0.00				\$0.00			
130	L114	ADD: CLOCK VU METER			0	\$0.00				\$73.00			
131	G50	ENH: SMARTNET OPERATION			0	\$0.00				\$481.80			
132	TD6441	ANTENNA, 60B 3 ELEMENT YAGI	1		0	\$0.00			\$80.30			\$80.30	
133	L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	50		0	\$0.00			\$105.00			\$105.00	
134	TDN0814	1/2" CONNECTOR, N PLUG LDF PLTD	4		0	\$0.00			\$32.85			\$131.40	
135	TDN9289	CABLE WRAP, WEATHERPROOFING	1		0	\$0.00			\$27.89			\$27.89	
136	RLN4264A	LIGHTNING ARRESTOR/SURGE	1		0	\$0.00			\$46.54			\$46.54	

Exhibit G: Additional Equipment Price Schedule

EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

City and County of San Francisco Citywide 800MHz Radio System Project (CEIS) Additional Equipment Price Schedule		Model	Item Description	Qty	Per Unit	Mn Hours	Total	Hour	Rate	Total	Material	Unit	Cost	Total	Subcontract	Unit	Cost	Total	Total	Costs
137	****SPECTRA****	Remote Control, w/4dp	1	0	0	0	\$0.00													
138	L99DX	ASTRO SPECTRA	1	0	0	\$0.00														\$9,276.76
139	264L	339L5-35W 800 MHZ	0	0	0	\$0.00														\$5,682.44
140	G241	ADD: ANALOG ONLY MODE	0	0	0	\$0.00														
141	L114	ADD: CLOCK VU METER	0	0	0	\$0.00														
142	G50	ENH: SMARTNET OPERATION	0	0	0	\$0.00														
143	TRN7468	MOUNTING BRACKET EIA 19"	0	0	0	\$0.00														
144	TDN9289	ANTENNA, 6DB 3 ELEMENT YAGI	1	0	0	\$0.00														\$80.30
145	TDN8014	1/2" LDF HELIX, POLY JKT, PER FOOT	60	0	0	\$0.00														\$106.00
146	L1705	1/2" CONNECTOR, N PLUG LDF PLTD	4	0	0	\$0.00														\$131.40
147	TDN9289	CABLE WRAP, WEATHERPROOFING	1	0	0	\$0.00														\$27.38
148	RLN4264A	LIGHTNING ARRESTOR /SURGE	1	0	0	\$0.00														\$46.54
149	L1751	DESKSET, REMOTE, ASTRO DGT8000	1	0	0	\$0.00														\$872.35
150	L1752	ADAPTER, REMOTE, ASTRO DGT8000	1	0	0	\$0.00														\$580.35
151	****ASTRO SPECTRA****	Local Control, w/4dp & Encripl.	1	0	0	\$0.00														
152	L99DX	ASTRO SPECTRA	1	0	0	\$0.00														\$4,980.81
153	258L	W7 25W 800MHZ	0	0	0	\$0.00														\$750.00
154	G241	ADD: ANALOG ONLY MODE	0	0	0	\$0.00														
155	L114	ADD: CLOCK VU METER	0	0	0	\$0.00														
156	G50	ENH: SMARTNET OPERATION	0	0	0	\$0.00														
157	G274	ADD: DES OF/BIDES-XL	0	0	0	\$0.00														
158	G806	ENH: ASTRO DIGITAL CAI OPERATION	0	0	0	\$0.00														
159	TDN9289	ANTENNA, 6DB 3 ELEMENT YAGI	1	0	0	\$0.00														\$80.30
160	L1705	1/2" LDF HELIX, POLY JKT, PER FOOT	50	0	0	\$0.00														\$106.00
161	TDN8014	1/2" CONNECTOR, N PLUG LDF PLTD	4	0	0	\$0.00														\$181.40
162	TDN9289	CABLE WRAP, WEATHERPROOFING	1	0	0	\$0.00														\$27.38
163	RLN4264A	LIGHTNING ARRESTOR /SURGE	1	0	0	\$0.00														\$46.54
164	****ASTRO SPECTRA****	Remote Control, w/4dp & Encripl	1	0	0	\$0.00														
165	L99DX	ASTRO SPECTRA	1	0	0	\$0.00														\$9,341.83
166	264L	339L5-35W 800 MHZ	0	0	0	\$0.00														
167	L114	ADD: CLOCK VU METER	0	0	0	\$0.00														
168	G274	ADD: DES OF/BIDES-XL	0	0	0	\$0.00														
169	G806	ENH: SMARTNET OPERATION	0	0	0	\$0.00														
170	G50	ENH: ASTRO DIGITAL CAI OPERATION	0	0	0	\$0.00														
171	TRN7468	MOUNTING BRACKET EIA 19"	0	0	0	\$0.00														
172	TDN9289	ANTENNA, 6DB 3 ELEMENT YAGI	1	0	0	\$0.00														\$80.30
173	L1705	1/2" LDF HELIX, POLY JKT, PER FOOT	50	0	0	\$0.00														\$106.00
174	TDN8014	1/2" CONNECTOR, N PLUG LDF PLTD	4	0	0	\$0.00														\$131.40
175	TDN9289	CABLE WRAP, WEATHERPROOFING	1	0	0	\$0.00														\$27.38
176	RLN4264A	LIGHTNING ARRESTOR /SURGE	1	0	0	\$0.00														\$46.54
177	L1751	DESKSET, REMOTE, ASTRO DGT8000	1	0	0	\$0.00														\$872.35
178	L1752	ADAPTER, REMOTE, ASTRO DGT8000	1	0	0	\$0.00														\$580.35



EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

Item #	Model	Item Description	Qty	Man Hours	Labor Hrs	Rev. 7/97		Material Unit	Subcontracts Unit	Total \$	Total \$	Total \$	Total \$
						Total	Rate						
179	****ACCESSORIES****		0			\$0.00							
180	****PORTABLE****		0			\$0.00							
181	NTN7147	*****MIS2000***** BATTERY, FMIS, ULTRA-HIGH CAP	1				\$0.00	\$110.96		\$110.96	\$0.00	\$110.96	\$0.00
182	NTN1177	BATTERY, FMIS, ULTRA-HIGH CAP	1				\$0.00	\$65.70		\$65.70	\$0.00	\$65.70	\$0.00
183	NTN1177	CHARGER, 110V SINGLE COMPACT	1				\$0.00	\$492.75		\$492.75	\$0.00	\$492.75	\$0.00
184	NTN1177	CHARGER, 110V MULTI RAPID	1				\$0.00	\$87.16		\$87.16	\$0.00	\$87.16	\$0.00
185	NTN7310	AUDIO ACC.REMOTE SPEAKER/MIC	1				\$0.00	\$10.95		\$10.95	\$0.00	\$10.95	\$0.00
186	NTN8038	CARRY ACC.BELT CLIP 3"	1				\$0.00	\$43.80		\$43.80	\$0.00	\$43.80	\$0.00
187	NAF5037	CASE, 3.0" HI ACTIVITY ULTRA HI CAP	1				\$0.00	\$24.09		\$24.09	\$0.00	\$24.09	\$0.00
188	NAF5037	ANT, 1/2 WAVELENGTH WHIP	1				\$0.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00
189	****PORTABLE****		0			\$0.00							
190	NTN8298	*****XTS3000***** BATTERY, NICAD ULTRA HI CAP FM	1				\$0.00	\$137.97		\$137.97	\$0.00	\$137.97	\$0.00
191	NTN1168	BATTERY, NICAD ULTRA HI CAP FM	1				\$0.00	\$91.25		\$91.25	\$0.00	\$91.25	\$0.00
192	NTN1177	CHARGER, 110V SINGLE ENH	1				\$0.00	\$492.75		\$492.75	\$0.00	\$492.75	\$0.00
193	NTN1177	CHARGER, 110V MULTI RAPID	1				\$0.00	\$87.16		\$87.16	\$0.00	\$87.16	\$0.00
194	NTN8266	AUDIO ACC.REMOTE SPEAKER/MIC	1				\$0.00	\$7.30		\$7.30	\$0.00	\$7.30	\$0.00
195	NTN8381	ATTACHMENT, REMOVEABLE BELT CLIP	1				\$0.00	\$43.80		\$43.80	\$0.00	\$43.80	\$0.00
196	NTN8381	CASE, CARRY HIGH ACTIVITY	1				\$0.00	\$43.80		\$43.80	\$0.00	\$43.80	\$0.00
197	NTN8306	CASE, CARRY HIGH ACTIVITY	1				\$0.00	\$24.09		\$24.09	\$0.00	\$24.09	\$0.00
198	NAF5037	ANT, 1/2 WAVELENGTH WHIP	1				\$0.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00
199	****PORTABLE****		0			\$0.00							
200	NTN7058	*****ASTRO SABER***** BATTERY, ULTRA HI CAP RUGGEDIZED	1				\$0.00	\$113.15		\$113.15	\$0.00	\$113.15	\$0.00
201	NTN4734	BATTERY, ULTRA HI CAP RUGGEDIZED	1				\$0.00	\$164.98		\$164.98	\$0.00	\$164.98	\$0.00
202	NTN4796	CHARGER, DESKTOP SINGLE UNIT 117V	1				\$0.00	\$575.24		\$575.24	\$0.00	\$575.24	\$0.00
203	NTN7309	CHARGER, DESKTOP MULTI UNIT 117V	1				\$0.00	\$102.93		\$102.93	\$0.00	\$102.93	\$0.00
204	NTN7573	MICROPHONE, REMOTE SPEAKER	1				\$0.00	\$16.79		\$16.79	\$0.00	\$16.79	\$0.00
205	NTN7573	BELT CLIP ATTACHMENT, REMOVEABLE	1				\$0.00	\$45.99		\$45.99	\$0.00	\$45.99	\$0.00
206	NAF5037	CARRY CASE, LEATHER SWIVEL SNAP	1				\$0.00	\$24.09		\$24.09	\$0.00	\$24.09	\$0.00
207	NAF5037	ANT, 1/2 WAVELENGTH WHIP	1				\$0.00	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00

Note: Additional equipment not found on this list is contained in the "R01 domestic price book," "RD-PP-7/97 radius price book," and "R01R Domestic Parts Pricing Book and Database" dated July 30, 1997, which is hereby incorporated and made a part of this document by this reference. To the extent the prices in this printed schedule conflict with the referenced price books, the City shall be entitled to the lowest price.



**Exhibit H: Labor Rate Schedule**

9. Exhibit H  
Labor rate schedule

<u>Classification</u>	<u>Rate Per Hour</u>
Program Manager	\$119.00
Application Engineer Specialist	\$124.00
Project Design Engineer	\$124.00
Contract Administrator	\$89.25
Engineering Specification Writer	\$124.00
Draftsperson	\$89.25
Technician	\$104.13
Civil Construction Foreman	\$92.81
Equipment Technician	\$104.13
Instructor for Training	\$124.00
Installation Technician	\$92.13
Operator Training	\$124.00
CADD Designer	Quoted per Task

## Exhibit H: Labor Rate Schedule

Upon the completion of the process set forth in Section 3.03(a)(3) hereof, the Contractor shall submit the hourly rates for the following services:

Light Equipment Operator

Flooring

Plumbing

Cement Mason

Teamster

Iron Worker (Tower Erector)

Concrete Worker

Civil Construction Superintendent

Site Construction Manager

Laborer

Field Surveying

One Man

Two Men

Three Men

Acoustical

Foreman

Journeyman

Electrical

Foreman

Journeyman

Apprentice

Carpentry

Foreman

Journeyman

HVAC

Glazer

Foreman

Journeyman

Architectural Services

Reinforcing Steel Worker

\* Price will be supplied upon the selection of subcontractor for the civil work set forth in Section 3.03(a)(3).



City and County of San Francisco

Department of Telecommunications and Information Services (DTIS)
Division of Telecommunications

901 Rankin Street San Francisco, CA 94124

(415) 550-2700 (General Information) (415) 550-2710 (General Manager) (415) 550-2773 or 550-2728 (FAX)

10. Exhibit I
Commence form

Date

[name of contractor's project manager]

Name, Title

Street Address

City, State, Zip

Re: Citywide 800MHz Radio System Project.

Dear \_\_\_\_\_:

You are hereby requested to commence the implementation, delivery, and installation of [insert the phase or part e.g., "Part One of Phase One of the Project," "Part Two of Phase One of the Project," "Phase Two of the Project," "Coverage enhancement Phase," or "WDM Phase."] of the Citywide 800MHz Radio System Project in complete accordance with the terms and conditions of the Citywide 800MHz Radio System Project Agreement.

[name of City Project Manager]

Signature

Name

Title



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B. Consent for Assignment to the Corporation. Licensee hereby represents to Motorola that the Licensee intends to finance the 800 MHz radio system with governmental securities

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**LICENSEE OR DTIS:**

General Manager  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, CA 94124

with a copies to:

Project Manager for the 800 MHz Project  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, CA 94124

City Administrator  
401 Van Ness Avenue, Room 402  
San Francisco, CA 94102

City Attorney's Office  
1390 Market Street, 6th Floor  
San Francisco, CA 94102-5408  
Attn: Victor L. Castillo

**MOTOROLA:**

Motorola, Inc.  
1700 South Amphlett Boulevard, Suite 300  
San Mateo, CA 94402  
Attn: Project Manager for the San Francisco 800 MHz Project  
with copies to:

Motorola, Inc.  
9980 Carroll Canyon Road  
San Diego, CA 92131-1186  
Attn: Contract and Compliance

Motorola, Inc.  
1301 E. Algonquin Road, Room 2305  
Schaumburg, IL 60196  
Attn: LMPS Technical Assets Manager

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- D. **Waivers.** No waiver of a right or remedy of a party will constitute a waiver of another right or remedy of that party.
- E. **Assignments.** Motorola may assign any of its rights or subcontract any of its obligations under this Agreement, or encumber or sell any of its rights in any Motorola Software, without prior notice to or consent of Licensee, provided however, if Motorola sells the Motorola Software, then Motorola shall ensure that any source code for such software that has been deposited in escrow for the benefit of Licensee is transferred subject to the terms of such escrow.
- F. **Entire Agreement and Amendment.** This Agreement, together with the Agreement, contains the parties' entire agreement regarding Licensee's use of Motorola Software and may be amended only in a writing signed by both parties, except that Motorola may modify this Agreement as necessary to comply with applicable laws and regulations including FCC regulations.
- G. **Governing Law.** This Agreement will be governed by the laws of the United States of America to the extent that they apply and otherwise by the laws of the State of California.

## Section 13 PROHIBITED INTERESTS

Motorola states that it is familiar with provisions of Section 8.105 of the Charter of the City of San Francisco, and Section 87100 *et seq.* of the Government Code of the State of California, incorporated herein by reference and made a part hereof, and certifies that it does not know of any aspects of its business or personal practices that constitute a violation of said sections. No member of the Board of Supervisors of the City and County of San Francisco, officer or employee of the City and County of San Francisco during his or her tenure or for one year thereafter shall have an interest, direct or indirect, in this Agreement or the proceeds thereof. No officer, director, or employee of Motorola, nor any member of a Motorola officer's, director's, employee's or family, shall serve on a City board or committee, or hold any position that either by rule, practice or action nominates, recommends, or supervises Motorola's operations, or authorizes funding to Motorola.

## Section 14 LICENSEE ACTING IN PROPRIETARY CAPACITY ONLY

Motorola understands and agrees that the Licensee is entering into this Agreement in its proprietary capacity and not as a regulatory agency with police powers. Nothing in this

Agreement shall limit in any way Motorola's obligation to obtain any required approvals from Licensee departments, boards, or commissions having jurisdiction over the Project and its installation, repair, alteration or operation.

#### **Section 15 TIME OF THE ESSENCE**

Time is of the essence with respect to the performance of each and all of the covenants, conditions and agreements of this Agreement.

#### **Section 16 MACBRIDE PRINCIPLES--NORTHERN IRELAND**

The Licensee urges companies doing business in Northern Ireland to move towards resolving employment inequities and encourages such companies to abide by the MacBride Principles as expressed in San Francisco Administrative Code Section 12F.1 *et seq.* The Licensee also urges San Francisco companies to do business with corporations that abide by the MacBride Principles. Motorola acknowledges that it has read and understands the above statement of the Licensee concerning doing business in Northern Ireland.

#### **Section 17 TROPICAL HARDWOOD BAN**

The Licensee urges companies not to import, purchase, obtain or use, for any purpose, any tropical hardwood or any tropical hardwood product.

#### **Section 18 VIDEO DATA TERMINAL ORDINANCE**

Motorola agrees to comply fully with all applicable provisions of the San Francisco VDT Ordinance 405-90, as amended from time to time. Said provisions are incorporated herein and by reference made a part hereof as though fully set forth. Motorola will provide the Equipment in accordance with the City's VDT Ordinance.

#### **Section 19 DRUG FREE WORK PLACE**

If Motorola is required by its performance under this Agreement to comply with the Drug Free Work Place Act of 1988 (Pub. L. 100-690, Title V, Subtitle D), Motorola shall abide by all applicable terms and conditions of that Act.

#### **Section 20 COMPLIANCE WITH AMERICANS WITH DISABILITIES ACT**

Motorola acknowledges that, pursuant to the Americans with Disabilities Act (ADA), programs, services and other activities provided by a public entity to the public, whether directly or through a contractor, must be accessible to the disabled public. Motorola shall provide the services specified in this Agreement in a manner that complies with the ADA and any and all other applicable federal, state and local disability rights legislation. Motorola shall not discriminate against disabled persons in the provision of services, benefits or activities provided under this Agreement and further agrees that any violation of this prohibition on the part of Motorola, its employees, agents or assigns, shall constitute a material breach of this Agreement.

## Section 21 BURMA (MYANMAR) BUSINESS PROHIBITION

(a) Motorola is not the government of Burma (Myanmar), a person or business entity organized under the laws of Burma (Myanmar) or a "prohibited person or entity" as defined in Section 12J.2(G) of the San Francisco Administrative Code. Any items sold pursuant to this Agreement to the City and County of San Francisco are not made in Burma (Myanmar) as defined in Section 12J.4(A) of the San Francisco Administrative Code. The Licensee reserves the right to terminate this Agreement for default if Motorola violates the terms of this Section 1B.16.

(b) Chapter 12J of the San Francisco Administrative Code is hereby incorporated by reference as though fully set forth herein. The failure of Motorola to comply with any of its requirements shall be deemed a material breach of this Agreement. In the event that Motorola fails to comply in good faith with any of the provisions of Chapter 12J of the San Francisco Administrative Code, Motorola shall be liable for liquidated damages for each violation in an amount equal to Motorola's net profit under this Agreement, or 10% of the total amount of the contract, or \$1,000, whichever is greatest. Motorola acknowledges and agrees that the liquidated damages assessed shall be payable to the Licensee upon demand and may be set off against any moneys due to the Motorola from any Licensee contract.

## Section 22 CAPTIONS

All the captions contained in this Agreement are for convenience in reference and are not intended to define or limit the scope of any provision of this Agreement.

## Section 23 GOVERNING LAW

This Agreement shall be governed by, interpreted in accordance with, and enforced pursuant to the internal laws of the State of California.

## Section 24 JURISDICTION AND VENUE

The parties agree that the exclusive jurisdiction and venue of any action arising out of, or which concerns this Agreement, or to interpret or enforce this Agreement, shall be in the Superior Court of California for the City and County of San Francisco or the United States District Court for the Northern District of California. In the event of any litigation arising out of or which concerns this Agreement or to enforce or interpret this Agreement, the prevailing party shall be entitled to an award of its reasonable attorneys' fees and costs (including attorneys' fees and costs attributable to in-house counsel) in addition to any other remedy to which it may be entitled.

## Section 25 INTERPRETATION

The neuter gender includes the masculine and feminine, the masculine includes the feminine and neuter, and the feminine includes the masculine and neuter, and each includes corporation, partnership, trust or other legal entity, public or private, whenever the context so requires. The singular number includes the plural, and the plural the singular, whenever the context so requires. The use herein of the word "including," when following any general statement, term or matter, shall not be construed to limit such statement, term or matter to the specific items or matters set forth immediately following such word or to similar items or matters, whether or not nonlimiting language (such as "without limitation," or "but not limited to," or words of similar import) is used

with reference thereto, but rather shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such general statement, term or matter.

**Section 26 SEVERABILITY.**

If any provision of this Agreement is determined to be invalid or unenforceable, the remaining provisions shall be enforceable to the maximum extent possible.

**Section 27 COUNTERPARTS**

This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which taken together shall constitute one and the same instrument.

**Section 28 PUBLIC DISCLOSURE LAWS**

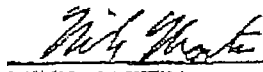
This Agreement and all documents received in connection with the Agreement and the Project are subject to Public Disclosure Laws, including the City's Sunshine Ordinance.

In Witness Whereof, the parties have caused duly authorized representatives to execute this Agreement on the dates set forth below.

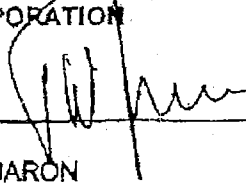
**CITY AND COUNTY OF SAN FRANCISCO,  
A MUNICIPAL CORPORATION**

RECOMMENDED:

  
ED HARRINGTON  
Director of Telecommunications and  
Information Services

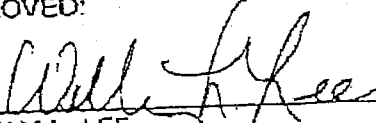
  
MIKE MARTIN  
911 Project Director

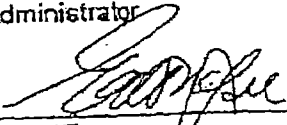
**MOTOROLA, INC., A DELAWARE  
CORPORATION**

By:   
T.W. JARON  
Vice President and General Manager,  
Western Division

REVIEWED AND APPROVED AS TO FORM  
  
SCOTT DODGE 9/8/97 DATE  
MOTOROLA  
CONTRACTS AND COMPLIANCE DEPT.

APPROVED:

  
\_\_\_\_\_  
WILLIAM L. LEE  
City Administrator

  
\_\_\_\_\_  
EDWIN LEE  
Director of Purchasing

APPROVED AS TO FORM:

LOUISE H. RENNE  
City Attorney

By:   
\_\_\_\_\_  
VICTOR CASTILLO  
Deputy City Attorney

## SOFTWARE LICENSE AGREEMENT

This Software License Agreement ("Agreement") is between Motorola, Inc., a Delaware corporation, 1301 E. Algonquin Road, Schaumburg, IL 60196 ("Motorola"), and the City and County of San Francisco (address) \_\_\_\_\_ ("Licensee").

### Section 1 SCOPE

Licensee may acquire from Motorola's Land Mobile Products Sector ("LMPS") radio communication products ("Products") that contain embedded or pre-loaded Motorola software such as in a ROM, PROM, or EPROM, or other Motorola software provided on media such as a floppy disk, tape, diskette, or CD-ROM. All such software (including Radio Service Software and FLASHport® Software) is referred to as "Motorola Software." This Agreement contains the terms under which Licensee may use Motorola Software acquired from LMPS.

### Section 2 GRANT OF LICENSE

Motorola hereby grants to Licensee a personal, non-exclusive, perpetual license under Motorola's applicable proprietary rights to use Motorola Software in accordance with the terms of this Agreement and the Master Agreement defined herein. This Agreement is subject to the terms and conditions of the Citywide 800 MHz Radio System Project Agreement, dated as of \_\_\_\_\_, 1997, including Article 11 thereof (the "Master Agreement").

### Section 3 LIMITATIONS ON USE

Licensee may use Motorola Software only for Licensee's internal business purposes and only as described in the Master Agreement and the Motorola Software or Product documentation. Any other use of Motorola Software is strictly prohibited and will be deemed a breach of this Agreement, except for internal use as provided herein. Licensee may not copy, modify, adapt, merge with other software, reverse engineer, prepare derivative works of, or disassemble any Motorola Software for any reason, except that Licensee may make at most two copies of Motorola Software provided with infrastructure equipment for back-up purposes. Licensee will be provided with a copy of Radio Service Software for each site at which Licensee uses Radio Service Software; Licensee may make one additional copy for each computer owned or controlled by Licensee at each such site. Prior to acquiring any Radio Service Software or upon Motorola's request, Licensee shall provide a list of all sites where the Licensee is using or intends to use any Radio Service Software Licensee must reproduce all Motorola copyright and trademark notices on all copies of Motorola Software.

### Section 4 TRANSFERS

A. Consent required. With the prior written consent of Motorola, the City shall have the right to assign all software licenses to any third party. Motorola shall not unreasonably withhold its consent. The right to assign the Radio Service Software and FLASHport Software shall be limited to the assignments described below.

B. Consent for Assignment to the Corporation. City hereby represents to Motorola that the City intends to finance the 800 MHz radio system with governmental securities secured by certain lease payments of the City. In connection with the financing, certain assignments of the software licenses (including Radio Service Software and FLASHport Software) between the City, the Financial Trustee (as defined in the Master Agreement) and the City and County of San Francisco Finance Corporation will be necessary for the financing ("Financing



Assignments"). To allow the City to accomplish the proposed financing, Motorola hereby irrevocably consents to all the Financing Assignments.

C. Consent for Third party Users. In the event of a default on any of the governmental securities issued, in whole or in part, to finance the 800 MHz radio system, Motorola hereby irrevocably consents to the assignment of all software licenses (including Radio Service Software and FLASHport Software) to any other user of similar projects or equipment, provided that (i) the user is located within the United States of America, (ii) the City's rights under the license are assigned subject to the terms of this agreement, (iii) the user is not a competitor of Motorola in the 800 MHz radio communication business and (iv) Motorola receives a transfer form (which Motorola will provide upon request) completed and signed by the new owner.

#### **Section 5 OWNERSHIP AND TITLE**

Title to all copies of Motorola Software in any form, including all rights in patents, copyrights, trade secrets, and other intellectual properties, remains vested exclusively in Motorola. Notwithstanding the foregoing, Licensee shall own all right, title and interest in any modifications or additions that the Licensee shall make to the Motorola Software, including without limitation Licensee-defined routines or macros.

#### **Section 6 CONFIDENTIALITY**

Licensee acknowledges that all Motorola Software contains valuable proprietary information and trade secrets and that unauthorized dissemination, distribution, modification, reverse engineering, disassembly, or other improper use of Motorola Software will result in irreparable harm to Motorola for which monetary damages would be inadequate. Accordingly, Licensee will limit access to Motorola Software to those of its employees and agents who need to use Motorola Software for Licensee's internal business purposes, and Licensee will take appropriate action with those employees and agents to preserve the confidentiality of Motorola Software. Motorola acknowledges that the Licensee is a public body subject to public disclosure laws.

#### **Section 7 MAINTENANCE AND SUPPORT**

No maintenance or support is provided under this Agreement. Maintenance or support will be provided under a Motorola Software Maintenance and Support Agreement in accordance with the terms of the Master Agreement.

#### **Section 8 LIMITED WARRANTY**

For two (2) years after initial shipment of Motorola Software, or for the Warranty Period specified in the Master Agreement between the parties, Motorola warrants that the Motorola Software, when used properly, will be free from reproducible defects that materially vary from its published specifications. Motorola does not warrant that Licensee's use of the Motorola Software or the Products will be uninterrupted or error-free or that the Motorola Software or the Products will meet Licensee's particular requirements. **MOTOROLA'S TOTAL LIABILITY, AND LICENSEE'S SOLE REMEDY, FOR ANY BREACH OF THIS WARRANTY WILL BE LIMITED TO, AT MOTOROLA'S OPTION, REPAIR OR REPLACEMENT OF THE MOTOROLA SOFTWARE OR PAYMENT OF LICENSEE'S DIRECT DAMAGES UP TO THE AMOUNT PAID TO MOTOROLA FOR THE MOTOROLA SOFTWARE OR THE INDIVIDUAL PRODUCT IN WHICH THE MOTOROLA SOFTWARE IS EMBEDDED OR FOR WHICH IT WAS PROVIDED. THIS WARRANTY EXTENDS ONLY TO THE FIRST LICENSEE AND THE CORPORATION, AS IDENTIFIED IN THE MASTER AGREEMENT BETWEEN THE PARTIES, SUBSEQUENT TRANSFEREES ACCEPT THE MOTOROLA SOFTWARE "AS IS" AND WITHOUT**

WARRANTIES OF ANY KIND MOTOROLA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

**Section 9 LIMITATION OF LIABILITY**

IN NO EVENT WILL MOTOROLA BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN EXCESS OF THE AMOUNT STATED IN THE MASTER AGREEMENT IN CONNECTION WITH WHICH THIS SOFTWARE LICENSE AGREEMENT IS GIVEN.

**Section 10 TERM AND TERMINATION**

Licensee's right to use Motorola Software will begin when Licensee sends a duly executed copy of this Agreement to Motorola, and either (a) Motorola returns a fully executed Agreement to Licensee or (b) Motorola ships Motorola Software or a Product containing Motorola Software to Licensee, and will continue in perpetuity unless terminated as follows. Licensee's right to use Motorola Software will terminate without notice upon a breach of this Agreement by Licensee. In addition, if Motorola reasonably believes that Licensee intends to breach this Agreement with respect to Radio Service Software or FLASHport® Software, Motorola will give written notice to Licensee and Licensee will then have [three (3) days] within which to deliver Motorola a letter stating that it does not intend to breach the agreement and specifically addressing any facts stated in the Motorola notice indicating to the contrary. If Motorola is in good faith not satisfied that Licensee will not breach this Agreement, Motorola may, by notice to Licensee, terminate Licensee's right to use such Motorola Software. Upon termination, Motorola will be entitled to immediate injunctive relief and, unless Licensee is a sovereign government entity, Motorola will have the right to repossess all Radio Service Software and FLASHport® Software in Licensee's possession. Within thirty days after termination of Licensee's right to use any Motorola Software, Licensee must certify in writing to Motorola that all copies of such Motorola Software have been returned to Motorola or destroyed.

Other than as provided above, in the event of any other material breach of this Agreement by the City, Motorola shall send written notice to the City and the Corporation. Both the City and the Corporation shall have thirty (30) days to cure such breach. Should the City and the Corporation fails to cure the breach within such time, Motorola shall have the right to terminate this agreement by written notice to the City and Corporation.

**Section 11 NOTICES**

All notices, consents, and waivers permitted or required under this Agreement will be deemed given upon receipt and must be delivered in writing to the addresses at the top of this Agreement and, if to Motorola, to the LMPS Technical Assets Manager, Room 2305. Change of address must be in writing to the other party.

**Section 12 GENERAL**

A. **COPYRIGHT NOTICES:** The existence of a copyright notice on Motorola Software will not be construed as an admission or presumption that public disclosure of Motorola Software or any trade secrets associated with Motorola Software has occurred.

B. **NON-MOTOROLA SOFTWARE:** Motorola may provide non-Motorola software to Licensee under the terms of separate license agreements with the owners of such software. Licensee will abide by the terms of these licenses, subject to the terms of the Master Agreement.

C. **CAUSES OF ACTION:** Licensee must bring any action under this Agreement within the time provided within the applicable state of federal law.

D. **WAIVERS:** No waiver of a right or remedy of a party will constitute a waiver of another right or remedy of that party.

E. **ASSIGNMENTS:** Motorola may assign any of its rights or subcontract any of its obligations under this Agreement, or encumber or sell any of its rights in any Motorola Software, without prior notice to or consent of Licensee, provided however, if Motorola sells the Motorola Software, then Motorola shall ensure that any source code for such software that has been deposited in escrow for the benefit of Licensee is transferred subject to the terms of such escrow.

F. **ENTIRE AGREEMENT AND AMENDMENT:** This Agreement, together with the Master Agreement, contains the parties' entire agreement regarding Licensee's use of Motorola Software and may be amended only in a writing signed by both parties, except that Motorola may modify this Agreement as necessary to comply with applicable laws and regulations including FCC regulations.

G. **GOVERNING LAW:** This Agreement will be governed by the laws of the United States of America to the extent that they apply and otherwise by the laws of the State of California.

In Witness Whereof, the parties have caused duly authorized representatives to execute this Agreement on the dates set forth below.

**City and County of San Francisco**

**Motorola, Inc.**

By: \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_



## FLEXSAFE ESCROW AGREEMENT

Account Number \_\_\_\_\_

12. Exhibit K  
Escrow agreement

This Software Escrow Agreement ("Agreement") is effective as of \_\_\_\_\_, 1997 between Data Securities International, Inc. ("DSI") and Motorola, Inc. ("Depositor"), who collectively may be referred to in this Agreement as "the parties" and who are more fully identified in the Exhibit A.

- A. Depositor and Depositor's client have entered or will enter into a license agreement, development agreement, and/or other agreement regarding certain proprietary technology of Depositor (referred to in this Agreement as "the license agreement").
- B. Depositor desires to avoid disclosure of its proprietary technology except under certain limited circumstances.
- C. Depositor desires to establish an escrow with DSI to provide for the retention, administration and controlled access of the proprietary technology materials of Depositor.
- D. The parties desire this Agreement to be supplementary to the license agreement pursuant to 11 United States Bankruptcy Code, Section 365(n).

### ARTICLE 1 -- DEPOSITS

- 1.1 Obligation to Make Deposit. Upon the signing of this Agreement by the parties, Depositor shall deliver to DSI the proprietary information and other materials ("deposit materials") to be deposited under this Agreement.
- 1.2 Identification of Tangible Media. Prior to the delivery of the deposit materials to DSI, Depositor shall conspicuously label for identification each document, magnetic tape, disk, or other tangible media upon which the deposit materials are written or stored. Additionally, Depositor shall complete Exhibit B to this Agreement by listing each such tangible media by the item label description, the type of media and the quantity. The Exhibit B must be signed by Depositor and delivered to DSI with the deposit materials. Unless and until Depositor makes the initial deposit with DSI, DSI shall have no obligation with respect to this Agreement, except the obligation to notify Depositor regarding the status of the deposit account as required in Section 3.2 below.
- 1.3 Deposit Inspection. When DSI receives the deposit materials and the Exhibit B, DSI will conduct a deposit inspection by visually matching the labeling of the tangible media containing the deposit materials to the item descriptions and quantity listed on the Exhibit B.

1.4 Acceptance of Deposit. At completion of the deposit inspection, if DSI determines that the labeling of the tangible media matches the item descriptions and quantity on Exhibit B, DSI will date and sign the Exhibit B and mail a copy thereof to Depositor. If DSI determines that the labeling does not match the item descriptions or quantity on the Exhibit B, DSI will (a) note the discrepancies in writing on the Exhibit B; (b) date and sign the Exhibit B with the exceptions noted; and (c) provide a copy of the Exhibit B to Depositor. DSI's acceptance of the deposit occurs upon the signing of the Exhibit B by DSI.

1.5 Depositor's Representations. Depositor represents as follows:

- a. Depositor lawfully possesses all of the deposit materials deposited with DSI;
- b. With respect to all of the deposit materials, Depositor has the right and authority to grant to DSI the rights as provided in this Agreement; and
- c. The deposit materials are not subject to any lien or other encumbrance.

1.6 Deposit Updates. Updates to the deposit materials shall be added to the existing deposit. All deposit updates shall be listed on a new Exhibit B and the new Exhibit B shall be signed by Depositor. Each Exhibit B will be held and maintained separately within the escrow account. An independent record will be created which will document the activity for each Exhibit B. The processing of all deposit updates shall be in accordance with Sections 1.2 through 1.5 above. All references in this Agreement to the deposit materials shall include the initial deposit materials and any updates.

1.7 Removal of Deposit Materials. The deposit materials may be removed and/or exchanged only on written instructions signed by Depositor or as otherwise provided in this Agreement.

## ARTICLE 2 – FLEXSAFE BENEFICIARY ENROLLMENTS

2.1 FlexSAFE Enrollments. After DSI's acceptance of the deposit materials, Depositor may enroll one or more beneficiaries to this technology escrow account. Depositor will execute and submit to DSI a FlexSAFE Beneficiary Enrollment document, Exhibit T, listing each beneficiary to be enrolled as a FlexSAFE Beneficiary under the Agreement. Upon DSI's acceptance of Exhibit T, DSI will issue an enrollment letter and a copy of this Agreement to the FlexSAFE Beneficiary.

2.2 Other Third Parties. DSI shall have no obligation to any other third party except a FlexSAFE Beneficiary accepted by DSI. DSI and Depositor shall have the right to modify or cancel the Agreement without the consent of any third party, except a FlexSAFE Beneficiary.

## ARTICLE 3 -- CONFIDENTIALITY AND RECORD KEEPING

3.1 Confidentiality. DSI shall maintain the deposit materials in a secure, environmentally safe, locked facility which is accessible only to authorized representatives of DSI. DSI shall have the obligation to reasonably protect the confidentiality of the deposit materials. Except as provided in this Agreement, DSI shall not disclose the content of this Agreement to any third party and shall not disclose, transfer, make available, or use the deposit materials. If DSI receives a subpoena or other order of a court or other judicial tribunal pertaining to the disclosure or release of the deposit materials, DSI will immediately notify Depositor. It shall be the responsibility of Depositor to challenge any such order; provided, however, that DSI does not waive its rights to present its position with respect to any such order. DSI will not be required to disobey any court or other judicial tribunal order. (See Section 8.5 below for notices of requested orders.)

3.2 Status Reports. DSI will issue to Depositor and FlexSAFE Beneficiary a report profiling the account history at least semi-annually. DSI may provide copies of the account history upon request.

3.3 Audit Rights. During the term of this Agreement, Depositor shall have the right to inspect the written records of DSI pertaining to this Agreement. Any inspection shall be held during normal business hours and following reasonable prior notice.

## ARTICLE 4 -- GRANT OF RIGHTS TO DSI

4.1 Title to Media. Depositor hereby transfers to DSI the title to the media upon which the proprietary information and materials are written or stored. However, this transfer does not include the ownership of the proprietary information and materials contained on the media such as any copyright, trade secret, patent or other intellectual property rights.

4.2 Right to Make Copies. DSI shall have the right to make copies of the deposit materials as reasonably necessary to perform this Agreement. DSI shall copy all copyright, nondisclosure, and other proprietary notices and titles contained on the deposit materials onto any copies made by DSI. With all deposit materials submitted to DSI, Depositor shall provide any and all instructions as may be necessary to duplicate the deposit materials including but not limited to the hardware and/or software needed.

4.3 Right to Transfer Upon Release. Depositor hereby grants to DSI the right to transfer the deposit materials to FlexSAFE Beneficiary upon any release of the deposit materials for use by FlexSAFE Beneficiary in accordance with Section 5.4. Except upon such a release or as otherwise provided in this Agreement, DSI shall not transfer the deposit materials.

## ARTICLE 5 -- RELEASE OF DEPOSIT

5.1 Release of Deposit Upon Depositor's Instruction. Upon receipt by DSI of written instruction directly from Depositor, Depositor's trustee in bankruptcy, or a court of competent jurisdiction, DSI will release a copy of the deposit materials to the FlexSAFE Beneficiary identified in the instruction. However, DSI is entitled to receive any fees due DSI before making the release. This Agreement will terminate upon the release of the deposit materials held by DSI to the FlexSAFE Beneficiary.

5.2 Filing for Release of Deposit by FlexSAFE Beneficiary.

a. Upon notice to DSI by FlexSAFE Beneficiary of the occurrence of a release condition as defined in Section 5.3, DSI shall provide Depositor with a copy of FlexSAFE Beneficiary's notice by certified mail, return receipt requested, or by commercial express mail. If Depositor provides DSI with contrary instructions within sixty (60) days, DSI shall not deliver a copy of the deposit materials to FlexSAFE Beneficiary.

"Contrary Instructions" shall mean a good faith written representation by Depositor that a Release Condition has not occurred or has been cured. Upon receipt of Contrary Instructions, DSI shall send a copy of the Contrary Instructions to FlexSAFE Beneficiary by certified mail, return receipt requested, or by commercial express mail. Additionally, DSI shall notify both Depositor and FlexSAFE Beneficiary that there is a dispute to be resolved pursuant to Section 8.3. Subject to Section 6.3, DSI will continue to store the deposit materials without release pending (a) instructions from Depositor; or (b) order of a court.

b. If no contrary instructions are given to DSI, Depositor agrees that DSI shall deliver a copy of the deposit materials to the FlexSAFE Beneficiary who provides DSI with all of the following:

1. Copy of a current, valid license agreement between Depositor and FlexSAFE Beneficiary;
2. Written demand that a copy of the deposit materials be released and delivered to FlexSAFE Beneficiary;
3. Written notice that the copy of the deposit materials being released to FlexSAFE Beneficiary be used only as permitted under the license agreement;
4. Specific delivery instructions along with any reasonable fees due DSI; and



5. Written notice that the release of the copy of the deposit materials is pursuant to 11 United States Code Section 365(n).

5.3 Release Conditions. As used in this Agreement, "Release Conditions" shall mean the existence of any one or more of the following circumstances, uncorrected for more than thirty (30) days:

- a. Entry of an order for relief under Title 11 of the United States Code;
- b. The making by Depositor of a general assignment for the benefit of creditors;
- c. The appointment of a general receiver or trustee in bankruptcy of Depositor's business or property; or
- d. Action by Depositor under any state insolvency or similar law for the purpose of its bankruptcy, reorganization, or liquidation.
- e. Delivery to DSI of a notice ("Notice") from FlexSAFE Beneficiary stating that one or more of the following circumstances have occurred:
  - (i) Depositor has breached its obligations under the Software License Agreement or Citywide 800 MHz Radio System Project Agreement dated as of \_\_\_\_\_, 1997 between the Depositor and FlexSAFE Beneficiary ("Master Agreement") to maintain the Software or provide released updates thereto.
  - (ii) Depositor has notified the FlexSAFE Beneficiary that Depositor is no longer willing or able to support or maintain the Software or provide released updates thereto.
  - (iii) The sale, assignment or other transfer by Depositor, without the prior consent of FlexSAFE Beneficiary, such of Depositor's rights in the Software as would prevent Depositor or a reliable third party transferee from the timely effective discharge of its obligations with respect to the performance of the Software under the License Agreement or from the effective, timely discharge of its maintenance obligations with respect to the Software under the Master Agreement or any maintenance agreement.
  - (iv) Depositor has made a general announcement to its customers or prospects that it will discontinue supporting or maintaining the Software in whole or in part.

- f. Termination of this Agreement with no replacement escrow agreement having been created and in effect.

5.4 Right to Use Following Release. Unless otherwise provided in the license agreement, upon release of the deposit materials in accordance with this Article 5, FlexSAFE Beneficiary shall have the right to use the deposit materials for the sole purpose of continuing the benefits afforded to FlexSAFE Beneficiary by the license agreement. FlexSAFE Beneficiary shall be obligated to maintain the confidentiality of the released deposit materials, subject to applicable public disclosure laws.

## ARTICLE 6 – TERM AND TERMINATION

6.1 Term of Agreement. The initial term of this Agreement is for a period of one year. Thereafter, this Agreement shall automatically renew from year-to-year unless (a) Depositor instructs DSI in writing that the Agreement is terminated; or (b) the Agreement is terminated by DSI for nonpayment in accordance with Section 6.3. The Depositor and the City shall be given thirty (30) days written notice prior to the termination under this section becoming effective. If the deposit materials are subject to another escrow agreement with DSI, DSI reserves the right, after the initial one year term, to adjust the anniversary date of this Agreement to match the then prevailing anniversary date of such other escrow arrangements. Thirty (30) days prior to any such termination of this Agreement, DSI shall send written notice to the FlexSAFE Beneficiary.

6.2 Term of Enrollment. Upon receipt by DSI of Depositor's executed Exhibit T, the FlexSAFE Beneficiary will be enrolled for an initial term of one (1) year, unless this Agreement terminates earlier, causing the FlexSAFE Beneficiary enrollment to terminate. Subsequent enrollment terms may be adjusted to the anniversary date of this Agreement and shall automatically renew from year-to-year unless (a) Depositor instructs DSI in writing to terminate the FlexSAFE Beneficiary enrollment; or (b) the enrollment is terminated by DSI for nonpayment in accordance with Section 6.3. DSI may not terminate the FlexSAFE Beneficiary's enrollment unless the Depositor provides DSI with written evidence that it has notified the FlexSAFE Beneficiary of such termination.

6.3 Termination for Nonpayment. In the event of the nonpayment of fees owed to DSI, DSI shall provide written notice of delinquency to all parties to this Agreement. Unless Depositor has instructed DSI to terminate FlexSAFE Beneficiary pursuant to subsection 6.2(a), Depositor or FlexSAFE Beneficiary shall have the right to make the payment to DSI to cure the default. If the past due payment is not received in full by DSI within one month of the date of such notice, then DSI shall have the right to terminate this Agreement at any time thereafter by sending written notice of termination to all parties. DSI shall have no obligation to take any action under this Agreement so long as any payment due to DSI remains unpaid.

6.4 Disposition of Deposit Materials Upon Termination. Upon termination of this Agreement by instruction of Depositor, DSI shall destroy, return, or otherwise deliver the deposit materials in accordance with such instructions. Upon termination for nonpayment, DSI may, at its sole discretion, destroy the deposit materials or return them to Depositor. DSI shall have no obligation to return or destroy the deposit materials if the deposit materials are subject to another escrow agreement with DSI.

6.5 Survival of Terms Following Termination. Upon termination of this Agreement, the following provisions of this Agreement shall survive:

- a. Depositor's Representations (Section 1.5);
- b. The obligations of confidentiality with respect to the deposit materials;
- c. The rights granted in the sections entitled Right to Transfer Upon Release (Section 4.3) and Right to Use Following Release (Section 5.4), if a release of the deposit materials has occurred prior to termination;
- d. The obligation to pay DSI any fees and expenses due;
- e. The provisions of Article 8; and
- f. Any provisions in this Agreement which specifically state they survive the termination or expiration of this Agreement.

## ARTICLE 7 – DSI'S FEES

7.1 Fee Schedule. DSI is entitled to be paid its standard fees and expenses applicable to the services provided. DSI shall notify the party responsible for payment of DSI's fees at least 90 days prior to any increase in fees. For any service not listed on DSI's standard fee schedule, DSI will provide a quote prior to rendering the service, if requested. Depositor shall pay all fees.

7.2 Payment Terms. DSI shall not be required to perform any service unless the payment for such service and any outstanding balances owed to DSI are paid in full. All other fees are due upon receipt of invoice. If invoiced fees are not paid after 30 days written notice, DSI may terminate this Agreement in accordance with Section 6.3. Late fees on past due amounts shall accrue at the rate of one and one-half percent per month (18% per annum) from the date of the invoice.

## ARTICLE 8 – LIABILITY AND DISPUTES

8.1 Right to Rely on Instructions. DSI may act in reliance upon any instruction, instrument, or signature reasonably believed by DSI to be genuine. DSI may assume that any employee of Depositor or FlexSAFE Beneficiary who gives any written notice,

request, or instruction has the authority to do so. DSI shall not be responsible for failure to act as a result of causes beyond the reasonable control of DSI.

8.2 Indemnification. DSI shall be responsible to perform its obligations under this Agreement and to act in a reasonable and prudent manner with regard to this escrow arrangement. Provided DSI has acted in the manner stated in the preceding sentence, Depositor agrees to indemnify, defend and hold harmless DSI from any and all claims, actions, damages, arbitration fees and expenses, costs, attorney's fees and other liabilities incurred by DSI relating in any way to this escrow arrangement.

8.3 Dispute Resolution. Any dispute relating to or arising from this Agreement shall be resolved by non-binding arbitration under the Commercial Rules of the American Arbitration Association. Unless otherwise agreed by Depositor and FlexSAFE Beneficiary, arbitration will take place in San Diego, California, U.S.A. and any court having jurisdiction over the matter may enter judgment on the award of the arbitrator(s). Service of a petition to confirm the arbitration award may be made by First Class mail or by commercial express mail, to the attorney for the party or, if unrepresented, to the party at the last known business address.

8.4 Controlling Law. This Agreement is to be governed and construed in accordance with the laws of the State of California, without regard to its conflict of law provisions.

8.5 Notice of Requested Order. If any party intends to obtain an order from the arbitrator or any court of competent jurisdiction which may direct DSI to take, or refrain from taking any action, that party shall:

- a. Give DSI at least one business days' prior notice of the hearing;
- b. Include in any such order that, as a precondition to DSI's obligation, DSI be paid in full for any past due fees and be paid for the reasonable value of the service to be rendered pursuant to such order; and
- c. Ensure that DSI not be required to deliver the original (as opposed to a copy) of the deposit materials if DSI may need to retain the original in its possession to fulfill any of its other duties.

## ARTICLE 9 -- GENERAL PROVISIONS

9.1 Entire Agreement. This Agreement, which includes the Exhibits described herein, embodies the entire understanding between the parties with respect to its subject matter and supersedes all previous communications, representations or understandings, either oral or written. No amendment or modification of this Agreement shall be valid or binding unless signed by both parties hereto, except the Exhibit A need not be signed by either party.

9.2 Notices. All notices, invoices, payments, deposits and other documents and communications shall be given to the parties at the addresses specified in the attached Exhibit A. It shall be the responsibility of the parties to notify each other as provided in this Section in the event of a change of address. The parties shall have the right to rely on the last known address of the other parties. Unless otherwise provided in this Agreement, all documents and communications may be delivered by First Class mail.

9.3 Severability. In the event any provision of this Agreement is found to be invalid, voidable or unenforceable, the parties agree that unless it materially affects the entire intent and purpose of this Agreement, such invalidity, voidability or unenforceability shall affect neither the validity of this Agreement nor the remaining provisions herein, and the provision in question shall be deemed to be replaced with a valid and enforceable provision most closely reflecting the intent and purpose of the original provision.

9.4 Successors. This Agreement shall be binding upon and shall inure to the benefit of the successors and assigns of the parties. However, DSI shall have no obligation in performing this Agreement to recognize any successor or assign of Depositor unless DSI receives clear, authoritative and conclusive written evidence of the change of parties.

Depositor: Motorola, Inc.

Data Securities International, Inc.

By: \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**EXHIBIT A**

**DESIGNATED CONTACT**

Account Number \_\_\_\_\_

Notices, deposit material returns and communications to Depositor should be addressed to:

Invoices to Depositor should be addressed to:

Name: Motorola, Inc.  
Address: 9980 Carroll Canyon Road  
San Diego, CA 92131-1186  
Designated Contact: Dan Delaney  
Telephone: 619 / 530-8459  
Facsimile: 619 / 530-8486

Motorola, Inc.  
9980 Carroll Canyon Road  
San Diego, CA 92131-1186  
Attention: Area Controller  
619 / 530-8388

Requests from Depositor to change the designated contact should be given in writing by the designated contact or an authorized employee.

Contracts, deposit materials and notices to DSI should be addressed to:

Invoice inquiries and fee remittances to DSI should be addressed to:

DSI  
Contract Administration  
Suite 200  
9555 Chesapeake Drive  
San Diego, CA 92123

DSI  
Accounts Receivable  
Suite 1450  
425 California Street  
San Francisco, CA 94104

Telephone: (619) 694-1900  
Facsimile: (619) 694-1919

(415) 398-7900  
(415) 398-7914

Date: \_\_\_\_\_

**EXHIBIT B  
DESCRIPTION OF DEPOSIT MATERIALS**

Depositor Company Name: Motorola, Inc. Account Number: \_\_\_\_\_

**PRODUCT DESCRIPTION:**

Product Name \_\_\_\_\_ Version \_\_\_\_\_

Operating System \_\_\_\_\_

Hardware Platform \_\_\_\_\_

**DEPOSIT COPYING INFORMATION:**

Hardware required: \_\_\_\_\_

Software required: \_\_\_\_\_

**DEPOSIT MATERIAL DESCRIPTION:**

Qty	Media Type & Size	Label Description of Each Separate Item (excluding documentation)
_____	Disk 3.5" or _____	
_____	DAT tape _____ mm	
_____	CD-ROM	
_____	Data cartridge tape _____	
_____	TK 70 or _____ tape	
_____	Magnetic tape _____	
_____	Documentation	
_____	Other _____	

I certify for Depositor that the above described materials have been transmitted to DSI

Signature \_\_\_\_\_

Print Name \_\_\_\_\_

Date \_\_\_\_\_

DSI has inspected and accepted the above materials (any exceptions are noted above):

Signature \_\_\_\_\_

Print Name \_\_\_\_\_

Date Accepted \_\_\_\_\_

Exhibit B# \_\_\_\_\_

Send materials to: DSI, 9555 Chesapeake Dr. #200, San Diego, CA 92123

EXHIBIT T

FLEXSAFE BENEFICIARY ENROLLMENT

Account Number \_\_\_\_\_

Pursuant to the Software Escrow Agreement ("Agreement"), Depositor hereby enrolls the following as a FlexSAFE Beneficiary:

City and County of San Francisco, a municipal corporation

Notices and communications to FlexSAFE Beneficiary should be addressed to:

City and County of San Francisco  
Address: \_\_\_\_\_  
\_\_\_\_\_

Designated Contact: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
Facsimile: \_\_\_\_\_

Depositor: Motorola, Inc.

Data Securities International, Inc.

By: \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_



# EXHIBIT L: PROJECT TRAINING

13. Exhibit L  
Project training

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## EXHIBIT L: PROJECT TRAINING

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### 1. PROJECT TRAINING

Training sessions for mobile, portable, and control station radios shall be conducted in the City of San Francisco at a facility to be provided by Motorola except that Dispatch for Group 1 shall be on site at Group 1, at a City designated Group 1 location, and Group 2 shall be at CECC. Motorola shall conduct all infrastructure technical training and system management training at the appropriate City locations and utilize the CERS equipment for training purposes. Motorola's technical training is based on using provided equipment to support the training activities except for system management training. Motorola shall not be responsible for transportation to and from the training facility and shall not be providing meals. Training sessions shall be scheduled according to the approved contract schedule. Each department's user training shall not be scheduled more than forty-five days prior to cutover to the system. If 45 days does pass between training and City use Motorola shall supply on site remedial training covering each shift once, except if cause of delay is other than Motorola. It is intended that once the training sessions for a department begin, multiple sessions shall be conducted each day until completion of the program. Motorola shall not be responsible for scheduling City personnel to attend training sessions, nor shall Motorola be responsible for assuring attendance. Motorola shall provide an attendance sheet at each session for the purpose of recording the students' attendance. Copies of the attendance sheets shall be provided to the City at the completion of training. Specifics regarding the training classes to be offered are presented later in this document.

#### 1.1 CONTRACTOR INSTRUCTOR QUALIFICATIONS

Instructors for the microwave transmission system and the bi-directional amplifier system shall be provided by the equipment manufacturer from their normal training staff. All other instructors shall be either qualified instructors from Motorola's Worldwide Technical Education group or professional training subcontractors retained by Motorola.

#### 1.2 INTENDED AUDIENCE

All students scheduled to receive mobile and portable radio training from Motorola will be considered user trainees. The students scheduled to receive Console Terminal Equipment (CTE) training from Motorola shall include both user trainees and instructor trainees. In regards to the professional trainers to be retained by the City, Motorola shall present the information to them in a professional manner, but will not evaluate their retention or their ability to deliver this information to others, and will not be responsible for their certification. The student training materials to be provided shall be an adequate guide for ongoing training. Any student attending a technical training class will be a qualified electronics technician, and therefore classes will not cover basic electronic circuit fundamentals.

## EXHIBIT L: PROJECT TRAINING

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### 1.3 TRAINING FACILITIES

Motorola shall provide a training facility for subscriber training located within the limits of the City of San Francisco. The training facility shall meet current building codes of the City, including requirements defined in the American With Disabilities Act of 1994. Motorola shall submit the training location information to the City for approval. At its' option, the City may require Motorola to conduct some field training operations at City facilities.

### 1.4 TRAINING HOURS

Training sessions for all City departments, with the exception of Police, Sheriff, and Public Health, shall be coordinated to match the department's normal daytime work schedule, not to exceed eight hours, and shall exclude legal holidays. Training sessions for the Police, Sheriff, and Public Health departments shall be coordinated to match the shift schedules for each department. The number of after-hours sessions shall be in accordance with the training requirements.

### 1.5 TRAINING MATERIALS AND EQUIPMENT

Motorola shall provide custom-designed operator manuals for portable radio and mobile radio training. The operator manuals shall be designed by extracting pertinent text, illustrations, and diagrams from the standard operator's manual, which describes the appropriate operation, functions and configuration of the unit being furnished to the City. Each manual shall be bound in a heavy bond paper cover. Non-standard features provided by Motorola shall be documented as attachments to the standard manuals. A sample of each manual shall be submitted to the City at least 14 days in advance for review and approval prior to use in training. The quantities of each manual to be supplied shall be in accordance with the total number of students for each type of training. Motorola shall provide an additional 25% of each type of manual to support future training needs. Motorola shall provide a quantity of control station operation manuals equal to the number of control stations provided, plus 25%.

## EXHIBIT L: PROJECT TRAINING

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### 2. TECHNICAL TRAINING

Motorola shall present the following technical training courses:

Course	Duration
SMARTNET Central Controller	3 days
Trunked Simulcast System, including AstroTac Comparator, Premysis Channel Bank, and secure operation	5 days
QUANTAR Repeaters	3 day
CENTRACOM GOLD Elite CRT console including Embassy Switch, CADI interface and Alias Database Manager	5 days
MCS2000 Mobile Radio and Control Station	4 days
XTS 3000 Portables	4 days
Astro Spectra Mobile	4 days
Astro Saber Portable	4 days
MTS2000 Portable Radio	4 days
MOSCAD Fault Management System	4 days
Microwave Transmission System	5 days
Bi-Directional Amplifier System	5 days

The technical training courses shall be presented in accordance with the equipment supplier's standard training outlines. Each student shall be provided with the appropriate training materials in accordance with the equipment supplier's normal training practices. Sample course outlines are provided in Section 7. These outlines are representative of the courses to be presented but are subject to some revision to accommodate equipment or system changes which may occur prior to final design. Two sessions of each technical training and system management course shall be presented with each session accommodating nine students.

### 3. SYSTEM MANAGEMENT TRAINING

Motorola shall present the following System Management Training courses:

Course	Duration
SmartZone System Management	3 days
MOSCAD Fault Management System	3 days

The System Management Training courses shall be presented in accordance with the equipment supplier's standard training outlines. Each student shall be provided with the appropriate

## EXHIBIT L: PROJECT TRAINING

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training materials in accordance with the equipment supplier's normal training practices. Sample course outlines are provided in Section 7. These outlines are representative of the courses to be presented, but are subject to some revision to accommodate equipment or system changes that may occur prior to detailed design.

### 4. USER TRAINING

Motorola shall provide training to City personnel who will in turn train other City personnel. Motorola shall present the following Operator Training courses:

Course	Duration
Mobile Radio(Field)	4 hours
Control Station (Field)	4 hours
Portable Radio (Field)	4 hours
CTE Operation (Instructor)	2 days
CTE Operation (Dispatcher)	8 hours

To simplify scheduling of personnel who need to attend both portable and mobile radio classes and to minimize impact on their work schedules, where feasible, the mobile radio and portable radio user training sessions shall be scheduled in consecutive time periods.

#### 4.1 DISPATCH OPERATIONS

Motorola shall present the following Dispatch Operation Training course:

Course	Duration
CTE Operation	1 day

Upon completion of the course, the student will be able to:

- Identify the CENTRACOM Elite components
- Perform basic dispatch functions
- Work with configurations
- Communicate with radios and perform signaling
- Use the operator console features
- Work with telephone resources
- Work with auxiliary I/O
- Work with multiselect and patch groups
- Perform supervisory functions
- Operate / configure CAD interface functions
- Operate / configure PUC

## EXHIBIT L: PROJECT TRAINING

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### 4.2 FIELD OPERATIONS

Motorola shall provide training to instruct students in the operation of all mobile, portable, and control station radio types. The training shall be structured to give students the opportunity to operate the features of the radios as equipped and configured for delivery to their department. Instructions shall include the information necessary to enable the student to operate the radio in the modes necessary to support communications in the specialized coverage areas. The training shall not cover department operational procedures.

### 5. INSTRUCTOR TRAINING

Instructor training for professional trainers retained by the City shall only be provided for Console Terminal Equipment (CTE) equipment. The instruction shall cover the operation of the CTEs as described in Section 4.1. The primary difference between the CTE user training and the instructor training is the amount of time available for hands-on operation and for question-and-answer interaction with the instructor. Five copies of instructor training material shall be supplied to the City. The training shall cover the operation of the radio console as it is equipped and configured for the department for which the instructor is being trained. Motorola is not providing professional dispatcher training or training relative to City departmental dispatch procedures. This training shall not be included in the radio console training.

### 6. TRAINING CLASSES AND SIZES

Motorola's training sessions are presented in the sections that follow.

#### 6.1 TECHNICIAN TRAINING

Two sessions of each of the technical training classes described shall be provided with each session accommodating nine students.

#### 6.2 SYSTEM MANAGEMENT TRAINING

Motorola shall provide System Management Training for two City project management personnel. Since portions of system management training are subject to the final design review and the procurement of the project specific hardware and software, the schedule for this training shall be as soon as possible after notice to commence. In addition, two sessions of System Management Training shall be delivered at system cutover to City technicians with no more than 9 students per session.

## EXHIBIT L: PROJECT TRAINING

### 6.3 USER TRAINING

Table 1 denotes how many of each type of user training sessions are to be provided for each department. A factor of 30% was used to determine the number of after-hours sessions for the Police, Sheriff and Public Health departments. All console instructor classes shall be delivered Monday through Friday during normal business hours, excluding all legal holidays.

Department	Portable	Mobile	Control Station	Console / User	Console/ Instructor
<b>Police</b>					
Day	10	10	10	5	3
After Hours	5	5	5	8	0
<b>Fire</b>	24	24	24	9	2
<b>Sheriff</b>					
Day	2	2	2	2	1
After Hours	1	1	1	1	0
<b>DPH</b>					
Day	2	2	2	4	2
After Hours	1	1	1	2	0
<b>Water</b>	3	0	0	2	2
<b>Park &amp; Rec</b>	2	2	2	0	0
<b>DES</b>	2	0	0	0	0
<b>DET</b>	2	2	2	2	0
<b>TOTAL</b>	<b>54</b>	<b>49</b>	<b>49</b>	<b>35</b>	<b>10</b>

Table 2, below, lists the total number of students to be trained.



## EXHIBIT L: PROJECT TRAINING

DEPT	Type	Portable			Mobile			Consoles			
		Field Super	Field User	By Contractor	Field Super	Field User	By Contractor	Disp	Super	By Contractor	Prof Trainer
SFPD	Staff	230	2000	230	230	2000	230	145	20	165	11
	Max.	25	250	25	25	250	25	10	3	13	5
SFFD	Staff	350	1138	350	350	1138	350	16	10	26	8
	Max.	15	100	15	15	100	15	8	5	3	4
SD	Staff	125	700+	25	125	700+	25	50	125	10	1
	Max.	25	TBD	25	TBD	TBD	25	TBD	TBD	5	1
DPH	Staff	7	160	10	7	160	10	45	8	45	8
	Max.	7	10	5	7	10	5	10	8	10	4
DPT	Staff	22	280	22	12	81	12	21		21	1
	Max.	TBD	TBD	5	TBD	TBD	4	7		7	1
WD	Staff	7	46	23	0	0	0	5	1	6	0
	Max.	TBD	TBD	10	n/a	n/a	n/a	5	1	3	0
Rec-Park	Staff	18	94	18	10	61	10	n/a	n/a	0	0
	Max.	9	9	9	7	7	5	n/a	n/a	0	0
OES	Staff			10			0			0	0
	Max.			5							0
		Technicians									
DET	Staff	18		18	18		18	18		18	
	Max.	9		9	9		9	9		9	
<b>TOTALS</b>				<b>706</b>			<b>655</b>			<b>291</b>	<b>32</b>

Notes:  
 Staff = Total number of staff. Max. = Maximum number of students from the department that can be away from duties for training.  
 San Francisco Police Department will have the Watch Sergeants train the field users assigned to their detail.  
 The shaded areas indicate actual numbers of students to be trained by the Contractor.  
 SFPD, SFFD, SD, and DPH on 24-hour shifts. The following indicates the % of the students that will need training after normal business hours: SFPD: 30%, SFFD: 0%, SD: 30%, and DPH: 30%. SFPD console user training is 40% day, 30% swing, 30%midnight

## EXHIBIT L: PROJECT TRAINING

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### 7. MOTOROLA COURSE OUTLINES

The course outlines that follow are representative of the courses to be presented, but are subject to revision in accordance with the final system design.

1. **System Management System**
  - a. SmartZone Zone Watch Grid
2. **MOSCAD Fault Management System**
  - a. System Supervisory Training (Typical)
  - b. Maintenance Training Course
3. **Bi-Directional Amplifier System**
  - a. MicroFILL Amplifier
  - b. PrismPlus Amplifier
  - c. MicroLite Amplifier
4. **Microwave Transmission System**
  - a. The Digital Versatility Microwave—DVM18-45
5. **Trunked Radio System**
  - a. Trunked Central Controller and Repeater Control Circuitry
  - b. Trunked Digital Path Simulcast System
  - c. QUANTAR Base Station Repeaters
  - d. MCS 2000 Mobile Radio
  - e. Astro Spectra Mobile
  - f. MTS 2000 Portable Radio
  - g. Astro Saber Portable
  - h. XTS 3000 Portables
6. **Radio Console System**
  - a. CENTRACOM Elite Console System Management System

## **EXHIBIT L: PROJECT TRAINING**

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### **7.1 SYSTEM MANAGEMENT SYSTEM**

#### **7.1.1 Smartzone Zone Watch Grid**

##### **Course Length**

One day

##### **Recommended Prerequisites**

A basic understanding of radio communications and the trunking environment

##### **Course Description**

This course will introduce the students to the Motorola Trunked Radio System principles as monitored by the System Watch II product, and will provide in-depth, hands-on training for System Watch II features and capabilities, when the necessary equipment and software are provided.

The instructor will in all cases communicate to the class any and all safety issues related to the subject equipment.

##### **Course Objective**

This course is designed to train the students in the operation of the System Watch II Trunking Terminal System and to prepare them to operate the system on a daily basis.

##### **Class Size**

Nine students.

## EXHIBIT L: PROJECT TRAINING

---

### 7.2 MOSCAD FAULT MANAGEMENT SYSTEM

#### 7.2.1 System Supervisory Training (Typical) Course Outline

##### **Getting Started**

Loading the application

First display

System title window

Help windows

##### **Log In**

##### **System Operations**

Screen navigation

Maps

Alarm states

Unacknowledged

Acknowledged

Return to normal prior to acknowledge

Alarm history

Alarm summary

Alarm history file archiving

Manual interrogation

Auto interrogation

Change of State (COS) transmissions: RTU origin

##### **System Security**

##### **System Manager**

System health/status information

System diagnostics

Setting MOSCAD time and date

Resetting system diagnostic stats

Auto-interrogation timing

##### **System Overview/Walkthru**

RTU messaging

Central interrogations

Communication media

System I/O

Protocols and data rates

## EXHIBIT L: PROJECT TRAINING

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### MOSCAD Fault Management System

#### 7.2.2 Maintenance Training Course Outline

This training is targeted for the maintenance personnel responsible for maintaining the system. This training would cover end-to-end system infrastructure components. Included would be the use of the MOSCAD ToolBox application for MOSCAD diagnostic information and uploading/downloading MOSCAD applications and configurations. Each participant would be provided with or have access to the System Documentation Manual, the Toolbox application manual, the WonderWare InTouch application manual, and the MOSCAD service manual set. The items typically covered are as follows:

##### Operator Training Review

System Overview/Walkthru

RTU messaging

Central interrogations

Communication media

System I/O

Protocols and data rates

Hardware Components

MOSCAD CPU

MOSCAD site RTU

MOSCAD FIU

Operator work station

Software

MOSCAD toolbox application

Site configuration

Application upload/download

Diagnostics

WonderWare/InTouch application

Installing

General review

Resident software components

MOSCAD RTU applications

MOSCAD database

WonderWare central database

## EXHIBIT L: PROJECT TRAINING

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### 7.3 BI-DIRECTIONAL AMPLIFIER SYSTEM

#### 7.3.1 MicroFILL® Amplifier

##### **Introduction**

About this manual

Contents

Terminology

About the MicroFILL system

System overview

System components

About the amplifier enclosure

Amplifier enclosure components

RF path

Frequency allocation

Equipment characteristics

Amplifier specifications

Compliance with standards

Reliability

##### **Preliminary Decisions**

Electrical service

RF requirements

Mounting surface and location

Space requirements

##### **Installing the Amplifier Enclosure**

Checking the site

Checking the equipment

Mounting the adapter plate assembly

Mounting the amplifier enclosure

Connecting the coaxial cables

Connecting power

Securing the door

##### **Setting Up for Initial Operation**

Powering up the unit

Adjusting the alarm and peak limit detectors

Adjusting gain

##### **Alarm System (Optional)**

Alarm system design

Alarm system components

RF path

## EXHIBIT L: PROJECT TRAINING

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System alarms

Initial startup

**Troubleshooting**

Getting help

Basic troubleshooting tips

Loss of communications (both directions)

Loss of communications (one direction)

Troubleshooting the alarm-equipped amplifier

## EXHIBIT L: PROJECT TRAINING

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### **Bi-Directional Amplifier System**

#### **7.3.2 PrismPlus™ Amplifier**

##### **Introduction**

About this manual

Contents

Important terminology

Model identification

About the PrismPlus

PrismPlus overview

Features

PrismPlus operation

Subassemblies

Power supply

Preamplifier

Power amplifier

Fan and heatsink

Peak limiter board and alarm

##### **Preliminary Decisions**

Introduction

Selecting the site

Antenna placement

Placement of the PrismPlus unit

##### **Installing the Equipment**

Introduction

Unpacking the equipment

Identifying the controls

Installing the equipment

Mounting the donor antenna

Mounting the reradiating antenna

Placing the PrismPlus

Connecting the unit to the antennas

Converting the power supply

##### **Setting Up for Operation**

Introduction

Order of setup procedures

Required equipment

Test preparation of the equipment

Adjusting downlink power output

Uplink adjustment with a signal generator



## EXHIBIT L: PROJECT TRAINING

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### **PrismPlus Options**

Introduction

Alarm system for the PrismPlus

Weather resistant version of the PrismPlus

### **Troubleshooting**

Introduction

Troubleshooting procedures

Troubleshooting steps

**Specifications**

## EXHIBIT L: PROJECT TRAINING

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### **Bi-Directional Amplifier System**

#### **7.3.3 MicroLite Amplifier**

##### **Introduction to the Course**

- Instructor preparation
- Introduction to MicroLite training
- Training program materials
- Before getting started
- Review agenda
- Technical support numbers

##### **Lesson 1: Microcell Overview**

- Instructor preparation
- Lesson objectives
- Lesson introduction
- MicroLite system overview
- Microcell concepts
- MicroLite hardware components
- MicroLite system options
- Summary

##### **Lesson 2: The Fiber Link**

- Instructor preparation
- Lesson objectives
- Lesson introduction
- Fiber optic system
- Fiber optic transmission
- Benefits of optical transmission
- Safe handling of fiber optic cables
- Measuring optical signal loss
- Summary

## EXHIBIT L: PROJECT TRAINING

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### **Lesson 3A: Hardware Identification—Basic MicroLite**

- Instructor preparation
- Lesson objectives
- Lesson introduction
- Lesson organization
- Front panel layout
- General hardware layout
- Functional component layout
- Summary

### **Lesson 3B: Hardware Identification—MicroLite Plus**

- Instructor preparation
- Lesson objectives
- Lesson introduction
- Front panel layout
- General hardware layout
- Functional component layout
- Summary

### **Lesson 3C: Hardware Identification—MicroLite Plus with WDM**

- Instructor preparation
- Lesson objectives
- Lesson introduction
- Front panel layout
- General hardware layout
- Functional component layout
- Summary

### **Lesson 4: MicroLite Installation**

- Instructor preparation
- Lesson objectives
- Lesson introduction
- Physical installation overview
- Overview of the installation process
- Part I: Installation at the donor cell site
- PART II: Installation at the remote antenna site
- Summary

## EXHIBIT L: PROJECT TRAINING

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### **Lesson 5: MicroLite System Setup**

Instructor preparation

Lesson objectives

Lesson introduction

System setup overview

Overview of the system setup process

System setup procedures

Additional system procedures

Summary

### **Lesson 6: Alarm System Operation**

Instructor preparation

Lesson objectives

Lesson introduction

MicroLite alarm system components

Alarm conditions

Remote alarm monitoring setup

Summary

### **Lesson 7: Troubleshooting Concepts**

Instructor preparation

Lesson objectives

Lesson introduction

Troubleshooting overview

Troubleshooting sequence

Summary

### **Conclusion of the Course**

Conclusion of MicroLite training

## EXHIBIT L: PROJECT TRAINING

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### 7.4 MICROWAVE TRANSMISSION SYSTEM

#### 7.4.1 The Digital Versatility Microwave—DVM18-45

##### Day 1

##### Introduction

##### Application

Single terminal

Dual terminal

Regenerator

Repeater

Repeater hybrid

##### Instruction Manual

Installation, alignment, and operation

Maintenance and troubleshooting

General information

Mechanical description

Theory of operation

System control and alarm network

##### Appendices

Factory test records

Farinon wiring list

System assembly drawing

##### Day 2

##### Signal Flow

With multiplexer shelf

With DS-3 interface shelf

##### Day 3

##### Protection

Protection alarm unit

Protection control unit

I/O expanders

Internal communication

External communication

##### Operations

Installation

Operation flow chart

## **EXHIBIT L: PROJECT TRAINING**

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### **Day 4**

**Discussion of Alignment Procedures**

**Alignment Lab**

### **Day 5**

**Discuss Troubleshooting Procedures**

**Troubleshooting Lab**

## **EXHIBIT L: PROJECT TRAINING**

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### **7.5 TRUNKED RADIO SYSTEM**

#### **7.5.1 Trunked Central Controller and Repeater Control Circuitry**

##### **Course Length**

Three days, from 8:00 a.m. to 4:00 p.m. daily

##### **Recommended Prerequisites**

It is especially important that the student have a good understanding of basic logic circuits, digital techniques, and basic microprocessor theory before attending this course.

##### **Course Description**

The course begins with an in-depth discussion of trunking features and signaling concepts. This is followed by Central Controller operation and maintenance theory, and SMARTNET trunking characteristics. Also included will be a section on the System Manager Terminal. All control circuitry located in the trunked repeater and used by the Central Controller will be covered. No repeater RF circuitry will be included.

##### **Class Size**

Nine

## EXHIBIT L: PROJECT TRAINING

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### Trunked Radio System

#### 7.5.2 Trunked Digital Path Simulcast System

Program Length: 40 hours

Delivery Method: Instructor led

##### Target Audience

Experienced electronic technicians who are directly involved with the maintenance of Motorola two-way FM communication system products.

##### Prerequisites

An understanding of the following is recommended: 1) Trunked Central Controller, 2) Trunked CENTRACOM Series II Console, 3) Digital MSF 6000 Repeater, and 4) a Trunked Mobile or Portable course.

##### Overview

This course covers the features, operation, and infrastructure of Motorola's Trunked Digital Path Simulcast two-way radio system, including system control, audio processing, and alignments. System components will be covered to the board level except for those covered in the recommended prerequisite courses, which are noted above.

##### Course Topics

- Trunked analog voting and simulcast concepts
- Simulcast prime and remote site controllers
- Simulcast configurations, functions, and alignment of the
- Transmit audio processing equipment
- Premisys ImaCS 800 and Siemens 9004B channel banks
- MSF 5000 base station
- Digitac comparator
- Simulcast system alignments and optimization

##### Upon completion, the participant will be able to

- Use terminology of a trunked digital path simulcast system to describe its normal operation
- Describe the functions of the components used in a trunked digital path simulcast system
- Describe the control data paths of a trunked digital path simulcast system
- Describe the audio paths of a trunked digital path simulcast system
- Align and optimize a trunked digital path simulcast system



## EXHIBIT L: PROJECT TRAINING

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### Trunked Radio System

#### 7.5.3 QUANTAR/QUANTRO Base Station Repeaters

##### Course Length

This course is two and one-half days, from 8:00 a.m. to 4:00 p.m. daily.

##### Recommended Prerequisites

The student should have an understanding of communication electronics. This should include a good working knowledge of FM theory and usage of common communication test equipment.

##### Course Description

This course is designed to give the service technician the ability to align, troubleshoot, and repair the QUANTAR or QUANTRO base station repeaters. Operation of the QUANTAR/QUANTRO radio service software will also be covered. The instructor will in all cases communicate to the class any and all safety issues to the subject equipment.

##### Course Objectives

At the completion of this course, the student will

Demonstrate a working knowledge of the features and capabilities of the QUANTAR/QUANTRO base station repeaters.

Verify proper operation of a QUANTAR/QUANTRO base station repeater.

Efficiently troubleshoot a QUANTAR/QUANTRO base station repeater to a faulty field replaceable unit.

Use the Radio Service Software to troubleshoot, align, and calibrate the station.

Using the radio service software, configure a QUANTAR or QUANTRO to customer's specifications.

##### Class Size

Nine

## EXHIBIT L: PROJECT TRAINING

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### Trunked Radio System

#### 7.5.4 MCS 2000 Mobile Radio

##### Course Length

This course is four and one-half days, from 8:00 a.m. to 4:00 p.m. daily, ending at approximately 11:30 a.m. on Friday.

##### Recommended Prerequisites

An understanding of communications electronics is recommended. This should include a good working knowledge of FM theory and usage of common communications equipment.

##### Course Description

This course is designed to give the service technician the ability to configure, align, troubleshoot, and repair the MCS 2000 Mobile Radio. Operation, Physical Layout, and Radio Service Software will also be covered. The instructor will in all cases communicate to the class any and all safety issues associated with the subject equipment.

##### Course Objectives

At the completion of this course, the student will

Demonstrate a working knowledge of the features and capabilities of the MCS 2000 Mobile Radio.

Verify proper operation of the MCS 2000 Mobile Radio.

Efficiently troubleshoot the MCS 2000 Mobile Radio to a faulty unit, board, and/or component.

Use Radio Service Software to perform diagnostics and troubleshooting, alignment and calibration, and configure to customer specification.

##### Class Size

Nine

## EXHIBIT L: PROJECT TRAINING

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### 7.5.5 Astro Spectra Mobile

To be included later.

## EXHIBIT L: PROJECT TRAINING

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### Trunked Radio System

#### 7.5.6 MTS 2000 Series Trunked Portable Radio Course Description and Objectives

##### Course Title

MTS 2000 Series Trunked Portable Radio

##### Course Length

This course is three and one-half days long, beginning on Tuesday and ending approximately at noon on Friday.

##### Recommended Prerequisites

An understanding of communications electronics. This should include a good working knowledge of digital logic circuits as well as FM theory and usage of common communications test equipment.

##### Course Description

This course provides the technician with circuit theory of operation, testing procedures, programming, maintenance, and repair of the MTS 2000 Series trunked portable radio. Coupling the circuit theory to active, "hands-on" testing is emphasized and ample bench time is provided. The instructor will in all cases communicate to the class any and all safety issues related to the subject equipment.

##### Course Objective

To derive an understanding of the theory of operation, programming, and maintenance of the MTS 2000 Series trunked portable radio. Refer to the detailed course objectives below.

##### Class Size

Nine

##### Course Objectives

When the student completes this course, they will be able to diagnose and repair the MTS 2000 portable radio.

To accomplish this task, the student will

Be able to identify the MTS 2000 portable radio and determine the models and options associated with the radio.

Learn how to disassemble the radio, conforming to proper procedures.

Have knowledge of how the receiver, transmitter, and controller circuitry operates within the radio.

Perform the necessary checks on the radio to ensure the radio is working within published specifications.

Align the radio, using a computer, the proper service aids, and test equipment.

Diagnose a problem in the radio and demonstrate the correct procedure for troubleshooting down to the component level.

Repair the MTS 2000 portable radio utilizing Motorola-recommended equipment and procedures.

## **EXHIBIT L: PROJECT TRAINING**

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### **7.5.7 Astro Saber Portable**

To be included later.

## EXHIBIT L: PROJECT TRAINING

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### 7.5.8 XTS 3000 Portables

To be included later.

## EXHIBIT L: PROJECT TRAINING

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### 7.6 RADIO CONSOLE SYSTEM

#### Course Title

#### 7.6.1 CENTRACOM Elite Console

#### Course length

Four and one-half days

#### Recommended Prerequisites

An understanding of communication electronics, including a good working knowledge of digital logic circuits, microprocessors, and troubleshooting concepts. Some experience with CENTRACOM systems, Base stations, and LAN and mobile or portable radios would be beneficial.

#### Course Description

This course covers CENTRACOM Gold Installation procedures, "As-Built" documentation, various console types, LAN System Architecture, Central Electronics Bank modules, Maintenance and Diagnostics, and Troubleshooting the CENTRACOM SERIES II system. The instructor will in all cases communicate to the class any and all safety issues related to the subject equipment.

GUI dispatch and GUI admin

Console database manager (CDM)

Alias database manager (ADM)

LAN

CEB power supply

Console operator interface module (COIM)

Upgrading to Gold Series

#### Course Objective

Understand the theory of installation, technical operation, maintenance requirements, and equipment testing procedures of the CENTRACOM Gold Series product line.

#### Class Size

Nine





CITY AND COUNTY OF SAN FRANCISCO  
PURCHASING DEPARTMENT

COPY

FIRST AMENDMENT

THIS AMENDMENT (this "Amendment") is made as of May 18, 1998, in San Francisco, California, by and between MOTOKOLA, INC. ("Contractor"), and the CITY AND COUNTY OF SAN FRANCISCO, a municipal corporation ("City"), acting by and through its Director of Purchasing,

RECITALS

WHEREAS, City and Contractor have entered into the Agreement (as defined below); and

WHEREAS, City and Contractor desire to modify the Agreement on the terms and conditions set forth herein;

NOW, THEREFORE, Contractor and the City agree as follows:

1. Definitions. The following definitions shall apply to this Amendment:

(a) Agreement. The term "Agreement" shall mean the Agreement dated September 22<sup>nd</sup> 1997 between Contractor and City.

(b) Other Terms. Terms used and not defined in this Amendment shall have the meanings assigned to such terms in the Agreement.

2. Modifications to the Agreement. The Agreement is hereby modified as follows:

(a) In Section 1.01 of the Agreement, the definition of "EQUIPMENT" currently reads as follows:

"EQUIPMENT" means the hardware, software, furniture, housing and any other item required to install, operate, support and maintain the Project, which equipment shall be specified in the Statement of Work and Services. Equipment for the Project shall be classified as follows: (i) "Fixed Network Equipment": any equipment permanently installed at a specific site including trunked radio system, microwave transmission system, console control equipment and system manager equipment and terminals; (ii) "Mobile Equipment": any equipment installed in a vehicle for operation; (iii) "Portable Equipment": any equipment carried by personnel for operation; and (iv) "Test and Support Equipment": any equipment, which may be fixed, mobile, portable, or vehicular, required to check, accept, support, administer and maintain the Project.

Such definition is hereby amended in its entirety to read as follows:

"EQUIPMENT" means the hardware, software, furniture, housing and any other item required to install, operate, support and maintain the Project, which equipment shall be specified in the Statement of Work and Services. Equipment for the Project shall be classified as follows: (i) "Fixed Network Equipment": any equipment permanently installed at a specific site including trunked radio system, microwave transmission system, console control equipment and system manager equipment and terminals; (ii) "Mobile Equipment": any equipment installed in a vehicle for operation; (iii) "Portable Equipment": any equipment carried by personnel for operation; (iv) "Mobile Data Equipment": any equipment, whether it be Fixed Network Equipment, Mobile Equipment, or Portable Equipment which is required to support mobile computing devices, or the mobile computing devices themselves, and which equipment is denoted by one of the following Motorola APC codes: 170, 232, 381, 403, 503, 508, 509, 554, 629, 680, 736, or 855; and

JR

(v) "Test and Support Equipment": any equipment, which may be fixed, mobile, portable, or vehicular, required to check, accept, support, administer and maintain the Project

(b) In Section 1.01 of the Agreement, the definition of "GENERAL MANAGER" currently reads as follows:

"GENERAL MANAGER" means the General Manager of the Division of Telecommunications of DTIS, or authorized representative or deputy.

Such definition is hereby amended in its entirety to read as follows:

"GENERAL MANAGER" means the E-911 Project Director of DTIS, or authorized representative or deputy.

(c) Section 4.02 (a) of the Agreement currently reads as follows:

(a) In addition to the Equipment purchased for the Project, the City may, but is not obligated to, purchase any additional Equipment ("Additional Equipment") subject to Section 3.03(e). For any Additional Equipment, City shall pay an additional amount over the Project Price. To the extent the Equipment to be purchased constitutes User Equipment, the amount payable by the City shall be based upon the Additional Equipment Price Schedule, attached hereto as Exhibit G, subject to the following discounts: Fixed Equipment—twenty-seven percent (27%), Mobile Equipment—twenty-seven percent (27%), Portable Equipment—twenty-seven percent (27%), Equipment parts—fifteen percent (15%), Batteries—discount given to the State of California under the Master Contract, dated February 1, 1997 (Contract No. 01CAC00408). To the extent the Equipment to be purchased constitutes Fixed Network Equipment, the amount payable by the City shall be based upon the price assigned to the particular piece of Equipment in the Project Cost Itemization Schedule. The prices set forth in the Additional Equipment Price Schedule and the Project Cost Itemization Schedule include all shipping, freight and handling cost to delivery the Equipment to the City. Any taxes, imposition or fee imposed by any governmental entity on the Additional Equipment shall be payable by the City upon delivery and installation of the Equipment and passage of the applicable portion of the Acceptance Test Plan. All purchases of Additional Equipment shall be subject to prior approval of the Purchaser and the Controller. If the Equipment is ordered prior to Final Acceptance of the Project, City shall pay for the Equipment in accordance with the Payment Schedule set forth in Section 4.05 hereof. If Equipment is ordered after Final Acceptance of the Project, City shall pay for the Equipment as follows: one hundred percent (100%) after delivery and installation of the Equipment and passage of the Acceptance Test Plan agreed upon by the parties for such piece of Additional Equipment. Should any Equipment on the price list become unavailable or obsolete, the City shall have the right to purchase any new item of Equipment that is functionally similar to the unavailable or obsolete Equipment. The price of the new item of Equipment shall equal the lesser of (i) the published list price of the Equipment less any applicable governmental discount (exclusive of federal discounts) and (ii) the price of the unavailable or obsolete Equipment. The Contractor acknowledges that this Master Agreement does not obligate the City to purchase any of the Additional Equipment from the Contractor. The City may elect to purchase such Equipment from any third party. Furthermore, the City reserves the right to purchase the Additional Equipment, but have a third party install such Equipment.

Such Section is hereby amended in its entirety to read as follows:

(a) In addition to the Equipment purchased for the Project, the City may, but is not obligated to, purchase any additional Equipment ("Additional Equipment") subject to

Section 3.03(e). For any Additional Equipment, City shall pay an additional amount over the Project Price. To the extent the Equipment to be purchased constitutes User Equipment, the amount payable by the City shall be based upon the Additional Equipment Price Schedule, attached hereto as Exhibit G. Equipment not listed in Exhibit G shall be reduced by the following discounts taken from Motorola's Domestic Net User Price: Fixed Equipment—twenty-seven percent (27%), Mobile Equipment—twenty-seven percent (27%), Portable Equipment—twenty-seven percent (27%), Equipment parts—fifteen percent (15%), Batteries—discount given to the State of California under the Master Contract, dated February 1, 1997 (Contract No. 01CAC00408), and Mobile Data Equipment—eleven percent (11%). To the extent the Equipment to be purchased constitutes Fixed Network Equipment, the amount payable by the City shall be based upon the price assigned to the particular piece of Equipment in the Project Cost Itemization Schedule. The prices set forth in the Additional Equipment Price Schedule and the Project Cost Itemization Schedule include all shipping, freight and handling cost to deliver the Equipment to the City. Any taxes, imposition or fee imposed by any governmental entity on the Additional Equipment shall be payable by the City upon delivery and installation of the Equipment and passage of the applicable portion of the Acceptance Test Plan. All purchases of Additional Equipment shall be subject to prior approval of the Purchaser and the Controller. If the Equipment is ordered prior to Final Acceptance of the Project, City shall pay for the Equipment in accordance with the Payment Schedule set forth in Section 4.05 hereof. If Equipment is ordered after Final Acceptance of the Project, City shall pay for the Equipment as follows: one hundred percent (100%) after delivery and installation of the Equipment and passage of the Acceptance Test Plan agreed upon by the parties for such piece of Additional Equipment. Should any Equipment on the price list become unavailable or obsolete, the City shall have the right to purchase any new item of Equipment that is functionally similar to the unavailable or obsolete Equipment. The price of the new item of Equipment shall equal the lesser of (i) the published list price of the Equipment less any applicable governmental discount (exclusive of federal discounts) and (ii) the price of the unavailable or obsolete Equipment. The Contractor acknowledges that this Master Agreement does not obligate the City to purchase any of the Additional Equipment from the Contractor. The City may elect to purchase such Equipment from any third party. Furthermore, the City reserves the right to purchase the Additional Equipment, but have a third party install such Equipment.

(d) Section 4.06 (a) of the Agreement currently reads as follows:

Submitting Invoices. At every Payment Milestone, Contractor shall have the right to submit an invoice to DTIS for the amount due and owing at such milestone. Invoiced amounts shall be based upon the Project Cost Itemization Schedule subject to any change orders or any unwaived liquidated damages payable by Contractor. All invoices shall provide a detailed list of the cost. All invoices must be in a form acceptable to the General Manager. All amounts paid shall be subject to audit by the City pursuant to Section 4.12 hereof. All invoices shall be mailed or delivered to:

General Manager of the Division of Telecommunications  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, California 94124

Such Section is hereby amended in its entirety to read as follows:

Submitting Invoices. At every Payment Milestone, Contractor shall have the right to submit an invoice to DTIS for the amount due and owing at such milestone. Invoiced amounts shall be based upon the Project Cost Itemization Schedule subject to any change orders or any unwaived liquidated damages payable by Contractor. All invoices shall provide a detailed list of the cost. All invoices must be in a form acceptable

to the E-911 Project Director. All amounts paid shall be subject to audit by the City pursuant to Section 4.12 hereof. With the exception of invoices for Additional Equipment Purchases, all invoices shall be mailed or delivered to:

Mike Martin  
E-911 Project Director  
1166 Post St., Suite 200  
San Francisco, California 94109

With copies to:

Project Manager of the 800MHz Project  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, California 94124

Deputy Director, Network Facilities  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, California 94124

Invoices for Additional Equipment Purchases shall be mailed or delivered to:

Deputy Director, Network Facilities  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, California 94124

With copies to:

Mike Martin  
E-911 Project Director  
1166 Post St., Suite 200  
San Francisco, California 94109

Project Manager of the 800MHz Project  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, California 94124

(e) Section 6.04(a) Section 6.04(a) of the Agreement currently reads as follows:

Project Managers. Contractor and City shall each designate a Project Manager, who shall be available on a 24-hour basis every day of the week. The City and Contractor shall maintain the Project Manager until the one-year anniversary of the Final Acceptance of the Project. The initial Project Managers shall be:

CONTRACTOR: GEORGE NEWBY  
PAGER NO. 1 (800) SKYPAGE, NO. 33991

CITY: MITCHELL SUTTON  
PAGER NO. (415) 804-1115

Such Section is hereby amended in its entirety to read as follows:

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Project Managers. Contractor and City shall each designate a Project Manager, who shall be available on a 24-hour basis every day of the week. The City and Contractor shall maintain the Project Manager until the one-year anniversary of the Final Acceptance of the Project. The initial Project Managers shall be:

CONTRACTOR: BRENT WOOLLEY  
PAGER NO. 1 (800) 759-8255 Pin# 2072774

CITY: MITCHELL SUTTON  
PAGER NO. (415) 804-1115

(f) Section 6.09 (c). Section 6.09 (c) of the Agreement currently reads as follows:

(c) Title; Risk of Loss. All User Equipment shall be shipped by Contractor F.O.B., to the designated delivery site in San Francisco, California, in accordance with the applicable shipping instructions. If a delay has occurred beyond the designated delivery date, Contractor shall provide reasonable notice to the City as to the new delivery date. Title to the User Equipment and risk of loss shall pass to the City upon the certification of the City's Project Manager that all the Equipment has been delivered. In connection with any Fixed Network Equipment, title shall pass upon certification of City's Project Manager that such Equipment has been installed; however, risk of loss for such Equipment and related material shall not pass to the City until Final Acceptance of the Project. Notwithstanding the foregoing, no title shall pass with respect to any Software being licensed to the City.

Such Section is hereby amended in its entirety to read as follows:

(c) Title; Risk of Loss. All User Equipment shall be shipped by Contractor F.O.B., to the designated delivery site in San Francisco, California, in accordance with the applicable shipping instructions. If a delay has occurred beyond the designated delivery date, Contractor shall provide reasonable notice to the City as to the new delivery date. Title to the User Equipment and risk of loss shall pass to the City upon the certification of the City's Project Manager that all the Equipment has been delivered. In connection with any Fixed Network Equipment, title shall pass upon certification of City's Project Manager that such Equipment has been delivered to the designated facility in San Francisco; however, risk of loss for such Equipment and related material shall not pass to the City until Final Acceptance of the Project. Notwithstanding the foregoing, no title shall pass with respect to any Software being licensed to the City.

(g) Section 18.02. Section 18.02 of the Agreement currently reads as follows:

Section 18.02. Required Minority Business Enterprise (MBE), Women Business Enterprise (WBE), and Local Business Enterprise (LBE).

(a) Chapter 12D of the San Francisco Administrative Code, as amended from time to time, establishes the City's policy of encouraging and increasing the use and participation of Minority Business Enterprises (MBE), Women Business Enterprises (WBE), and Local Business Enterprises (LBE). Contractor is willing, agrees and hereby commits that it will subcontract portions of the Project under this Master Agreement, not related to Equipment cost, to qualified and certified MBE/WBE/LBE, from a list recommended by the San Francisco City and County Human Rights Commission (HRC). Contractor acknowledges and agrees that it is fully responsible for all firms that it selects from the list furnished by HRC to provide work and services on any Project. The failure of any of the selected firms to perform the contracted work shall not excuse Contractor from any of its obligations under this Master Agreement. Pursuant to Chapter 12D of the Administrative Code, the MBE/WBE subcontracting goals for this Project are 28% for MBEs and 5% for WBEs. Such goals may be reduced by HRC. These goals apply to the subcontracted portion of the overall Project.

Such Section is hereby amended in its entirety to read as follows:

Section 18.02. Required Minority Business Enterprise (MBE), Women Business Enterprise (WBE), and Local Business Enterprise (LBE).

(a) Chapter 12D of the San Francisco Administrative Code, as amended from time to time, establishes the City's policy of encouraging and increasing the use and participation of Minority Business Enterprises (MBE), Women Business Enterprises (WBE), and Local Business Enterprises (LBE). Contractor is willing, agrees and hereby commits that it will subcontract portions of the Project under this Master Agreement, not related to Equipment cost, to qualified and certified MBE/WBE/LBE, from a list recommended by the San Francisco City and County Human Rights Commission (HRC). Contractor acknowledges and agrees that it is fully responsible for all firms that it selects from the list furnished by HRC to provide work and services on any Project. The failure of any of the selected firms to perform the contracted work shall not excuse Contractor from any of its obligations under this Master Agreement. Pursuant to Chapter 12D of the Administrative Code, the MBE/WBE subcontracting goals for this Project are twenty-five percent (25%) of the total contract amount for this project exclusive of (i) all project hardware, which includes the trunked radio system equipment, the microwave transmission system equipment, and the radio console system equipment; (ii) overall project management and system design services. Such goals may be reduced by HRC.

(h) Section 18.06. Section 18.06 of the Agreement currently reads as follows:

Section 18.06. Notices. All notices to be given by the parties hereto shall be in writing and served by depositing the same in the United States Post Office, postage prepaid and registered at the following addresses:

CITY OR DTIS:

General Manager  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, CA 94124

with copies to:

Project Manager for the 800 MHz Project  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, CA 94124

City Administrator  
401 Van Ness Avenue, Room 402  
San Francisco, CA 94102

City Attorney's Office  
1390 Market Street, 6th Floor  
San Francisco, CA 94102-5408  
Attn: Victor L. Castillo

CONTRACTOR:

Motorola, Inc.  
1700 South Amphlett Boulevard, Suite 300  
San Mateo, CA 94402  
Attn: Project Manager for the San Francisco 800 MHz Project  
with copies to:

Motorola, Inc.  
9980 Carroll Canyon Road  
San Diego, CA 92131-1186

VMP

Attn: Contract and Compliance

Such Section is hereby amended in its entirety to read as follows:

Section 18.06. Notices. All notices to be given by the parties hereto shall be in writing and served by depositing the same in the United States Post Office, postage prepaid and registered at the following addresses:

CITY OR DTIS:

Mike Martin  
E-911 Project Director  
1166 Post St. Suite 200  
San Francisco, CA 94109

with copies to:

Project Manager for the 800 MHz Project  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, CA 94124

Deputy Director, Network Facilities  
Department of Telecommunications and Information Services  
901 Rankin Street  
San Francisco, CA 94124

City Attorney's Office  
1390 Market Street, 5th Floor  
San Francisco, CA 94102-5408  
Attn: Robert S. Maerz

CONTRACTOR:

Motorola, Inc.  
1700 South Amphlett Boulevard, Suite 300  
San Mateo, CA 94402  
Attn: Project Manager for the San Francisco 800 MHz Project

with copies to:

Motorola, Inc.  
9980 Carroll Canyon Road  
San Diego, CA 92131-1186  
Attn: Contract and Compliance

(i) Exhibit G. Exhibit G, Additional Equipment Price Schedule Dated 7/29/97 is replaced in its entirety with Exhibit G, Additional Equipment Price Schedule Dated 5/14/98 which is attached to this Amendment and hereby incorporated by reference.

3. Effective Date. Each of the modifications set forth in Section 2 shall be effective on and after May 18, 1998.

4. Legal Effect. Except as expressly modified by this Amendment, all of the terms and conditions of the Agreement shall remain unchanged and in full force and effect.

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IN WITNESS WHEREOF, Contractor and City have executed this Amendment as of the date first referenced above.

CITY

Recommended by:

*Mike Marton*

Signature for Department

*Mike Marton*

Printed Name

*911 Director*

Title and Department

Approved as to Form:

Louise H. Renne  
City Attorney

By

*Robert S. Maerz*

ROBERT S. MAERZ  
Deputy City Attorney

Approved:

*Edwin M. Lee*

Edwin M. Lee  
Director of Purchasing

Approved:

*Steven D. Nelson*

Steven D. Nelson  
Director of Administrative Services

CONTRACTOR

MOTOROLA, INC.

By

*Richard F. Ryan*

Title *VICE PRESIDENT*

*Richard F. Ryan* APPROVED AS TO FORM *5/21/98*  
RICHARD F. RYAN DATE  
MOTOROLA

*RD*



EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

Item #	Model	Item Description	Qty	Per Unit	Total	Man Hours	Rate	Total	Rev: 5/94		Subcontract	Total	Total	Cents
									Unit	Cost				
City and County of San Francisco Citywide 800MHz Radio Systems Project (CERS) Additional Equipment Price Schedule														
Exhibit G: User Equipment Price Schedule														
1	*****PORTABLES***** Model 1 w/o Kpd		1											
2	MTS2000	MTS2000 PORTABLE SERIES												
3	R101X	MTS2000 III 3W 808-970 MHZ												
4	202H	ALT: BATTERY FACTORY MUTUAL												
5	H223	ENH: TRUNKED REMOTE MONITOR												
6	H43	ADD: SMARTNET SYSTEM PACKAGE												
7	H37	CASE, 3.0" HI ACTIVITY ULTRA HI CAP												
8	NTN8038													
9	*****ASTRO XT83000**	Model 1 w/o Kpd	1											
10	H09UC9PW5 N	ASTRO DIG XT8 3000 BASIC 800MHZ PORT												
11	H223	ALT: BATTERY ULTRA HIGH CAP N1CD FM												
12	H43	ENH: TRUNKED REMOTE MONITOR												
13	Q241	ENH: ANALOG OPERATION												
14	H37	ADD: SMARTNET SYSTEM PACKAGE												
15	NTN8038	CASE, CARRY HIGH ACTIVITY												
16	*****ASTRO SABER*****	Model 1 w/o Kpd	1											
17	H890X	ASTRO DIG SABER PORT SERIES												
18	Z104	ASTRO DIGITAL SABER I 800MHZ PORT												
19	H223	ALT: BATTERY, RUGGEDIZED FM												
20	H43	ENH: TRUNKED REMOTE MONITOR												
21	H409	ENH: TRUNKED ONE BUTTON STATUSMSG												
22	Q241	ALT: RUGGEDIZED ASTRO DIGITAL SABER												
23	H37	ENH: ANALOG OPERATION												
24	H37	ADD: SMARTNET SYSTEM PACKAGE												
25	NTN7673	CARRY CASE, LEATHER SWIVEL SNAP												
26	NLN4630	BELT LOOP, SWIVEL 3 INCH												
27	*****ASTRO XT83000**	Model 1 w/o Kpd w/extra	1											
28	H09UC9PW5 N	ASTRO DIG XT8 3000												
29	H223	ALT: BATTERY ULTRA HIGH CAP N1CD FM												
30	H43	ENH: TRUNKED REMOTE MONITOR												
31	Q1003	ADD: APCO 25 COMMON AIR INTERFACE												
32	H30	ADD: DES-OFB												
33	H37	ADD: SMARTNET SYSTEM PACKAGE												
34	NTN8038	CASE, CARRY HIGH ACTIVITY												
35	*****MTS2000*****	Model 1 w/o Kpd	1											
36	R101X	MTS2000 PORTABLE SERIES												
37	204H	MTS2000 III 3W 808-970 MHZ												
38	H223	ALT: BATTERY FACTORY MUTUAL												
39	H43	ENH: TRUNKED REMOTE MONITOR												
40	H40	ENH: ONE TOUCH BUTTON												
41	H37	ADD: SMARTNET SYSTEM PACKAGE												
42	NTN8038	CASE, 3.0" HI ACTIVITY ULTRA HI CAP												

800 MHz Radio Project  
Revision 2, 5/14/00

G-1 of 7

Exhibit G: Additional Equipment  
Price Schedule

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EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

Item #	Model	Item Description	Qty	Man Hours	Per Unit	Total	Rate	Labr Hrs	Rev: 573	Total	Material Unit Cost	Total	Subcontracts Unit Cost	Total	Total	Total
43	****ASTRO XT53000**	Model I w/ Kp	1													
44	J08U49PW7 N	ASTRO DIG XT5 3000 FULL FEATURE 800														
45	H223	ALT: BATTERY ULTRA HIGH CAP NICD FM														
46	H43	ENH: TRUNKED REMOTE MONITOR														
47	H46	ENH: TRUNKED 1 BTN STATUSMESSAGE														
48	Q241	ENH: ANALOG OPERATION														
49	H37	ADD: SMARTNET SYSTEM PACKAGE														
50	NTN631	CASE, CARRY HIGH ACTIVITY														
51	****ASTRO SABER****	Model II w/ Kp	1													
52	H90DX	ASTRO DIG SABER PORT SERIES														
53	H22H	ASTRO DIGITAL SABER II 800MHZ PORT														
54	H223AJ	ALT: BATTERY, RUGGEDIZED FM														
55	H43	ENH: TRUNKED REMOTE MONITOR														
56	H46	ENH: TRUNKED ONE BUTTON STATUSMSG														
57	H489	ALT: RUGGEDIZED ASTRO DIGITAL SABER														
58	Q241	ENH: ANALOG OPERATION														
59	H37	ADD: SMARTNET SYSTEM PACKAGE														
60	NLM4530	BELT LOOP, SWIVEL 3 INCH														
61	NTN7573	CARRY CASE, LEATHER SWIVEL SNAP														
62	****ASTRO XT53000**	Model III w/ Kp & Encryp Rugged	1													
63	J08U49PW7 N	ASTRO DIG XT5 3000 FULL FEATURE 800														
64	H223	ALT: BATTERY ULTRA HIGH CAP NICD FM														
65	H43	ENH: TRUNKED REMOTE MONITOR														
66	H46	ENH: TRUNKED 1 BTN STATUSMESSAGE														
67	Q274	ADD: DES-OFB AND DES-XL ENCRYPTION														
68	Q608	ADD: APCO 25 COMMON AIR INTERFACE														
69	H37	ADD: SMARTNET SYSTEM PACKAGE														
70	NTN631	CASE, CARRY HIGH ACTIVITY														
71	****ASTRO SABER****	Model II w/ Kp & Encryp Rugged	1													
72	H90DX	ASTRO DIG SABER PORT SERIES														
73	H22H	ASTRO DIGITAL SABER II 800MHZ PORT														
74	H223AJ	ALT: BATTERY, RUGGEDIZED FM														
75	H43	ENH: TRUNKED REMOTE MONITOR														
76	H46	ENH: TRUNKED ONE BUTTON STATUSMSG														
77	H489	ALT: RUGGEDIZED ASTRO DIGITAL SABER														
78	H40	ADD: DES OFB														
79	Q608	ADD: APCO 25 COMMON AIR INTERFACE														
80	H37	ADD: SMARTNET SYSTEM PACKAGE														
81	NLM4530	BELT LOOP, SWIVEL 3 INCH														
82	NTN7573	CARRY CASE, LEATHER SWIVEL SNAP														
83	****MOBILE****	****DASH MOUNT****														
84	****MCS2000****	Model III, w/ Kp	1													
85	M0110X	MCS2000 HIGH SPEC MOBILE														
86	Q22W	550MHZ 15W MODEL II														
87	B880	ADD: PUSH SWITCH, EMERGENCY														
88	G465	ADD: ANTENNA 1/4 WAVE 800-900MHZ														
89	H43	ENH: TRUNKED REMOTE MONITOR														
90	H40	ENH: ONE TOUCH BUTTON														
91	H37	ADD: SMARTNET SYSTEM PACKAGE														

MP

EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

Item #	Model	Item Description	Qty	Man Hours	Per Unit	Total	Rate	Labr	Total	Material	Total	Subcontract	Total	Cost	Total	Cost
City and County of San Francisco																
Climate Resilient Radio System Project (CRS)																
Additional Equipment Price Schedule																
92	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$2,457.18		\$2,457.18		\$0.00	\$2,457.18
93	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$1,525.70	\$3,982.88	\$130.00	\$5,638.58		\$1,525.70	\$7,164.28
94	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$397.85	\$397.85		\$397.85		\$0.00	\$397.85
95	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$401.50	\$401.50		\$401.50		\$0.00	\$401.50
96	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$10.95	\$10.95		\$10.95		\$0.00	\$10.95
97	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$0.00		\$0.00		\$0.00	\$0.00
98	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$481.80	\$481.80		\$481.80		\$0.00	\$481.80
99	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$3,405.45	\$130.00	\$3,535.45		\$0.00	\$3,535.45
100	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$1,525.70	\$3,982.88		\$5,508.58		\$1,525.70	\$7,034.28
101	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$397.85	\$397.85		\$397.85		\$0.00	\$397.85
102	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$401.50	\$401.50		\$401.50		\$0.00	\$401.50
103	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$10.95	\$10.95		\$10.95		\$0.00	\$10.95
104	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$0.00		\$0.00		\$0.00	\$0.00
105	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$346.77	\$346.77		\$346.77		\$0.00	\$346.77
106	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$401.80	\$401.80		\$401.80		\$0.00	\$401.80
107	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$2,073.89	\$130.00	\$2,203.89		\$0.00	\$2,203.89
108	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$1,525.70	\$3,982.88		\$5,508.58		\$1,525.70	\$7,034.28
109	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$397.85	\$397.85		\$397.85		\$0.00	\$397.85
110	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$401.50	\$401.50		\$401.50		\$0.00	\$401.50
111	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$10.95	\$10.95		\$10.95		\$0.00	\$10.95
112	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$0.00		\$0.00		\$0.00	\$0.00
113	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$216.81	\$216.81		\$216.81		\$0.00	\$216.81
114	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$481.80	\$481.80		\$481.80		\$0.00	\$481.80
115	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$2,073.89	\$130.00	\$2,203.89		\$0.00	\$2,203.89
116	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$1,525.70	\$3,982.88		\$5,508.58		\$1,525.70	\$7,034.28
117	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$397.85	\$397.85		\$397.85		\$0.00	\$397.85
118	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$401.50	\$401.50		\$401.50		\$0.00	\$401.50
119	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$10.95	\$10.95		\$10.95		\$0.00	\$10.95
120	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$0.00		\$0.00		\$0.00	\$0.00
121	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$546.77	\$546.77		\$546.77		\$0.00	\$546.77
122	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$216.81	\$216.81		\$216.81		\$0.00	\$216.81
123	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$481.80	\$481.80		\$481.80		\$0.00	\$481.80
124	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$0.00		\$0.00		\$0.00	\$0.00
125	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$0.00		\$0.00		\$0.00	\$0.00
126	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$3,815.84	\$130.00	\$3,945.84		\$0.00	\$3,945.84
127	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$2,328.70	\$5,843.15		\$8,171.85		\$2,328.70	\$10,500.55
128	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$0.00		\$0.00		\$0.00	\$0.00
129	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$73.00	\$73.00		\$73.00		\$0.00	\$73.00
130	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$60.00	\$60.00		\$60.00		\$0.00	\$60.00
131	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$2.12	\$2.12		\$2.12		\$0.00	\$2.12
132	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$32.85	\$32.85		\$32.85		\$0.00	\$32.85
133	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$27.38	\$27.38		\$27.38		\$0.00	\$27.38
134	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$48.54	\$48.54		\$48.54		\$0.00	\$48.54
135	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$0.00		\$0.00		\$0.00	\$0.00
136	Model A7, w/Mod	Model A7, w/Mod	1	0	0	0	\$0.00		\$0.00	\$0.00	\$0.00		\$0.00		\$0.00	\$0.00

EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

Item #	Model	Item Description	Qty	Man Hours	Per Unit	Total	Rate	Labr Hrs	Rev 298	Material Unit	Cost	Total	Subcontract Unit	Cost	Total	Cost
137	***SPECTRA***	Remote Control, w/Key	1		0				\$0.00		\$0.00	\$5,682.44			\$5,682.44	
138	L99DX	ASTRO SPECTRA	1		0				\$0.00		\$2,328.70	\$7,011.14			\$7,011.14	\$14,693.58
139	254L	3391.5-35W 800 MHZ	1		0				\$0.00		\$1,084.05	\$8,095.19			\$8,095.19	\$15,779.77
140	G24L	ADD: ANALOG ONLY MODE	1		0				\$0.00		\$0.00	\$8,095.19			\$8,095.19	\$16,874.96
141	L114	ADD: CLOCK VU METER	1		0				\$0.00		\$73.00	\$8,168.19			\$8,168.19	\$17,047.96
142	G50	ENH: SMARTNET OPERATION	1		0				\$0.00		\$481.80	\$8,649.99			\$8,649.99	\$17,529.76
143	TRK7468	MOUNTING BRACKET EIA 19"	1		0				\$0.00		\$73.00	\$8,722.99			\$8,722.99	\$17,602.76
144	TD76441	ANTENNA, 6DB 3 ELEMENT YAGI	1		0				\$0.00		\$80.30	\$8,803.29			\$8,803.29	\$17,683.06
145	L1705	1/2" LDF HELIX, POLY JKT, PER FOOT	50		0				\$0.00		\$2.12	\$9,015.41			\$9,015.41	\$17,704.46
146	TD10014	1/2" CONNECTOR, N PLUG LDF PLTD	4		0				\$0.00		\$32.85	\$9,048.26			\$9,048.26	\$17,736.72
147	TD19209	CABLE WRAP, WEATHERPROOFING	1		0				\$0.00		\$27.38	\$9,075.64			\$9,075.64	\$17,764.10
148	RLH4204A	LIGHTNING ARRESTOR /SURGE	1		0				\$0.00		\$46.54	\$9,122.18			\$9,122.18	\$17,810.64
149	L1751	DESKSET, REMOTE, ASTRO DGT19000	1		0				\$0.00		\$872.35	\$9,994.53			\$9,994.53	\$17,898.17
150	L1752	ADAPTER, REMOTE, ASTRO DGT19000	1		0				\$0.00		\$580.35	\$10,574.88			\$10,574.88	\$18,478.52
151	***ASTRO SPECTRA***	Local Control, w/Key & Enctyl	1		0				\$0.00		\$0.00	\$4,864.11			\$4,864.11	\$13,342.63
152	L99DX	ASTRO SPECTRA	1		0				\$0.00		\$2,328.70	\$7,192.81			\$7,192.81	\$15,535.44
153	259L	W7 25W 800MHZ	1		0				\$0.00		\$843.15	\$8,035.96			\$8,035.96	\$13,571.40
154	G24L	ADD: ANALOG ONLY MODE	1		0				\$0.00		\$0.00	\$8,035.96			\$8,035.96	\$14,407.36
155	L114	ADD: CLOCK VU METER	1		0				\$0.00		\$73.00	\$8,108.96			\$8,108.96	\$15,243.32
156	G50	ENH: SMARTNET OPERATION	1		0				\$0.00		\$481.80	\$8,590.76			\$8,590.76	\$16,075.08
157	G105	ADD: DES OFB	1		0				\$0.00		\$548.77	\$9,139.53			\$9,139.53	\$16,623.85
158	G909	ENH: ASTRO DIGITAL CAL OPERATION	1		0				\$0.00		\$401.50	\$9,541.03			\$9,541.03	\$17,064.88
159	TD76441	ANTENNA, 6DB 3 ELEMENT YAGI	1		0				\$0.00		\$80.30	\$9,621.33			\$9,621.33	\$17,145.18
160	L1705	1/2" LDF HELIX, POLY JKT, PER FOOT	50		0				\$0.00		\$2.12	\$9,833.50			\$9,833.50	\$17,166.68
161	TD10014	1/2" CONNECTOR, N PLUG LDF PLTD	4		0				\$0.00		\$32.85	\$9,866.35			\$9,866.35	\$17,199.03
162	TD19209	CABLE WRAP, WEATHERPROOFING	1		0				\$0.00		\$27.38	\$9,893.73			\$9,893.73	\$17,226.41
163	RLH4204A	LIGHTNING ARRESTOR /SURGE	1		0				\$0.00		\$46.54	\$9,940.27			\$9,940.27	\$17,272.95
164	***ASTRO SPECTRA***	Remote Control, w/Key & Enctyl	1		0				\$0.00		\$0.00	\$4,930.71			\$4,930.71	\$12,203.66
165	L99DX	ASTRO SPECTRA	1		0				\$0.00		\$2,328.70	\$7,259.41			\$7,259.41	\$14,463.07
166	254L	3391.5-35W 800 MHZ	1		0				\$0.00		\$1,084.05	\$8,343.46			\$8,343.46	\$15,606.53
167	L114	ADD: CLOCK VU METER	1		0				\$0.00		\$73.00	\$8,416.46			\$8,416.46	\$16,023.99
168	G185	ADD: DES OFB	1		0				\$0.00		\$546.77	\$8,963.26			\$8,963.26	\$16,570.76
169	G909	ENH: ASTRO DIGITAL CAL OPERATION	1		0				\$0.00		\$401.50	\$9,364.76			\$9,364.76	\$17,012.26
170	G50	ENH: SMARTNET OPERATION	1		0				\$0.00		\$481.80	\$9,846.56			\$9,846.56	\$17,493.82
171	TRK7468	MOUNTING BRACKET EIA 19"	1		0				\$0.00		\$73.00	\$9,919.56			\$9,919.56	\$17,566.82
172	TD76441	ANTENNA, 6DB 3 ELEMENT YAGI	1		0				\$0.00		\$80.30	\$10,000.86			\$10,000.86	\$17,647.12
173	L1705	1/2" LDF HELIX, POLY JKT, PER FOOT	50		0				\$0.00		\$2.12	\$10,033.01			\$10,033.01	\$17,668.13
174	TD10014	1/2" CONNECTOR, N PLUG LDF PLTD	4		0				\$0.00		\$32.85	\$10,065.86			\$10,065.86	\$17,690.99
175	TD19209	CABLE WRAP, WEATHERPROOFING	1		0				\$0.00		\$27.38	\$10,093.24			\$10,093.24	\$17,713.23
176	RLH4204A	LIGHTNING ARRESTOR /SURGE	1		0				\$0.00		\$46.54	\$10,139.78			\$10,139.78	\$17,759.77
177	L1751	DESKSET, REMOTE, ASTRO DGT19000	1		0				\$0.00		\$872.35	\$11,012.13			\$11,012.13	\$18,331.90
178	L1752	ADAPTER, REMOTE, ASTRO DGT19000	1		0				\$0.00		\$580.35	\$11,592.48			\$11,592.48	\$18,912.38

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EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

Item #	Model	Item Description	Qty	Per Unit	Man Hours	Labor Hrs	Rate	Total	Reti 30%	Material Unit	Cost	Subcontract Unit	Cost	Total	Total	Cost
179		City and County of San Francisco Citywide 800MHz Radio System Project (CERS) Additional Equipment Price Schedule														
180	*****ACCESSORIES*****															
181	*****PORTABLE*****															
182	NTN1171	BATTERY, FMIS, ULTRA-HIGH CAP	1								\$110.96			\$110.96	\$110.96	
183	NTN1171	CHARGER, 110V SINGLE COMPACT	1								\$65.70			\$65.70	\$65.70	
184	NTN1177	CHARGER, 110V MULTI RAPID	1								\$492.75			\$492.75	\$492.75	
185	NINM0101	AUDIO ACC. REMOTE SPEAKER/MIC	1								\$87.16			\$87.16	\$87.16	
186	NTN7310	CARRY ACC. BELT CLIP 3"	1								\$10.95			\$10.95	\$10.95	
187	NTN8030	CASE, 3.0" HI ACTIVITY ULTRA HI CAP	1								\$43.80			\$43.80	\$43.80	
188	NAF5037	ANT, 1/2 WAVELENGTH WHIP	1								\$24.09			\$24.09	\$24.09	
189	*****PORTABLE*****															
190	NTN0205	BATTERY, NICAD ULTRA HI CAP FM	1								\$137.97			\$137.97	\$137.97	
191	NTN1160	CHARGER, 110V SINGLE ENH	1								\$91.25			\$91.25	\$91.25	
192	NTN1177	CHARGER, 110V MULTI RAPID	1								\$492.75			\$492.75	\$492.75	
193	NINM0101	AUDIO ACC. REMOTE SPEAKER/MIC	1								\$87.16			\$87.16	\$87.16	
194	RTH0268	ATTACHMENT, REMOVABLE BELT CLIP	1								\$7.30			\$7.30	\$7.30	
195	NTN0301	CASE, CARRY HIGH ACTIVITY	1								\$43.80			\$43.80	\$43.80	
196	NTN0306	CASE, CARRY HIGH ACTIVITY	1								\$43.80			\$43.80	\$43.80	
197	NAF5037	ANT, 1/2 WAVELENGTH WHIP	1								\$24.09			\$24.09	\$24.09	
198	*****PORTABLE*****															
199	NTN7050	BATTERY, ULTRA HI CAP RUGGEDIZED	1								\$113.15			\$113.15	\$113.15	
200	NTN4734	CHARGER, DESKTOP SINGLE UNIT 117V	1								\$164.98			\$164.98	\$164.98	
201	NTN4706	CHARGER, DESKTOP MULTI UNIT 117V	1								\$575.24			\$575.24	\$575.24	
202	NINM0217	MICROPHONE, REMOTE SPEAKER	1								\$102.93			\$102.93	\$102.93	
203	NTN7909	BELT CLIP ATTACHMENT, REMOVABLE	1								\$16.79			\$16.79	\$16.79	
204	NTN7673	CARRY CASE, LEATHER SWIVEL SNAP	1								\$45.99			\$45.99	\$45.99	
205	NAF5037	ANT, 1/2 WAVELENGTH WHIP	1								\$24.09			\$24.09	\$24.09	
206	*****WIRELESS DATA NETWORK SUBSCRIBER UNITS*****															
207	MY520	120 MHz Pentium, 8 MB RAM, 2 Type II PCMCIA, 8.4" diagonal display	1								\$4,935.05			\$4,935.05	\$4,935.05	
208	F5001	MY620 600 MHz 3 Watt	1								\$222.50			\$222.50	\$222.50	
209	V500	RD-LAP Protocol 10.2 kbps	1								\$222.50			\$222.50	\$222.50	
210	V501	MDC4800 Protocol	1								\$707.55			\$707.55	\$707.55	
211	V140	38 Power Amplifier	1								\$351.55			\$351.55	\$351.55	
212	V449	32 MB RAM	1								\$351.55			\$351.55	\$351.55	
213	V635	1.4 Gigabyte Hard Drive	1								\$173.55			\$173.55	\$173.55	
214	V502	Window 95	1								\$311.50			\$311.50	\$311.50	
215	V503	TX for MY620	1								\$687.50			\$687.50	\$687.50	
216	Z850	RWQ4055 WaveSet Link	1								\$35.60			\$35.60	\$35.60	
217	RLM4508	Antenna	1								\$267.00			\$267.00	\$267.00	
218	HLV8015	Mounting for Keyboard and Terminal CPU Mount	1								\$53.85			\$53.85	\$53.85	
219	FORTE	75 MHz 486 DX4, 8 MB RAM, 8 MB Flash ROM, 2 Type II PCMCIA, 7.4" diagonal display	1								\$4,628.00			\$4,628.00	\$4,628.00	
220	F2167	Fedex 600 MHz 3 Watt	1								\$222.50			\$222.50	\$222.50	
221	V500	RD-LAP Protocol 19.2 kbps	1								\$222.50			\$222.50	\$222.50	
222	V681	MDC 4800 Protocol	1								\$400.50			\$400.50	\$400.50	
223	V410	16 MB RAM	1								\$173.55			\$173.55	\$173.55	
224	V482	Window 3.1	1								\$311.50			\$311.50	\$311.50	
225	V503	TX	1								\$311.50			\$311.50	\$311.50	

800 MHz Radio Project  
Rimdon 2, 6/14/98

Exhibit G: Additional Equipment  
Price Schedule

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EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

Item #	Model	Item Description	Qty	Man Hour	Per Unit	Total	Rev: 598	Material Unit	Cost	Total	Subcontract Unit	Cost	Total	
City and County of San Francisco														
Citywide 800MHz Radio System Project (CERS)														
Additional Equipment Price Schedule														
227	V466	AC wall Charger	1						\$ 153.75	\$ 153.75			\$ 153.75	
228	ZD49	RWQ4055 WaveSoft Link	1						\$ 667.50	\$ 667.50			\$ 667.50	
229	R0A4008	Antenna	1						\$ 35.60	\$ 35.60			\$ 35.60	
230	FRN1524	Vehicle Docking Station	1						\$ 707.55	\$ 707.55			\$ 707.55	
231	FLN0603	Keyboard for docking station, incl. mtg hdw	1						\$ 400.50	\$ 400.50			\$ 400.50	
232	FLN2424	800 MHz 35 watt power amp	1						\$ 707.55	\$ 707.55			\$ 707.55	
233	FLN5131	Belt Holster Carrying Case	1						\$ 84.55	\$ 84.55			\$ 84.55	
234	FLN5120	Over the Shoulder carrying case	1						\$ 102.35	\$ 102.35			\$ 102.35	
235	PRN000	Basic modem, 800, 821, 19.2 and 9.6	1						\$ 1,290.50	\$ 1,290.50			\$ 1,290.50	
236	F2274	MDC4800	1						\$ 222.50	\$ 222.50			\$ 222.50	
237	V681	AC Wall Adapter	1						\$ 10.00	\$ 10.00			\$ 10.00	
238	V468	Spare Standard Battery	1						\$ 31.35	\$ 31.35			\$ 31.35	
239	V320	Spare High Capacity Battery and cover	1						\$ 71.20	\$ 71.20			\$ 71.20	
240	V43	Cigarette Lighter Adapter	1						\$ 44.50	\$ 44.50			\$ 44.50	
241	V468	Cable, 3' RJ-45 to DB9 F	1						\$ 35.60	\$ 35.60			\$ 35.60	
242	V443	Leatherlin Carrying Case	1						\$ 59.63	\$ 59.63			\$ 59.63	
243	V465	Swivel Belt Loop Nylon Carrying Case	1						\$ 61.41	\$ 61.41			\$ 61.41	
244	V177	Ext. Adapter Cable	1						\$ 33.82	\$ 33.82			\$ 33.82	
245	PKR4389	Antenna Connector	1						\$ 2.67	\$ 2.67			\$ 2.67	
246	2080378E84	Roof Mount Antenna	1						\$ 12.46	\$ 12.46			\$ 12.46	
247	HA4002	Standard Battery Charger	1						\$ 48.08	\$ 48.08			\$ 48.08	
248	HTN0028	Battery Charger & Conditioner (for both types)	1						\$ 113.92	\$ 113.92			\$ 113.92	
249	FUR2323	8 Battery Gang Charger (for both types)	1						\$ 85.23	\$ 85.23			\$ 85.23	
250	HTN9285		1						\$ 2,371.65	\$ 2,371.65			\$ 2,371.65	
251	VRM000	Basic modem, UHF, 800, 821, 900, 19.2 and 9.6	1						\$ 222.50	\$ 222.50			\$ 222.50	
252	F2400 series	RD-LAP Protocol 19.2 kbps	1						\$ 222.50	\$ 222.50			\$ 222.50	
253	J029	MDC4800	1						\$ 66.75	\$ 66.75			\$ 66.75	
254	JR42	Cable	1						\$ 35.60	\$ 35.60			\$ 35.60	
255	J66A	Antenna	1						\$ 59.68	\$ 59.68			\$ 59.68	
256	RPLA4008	Radio Mount	1						\$ 87.01	\$ 87.01			\$ 87.01	
257	RLFA075	Vehicle Mount	1						\$ 6.23	\$ 6.23			\$ 6.23	
258	RLN4070	Flat Bracket	1						\$ 1,248.00	\$ 1,248.00			\$ 1,248.00	
259	RLM4070		1						\$ 222.50	\$ 222.50			\$ 222.50	
260	VRM060	Basic modem, 800, 821, 19.2 and 9.6	1						\$ 222.50	\$ 222.50			\$ 222.50	
261	F2160 series	RD-LAP Protocol 19.2 kbps	1						\$ 66.75	\$ 66.75			\$ 66.75	
262	V500	MDC4800	1						\$ 35.60	\$ 35.60			\$ 35.60	
263	V601	Cable	1						\$ 35.60	\$ 35.60			\$ 35.60	
264	J500	Antenna	1						\$ 46.39	\$ 46.39			\$ 46.39	
265	RRV917	Nourning Kit	1						\$ 5,390.00	\$ 5,390.00			\$ 5,390.00	
266	SLN4103	166 MHz Penium, 32 MB RAM, 12.1" display, 2 GB hard drive,	1						\$ 667.50	\$ 667.50			\$ 667.50	
267	Pennonite	Windows 95	1						\$ 4,182.11	\$ 4,182.11			\$ 4,182.11	
268	DSCF25LJFBEM	Color Laptop	1						\$ 667.50	\$ 667.50			\$ 667.50	
269	Z850	RWQ4055 WaveSoft Link	1						\$ 35,390.00	\$ 35,390.00			\$ 35,390.00	
270	Pennonite	166 MHz Penium, 16 MB RAM, 10.4" display, 1.35 GB Hard Drive,	1						\$ 4,182.11	\$ 4,182.11			\$ 4,182.11	
271	DSCF25LJGCEAM	Color Laptop	1						\$ 667.50	\$ 667.50			\$ 667.50	
272	Z850	RWQ4055 WaveSoft Link	1						\$ 4,182.11	\$ 4,182.11			\$ 4,182.11	
273	Pennonite	166 MHz Penium, 16 MB RAM, 10.4" display, 1.35 GB Hard Drive,	1						\$ 667.50	\$ 667.50			\$ 667.50	
274	DSCF25LJGCEAM	Color Laptop	1						\$ 4,182.11	\$ 4,182.11			\$ 4,182.11	
275	Z850	RWQ4055 WaveSoft Link	1						\$ 667.50	\$ 667.50			\$ 667.50	

800 MHz Radio Project  
Revision 2, 01/09B

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Exhibit G: Additional Equipment  
Price Schedule

EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

City and County of San Francisco Citywide 800MHz Radio System Project (CERS) Additional Equipment Price Schedule											
Item #	Model	Item Description	Qty	Man Hours	Total	Rate	Item: 59A		Subcontract Unit	Total	Cost
							Per Unit	Cost			
275	Software		1								\$1,495.00
276	RWC4018	Accident	1								\$750.00
277	RWC4019	Challenge	1								\$1,495.00
278	RWC4020	Incident	1								\$750.00
279	RWC4021	Arrest & Booking	1								\$750.00
280	RWC4022	Tow Silt	1								\$750.00
281	RWC4023	Field Interview	1								\$2,995.00
282	RWC4024 \$2995	Package including all above software modules	1								\$1,995.00
		Package including Incident and Accident Modules only									\$1,995.00
Note: Additional equipment not found on this list is contained in the "R01 domestic price book," "RD-PP-7/87 radius price book," and "R01R Domestic Parts Pricing Book and Database" dated July 30, 1997, attached herein and made a part of this contract by reference.											

Exhibit G: Additional Equipment Price Schedule





CITY AND COUNTY OF SAN FRANCISCO  
PURCHASING DEPARTMENT

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SECOND AMENDMENT

THIS AMENDMENT (this "Amendment") is made as of September 24, 1998 in San Francisco, California, by and between MOTOROLA, INC. ("Contractor"), and the CITY AND COUNTY OF SAN FRANCISCO, a municipal corporation ("City"), acting by and through its Director of Purchasing,

RECITALS

WHEREAS, City and Contractor have entered into the Agreement (as defined below); and

WHEREAS, City and Contractor desire to modify the Agreement on the terms and conditions set forth herein;

NOW, THEREFORE, Contractor and the City agree as follows:

1. Definitions. The following definitions shall apply to this Amendment:

(a) Agreement. The term "Agreement" shall mean the Agreement dated September 22<sup>nd</sup> 1997 between Contractor and City as modified by the First Amendment dated May 18, 1998.

(b) Other Terms. Terms used and not defined in this Amendment shall have the meanings assigned to such terms in the Agreement.

2. Modifications to the Agreement. The Agreement is hereby modified as follows:

(b) Section 4.01 (a) (iii). Section 4.01 (a) (iii) of the Agreement currently reads as follows:

(iii) WDN Phase. If the City elects to purchase the WDN Phase, the Project Price shall be augmented by an amount agreed upon by the parties not to exceed One Million Sixty-Three Thousand Five Hundred Twenty-Eight Dollars (\$1,063,528). In determining the amount to be paid, the parties shall use the prices set forth in the Project Cost Itemization Schedule, Labor Rate Schedule and the Additional Equipment Price Schedule.

Such Section is hereby amended in its entirety to read as follows:

(iii) WDN Phase. If the City elects to purchase the WDN Phase, the Project Price shall be augmented by an amount agreed upon by the parties not to exceed One Million Two Hundred Sixty-Three Thousand Five Hundred Twenty-Eight Dollars (\$1,263,528). In determining the amount to be paid, the parties shall use the prices set forth in the Project Cost Itemization Schedule, Labor Rate Schedule and the Additional Equipment Price Schedule.

- (a) Section 6.09 (c). Section 6.09 (c) of the Agreement currently reads as follows:

(c) Title; Risk of Loss. All User Equipment shall be shipped by Contractor F.O.B., to the designated delivery site in San Francisco, California, in accordance with the applicable shipping instructions. If a delay has occurred beyond the designated delivery date, Contractor shall provide reasonable notice to the City as to the new delivery date. Title to the User Equipment and risk of loss shall pass to the City upon the certification of the City's Project Manager that all the Equipment has been delivered. In connection with any Fixed Network Equipment, title shall pass upon certification of City's Project Manager that such Equipment has been delivered to the designated facility in San Francisco; however, risk of loss for such Equipment and related material shall not pass to the City until Final Acceptance of the Project. Notwithstanding the foregoing, no title shall pass with respect to any Software being licensed to the City.

Such Section is hereby amended in its entirety to read as follows:

(c) Title; Risk of Loss. All User Equipment shall be shipped by Contractor F.O.B., to the designated delivery site in San Francisco, California, in accordance with the applicable shipping instructions. If a delay has occurred beyond the designated delivery date, Contractor shall provide reasonable notice to the City as to the new delivery date. Title to the User Equipment shall pass upon certification of City's Project Manager that such Equipment has been delivered to the designated facility in San Francisco. However, Contractor shall be responsible for any loss of such Equipment and related material until such time as the User Department makes beneficial use of the Equipment or related material. In connection with any Fixed Network Equipment, title shall pass upon certification of City's Project Manager that such Equipment has been delivered to the designated facility in San Francisco. However, Contractor shall remain responsible for any loss of such Equipment and related material until Final Acceptance of the Project. Notwithstanding the foregoing, no title shall pass with respect to any Software being licensed to the City.

3. Effective Date. Each of the modifications set forth in Section 2 shall be effective on and after September 24, 1998.

4. Legal Effect. Except as expressly modified by this Amendment, all of the terms and conditions of the Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, Contractor and City have executed this Amendment as of the date first referenced above.

CITY

Recommended by:

[Signature]  
Signature for Department

Mike Marton  
Printed Name

Director EED  
Title and Department

Approved as to Form:

Louise H. Renne  
City Attorney

By [Signature]  
ROBERT S. MAERZ  
Deputy City Attorney

Approved:

[Signature]  
Edwin M. Lee  
Director of Purchasing

Approved:

[Signature]  
Steven D. Nelson  
Director of Administrative Services

CONTRACTOR

MOTOROLA, INC.

By [Signature]  
Title Vice President

[Signature] APPROVED AS TO FORM 7/25/98  
DATE  
THOMAS R. RYAN  
MOTOROLA



CITY AND COUNTY OF SAN FRANCISCO  
PURCHASING DEPARTMENT

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THIRD AMENDMENT

THIS AMENDMENT (this "Amendment") is made as of August 11, 1999 in San Francisco, California, by and between MOTOROLA, INC. ("Contractor"), and the CITY AND COUNTY OF SAN FRANCISCO, a municipal corporation ("City"), acting by and through its Director of Purchasing.

RECITALS

WHEREAS, City and Contractor have entered into the Agreement (as defined below); and

WHEREAS, City and Contractor desire to modify the Agreement on the terms and conditions set forth herein;

NOW, THEREFORE, Contractor and the City agree as follows:

1. Definitions. The following definitions shall apply to this Amendment:

(a) Agreement. The term "Agreement" shall mean the Agreement dated September 22<sup>nd</sup> 1997 between Contractor and City as modified by the First Amendment dated May 18, 1998 and the Second Amendment dated September 24, 1998.

(b) Other Terms. Terms used and not defined in this Amendment shall have the meanings assigned to such terms in the Agreement.

2. Modifications to the Agreement. The Agreement is hereby modified as follows:

(a) Section 6.03 (a) Section 6.03 (a) of the Agreement currently reads as follows:

(a) From time to time, the City shall have the right to submit a Change Order to Contractor. Within ten (10) Days of receiving a proposed Change Order, Contractor shall submit to DTIS a written cost estimate, which shall include any adjustments to the Project Price, the Master Project Schedule, Acceptance Test Plan or other obligations of the Contractor, as applicable. Should an adjustment to the Project Price be necessary, Contractor shall base such adjustment on the prices and costs contained in the Project Cost Itemization Schedule, the Additional Equipment Price Schedule and Labor Rate Schedule. Contractor shall not proceed with any work contemplated in any Change Order until it receives written notification to commence such work from the General Manager. All Change Orders resulting in an increase in the Project Price must be pre-approved, in writing, by the Controller and the Purchaser. Contractor shall commence the Work contemplated by the Change Order in accordance with the Master Project Schedule upon receiving written notice from DTIS. Contractor must proceed with the work contemplated by the Change Order even if the Parties disagree on the effect that such Change Order will have on Project Price, Master Project Schedule or the Acceptance Test Plan, provided the City has delivered to Contractor a written statement of its good faith estimate of the fair value of the cost of Change Order and its effect on the Master Project Schedule and Acceptance Test Plan. In such instance, the City agrees, upon completion of the work, to pay the Contractor the amount of the good faith estimate and Contractor's sole remedy as to the additional amounts is to file a claim against the City or submit the matter to arbitration pursuant to the terms of the Master Agreement. Any changes to the Statement of Work and Services necessary to ensure that the Project will meet the Performance Specification and pass all aspect of the Acceptance Test Plan will not be subject to this Change Order procedure. Such changes shall be made pursuant to Section 7.04 hereof.

Such Section is hereby amended in its entirety to read as follows:

(a) From time to time, the City shall have the right to submit a Change Order to Contractor. Within ten (10) Days of receiving a proposed Change Order, Contractor shall submit to DTIS a written cost estimate, which shall include any adjustments to the Project Price, the Master Project Schedule, Acceptance Test Plan or other obligations of the Contractor, as applicable. Should an adjustment to the Project Price be necessary, Contractor shall base such adjustment on the prices and costs contained in the Project Cost Itemization Schedule, the Additional Equipment Price Schedule and Labor Rate Schedule. Contractor shall not proceed with any work contemplated in any Change Order until it receives written notification to commence such work from the E-911 Project Director. The E-911 Project Director may approve issuance of Change Orders which do not cumulatively increase the Project Price by more than \$2 million dollars in any fiscal year. Any Change Orders which result in a cumulative increase in the Project Price of more than \$2 million dollars in any fiscal year, must be pre-approved, in writing, by the Controller and the Purchaser. Contractor shall commence the Work contemplated by the Change Order in accordance with the Master Project Schedule upon receiving written notice from DTIS. Contractor must proceed with the work contemplated by the Change Order even if the Parties disagree on the effect that such Change Order will have on Project Price, Master Project Schedule or the Acceptance Test Plan, provided the City has delivered to Contractor a written statement of its good faith estimate of the fair value of the cost of Change Order and its effect on the Master Project Schedule and Acceptance Test Plan. In such instance, the City agrees, upon completion of the work, to pay the Contractor the amount of the good faith estimate and Contractor's sole remedy as to the additional amounts is to file a claim against the City or submit the matter to arbitration pursuant to the terms of the Master Agreement. Any changes to the Statement of Work and Services necessary to ensure that the Project will meet the Performance Specification and pass all aspect of the Acceptance Test Plan will not be subject to this Change Order procedure. Such changes shall be made pursuant to Section 7.04 hereof.

(b) Section 15.02 (a). Section 15.02 (a) of the Agreement currently reads as follows:

*See mon 4*

(a) General. Contractor warrants that all Equipment and materials in the Project shall be free from defects in material, design, workmanship, and be of the kind and quality that performs in the manner described in the Statement of Work and Services, the published Equipment specifications, and any or all applicable Standards and Recommendations specified in the Statement of Work and Services. The foregoing warranty shall be effective for one (1) year commencing on the date of Final Project Acceptance. This one-year warranty shall not effect or limit any standard manufacturer's warranty for any item of Equipment in the Project.

Such Section is hereby amended in its entirety to read as follows:

(a) General. Contractor warrants that all Equipment and materials in the Project shall be free from defects in material, design, workmanship, and be of the kind and quality that performs in the manner described in the Statement of Work and Services, the published Equipment specifications, and any or all applicable Standards and Recommendations specified in the Statement of Work and Services. Exclusive of Wireless Data Network Fixed Network Equipment, the foregoing warranty shall be effective for one (1) year commencing on the date of Final Project Acceptance. For Wireless Data Network Fixed Network Equipment only, the foregoing warranty shall be effective for one (1) year commencing on the date of Wireless Data Network Final Acceptance as defined in the Wireless Data Network Statement of Work and Services and the approved Wireless Data Network Acceptance Test Procedures. This one-year warranty shall not effect or limit any standard manufacturer's warranty for any item of Equipment in the Project.

(c) Exhibit A. Exhibit A Performance Specifications Revision 3 is hereby replaced in its entirety with Exhibit A Performance Specifications (Sections 1-5) Revision 4 and Performance Specifications (Section 6) Revision 5 which is attached to this Amendment and is hereby incorporated by reference.

(d) Exhibit B. Exhibit B Statement of Work and Services Revision 1 is hereby replaced in its entirety with Exhibit B Statement of Work and Services Revision 2.1 and Exhibit B1 Statement of Work and Services for the Wireless Data Network Revision 1 which is attached to this Amendment and is hereby incorporated by reference.

3. Effective Date. Each of the modifications set forth in Section 2 shall be effective on and after August 11, 1999.

4. Legal Effect. Except as expressly modified by this Amendment, all of the terms and conditions of the Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, Contractor and City have executed this Amendment as of the date first referenced above.

CITY

CONTRACTOR

Recommended by:

MOTOROLA, INC.

*Mike Martin*  
Signature for Department

By *Mark A. Mason*

*Mike Martin*  
Printed Name

Title *V.P., SYSTEMS INTEGRATION*

*Director*  
Title and Department

*[Signature]* APPROVED AS TO FORM *8/25/99*  
RICHARD F. RYAN DATE  
MOTOROLA

Approved as to Form:

Louise H. Renne  
City Attorney

By *Robert S. Maerz*  
ROBERT S. MAERZ  
Deputy City Attorney

Approved:

*[Signature]*  
Edwin M. Lee  
Director of Purchasing

Approved:

*[Signature]*  
Steven D. Nelson  
Director of Administrative Services



**CITY AND COUNTY OF SAN FRANCISCO**  
**PURCHASING DEPARTMENT**

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**FOURTH AMENDMENT**

THIS AMENDMENT (this "Amendment") is made as of May 19, 2000 in San Francisco, California, by and between MOTOROLA, INC. ("Contractor"), and the CITY AND COUNTY OF SAN FRANCISCO, a municipal corporation ("City"), acting by and through its Director of Purchasing.

R E C I T A L S

WHEREAS, City and Contractor have entered into the Agreement (as defined below); and

WHEREAS, City and Contractor desire to modify the Agreement on the terms and conditions set forth herein;

NOW, THEREFORE, Contractor and the City agree as follows :

1. **Definitions.** The following definitions shall apply to this Amendment:

(a) **Agreement.** The term "Agreement" shall mean the Agreement dated September 22<sup>nd</sup> 1997 between Contractor and City as modified by the First Amendment dated May 18, 1998, the Second Amendment dated September 24, 1998, and the Third Amendment dated August 11, 1999.

(b) **Other Terms.** Terms used and not defined in this Amendment shall have the meanings assigned to such terms in the Agreement.

2. **Modifications to the Agreement.** The Agreement is hereby modified as follows:

(a) **Section 5.01.** Section 5.01 of the Agreement currently reads as follows:

**Master Project Schedule.** The Master Project Schedule for the Project is attached hereto as Exhibit E. The Contractor prepared the Master Project Schedule and represents and warrants to the City that it will meet all the dates specified in the Master Project Schedule and achieve Final Acceptance of the Project within nine hundred seventy-three (973) calendar days from the delivery of the initial Request to Commence by the City's Project Manager. The Contractor acknowledges and understands that the Master Project Schedule contains certain time-sensitive milestones ("Critical Milestones") that must be attained by certain dates; otherwise, the City will suffer financial harm. These Critical Milestones are as follows:

(1) Contractor shall complete Task No. 14.8 (TRS, MTS, SMC and RF Coverage ATP) within six hundred forty (640) calendar days from the initial Request to Commence by the City's Project Manager.

(2) Contractor shall complete Task No. 16.2.4 (CCE2 System Acceptance) within six hundred ninety-three (693) calendar days from the initial Request to Commence by the City's Project Manager.

(3) Contractor shall complete Task No. 17.2.1 (CCE1 Cut-over complete) within seven hundred forty-five (745) calendar days from the initial Request to Commence by the City's Project Manager.

(4) Contractor shall complete Task No. 19.2.1 (CCE2 Cut-over complete) within eight hundred seventy-nine (879) calendar days from the initial Request to Commence by the City's Project Manager.

(5) Contractor shall complete Task No. 25 (Final System Acceptance) within nine hundred seventy-three (973) calendar days from the initial Request to Commence by the City's Project Manager.

Such Section is hereby amended in its entirety to read as follows:

**Master Project Schedule.** The Master Project Schedule for the Project is attached hereto as Exhibit E. The Contractor prepared the Master Project Schedule and represents and warrants to the City that it will meet all the dates specified in the Master Project Schedule and achieve Final Acceptance of the Project within one thousand one hundred fifty-seven (1157) calendar days from the delivery of the initial Request to Commence by the City's Project Manager. The Contractor acknowledges and understands that the Master Project Schedule contains certain time-sensitive milestones ("Critical Milestones") that must be attained by certain dates; otherwise, the City will suffer financial harm. These Critical Milestones are as follows:

(1) Contractor shall complete Task No. 14.8 (TRS, MTS, SMC and RF Coverage ATP) within six hundred forty (640) calendar days from the initial Request to Commence by the City's Project Manager.

(2) Contractor shall complete Task No. 16.2.4 (CCE2 System Acceptance) within six hundred ninety-three (693) calendar days from the initial Request to Commence by the City's Project Manager.

(3) Contractor shall complete Task No. 17.2.1 (CCE1 Cut-over complete) within seven hundred forty-five (745) calendar days from the initial Request to Commence by the City's Project Manager.

(4) Contractor shall complete Task No. 19.2.1 (CCE2 Cut-over complete) within eight hundred seventy-nine (879) calendar days from the initial Request to Commence by the City's Project Manager.

(5) Contractor shall complete Task No. 25 (Final System Acceptance) within one thousand one hundred fifty-seven (1157) calendar days from the initial Request to Commence by the City's Project Manager.

(b) **Section 7.03.** Section 7.03 of the Agreement currently reads as follows:

**Section 7.03 Reliability Period.** The Reliability Period shall begin immediately after System Cutover of all user departments and shall continue for a period of ninety (90) days. If, during the Reliability Period, (1) the Project suffers a Major Failure prior to Final Project Acceptance, caused in whole or part by Contractor, Subcontractor's, or its Equipment, then Contractor shall remedy such failure and a new ninety (90) day Reliability Period shall begin only for the specific system or subsystem(s) (identified as one of the systems or subsystems under the definition of Major Failure that

has failed or (2) any of the major systems or subsystems identified in the definition of Major Failure suffers a Chronic Failure prior to Final Project Acceptance, even if such failure does not create a Major Failure as defined, then Contractor shall remedy such failure and a new ninety (90) day Reliability Period shall begin only for that specific system or subsystem which suffered such Chronic Failure (collectively the "Extended Reliability Period"); provided, however, in the event any system or subsystem failure is remedied, an Extended Reliability Period shall apply for such impacted systems or subsystems. In the event of extensive Major Failure or Chronic Failures the City may request after Contractor's remedy of such failure, re-testing such system or subsystems, and the Reliability Period for the Project re-start. Nothing herein shall be deemed to lessen Contractors responsibility for providing a fully functional Project upon Final Project Acceptance.

Such Section is hereby amended in its entirety to read as follows:

**Section 7.03 Reliability Period.** The Reliability Period shall begin in accordance with the Master Project Schedule and shall continue for a period of ninety (90) days. If, during the Reliability Period, (1) the Project suffers a Major Failure prior to Final Project Acceptance, caused in whole or part by Contractor, Subcontractor's, or its Equipment, then Contractor shall remedy such failure and a new ninety (90) day Reliability Period shall begin only for the specific system or subsystem(s) (identified as one of the systems or subsystems under the definition of Major Failure that has failed or (2) any of the major systems or subsystems identified in the definition of Major Failure suffers a Chronic Failure prior to Final Project Acceptance, even if such failure does not create a Major Failure as defined, then Contractor shall remedy such failure and a new ninety (90) day Reliability Period shall begin only for that specific system or subsystem which suffered such Chronic Failure (collectively the "Extended Reliability Period"); provided, however, in the event any system or subsystem failure is remedied, an Extended Reliability Period shall apply for such impacted systems or subsystems. In the event of extensive Major Failure or Chronic Failures the City may request after Contractor's remedy of such failure, re-testing such system or subsystems, and the Reliability Period for the Project re-start. Nothing herein shall be deemed to lessen Contractors responsibility for providing a fully functional Project upon Final Project Acceptance.

(c) **Section 15.02 (a).** Section 15.02 (a) of the Agreement currently reads as follows:

(a) **General.** Contractor warrants that all Equipment and materials in the Project shall be free from defects in material, design, workmanship, and be of the kind and quality that performs in the manner described in the Statement of Work and Services, the published Equipment specifications, and any or all applicable Standards and Recommendations specified in the Statement of Work and Services. Exclusive of Wireless Data Network Fixed Network Equipment, the foregoing warranty shall be effective for one (1) year commencing on the date of Final Project Acceptance. For Wireless Data Network Fixed Network Equipment only, the foregoing warranty shall be effective for one (1) year commencing on the date of Wireless Data Network Final Acceptance as defined in the Wireless Data Network Statement of Work and Services and the approved Wireless Data Network Acceptance Test Procedures. This one-year warranty shall not effect or limit any standard manufacturer's warranty for any item of Equipment in the Project.

Such Section is hereby amended in its entirety to read as follows:

(a) **General.** Contractor warrants that all Equipment and materials in the Project shall be free from defects in material, design, workmanship, and be of the kind and quality that performs in the manner described in the Statement of Work and Services, the published Equipment specifications, and any or all applicable Standards and Recommendations specified in the Statement of Work and Services. Exclusive of Wireless Data Network Fixed Network Equipment and User Equipment, the foregoing warranty shall be effective for one (1) year commencing on the date of Final Project Acceptance. For Wireless Data Network Fixed Network Equipment only, the foregoing warranty shall be effective for one (1) year commencing on the date of Wireless Data Network Final Acceptance as defined in the Wireless Data Network Statement of Work and Services and the approved Wireless Data Network Acceptance Test Procedures. For User Equipment only, the foregoing warranty shall be effective for one (1) year commencing on the later of: (1) the User Departments Beneficial Use of such User Equipment or (2) May 22, 2000. This one-year warranty shall not effect or limit any standard manufacturer's warranty for any item of Equipment in the Project.

(d) **Section 15.02 (f).** Section 15.02 (f) of the Agreement currently reads as follows:

(f) **Subcontractor Warranty.** Contractor hereby warrants all labor, workmanship, materials and Equipment provided by any Subcontractors on any Project. This Subcontractor warranty shall be effective for one (1) year, commencing on the date of Final Project Acceptance. This warranty shall not effect or limit any warranty provided by the Subcontractor.

Such Section is hereby amended in its entirety to read as follows:

(f) **Subcontractor Warranty.** Contractor hereby warrants all labor, workmanship, materials and Equipment provided by any Subcontractors on the Project. Exclusive of radio site development work as defined in the Statement of Work and Services, this Subcontractor warranty shall be effective for one (1) year, commencing on the date of Final Project Acceptance. Subcontractor Warranty for radio site development work only shall be effective for one (1) year commencing on May 22, 2000. This warranty shall not effect or limit any warranty provided by the Subcontractor.

(e) **Exhibit E:** Exhibit E Master Project Schedule Revision 1.1 is hereby replaced in it's entirety with Exhibit E Master Project Schedule Revision 1.24 which is attached to this Amendment and is hereby incorporated by reference.

(f) **Exhibit D:** Exhibit D Project Cost Itemization Schedule is hereby amended by the addition of Pages DS-7 Approved Change Orders and DS-8 Schedule Extension Costs which are attached to this Amendment and are hereby incorporated by reference.


3. **Effective Date.** Each of the modifications set forth in Section 2 shall be effective on and after May 19, 2000.

4. **Legal Effect.** Except as expressly modified by this Amendment, all of the terms and conditions of the Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, Contractor and City have executed this Amendment as of the date first referenced above.

**CITY**

Recommended by:

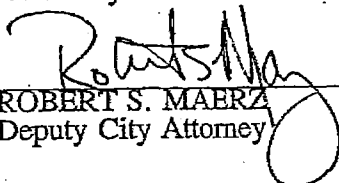
  
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Signature for Department

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Printed Name

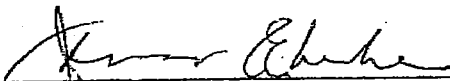
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Title and Department

Approved as to Form:

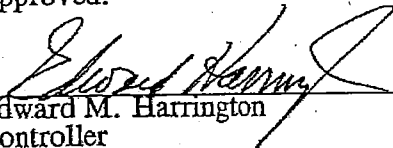
Louise H. Renne  
City Attorney

By   
\_\_\_\_\_  
ROBERT S. MAERZ  
Deputy City Attorney

Approved:

  
\_\_\_\_\_  
Edwin M. Lee  
Director of Purchasing

Approved:

  
\_\_\_\_\_  
Edward M. Harrington  
Controller

**CONTRACTOR**

MOTOROLA, INC.

By   
\_\_\_\_\_

Name: Larry Olson

Title : Vice-President - Sales

Date: May 17, 2000

**EXHIBIT D: PROJECT COST ITEMIZATION SCHEDULE  
APPROVED CHANGE ORDERS**

CO No.	Date	Document No.	Description	Change Order PH I	Change Order PH II	Total
MCO-1	4/3/98	MOT-092	Cost reduction due to Detail Design equipment changes	\$ (444,023.91)	\$ (442,113.36)	\$ (886,137.27)
MCO-2	5/11/98	MOT-103	Deletion of microwave hop to BOA	\$ (89,940.00)		\$ (976,077.27)
MCO-3	9/18/98	MOT-128	Special areas of Coverage Detailed Design equipment changes	\$ 649,208.16		\$ (326,869.11)
MCO-4	11/20/98	BCO-1	Construction Change Order #1	\$ 169,899.75		\$ (156,969.36)
MCO-5	11/24/98	MOT-139	Voice Over Wire	\$ 4,383.50		\$ (152,585.86)
MCO-6	12/18/98	BCO-2	Construction Change Order #2	\$ 137,398.50		\$ (15,187.36)
MCO-7	12/10/98	MOT-143	Increased amount of Phase II radios at Phase II Request to Commence		\$ 709,909.91	\$ 694,722.55
MCO-8	1/25/99	MOT-150	Change microwave dishes to high performance	\$ 16,453.00		\$ 711,175.55
MCO-9	3/12/99	BCO-3	Construction Change Order # 3	\$ 86,004.00		\$ 797,179.55
MCO-10	3/15/99	MOT-154	Reduction in cost for high performance microwave dishes	\$ (3,120.00)		\$ 794,059.55
MCO-11	5/13/99	BCO-4	Construction Change Order #4	\$ 75,933.00		\$ 869,992.55
MCO-12	6/8/99	MOT-174	Additional coverage for 2nd floor of Jail learning center (special areas of coverage)	\$ 3,840.00		\$ 873,832.55
MCO-13	6/30/99	BCO-5	Construction Change Order #5	\$ 36,792.00		\$ 910,624.55
MCO-14	7/30/99	BCO-6	Construction Change Order #6	\$ 322,501.95		\$ 1,233,126.50
MCO-15	8/18/99	MOT-189	Modify six control stations for tone operation (SFIA)		\$ 4,890.00	\$ 1,238,016.50
MCO-16	9/29/99	MOT-196	Additional accessories for DPT, SD, Fire		\$ 109,837.53	\$ 1,347,854.03
MCO-17	10/7/99	MOT-198	Credit for deducting Fire (& DPH) mobile installs		\$ (148,500.00)	\$ 1,199,354.03
MCO-18	10/20/99	MOT-203	CECC work requested by DPW/BOA PCO179 & 152B	\$ 23,377.00		\$ 1,222,731.03
MCO-19	10/18/99	SAC-01	Special areas of coverage Change Order 1	\$ 216,265.46		\$ 1,438,996.49
MCO-20	11/4/99	MOT-205	CECC work requested by DPW/BOA PCO 177 & 188	\$ 12,059.00		\$ 1,451,055.49
MCO-21	12/17/99	BCO-7	Construction Change Order #7	\$ 101,722.55		\$ 1,552,778.04
MCO-22	1/31/00	MOT-214	Additional control stations for CECC (\$78,909.66) SUPERCEDED.			\$ 1,552,778.04
MCO-23	1/31/00	MOT-214	Add digital encryption for 65 Police and Fire portables		\$ 73,452.05	\$ 1,626,230.09
MCO-24	1/31/00	MOT-214	48V power upgrade at CRS (\$35,704.43) SUPERCEDED			\$ 1,626,230.09
MCO-22a	2/4/00	MOT-216	(5) Additional control stations for CECC.		\$ 63,303.41	\$ 1,689,533.50
MCO-25	2/4/00	MOT-217	Upgrade 60 Fire XTS Model I encrypted to yellow ruggedized.		\$ 51,136.44	\$ 1,740,669.94
MCO-24a	3/7/00	MOT-220	48V power upgrade at CRS (revised cost)	\$ 40,239.43		\$ 1,780,909.37
MCO-26	3/21/00	MOT-223	MOT-223 credit for deducting DTIS mobile and control station installs		\$ (20,000.00)	\$ 1,760,909.37
MCO-27	3/31/00	SAC-02	Special areas of coverage Change Order 2	\$ 93,545.82		\$ 1,854,455.19
MCO-28	5/19/00	Exhibit D Pg DS-8	NOT TO EXCEED COST for extension CERS Final Acceptance from May 22, 2000 to November 22, 2000	\$ 608,334.00		\$ 2,462,789.19
<b>Total Change Orders:</b>				<b>\$ 2,060,873.21</b>	<b>\$ 401,915.98</b>	<b>\$ 2,462,789.19</b>
<b>Project Price at Contract Signing:</b>				<b>\$ 24,356,345.55</b>	<b>\$ 12,191,019.45</b>	<b>\$ 36,547,365.00</b>
<b>Adjusted Total:</b>				<b>\$ 26,417,218.76</b>	<b>\$ 12,592,935.43</b>	<b>\$ 39,010,154.19</b>

**Other Adjustments**

	4/7/98	MOT-095	Optional Phase 3 purchase (MOSCAD)			\$ 630,485.00
	12/7/98	MOT-142	Optional Wireless Data Network			\$ 1,201,099.00
	11/5/99	MOT-206	Liquidated damages assessed for failure to complete CCE1 cutover			\$ (130,000.00)

**Revised Total contract value: \$ 26,417,218.76 \$ 12,592,935.43 \$ 40,711,738.19**

**EXHIBIT D: PROJECT COST ITEMIZATION SCHEDULE  
SCHEDULE EXTENSION COSTS**

(for extension of CERS Final Acceptance from May 22, 2000 to November 22, 2000)

Description	Cost Per Day	Cost Per Month	Extension (months)	Total
Dedicated Project Manager	\$ 952	\$ 20,944	6	\$ 125,664.00
Dedicated Project Engineer	\$ 992	\$ 21,824	3	\$ 65,472.00
Delayed Final Acceptance Payment (on \$4M)	0.0253%	\$ 30,833	6	\$ 184,998.00
Delayed Final Acceptance plus one year payment (on \$400K)	0.0253%	\$ 3,083	6	\$ 18,498.00
Extended Warehousing	\$ 60.90	\$ 1,826	3	\$ 5,478.00
FNE Warranty Extension Includes dedicated on site System Technologist	n/a	\$ 26,154	6	\$ 156,924.00
Warranty Extension for Police User Equipment (423 mobiles and 771 Portable radios)		\$ 5,100	3	\$ 15,300.00
On Site FNE technical response (8X5 M-F)		\$ 12,000.00	3	\$ 36,000.00
<b>Total:</b>		<b>\$ 121,764</b>		<b>\$ 608,334</b>

The above costs are NOT TO EXCEED costs and will not begin accruing until the City Project Manager certifies that the following tasks have been completed:

1. Delivery and acceptance of all as built documentation. City must have a minimum of 10 working day review period after receipt of materials.
2. Delivery of final inventory list for equipment which has been accepted by the City.
3. Delivery and acceptance of CERS 30 day confidence period test report. City must have a minimum of 10 working day review period after receipt of materials.
4. Open CERS "category 1" punch list items have been corrected.
5. Technical training for MOSCAD and Special Areas of Coverage has been scheduled (first session of training for each category to be completed no later than June 30, 2000 unless City elects to postpone).
6. All archival copies and documentation for Project Software has been delivered.
7. All spare parts has been delivered and inventoried.

Optional Costs	Cost Per Day	Cost Per Month		
24 Hour System Monitoring, after hours consultation with City technical staff, weekly availability reports, service call tracking		\$ 11,975		
System Technologist	\$ 992	\$ 21,824		
Construction Manager	n/a	\$ 15,378		





CITY AND COUNTY OF SAN FRANCISCO  
PURCHASING DEPARTMENT

**COPY**

FIFTH AMENDMENT

THIS AMENDMENT (this "Amendment") is made as of November 21, 2000 in San Francisco, California, by and between MOTOROLA, INC. ("Contractor"), and the CITY AND COUNTY OF SAN FRANCISCO, a municipal corporation ("City"), acting by and through its Director of Purchasing.

RECITALS

WHEREAS, City and Contractor have entered into the Agreement (as defined below); and

WHEREAS, City and Contractor desire to modify the Agreement on the terms and conditions set forth herein;

NOW, THEREFORE, Contractor and the City agree as follows :

1. Definitions. The following definitions shall apply to this Amendment:

(a) Agreement. The term "Agreement" shall mean the Agreement dated September 22<sup>nd</sup> 1997 between Contractor and City as modified by the First Amendment dated May 18, 1998, the Second Amendment dated September 24, 1998, the Third Amendment dated August 11, 1999, and the Fourth Amendment dated May 19, 2000.

(b) Other Terms. Terms used and not defined in this Amendment shall have the meanings assigned to such terms in the Agreement.

2. Modifications to the Agreement. The Agreement is hereby modified as follows:

(a) Section 5.01. Section 5.01 of the Agreement currently reads as follows:

Master Project Schedule. The Master Project Schedule for the Project is attached hereto as Exhibit E. The Contractor prepared the Master Project Schedule and represents and warrants to the City that it will meet all the dates specified in the Master Project Schedule and achieve Final Acceptance of the Project within one thousand one hundred fifty-seven (1157) calendar days from the delivery of the initial Request to Commence by the City's Project Manager. The Contractor acknowledges and understands that the Master Project Schedule contains certain time-sensitive milestones ("Critical Milestones") that must be attained by certain dates; otherwise, the City will suffer financial harm. These Critical Milestones are as follows:

(1) Contractor shall complete Task No. 14.8 (TRS, MTS, SMC and RF Coverage ATP) within six hundred forty (640) calendar days from the initial Request to Commence by the City's Project Manager.

(2) Contractor shall complete Task No. 16.2.4 (CCE2 System Acceptance) within six hundred ninety-three (693) calendar days from the initial Request to Commence by the City's Project Manager.

(3) Contractor shall complete Task No. 17.2.1 (CCE1 Cut-over complete) within seven hundred forty-five (745) calendar days from the initial Request to Commence by the City's Project Manager.

(4) Contractor shall complete Task No. 19.2.1 (CCE2 Cut-over complete) within eight hundred seventy-nine (879) calendar days from the initial Request to Commence by the City's Project Manager.

(5) Contractor shall complete Task No. 25 (Final System Acceptance) within one thousand one hundred fifty-seven (1157) calendar days from the initial Request to Commence by the City's Project Manager.

Such Section is hereby amended in its entirety to read as follows:

**Master Project Schedule.** The Master Project Schedule for the Project is attached hereto as Exhibit E. The Contractor prepared the Master Project Schedule and represents and warrants to the City that it will meet all the dates specified in the Master Project Schedule and achieve Final Acceptance of the Project within one thousand two hundred seventy-seven (1277) calendar days from the delivery of the initial Request to Commence by the City's Project Manager. The Contractor acknowledges and understands that the Master Project Schedule contains certain time-sensitive milestones ("Critical Milestones") that must be attained by certain dates; otherwise, the City will suffer financial harm. These Critical Milestones are as follows:

(1) Contractor shall complete Task No. 14.8 (TRS, MTS, SMC and RF Coverage ATP) within six hundred forty (640) calendar days from the initial Request to Commence by the City's Project Manager.

(2) Contractor shall complete Task No. 16.2.4 (CCE2 System Acceptance) within six hundred ninety-three (693) calendar days from the initial Request to Commence by the City's Project Manager.

(3) Contractor shall complete Task No. 17.2.1 (CCE1 Cut-over complete) within seven hundred forty-five (745) calendar days from the initial Request to Commence by the City's Project Manager.

(4) Contractor shall complete Task No. 19.2.1 (CCE2 Cut-over complete) within eight hundred seventy-nine (879) calendar days from the initial Request to Commence by the City's Project Manager.

(5) Contractor shall complete Task No. 25 (Final System Acceptance) within one thousand two hundred seventy-seven (1277) calendar days from the initial Request to Commence by the City's Project Manager.

(b) Section 15.02. Section 15.02 of the Agreement currently reads as follows:

(a) **General.** Contractor warrants that all Equipment and materials in the Project shall be free from defects in material, design, workmanship, and be of the kind and quality that performs in the manner described in the Statement of Work and Services, the published Equipment specifications, and any or all applicable Standards and Recommendations specified in the Statement of Work and Services. Exclusive of Wireless Data Network Fixed Network Equipment and User Equipment, the foregoing warranty shall be effective for one (1) year commencing on the date of Final Project Acceptance. For Wireless Data Network Fixed Network Equipment only, the foregoing warranty shall be effective for one (1) year commencing on the date of Wireless Data Network Final Acceptance as defined in the Wireless Data Network Statement of Work and Services and the approved Wireless Data Network Acceptance Test Procedures. For User Equipment only, the foregoing warranty shall be effective for one (1) year commencing on the later of: (1) the User Departments Beneficial Use of such User Equipment or (2) May 22, 2000. This one-year warranty shall not effect or limit any standard manufacturer's warranty for any item of Equipment in the Project.

Such Section is hereby amended in its entirety to read as follows:

(a) **General.** Contractor warrants that all Equipment and materials in the Project shall be free from defects in material, design, workmanship, and be of the kind and quality that performs in the manner described in the Statement of Work and Services, the published Equipment specifications, and any or all applicable Standards and Recommendations specified in the Statement of Work and Services. Exclusive of Wireless Data Network Fixed Network Equipment and User Equipment, the foregoing warranty shall be effective for eight (8) months commencing on the date of Final Project Acceptance. For Wireless Data Network Fixed Network Equipment only, the foregoing warranty shall be effective for one (1) year commencing on the date of Wireless Data Network Final Acceptance as defined in the Wireless Data Network Statement of Work and Services and the approved Wireless Data Network Acceptance Test Procedures. For User Equipment only, the foregoing warranty shall be effective for one (1) year commencing on the later of: (1) the User Departments Beneficial Use of such User Equipment or (2) May 22, 2000. This one-year warranty shall not effect or limit any standard manufacturer's warranty for any item of Equipment in the Project.

(c) **Article 18.** Article 18 of the Agreement is hereby amended by the addition of the following Section:

**Section 18.28 Earned Income Credit Forms.** Administrative Code section 120 requires that employers provide their employees with IRS Form W-5 (The Earned Income Credit Advance Payment Certificate) and the IRS EIC Schedule, as set forth below. Employers can locate these forms at the IRS Office, on the Internet, or anywhere that Federal Tax Forms can be found.

(a) Contractor shall provide the EIC Forms to each Eligible Employee at each of the following times: (i) within thirty (30) days following the date on which the applicable Contract or Contract Amendment becomes effective (unless Contractor has already provided such EIC Forms at least once during the calendar year in question); (ii) promptly after any Eligible Employee is hired by Contractor; and (iii) annually between January 1 and January 31 of each calendar year during the term of the Contract.

(b) Failure to comply with the foregoing requirement shall constitute a material breach by Contractor of the terms of the Contract.

(c) If within thirty (30) days after the Contractor receives written notice of such a breach, Contractor fails to cure such breach or, if such breach cannot reasonably be cured within such period of thirty (30) days, Contractor fails to commence efforts to cure within such period, or thereafter fails to diligently pursue such cure to completion, the City may pursue any rights or remedies available under the terms of the Contract or under applicable law.

(d) **Exhibit E:** Exhibit E Master Project Schedule Revision 1.24 is hereby replaced in its entirety with Exhibit E Master Project Schedule Revision 1.25 which is attached to this Amendment and is hereby incorporated by reference.

(e) **Exhibit D:** Exhibit D Project Cost Itemization Schedule is hereby amended by the addition of Page DS-9 Approved Change Orders Page Two which is attached to this Amendment and is hereby incorporated by reference

3. **Effective Date.** Each of the modifications set forth in Section 2 shall be effective on and after November 21, 2000.

4. **Legal Effect.** Except as expressly modified by this Amendment, all of the terms and conditions of the Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, Contractor and City have executed this Amendment as of the date first referenced above.

CITY

Recommended by:

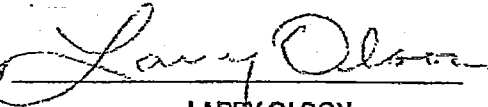
  
\_\_\_\_\_  
Signature for Department

L. D. Fraijo  
Printed Name

Chief of Staff ECS  
Title and Department

CONTRACTOR

MOTOROLA, INC.

By   
\_\_\_\_\_  
Title LARRY OLSON  
VICE PRESIDENT, SALES

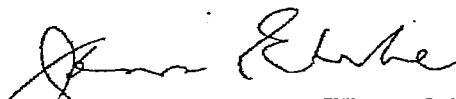
DATE: NOV 30, 2000

Approved as to Form:

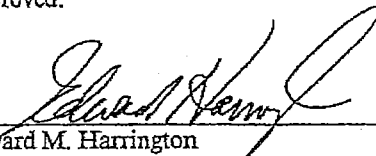
Louise H. Renne  
City Attorney

By   
\_\_\_\_\_  
ROBERT S. MAERZ  
Deputy City Attorney

Approved:

  
\_\_\_\_\_  
Director of Purchasing

Approved:

  
\_\_\_\_\_  
Edward M. Harrington  
Controller

**EXHIBIT D: PROJECT COST ITEMIZATION SCHEDULE  
APPROVED CHANGE ORDERS PAGE TWO**

CO No.	Date	Document No.	Description	Change Order PH I	Change Order PH II	Total
	5/19/00	Amendment 4	Revised total contract value from Exhibit D Page DS-7			\$ 40,711,738.19
MCO-29	5/24/00	MOT-226	Purchase 2310 additional batteries and misc accessories for SFPD		\$ 208,809.77	\$ 40,920,547.96
MCO-30	4/20/00	BCO-8	Construction change order #8	\$ 97,054.35		\$ 41,017,602.31
MCO-31	6/5/00	MOT-221	Purchase & install Centracom Elite console for DPW (replaces smartzone terminal)		\$ 32,012.95	\$ 41,049,615.26
MCO-32	6/30/00	MOT-228	Reduction in schedule extension "not to exceed" costs (see MCO-28)	\$ (182,646.00)		\$ 40,866,969.26
MCO-33	7/5/00	MOT-229	Purchase of 88 six unit charger wall mount brackets for Police		\$ 1,394.01	\$ 40,868,363.27
MCO-34	7/5/00	MOT-230	Adjustment to credit for DTIS mobile and control station installs (see MCO-26)		\$ 5,100.00	\$ 40,873,463.27
MCO-35	7/5/00	MOT-231	Adjustment to credit for Fire mobile installs (see MCO-17)		\$ 11,500.00	\$ 40,884,963.27
MCO-36	9/5/00	SAC-03	Special Areas of Coverage additional work		\$ 16,929.84	\$ 40,901,893.11
MCO-37	8/7/00	MOT-232	800 Belt loops for SFPD		\$ 7,603.68	\$ 40,909,496.79
MCO-38	9/21/00	MOT-235	RTS/CTS reconfiguration		\$ 19,229.00	\$ 40,928,725.79
MCO-39	9/29/00	MOT-237	Spare Elite console equipment and "shrouded" emergency buttons		\$ 36,492.22	\$ 40,965,218.01
MCO-40	10/26/00	SAC-04	Special Areas of Coverage additional work	\$ 82,786.80		\$ 41,048,004.81
MCO-41	10/27/00	MOT-233	Purchase/Install 3 additional control stations (EMS)		\$ 24,949.76	\$ 41,072,954.57
MCO-42	11/6/00	MOT-239	Paging option and upgraded hardware for Full Vision console		\$ 19,773.61	\$ 41,092,728.18
MCO-43	11/21/00	Exhibit D Pg DS-8	NOT TO EXCEED COST for extension of CERS Final Acceptance from November 22, 2000 to March 22, 2001. Includes: dedicated Project Manager, dedicated Project Engineer, delayed Final Acceptance payment, delayed Final Acceptance plus one year payment, system technologist, and on-site infrastructure response.	\$ 442,034.67		\$ 41,534,762.85
MCO-44	11/21/00	Exhibit D Pg DS-8	Upgrade onsite infrastructure response from 8X5 response time to 7X24 response time during the period November 22, 2000 to March 22, 2001.	\$ 14,400.00		\$ 41,549,162.85

Total Change Orders (this sheet): \$ 453,629.82 \$ 383,794.84 \$ 837,424.66  
Adjusted Total: \$ 41,549,162.85



**City and County of San Francisco**  
OFFICE OF CONTRACT ADMINISTRATION  
PURCHASING DIVISION

**SIXTH AMENDMENT**

THIS AMENDMENT (this "Amendment") is made as of June 15, 2007, in San Francisco, California, by and between Motorola, Inc. ("Contractor"), and the City and County of San Francisco, a municipal corporation ("City"), acting by and through its Director of the Office of Contract Administration.

RECITALS

WHEREAS, City and Contractor have entered into the Agreement (as defined below); and

WHEREAS, City and Contractor desire to modify the Agreement on the terms and conditions set forth herein;

WHEREAS, approval for this Amendment was obtained by Resolution of the Board of Supervisors, Resolution No. 653-06 on November 7, 2006.

NOW, THEREFORE, Contractor and the City agree as follows:

**1. Definitions.** The following definitions shall apply to this Amendment:

**a. Agreement.** The term "Agreement" shall mean the Agreement dated September 22, 1997 between Contractor and City as modified by:

First Amendment	May 18, 1998,
Second Amendment	September 24, 1998,
Third Amendment	August 11, 1999,
Fourth Amendment	May 19, 2000, and
Fifth Amendment	November 21, 2000.

**b. Other Terms.** Terms used and not defined in this Amendment shall have the meanings assigned to such terms in the Agreement.

**2. Modifications to the Agreement.** The Agreement is hereby modified as follows:

**a. Section 2.01.** Section 2.01, "Term of the Master Agreement," of the Agreement currently reads as follows:

The term of this Master Agreement shall commence on September 22, 1997 and shall expire on September 21, 2007, unless sooner terminated by the City pursuant to the terms of this Master Agreement.

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Such Section is hereby amended in its entirety to read as follows:

The term of this Master Agreement shall commence on September 22, 1997 and shall expire on September 21, 2017, unless sooner terminated by the City pursuant to the terms of this Master Agreement.

b. **Section 3.03(e).** Section 3.03(e), "Additional Equipment Purchase," of the Agreement currently reads as follows:

In addition to and separate and apart from the Equipment to be purchased for the Project, the City may, but is not obligated to, purchase Additional Equipment from Contractor in accordance with Section 4.02(a) hereof. The City may purchase up to one million dollars worth of Additional Equipment per fiscal year under this Master Agreement without further approval of the Board of Supervisors.

Such Section is hereby amended in its entirety to read as follows:

In addition to and separate and apart from the Equipment to be purchased for the Project, the City may, but is not obligated to, purchase Additional Equipment and Services from Contractor in accordance with Section 4.02(a) hereof. The City may purchase up to ten million dollars' worth of Additional Equipment and Services under this Master Agreement and Amendments without further approval of the Board of Supervisors. All Additional Services and System sales will be subject to the change order process.

c. **Section 4.01(b).** Section 4.01(b), "Lowest Price Guarantee." of the Agreement currently reads as follows:

Contractor represents and guarantees that City is receiving the highest, or equal to the highest, aggregate system discount that the Contractor has granted to any other person or entity on a similar 800 MHz trunked radio project. Except as otherwise required under prevailing wage requirements, Contractor represents and guarantees that the City the hourly labor rate set forth in Exhibit H-1 are equal to or lower than the lowest rates previously provided to any other person or entity on an 800 MHz trunked radio project in the last two (2) years. Should the City discover that the Contractor has provided a higher system discount or provided any services at a lower price, City shall be entitled to receive an amount equal to two times the difference. The foregoing remedy is in addition to any other remedy the City has under the law. To the extent Contractor reduced the list price for any equipment prior to the shipment of that particular item, the City shall be entitled to receive the benefit of the lower price; and the total Project Price shall be adjusted accordingly.

Such Section is hereby amended in its entirety to read as follows:

Contractor represents and guarantees that City is receiving the highest, or equal to the highest, aggregate system/equipment discount that the Contractor has granted to any other person or entity on a similar 800 MHz trunked radio project. Should the City discover that the Contractor has provided a higher system/equipment discount, City shall be entitled to receive an amount equal to two times the difference. The foregoing remedy is in addition to any other remedy the City has under the law. To the extent Contractor reduced the list price for any equipment prior to the shipment of that particular item, the City shall be entitled to receive the benefit of the lower price; and the total Project Price shall be adjusted accordingly.



**d. Section 4.02(a).** Section 4.02(a), "Price of Additional Equipment," of the Agreement currently reads as follows:

In addition to the Equipment purchased for the Project, the City may, but is not obligated to, purchase any additional Equipment ("**Additional Equipment**") subject to Section 3.03(e). For any Additional Equipment, City shall pay an additional amount over the Project Price. To the extent the Equipment to be purchased constitutes User Equipment, the amount payable by the City shall be based upon the Additional Equipment Price Schedule, attached hereto as Exhibit G. (Amendment 1) Equipment not listed in Exhibit G shall be reduced by the following discounts taken from Motorola's Domestic Net User Price: Fixed Equipment—twenty-seven percent (27%), Mobile Equipment—twenty-seven percent (27%), Portable Equipment—twenty-seven percent (27%), Equipment parts—fifteen percent (15%), Batteries—discount given to the State of California under the Master Contract, dated February 1, 1997 (Contract No. 01CAC00408) and Mobile Data Equipment – eleven percent (11%). To the extent the Equipment to be purchased constitutes Fixed Network Equipment, the amount payable by the City shall be based upon the price assigned to the particular piece of Equipment in the Project Cost Itemization Schedule. The prices set forth in the Additional Equipment Price Schedule and the Project Cost Itemization Schedule include all shipping, freight and handling cost to delivery the Equipment to the City. Any taxes, imposition or fee imposed by any governmental entity on the Additional Equipment shall be payable by the City upon delivery and installation of the Equipment and passage of the applicable portion of the Acceptance Test Plan. All purchases of Additional Equipment shall be subject to prior approval of the Purchaser and the Controller. If the Equipment is ordered prior to Final Acceptance of the Project, City shall pay for the Equipment in accordance with the Payment Schedule set forth in Section 4.05 hereof. If Equipment is ordered after Final Acceptance of the Project, City shall pay for the Equipment as follows: one hundred percent (100%) after delivery and installation of the Equipment and passage of the Acceptance Test Plan agreed upon by the parties for such piece Additional Equipment. Should any Equipment on the price list become unavailable or obsolete, the City shall have the right to purchase any new item of Equipment that is functionally similar to the unavailable or obsolete Equipment. The price of the new item of Equipment shall equal the lesser of (i) the published list price of the Equipment less any applicable governmental discount (exclusive of federal discounts) and (ii) the price of the unavailable or obsolete Equipment. The Contractor acknowledges that this Master Agreement does not obligate the City to purchase any of the Additional Equipment from the Contractor. The City may elect to purchase such Equipment from any third party. Furthermore, the City reserves the right to purchase the Additional Equipment, but have a third party install such Equipment.

Such Section is hereby amended in its entirety to read as follows:

In addition to the Equipment purchased for the Project, the City may, but is not obligated to, purchase any additional Equipment ("**Additional Equipment**") subject to Section 3.03(e). For any Additional Equipment, City shall pay an additional amount over the Project Price. To the extent the Equipment to be purchased constitutes User Equipment, the amount payable by the City shall be based upon the current Contractor's U.S. Domestic Price Book and the associated discount levels on the equipment, attached hereto as Exhibit G. All additional equipment purchased by the City will include shipping, freight and handling cost to deliver the Equipment to the City. Any taxes, imposition or fee imposed by any governmental entity on the Additional Equipment shall be payable by the City upon delivery of the Equipment and passage of the applicable portion of the Acceptance Test Plan. All purchases of Additional Equipment shall be subject to prior approval of the Purchaser and the Controller. Should any Equipment on the

price list become unavailable or obsolete, the City shall have the right to purchase any new item of Equipment that is functionally similar to the unavailable or obsolete Equipment. The price of the new item of Equipment shall equal the lesser of (i) the published list price of the Equipment less any applicable governmental discount (exclusive of federal discounts) and (ii) the price of the unavailable or obsolete Equipment. The Contractor acknowledges that this Master Agreement does not obligate the City to purchase any of the Additional Equipment from the Contractor. The City may elect to purchase such Equipment from any third party. Furthermore, the City reserves the right to purchase the Additional Equipment, but have a third party install such Equipment.

**e. Section 4.02(c).** Section 4.02(c), "Available Equipment Not Listed in Additional Equipment Price Schedule," of the Agreement currently reads as follows:

The City shall have the right to, but not be obligated to, purchase any Equipment which becomes available after the date hereof at the price set forth in the Contractor's U.S. Domestic Price Book published immediately preceding the City's written request to purchase such Equipment, subject to the following discounts: Fixed Equipment --twenty-seven percent (27%), Mobile Equipment --twenty-seven percent (27%), Portable Equipment --twenty seven-percent (27%), Equipment parts --fifteen percent (15%), Batteries -- discount given to the State of California under the Master Contract, dated February 1, 1997 (Contract No. 01CAC00408).

The parties agree to delete this provision.

**f. Section 4.06(b).** Section 4.06(b), "Submitting False Claims; Monetary Penalties," of the Agreement currently reads as follows:

Contractor acknowledges and accepts that if it submits a false claim to the City, the Contractor shall be liable to the City for: (1) treble damages, (2) a civil penalty of up to \$10,000 for each False Claim, and (3) all cost and expenses to bring a civil action, including attorney fees. The Contractor shall be guilty of submitting a false claim if it: (a) knowingly presents or causes to be presented to an officer or employee of the City a false claim or request for payment or approval; (b) knowingly makes, uses, or causes to be made or used a false record or statement to get a false claim paid or approved by the City; (c) conspires to defraud the City by getting a false claim allowed or paid by the City; (d) knowingly makes, uses, or causes to be made or used a false record or statement to conceal, avoid, or decrease an obligation to pay or transmit money or property to the City; or (e) is a beneficiary of an inadvertent submission of a false claim to the City, subsequently discovers the falsity of the claim, and fails to disclose the false claim to the City within a reasonable time after discovery of the false claim.

Such Section is hereby amended in its entirety to read as follows:

Pursuant to San Francisco Administrative Code §21.35, any contractor, subcontractor or consultant who submits a false claim shall be liable to the City for three times the amount of damages which the City sustains because of the false claim. A contractor, subcontractor or consultant who submits a false claim shall also be liable to the City for the costs, including attorneys' fees, of a civil action brought to recover any of those penalties or damages, and may be liable to the City for a civil penalty of up to \$10,000 for each false claim. A contractor, subcontractor or consultant will be deemed to have submitted a false claim to the City if the contractor, subcontractor or consultant: (a) knowingly presents or causes to be presented to an officer or employee of the City a false claim or request for payment or

approval; (b) knowingly makes, uses, or causes to be made or used a false record or statement to get a false claim paid or approved by the City; (c) conspires to defraud the City by getting a false claim allowed or paid by the City; (d) knowingly makes, uses, or causes to be made or used a false record or statement to conceal, avoid, or decrease an obligation to pay or transmit money or property to the City; or (e) is a beneficiary of an inadvertent submission of a false claim to the City, subsequently discovers the falsity of the claim, and fails to disclose the false claim to the City within a reasonable time after discovery of the false claim.

g. **Section 4.06(e)** is hereby added to the Agreement as follows

**Section 4.06(d) Submitting Invoices for Additional Equipment Purchase.** For Additional Equipment purchased in accordance with Section 4.02(a), 100% of the equipment price will be invoiced to the City upon shipment of the equipment. All payments are due 30 days from the invoice. New System or Service Payment Milestone payments will be subject to the change order process.

h. **Section 4.07.** Section 4.07, "Payment Authorization," of the Agreement currently reads as follows:

(a) **Payment Authorization.** A payment authorization will be issued based on the City Project Manager's certification that the Project has reached the prescribed milestone in **Section 4.05.**

(b) **No Representation.** The certification of the City's Project Manager once given is subject to (i) any continuing evaluations of the work for conformance with this Master Agreement, (ii) results of subsequent tests and inspections, (iii) minor deviations correctable prior to completion and (iv) specific qualifications expressed by the City's Project Manager. The issuance of a payment authorization will not be a representation that the City's Project Manager has (i) made an exhaustive or continuous on-Site inspection to check the quality or quantity of the work and Equipment, (ii) reviewed installation means, methods, techniques, sequences or procedures, and (iii) made an exhaustive or continuous on-site test of the performance of the Equipment or the Project.

(c) **Continued Obligation to Replace.** Notwithstanding any payment by the City, the Contractor shall have a continuing obligation to replace any unsatisfactory Equipment, work or material (i) until the expiration of all applicable warranties and (ii) to the extent required by the warranties, as such warranties are specified in Article 15 hereof.

(d) **Change Orders.** Only Change Orders completely approved and executed may be included on the payment authorization and only that portion of the Change Order work actually performed is to be submitted for payment.

Such Section is hereby amended in its entirety to read as follows:

(a) Within thirty (30) Days after receipt of an invoice from Contractor, DTIS shall issue a payment authorization to the Controller or the Corporation, as applicable, for such amount as due Contractor subject to the following:

(b) **Continued Obligation to Replace.** Notwithstanding any payment by the City, the Contractor shall have a continuing obligation to replace any unsatisfactory Equipment, work or material (i) until the expiration of all applicable warranties and (ii) to the extent required by the warranties, as such warranties are specified in Article 15 hereof.

(c) **Change Orders.** Only Change Orders completely approved and executed may be included on the payment authorization and only that portion of the Change Order work actually performed or goods delivered is to be submitted for payment.

- i. **Section 6.09(c).** Section 6.09(c), "Title, Risk of Loss," of the Agreement currently reads as follows:

All User Equipment shall be shipped by Contractor F.O.B., to the designated delivery site in San Francisco, California, in accordance with the applicable shipping instructions. If a delay has occurred beyond the designated delivery date, Contractor shall provide reasonable notice to the City as to the new delivery date. Title to the User Equipment shall pass upon certification of City's Project Manager that such equipment has been delivered to the designated facility in San Francisco. However, Contractor shall be responsible for any loss of such equipment and related material until such time as the User Department makes beneficial use of the Equipment or related material. In connection with any Fixed Network Equipment, title shall pass upon certification of City's Project Manager that such equipment has been delivered to the designated facility in San Francisco. However, Contractor shall remain responsible for any loss of such Equipment and related material until Final System Acceptance of the Project. Notwithstanding the foregoing, no title shall pass with respect to any Software being licensed to the City.

Such Section is hereby amended in its entirety to read as follows:

All User Equipment shall be shipped by Contractor F.O.B., to the designated delivery site in San Francisco, California, in accordance with the applicable shipping instructions. If a delay has occurred beyond the designated delivery date, Contractor shall provide reasonable notice to the City as to the new delivery date. Motorola will pack and ship all Equipment in accordance with good commercial practices. Title and risk of loss to the Equipment will pass to the City upon delivery of the additional equipment purchased. Notwithstanding the foregoing, no title shall pass with respect to any Software being licensed to the City.

- j. **Section 14.02(c).** Section 14.02(c), "Maintenance and Repair Updates," of the Agreement currently reads as follows:

From the installation of any portion of the Project until the tenth (10th) anniversary of the Final Acceptance of the Project, Contractor shall use best efforts to notify DTIS of any changes to prescribed maintenance procedure for the Project or any portion thereof. All service notes or maintenance information that becomes available after Equipment delivery must be sent to DTIS. If changes in the maintenance procedure(s) cannot be successfully attained through written materials and requires personal instruction(s) from qualified Contractor representatives, Contractor shall provide, at its sole cost, personal instructions to DTIS's technicians

responsible for the maintenance and repair of the pertinent portion of the Project. Contractor shall provide the training within the boundaries of the City. To the extent the City requires the assistance of any service technician in connection with any maintenance or repair update after the first (1st) anniversary of Final Acceptance of the Project, the City shall pay for the cost of such technician in accordance with the Labor Rate Schedule. The cost of any service technician needed on or before the first (1st) anniversary of the Final Project Acceptance is included as part of the Project Price.

Such Section is hereby amended in its entirety to read as follows:

From the installation of any portion of the Project until the tenth (10<sup>th</sup>) anniversary of the Final Acceptance of the Project, Contractor shall use best efforts to notify DTIS of any changes to prescribed maintenance procedure for the Project or any portion thereof. All service notes or maintenance information that becomes available after Equipment delivery must be sent to DTIS. If changes in the maintenance procedure(s) cannot be successfully attained through written materials and requires personal instruction(s) from qualified Contractor representatives, Contractor shall provide, at its sole cost, personal instructions to DTIS' technicians responsible for the maintenance and repair of the pertinent portion of the Project. Contractor shall provide the training within the boundaries of the City. To the extent the City requires the assistance of any service technician in connection with any maintenance or repair update after the first (1<sup>st</sup>) anniversary of Final Acceptance of the Project, the City shall pay for the cost of such technician in accordance with the Labor Rate Schedule. To the extent the City requires the assistance of any service technician in connection with any installation, maintenance or repair service after the first (1<sup>st</sup>) anniversary of Final Acceptance of the Project; the City shall pay for the cost of such technician in accordance with the Labor Rate Schedule. The cost of any service technician needed on or before the first anniversary of the Final Project Acceptance is included as part of the Project Price.

k. **15.02 Basic Warranty.** Section 15.02 is hereby replaced in its entirety to read as follows:

(a) **EQUIPMENT WARRANTY.** Warranty Period means one (1) year from delivery to the designated delivery site in San Francisco, California. During the Warranty Period, Motorola warrants that the Equipment under normal use and service will be free from material defects in materials and workmanship. If System Acceptance is delayed beyond six (6) months after shipment of the Equipment by events or causes within Customer's control, this warranty expires eighteen (18) months after the shipment of the Equipment.

(b) **MOTOROLA SOFTWARE WARRANTY.** Unless otherwise stated in the Software License Agreement, during the Warranty Period, Motorola warrants the Motorola Software in accordance with the terms of the Software License Agreement and the provisions of this Section 9 that are applicable to the Motorola Software. If System Acceptance is delayed beyond six (6) months after shipment of the Motorola Software by events or causes within Customer's control, this warranty expires eighteen (18) months after the shipment of the Motorola Software.

(c) **EXCLUSIONS TO EQUIPMENT AND MOTOROLA SOFTWARE WARRANTIES.** These warranties do not apply to: (i) defects or damage resulting from: use of the Equipment or Motorola Software in other than its normal, customary, and authorized manner; accident, liquids, neglect, or acts of God; testing, maintenance, disassembly, repair, installation, alteration, modification, or adjustment not

provided or authorized in writing by Motorola; Customer's failure to comply with all applicable industry and OSHA standards; (ii) breakage of or damage to antennas unless caused directly by defects in material or workmanship; (iii) Equipment that has had the serial number removed or made illegible; (iv) batteries (because they carry their own separate limited warranty) or consumables; (v) freight costs to ship Equipment to the repair depot; (vi) scratches or other cosmetic damage to Equipment surfaces that does not affect the operation of the Equipment; and (vii) normal or customary wear and tear.

(d) **SUBCONTRACTOR WARRANTY.** Contractor hereby warrants all labor, workmanship, materials and Equipment provided by its Subcontractors on any Project. This warranty shall not affect or limit any warranty provided by Contractor's Subcontractor.

(e) **PERFORMANCE SPECIFICATIONS.** Contractor warrants that all Equipment meets or exceeds Performance Specifications for a period of one year from services rendered. This warranty shall not affect or limit any standard manufacturer's warranty for any item or Equipment.

(f) **WARRANTY CLAIMS.** To assert a warranty claim, Customer must notify Motorola in writing of the claim before the expiration of the Warranty Period. Upon receipt of this notice, Motorola will investigate the warranty claim. If this investigation confirms a valid warranty claim, Motorola will (at its option and at no additional charge to Customer) repair the defective Equipment or Motorola Software, replace it with the same or equivalent product, or refund the price of the defective Equipment or Motorola Software. That action will be the full extent of Motorola's liability for the warranty claim. If this investigation indicates the warranty claim is not valid, then Motorola may invoice Customer for responding to the claim on a time and materials basis using Motorola's then current labor rates. Repaired or replaced product is warranted for the balance of the original applicable warranty period. All replaced products or parts will become the property of Motorola.

(g) **ORIGINAL END USER IS COVERED.** These express limited warranties are extended by Motorola to the original user purchasing the System for commercial, industrial, or governmental use only, and are not assignable or transferable.

(h) **DISCLAIMER OF OTHER WARRANTIES.** THESE WARRANTIES ARE THE COMPLETE WARRANTIES FOR THE EQUIPMENT AND MOTOROLA SOFTWARE PROVIDED UNDER THIS AGREEMENT AND ARE GIVEN IN LIEU OF ALL OTHER WARRANTIES. MOTOROLA DISCLAIMS ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

**1. Local Business Enterprise Utilization; Liquidated Damages.** Section 18.03 is hereby replaced in its entirety to read as follows:

**18.03. Local Business Enterprise Utilization; Liquidated Damages**

a. The LBE Ordinance

Contractor, shall comply with all the requirements of the Local Business Enterprise and Non-Discrimination in Contracting Ordinance set forth in Chapter 14B of the San Francisco Administrative Code as it now exists or as it may be amended in the future (collectively the "LBE Ordinance"), provided such amendments do not materially increase Contractor's obligations or liabilities, or materially diminish Contractor's rights, under this Agreement. Such provisions of the LBE Ordinance are incorporated by reference and made a part of this Agreement as though fully set forth in this section. Contractor's willful failure to comply with any applicable provisions of the LBE Ordinance is a material breach of

Contractor's obligations under this Agreement and shall entitle City, subject to any applicable notice and cure provisions set forth in this Agreement, to exercise any of the remedies provided for under this Agreement, under the LBE Ordinance or otherwise available at law or in equity, which remedies shall be cumulative unless this Agreement expressly provides that any remedy is exclusive. In addition, Contractor shall comply fully with all other applicable local, state and federal laws prohibiting discrimination and requiring equal opportunity in contracting, including subcontracting.

**b. Compliance and Enforcement**

**1. Enforcement**

If Contractor willfully fails to comply with any of the provisions of the LBE Ordinance, the rules and regulations implementing the LBE Ordinance, or the provisions of this Agreement pertaining to LBE participation, Contractor shall be liable for liquidated damages in an amount equal to Contractor's net profit on this Agreement, or 10% of the total amount of this Agreement, or \$1,000, whichever is greatest. The Director of the City's Human Rights Commission or any other public official authorized to enforce the LBE Ordinance (separately and collectively, the "Director of HRC") may also impose other sanctions against Contractor authorized in the LBE Ordinance, including declaring the Contractor to be irresponsible and ineligible to contract with the City for a period of up to five years or revocation of the Contractor's LBE certification. The Director of HRC will determine the sanctions to be imposed, including the amount of liquidated damages, after investigation pursuant to Administrative Code §14B.17.

By entering into this Agreement, Contractor acknowledges and agrees that any liquidated damages assessed by the Director of the HRC shall be payable to City upon demand. Contractor further acknowledges and agrees that any liquidated damages assessed may be withheld from any monies due to Contractor on any contract with City.

Contractor agrees to maintain records necessary for monitoring its compliance with the LBE Ordinance for a period of three years following termination or expiration of this Agreement, and shall make such records available for audit and inspection by the Director of HRC or the Controller upon request.

**m. Conflict of Interest.** Section 18.04 is hereby replaced in its entirety to read as follows:

**18.04. Conflict of Interest**

Through its execution of this Agreement, Contractor acknowledges that it is familiar with the provision of Section 15.103 of the City's Charter, Article III, Chapter 2 of the City's Campaign and Governmental Conduct Code, and Section 87100 et seq. and Section 1090 et seq. of the Government Code of the State of California, and certifies that it does not know of any facts which constitutes a violation of said provisions and agrees that it will immediately notify the City if it becomes aware of any such fact during the term of this Agreement.

**n. Requiring Health Benefits for Employees.** Section 18.16 of the Agreement is hereby replaced in its entirety, as follows:

**18.16. Requiring Health Benefits for Covered Employees**

Unless exempt, Contractor agrees to comply fully with and be bound by all of the provisions of the Health Care Accountability Ordinance (HCAO), as set forth in San Francisco Administrative Code Chapter 12Q, including the remedies provided, and implementing regulations, as the same may be amended from time to time. The provisions of Chapter 12Q are incorporated herein by reference and made a part of this agreement as though fully set forth. The text of the HCAO is available on the web at <http://www.sfgov.org/oca/lwlh.htm>. Capitalized terms used in this Section and not defined in this agreement shall have the meanings assigned to such terms in Chapter 12Q.

a. For each Covered Employee, Contractor shall provide the appropriate health benefit set forth in Section 12Q.3 of the HCAO. If Contractor chooses to offer the health plan option, such health plan shall meet the minimum standards set forth by the San Francisco Health Commission.

b. Notwithstanding the above, if the Contractor is a small business as defined in Section 12Q.3(d) of the HCAO, it shall have no obligation to comply with part (a) above.

c. Contractor's failure to comply with the HCAO shall constitute a material breach of this agreement. City shall notify Contractor if such a breach has occurred. If, within 30 days after receiving City's written notice of a breach of this Agreement for violating the HCAO, Contractor fails to cure such breach or, if such breach cannot reasonably be cured within such period of 30 days, Contractor fails to commence efforts to cure within such period, or thereafter fails diligently to pursue such cure to completion, City shall have the right to pursue the remedies set forth in 12Q.5(f)(1-5). Each of these remedies shall be exercisable individually or in combination with any other rights or remedies available to City.

d. Any Subcontract entered into by Contractor shall require the Subcontractor to comply with the requirements of the HCAO and shall contain contractual obligations substantially the same as those set forth in this Section. Contractor shall notify City's Purchasing Division when it enters into such a Subcontract and shall certify to the Purchasing Division that it has notified the Subcontractor of the obligations under the HCAO and has imposed the requirements of the HCAO on Subcontractor through the Subcontract. Each Contractor shall be responsible for its Subcontractors' compliance with this Chapter. If a Subcontractor fails to comply, the City may pursue the remedies set forth in this Section against Contractor based on the Subcontractor's failure to comply, provided that City has first provided Contractor with notice and an opportunity to obtain a cure of the violation.

e. Contractor shall not discharge, reduce in compensation, or otherwise discriminate against any employee for notifying City with regard to Contractor's noncompliance or anticipated noncompliance with the requirements of the HCAO, for opposing any practice proscribed by the HCAO, for participating in proceedings related to the HCAO, or for seeking to assert or enforce any rights under the HCAO by any lawful means.

f. Contractor represents and warrants that it is not an entity that was set up, or is being used, for the purpose of evading the intent of the HCAO.

g. Contractor shall keep itself informed of the current requirements of the HCAO.



h. Contractor shall provide reports to the City in accordance with any reporting standards promulgated by the City under the HCAO, including reports on Subcontractors and Subtenants, as applicable.

i. Contractor shall provide City with access to records pertaining to compliance with HCAO after receiving a written request from City to do so and being provided at least five business days to respond.

j. City may conduct random audits of Contractor to ascertain its compliance with HCAO. Contractor agrees to cooperate with City when it conducts such audits.

k. If Contractor is exempt from the HCAO when this Agreement is executed because its amount is less than \$25,000 (\$50,000 for nonprofits), but Contractor later enters into an agreement or agreements that cause Contractor's aggregate amount of all agreements with City to reach \$75,000, all the agreements shall be thereafter subject to the HCAO. This obligation arises on the effective date of the agreement that causes the cumulative amount of agreements between Contractor and the City to be equal to or greater than \$75,000 in the fiscal year.

l. **Effect of HCAO on Agreement.** As of the date of this amendment, the Agreement is subject to HCAO. Contractor is not required to provide HCAO benefits retroactively to the start date of the Agreement.

m. **Effect of HCAO on other contracts between Contractor and City.** As of the date of this Amendment, all contracts now in force between Contractor and City are subject to HCAO, unless an exemption (except for dollar amount) or waiver applied to the contract. If Contractor has entered into agreements with one or more City Departments, the aggregate amount of which equal \$25,000 or less payable from those Departments, this Agreement is exempt from the HCAO. For non-profit corporations, this threshold is \$50,000. If Contractor has multiple agreements with the City in a given fiscal year (which agreements would be considered "Contracts" under Chapter 12Q except that the individual dollar amounts are below the thresholds set forth in the preceding sentence) and the cumulative amount of such Agreements, including this Amendment, is \$75,000 or more, each such agreement then becomes subject to HCAO by virtue of this Amendment.

o. **Limitations on Contributions.** Section 18.29 is hereby added to the Agreement as follows:

**18.29. Limitations on Contributions**

Through execution of this Agreement, Contractor acknowledges that it is familiar with section 1.126 of the City's Campaign and Governmental Conduct Code, which prohibits any person who contracts with the City for the rendition of personal services, for the furnishing of any material, supplies or equipment, for the sale or lease of any land or building, or for a grant, loan or loan guarantee, from making any campaign contribution to (1) an individual holding a City elective office if the contract must be approved by the individual, a board on which that individual serves, or a board on which an appointee of that individual serves, (2) a candidate for the office held by such individual, or (3) a committee controlled by such individual, at any time from the commencement of negotiations for the contract until the later of either the termination of negotiations for such contract or six months after the date the contract is approved. Contractor acknowledges that the foregoing restriction applies only if the contract or a combination or series of contracts approved by the same individual or board in a fiscal year have a total anticipated or actual value of \$50,000 or more. Contractor further acknowledges that the prohibition on contributions applies to each prospective party to the contract; each member of

Contractor's board of directors; Contractor's chairperson, chief executive officer, chief financial officer and chief operating officer; any person with an ownership interest of more than 20 percent in Contractor; any subcontractor listed in the bid or contract; and any committee that is sponsored or controlled by Contractor. Additionally, Contractor acknowledges that Contractor must inform each of the persons described in the preceding sentence of the prohibitions contained in Section 1.126.

- p. **First Source Hiring Program.** Section 18.30 is hereby added to the Agreement as follows:

**18.30 First Source Hiring Program**

**a. Incorporation of Administrative Code Provisions by Reference**

The provisions of Chapter 83 of the San Francisco Administrative Code are incorporated in this Section by reference and made a part of this Agreement as though fully set forth herein. Contractor shall comply fully with, and be bound by, all of the provisions that apply to this Agreement under such Chapter, including but not limited to the remedies provided therein. Capitalized terms used in this Section and not defined in this Agreement shall have the meanings assigned to such terms in Chapter 83.

**b. First Source Hiring Agreement**

As an essential term of, and consideration for, any contract or property contract with the City, not exempted by the FSHA, the Contractor shall enter into a first source hiring agreement ("agreement") with the City, on or before the effective date of the contract or property contract. Contractors shall also enter into an agreement with the City for any other work that it performs in the City. Such agreement shall:

(1) Set appropriate hiring and retention goals for entry level positions. The employer shall agree to achieve these hiring and retention goals, or, if unable to achieve these goals, to establish good faith efforts as to its attempts to do so, as set forth in the agreement. The agreement shall take into consideration the employer's participation in existing job training, referral and/or brokerage programs. Within the discretion of the FSHA, subject to appropriate modifications, participation in such programs maybe certified as meeting the requirements of this Chapter. Failure either to achieve the specified goal or to establish good faith efforts will constitute noncompliance and will subject the employer to the provisions of Section 83.10 of this Chapter.

(2) Set first source interviewing, recruitment and hiring requirements, which will provide the San Francisco Workforce Development System with the first opportunity to provide qualified economically disadvantaged individuals for consideration for employment for entry level positions. Employers shall consider all applications of qualified economically disadvantaged individuals referred by the System for employment; provided however, if the employer utilizes nondiscriminatory screening criteria, the employer shall have the sole discretion to interview and/or hire individuals referred or certified by the San Francisco Workforce Development System as being qualified economically disadvantaged individuals. The duration of the first source interviewing requirement shall be determined by the FSHA and shall be set forth in each agreement, but shall not exceed 10 days. During that period, the employer may publicize the entry level positions in accordance with the agreement. A need for urgent or temporary hires must be evaluated, and appropriate provisions for such a situation must be made in the agreement.

(3) Set appropriate requirements for providing notification of available entry level positions to the San Francisco Workforce Development System so that the System may train and refer an adequate pool of qualified economically disadvantaged individuals to participating employers.

Notification should include such information as employment needs by occupational title, skills, and/or experience required, the hours required, wage scale and duration of employment, identification of entry level and training positions, identification of English language proficiency requirements, or absence thereof, and the projected schedule and procedures for hiring for each occupation. Employers should provide both long-term job need projections and notice before initiating the interviewing and hiring process. These notification requirements will take into consideration any need to protect the employer's proprietary information.

(4) Set appropriate record keeping and monitoring requirements. The First Source Hiring Administration shall develop easy-to-use forms and record keeping requirements for documenting compliance with the agreement. To the greatest extent possible, these requirements shall utilize the employer's existing record keeping systems, be nonduplicative, and facilitate a coordinated flow of information and referrals.

(5) Establish guidelines for employer good faith efforts to comply with the first source hiring requirements of this Chapter. The FSHA will work with City departments to develop employer good faith effort requirements appropriate to the types of contracts and property contracts handled by each department. Employers shall appoint a liaison for dealing with the development and implementation of the employer's agreement. In the event that the FSHA finds that the employer under a City contract or property contract has taken actions primarily for the purpose of circumventing the requirements of this Chapter, that employer shall be subject to the sanctions set forth in Section 83.10 of this Chapter.

(6) Set the term of the requirements.

(7) Set appropriate enforcement and sanctioning standards consistent with this Chapter.

(8) Set forth the City's obligations to develop training programs, job applicant referrals, technical assistance, and information systems that assist the employer in complying with this Chapter.

(9) Require the developer to include notice of the requirements of this Chapter in leases, subleases, and other occupancy contracts.

**c. Hiring Decisions**

Contractor shall make the final determination of whether an Economically Disadvantaged Individual referred by the System is "qualified" for the position.

**d. Exceptions**

Upon application by Employer, the First Source Hiring Administration may grant an exception to any or all of the requirements of Chapter 83 in any situation where it concludes that compliance with this Chapter would cause economic hardship.

**e. Liquidated Damages**

Contractor agrees:

(1) To be liable to the City for liquidated damages as provided in this section;

(2) To be subject to the procedures governing enforcement of breaches of contracts based on violations of contract provisions required by this Chapter as set forth in this section;

(3) That the contractor's commitment to comply with this Chapter is a material element of the City's consideration for this contract; that the failure of the contractor to comply with the contract provisions required by this Chapter will cause harm to the City and the public which is significant and substantial but extremely difficult to quantify; that the harm to the City includes not only the financial cost of funding public assistance programs but also the insidious but impossible to quantify harm that this community and its families suffer as a result of unemployment; and that the assessment of liquidated damages of up to \$5,000 for every notice of a new hire for an entry level position improperly withheld by the contractor from the first source hiring process, as determined by the FSHA during its first investigation of a contractor, does not exceed a fair estimate of the financial and other damages that the City suffers as a result of the contractor's failure to comply with its first source referral contractual obligations.

(4) That the continued failure by a contractor to comply with its first source referral contractual obligations will cause further significant and substantial harm to the City and the public, and that a second assessment of liquidated damages of up to \$10,000 for each entry level position improperly withheld from the FSHA, from the time of the conclusion of the first investigation forward, does not exceed the financial and other damages that the City suffers as a result of the contractor's continued failure to comply with its first source referral contractual obligations;

(5) That in addition to the cost of investigating alleged violations under this Section, the computation of liquidated damages for purposes of this section is based on the following data:

A. The average length of stay on public assistance in San Francisco's County Adult Assistance Program is approximately 41 months at an average monthly grant of \$348 per month, totaling approximately \$14,379; and

B. In 2004, the retention rate of adults placed in employment programs funded under the Workforce Investment Act for at least the first six months of employment was 84.4%. Since qualified individuals under the First Source program face far fewer barriers to employment than their counterparts in programs funded by the Workforce Investment Act, it is reasonable to conclude that the average length of employment for an individual whom the First Source Program refers to an employer and who is hired in an entry level position is at least one year;

therefore, liquidated damages that total \$5,000 for first violations and \$10,000 for subsequent violations as determined by FSHA constitute a fair, reasonable, and conservative attempt to quantify the harm caused to the City by the failure of a contractor to comply with its first source referral contractual obligations.

(6) That the failure of contractors to comply with this Chapter, except property contractors, may be subject to the debarment and monetary penalties set forth in Sections 6.80 et seq. of the San Francisco Administrative Code, as well as any other remedies available under the contract or at law; and

(7) That in the event the City is the prevailing party in a civil action to recover liquidated damages for breach of a contract provision required by this Chapter, the contractor will be liable for the City's costs and reasonable attorneys fees.

Violation of the requirements of Chapter 83 is subject to an assessment of liquidated damages in the amount of \$5,000 for every new hire for an Entry Level Position improperly withheld

from the first source hiring process. The assessment of liquidated damages and the evaluation of any defenses or mitigating factors shall be made by the FSHA.

**f. Subcontracts**

Any subcontract entered into by Contractor shall require the subcontractor to comply with the requirements of Chapter 83 and shall contain contractual obligations substantially the same as those set forth in this Section.

**q. Preservative-treated Wood Containing Arsenic.** Section 18.31 is hereby added to the Agreement, as follows:

**18.31. Preservative-treated Wood Containing Arsenic**

Contractor may not purchase preservative-treated wood products containing arsenic in the performance of this Agreement unless an exemption from the requirements of Chapter 13 of the San Francisco Environment Code is obtained from the Department of the Environment under Section 1304 of the Code. The term "preservative-treated wood containing arsenic" shall mean wood treated with a preservative that contains arsenic, elemental arsenic, or an arsenic copper combination, including, but not limited to, chromated copper arsenate preservative, ammoniacal copper zinc arsenate preservative, or ammoniacal copper arsenate preservative. Contractor may purchase preservative-treated wood products on the list of environmentally preferable alternatives prepared and adopted by the Department of the Environment. This provision does not preclude Contractor from purchasing preservative-treated wood containing arsenic for saltwater immersion. The term "saltwater immersion" shall mean a pressure-treated wood that is used for construction purposes or facilities that are partially or totally immersed in saltwater.

**r. Prohibition on Political Activity with City Funds.** Section 18.32 is hereby added to the Agreement, as follows:

**18.32. Prohibition on Political Activity with City Funds**

In accordance with San Francisco Administrative Code Chapter 12.G, Contractor may not participate in, support, or attempt to influence any political campaign for a candidate or for a ballot measure (collectively, "Political Activity") in the performance of the services provided under this Agreement. Contractor agrees to comply with San Francisco Administrative Code Chapter 12.G and any implementing rules and regulations promulgated by the City's Controller. The terms and provisions of Chapter 12.G are incorporated herein by this reference. In the event Contractor violates the provisions of this section, the City may, in addition to any other rights or remedies available hereunder, (i) terminate this Agreement, and (ii) prohibit Contractor from bidding on or receiving any new City contract for a period of two (2) years. The Controller will not consider Contractor's use of profit as a violation of this section.

**s. Protection of Private Information.** Section 18.33 is hereby added to the Agreement, as follows:

**18.33. Protection of Private Information**

Contractor agrees to comply fully with and be bound by all of the provisions of Chapter 12M of the San Francisco Administrative Code ("Protection of Private Information"), including the remedies provided. The provisions of Chapter 12M are incorporated herein by reference and made a part of this Agreement as though fully set forth. Capitalized terms used in this section and not defined in this Agreement shall have the meanings assigned to such terms in Chapter 12M. Consistent with the requirements of Chapter 12M, Contractor agrees to all of the following:

a. Neither Contractor nor any of its Subcontractors shall disclose Private Information obtained from the City in the performance of this Agreement to any other Subcontractor, person, or other entity, unless one of the following is true:

- (1) The disclosure is authorized by this Agreement;
- (2) The Contractor received advance written approval from the Contracting Department to disclose the information; or
- (3) The disclosure is expressly required by a judicial order.

b. Any disclosure or use of Private Information authorized by this Agreement shall be in accordance with any conditions or restrictions stated in this Agreement. Any disclosure or use of Private Information authorized by a Contracting Department shall be in accordance with any conditions or restrictions stated in the approval.

c. Private Information shall mean any information that: (1) could be used to identify an individual, including without limitation, name, address, social security number, medical information, financial information, date and location of birth, and names of relatives; or (2) the law forbids any person from disclosing.

d. Any failure of Contractor to comply with Chapter 12M shall be a material breach of this Agreement. In such an event, in addition to any other remedies available to it under equity or law, the City may terminate this Agreement, debar Contractor, or bring a false claim action against Contractor.

t. **Graffiti Removal.** Section 18.34 is hereby added to the Agreement, as follows:

#### **18.34 Graffiti Removal**

Graffiti is detrimental to the health, safety and welfare of the community in that it promotes a perception in the community that the laws protecting public and private property can be disregarded with impunity. This perception fosters a sense of disrespect of the law that results in an increase in crime; degrades the community and leads to urban blight; is detrimental to property values, business opportunities and the enjoyment of life; is inconsistent with the City's property maintenance goals and aesthetic standards; and results in additional graffiti and in other properties becoming the target of graffiti unless it is quickly removed from public and private property. Graffiti results in visual pollution and is a public nuisance. Graffiti must be abated as quickly as possible to avoid detrimental impacts on the City and County and its residents, and to prevent the further spread of graffiti.

Contractor shall remove all graffiti from any real property owned or leased by Contractor in the City and County of San Francisco within forty eight (48) hours of the earlier of Contractor's (a) discovery or notification of the graffiti or (b) receipt of notification of the graffiti from the

1

Department of Public Works. This section is not intended to require a Contractor to breach any lease or other agreement that it may have concerning its use of the real property. The term "graffiti" means any inscription, word, figure, marking or design that is affixed, marked, etched, scratched, drawn or painted on any building, structure, fixture or other improvement, whether permanent or temporary, including by way of example only and without limitation, signs, banners, billboards and fencing surrounding construction sites, whether public or private, without the consent of the owner of the property or the owner's authorized agent, and which is visible from the public right-of-way. "Graffiti" shall not include: (1) any sign or banner that is authorized by, and in compliance with, the applicable requirements of the San Francisco Public Works Code, the San Francisco Planning Code or the San Francisco Building Code; or (2) any mural or other painting or marking on the property that is protected as a work of fine art under the California Art Preservation Act (California Civil Code Sections 987 et seq.) or as a work of visual art under the Federal Visual Artists Rights Act of 1990 (17 U.S.C. §§ 101 et seq.).

Any failure of Contractor to comply with this section of this Agreement shall constitute an Event of Default of this Agreement.

ii. **Food Service Waste Reduction Requirements.** Section 18.35 is hereby added to the Agreement, as follows:

**18.35 Food Service Waste Reduction Requirements**

Effective June 1, 2007, Contractor agrees to comply fully with and be bound by all of the provisions of the Food Service Waste Reduction Ordinance, as set forth in San Francisco Environment Code Chapter 16, including the remedies provided, and implementing guidelines and rules. The provisions of Chapter 16 are incorporated herein by reference and made a part of this Agreement as though fully set forth. This provision is a material term of this Agreement. By entering into this Agreement, Contractor agrees that if it breaches this provision, City will suffer actual damages that will be impractical or extremely difficult to determine; further, Contractor agrees that the sum of one hundred dollars (\$100) liquidated damages for the first breach, two hundred dollars (\$200) liquidated damages for the second breach in the same year, and five hundred dollars (\$500) liquidated damages for subsequent breaches in the same year is reasonable estimate of the damage that City will incur based on the violation, established in light of the circumstances existing at the time this Agreement was made. Such amount shall not be considered a penalty, but rather agreed monetary damages sustained by City because of Contractor's failure to comply with this provision.

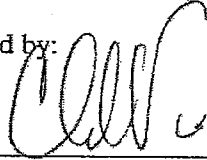
3. **Effective Date.** Each of the modifications set forth in Section 2 shall be effective on and after the date of this Amendment.

4. **Legal Effect.** Except as expressly modified by this Amendment, all of the terms and conditions of the Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, Contractor and City have executed this Amendment as of the date first referenced above.

**CITY**

Recommended by:

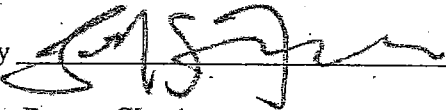


Chris A. Vein, Executive Director  
Department of Telecommunications  
And Information Services

Approved as to Form:

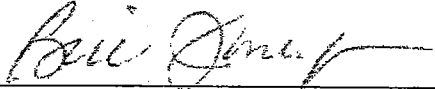
Dennis J. Herrera  
City Attorney

By



Deputy City Attorney

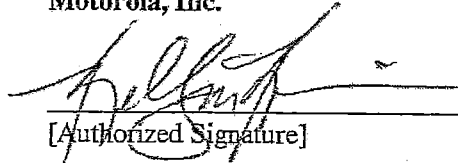
Approved:



Naomi Kelly  
Director of the Office of Contract  
Administration, and Purchaser

**CONTRACTOR**

**Motorola, Inc.**



[Authorized Signature]

Kelly M. Kirwan

Vice President, Motorola, Inc.  
State & Local Government Markets

City Vendor Number: 12872



RECEIVED  
2007 JUN 28 PM 12:25  
PROBATION DEPT

San Francisco Master Purchase Agreement Pricing  
 Ammendment #6 06/07/2007  
 Revised Exhibit G

Type	APC Code	APC Description	Discount %	Notes
Portable	256	XTVA	27.00%	
Portable	687	XTS1500	27.00%	
Portable	205	XTS2500 700/800 Portable	27.00%	
Portable	407	XTS 2500 UHF R1/R2 AND VHF	27.00%	
Portable	320	XTS 5000 UHF/VHF	27.00%	
Portable	721	XTS 5000 700/800	27.00%	
Portable	687	MT1500	27.00%	
Portable	921	MTX	27.00%	
Portable	672	HT750 and MTX	27.00%	
Portable	749	HT1250	27.00%	
Portable	430/332	FLASHKITS	27.00%	
Pagers	136	MINITOR	27.00%	
Pagers	169	ADVISOR	27.00%	
Accessories	271	CPC-REPLACEMENT PARTS	20.00%	
Accessories	362	CPC-REPLACEMENT PARTS	20.00%	
Accessories	371	APC - RADIO SUBS SOFTWARE	20.00%	
Accessories	454	AUDIO ACCESSORIES	20.00%	
Accessories	453	REPL BATTERIES	20.00%	
Mobile	276	XTL5000 CONSOLETTTE	27.00%	
Mobile	374	ASTRO CONSOLETTTE	27.00%	
Mobile	726	XTL1500 V/UHF	27.00%	
Mobile	775	XTL1500 700/800	27.00%	
Mobile	514	XTL2500 7/800 MHZ	27.00%	
Mobile	518	XTL2500 UHF/VHF	27.00%	
Mobile	500	XTL5000 7/800 MHZ	27.00%	
Mobile	585	XTL5000 UHF/VFH	27.00%	
Mobile	103	CDM 750 Series	27.00%	
Mobile	109	CDM 1250 Series	27.00%	
Mobile	792	CDM 1550 Series	27.00%	
Infrastructure	225	QTAR/QTAR RCVR 6809 TRNK	27.00%	
Infrastructure	448	ANALOG QUANTAR	27.00%	
Infrastructure	509	ASTRO QUANTAR	27.00%	
Infrastructure	537	QTAR SZ ASTRO INTELLIRPT	27.00%	
Infrastructure	273	ANALOG RECVR/COMPARITOR	27.00%	
Infrastructure	512	MTR2000 CONV DIRECT	27.00%	
Infrastructure	228	CENTRACOM SERIES II	27.00%	
Infrastructure	124	MC SERIES DESKSET	27.00%	
Infrastructure	244	TRKD CENTRACOMII	27.00%	
Infrastructure	229	LOGGING RECORDER for R3.0	27.00%	ASTRO SZ 3.0 only
Infrastructure	404 and 504	GOLD ELITE	27.00%	ASTRO SZ 3.0 only
Infrastructure	281	ZONE MGR USER INTERFACE	27.00%	ASTRO SZ 3.0 only
Infrastructure	524	ASTRO DIU	27.00%	

Type	APC Code	APC Description	Discount %	Notes
Infrastructure	525	ASTRO-TAC 3600	27.00%	ASTRO SZ 3.0 only
Infrastructure	377	MTC3600	27.00%	ASTRO SZ 3.0 related
Infrastructure	877	NETWORK MGMNT EQUIPMENT	27.00%	ASTRO SZ 3.0 only
Dropship	207	SITE/DROPSHIP EQUIP	27.00%	ASTRO SZ 3.0 related
Dropship	708	COMPUTERS/MODEMS	27.00%	ASTRO SZ 3.0 related
Dropship	261	CPC-TEST EQUIPMENT	27.00%	ASTRO SZ 3.0 related
WBSO	41	IVSC / ALPR*	11.00%	
WBSO	117	OUT-SOURCED FIXED DATA*	11.00%	
WBSO	171	DP2*	11.00%	
WBSO	214	MOSCAD*	15.00%	
WBSO	342	ALARM AND CONTROL SYSTEM*	11.00%	
WBSO	403	DATA CONTROLLERS*	11.00%	
WBSO	469	NFM PRODUCTS*	11.00%	
WBSO	343	ML900*	25.00%	
WBSO	39	MULTI-NET MOBILITY ROUTER*	11.00%	
WBSO	683	MESH/HOTZONE DUO*	15.00%	
WBSO	736	MW800*	25.00%	
WBSO	170	ML900 ACCESSORIES*	11.00%	
WBSO	232	TX MESSENGER*	11.00%	
WBSO	381/608	DataTAC SOFTWARE*	11.00%	
WBSO	403	DATA SYSTEM HARDWARE*	11.00%	
WBSO	503/554/855	DATA ACCESSORIES*	11.00%	
WBSO	508	VRM850 MODEM	27.00%	
WBSO	629	PORTABLE HANDHELD COMPUTER*	11.00%	
WBSO	153	HPD1000 MODEM*	15.00%	
WBSO	224	Point to Point*	15.00%	
WBSO	606/097	PTP / POINT TO POINT and MULTIPOINT WIRELESS BROADBAND NETWORK*	10.00%	

system or bulk equipment below and services purchases (for smaller orders of \$1,000,000 or less in value)

are eligible to receive additional discount considerations.

For large orders (i.e. exceeding \$1,000,000 in value), greater discounts are available and will be negotiated with Motorola.

These discounts may not be combined with any other on-going promotions.

Revised Exhibit H – Labor Rate Schedule per CPI Analysis

Program Manager	\$ 1,281.83
Application Engineer Specialist	\$ 1,335.69
Project Design Engineer	\$ 1,335.69
Contract Administrator	\$ 961.38
Engineering Specification Writer	\$ 1,335.69
Draftsperson	\$ 961.38
Technician	\$ 1,121.66
Civil Construction Foreman	\$ 999.72
Equipment Technician	\$ 1,121.66
Instructor for Training	\$ 1,335.69
Installation Technician	\$ 992.40
Operator Training	\$ 1,335.69

Consumer Price Index-All Urban Consumers

Series Catalog:

Series ID: CUURA422SAS

Not Seasonally Adjusted

Area: San Francisco-Oakland-San Jose, CA

Item: Services

Base Period: 1982-84 =100

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann	%Change Year over Year
1996	167.2	167.8	165.6	166.2	168.7	169.6	170.7	170.7	171.6	172.4	172.5	172.3	169.6	
1997	173.2	173.5	175	175.3	176.4	177	177.8	178.6	179.2	180.3	180.3	180.9	177.3	4.54%
1998		181.2		183.4		185.2		187.1		188.1		189.1	185.3	4.51%
1999		191.7		193.3		194		195.8		199.5		198.5	194.9	5.19%
2000				202.6		204.1		207.9		210.4		211.8	205.8	5.59%
2001				219.4		222.6		224.6		225.7		226.4	222.2	7.97%
2002				227.9		230		230.5		230.6		230.2	229.1	3.11%
2003				233.3		234.4		234.4		234.7		233.4	233.9	2.10%
2004				233.9		234.9		235.9		237.1		237.1	235.4	0.64%
2005				238.8		239		240.1		243.4		243.1	240.2	2.04%
2006				248.8		248.4		249.9		252.2		252.2	249.5	3.87%
2007														39.55%

SF MPA Analysis on Exhibit H

MPA	Hourly Rate	Equivalent Per Day Rate	CPI 1999 %	CPI 2000 %	CPI 2001 %	CPI 2002 %	CPI 2003 %	CPI 2004 %	CPI 2005 %	CPI 2006 %
			Change	Change	Change	Change	Change	Change	Change	Change
Program Manager	\$ 119.00	\$ 952.00	\$ 1,001.32	\$ 1,057.32	\$ 1,141.58	\$ 1,177.03	\$ 1,201.69	\$ 1,209.39	\$ 1,234.06	\$ 1,281.93
Application Engineer Specialist	\$ 124.00	\$ 992.00	\$ 1,043.39	\$ 1,101.75	\$ 1,189.54	\$ 1,226.48	\$ 1,252.18	\$ 1,260.21	\$ 1,285.91	\$ 1,335.69
Project Design Engineer	\$ 124.00	\$ 992.00	\$ 1,043.39	\$ 1,101.75	\$ 1,189.54	\$ 1,226.48	\$ 1,252.18	\$ 1,260.21	\$ 1,285.91	\$ 1,335.69
Contract Administrator	\$ 89.25	\$ 714.00	\$ 750.99	\$ 792.99	\$ 856.18	\$ 882.77	\$ 901.27	\$ 907.05	\$ 925.54	\$ 961.38
Engineering Specification Writer	\$ 124.00	\$ 992.00	\$ 1,043.39	\$ 1,101.75	\$ 1,189.54	\$ 1,226.48	\$ 1,252.18	\$ 1,260.21	\$ 1,285.91	\$ 1,335.69
Draftsperson	\$ 89.25	\$ 714.00	\$ 750.99	\$ 792.99	\$ 856.18	\$ 882.77	\$ 901.27	\$ 907.05	\$ 925.54	\$ 961.38
Technician	\$ 104.13	\$ 833.04	\$ 876.20	\$ 926.20	\$ 998.93	\$ 1,029.95	\$ 1,051.53	\$ 1,058.27	\$ 1,079.85	\$ 1,121.66
Civil Construction Foreman	\$ 92.81	\$ 742.48	\$ 780.95	\$ 824.62	\$ 890.33	\$ 917.98	\$ 937.22	\$ 943.23	\$ 962.46	\$ 999.72
Equipment Technician	\$ 104.13	\$ 833.04	\$ 876.20	\$ 926.20	\$ 998.93	\$ 1,029.95	\$ 1,051.53	\$ 1,058.27	\$ 1,079.85	\$ 1,121.66
Instructor for Training	\$ 124.00	\$ 992.00	\$ 1,043.39	\$ 1,101.75	\$ 1,189.54	\$ 1,226.48	\$ 1,252.18	\$ 1,260.21	\$ 1,285.91	\$ 1,335.69
Installation Technician	\$ 92.13	\$ 737.04	\$ 775.22	\$ 818.58	\$ 883.81	\$ 911.26	\$ 930.35	\$ 936.32	\$ 955.41	\$ 992.40
Operator Training	\$ 124.00	\$ 992.00	\$ 1,043.39	\$ 1,101.75	\$ 1,189.54	\$ 1,226.48	\$ 1,252.18	\$ 1,260.21	\$ 1,285.91	\$ 1,335.69

# ACORD CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YY)  
07/08/2006

PRODUCER

Serial # 2866

AON RISK SERVICES, INC. OF ILLINOIS  
1000 NORTH MILWAUKEE AVENUE  
GLENVIEW, ILLINOIS 60025  
ATTN: INSURANCE VERIFICATION CENTER  
1-800-4-VERIFY/ FAX 1-847-953-5341

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

### COMPANIES AFFORDING COVERAGE

COMPANY A	LIBERTY MUTUAL FIRE INSURANCE COMPANY
COMPANY B	LIBERTY MUTUAL FIRE INSURANCE COMPANY
COMPANY C	LIBERTY INSURANCE CORPORATION
COMPANY D	

INSURED

MOTOROLA INC. AND ITS SUBSIDIARIES  
1303 EAST ALGONQUIN ROAD  
SCHAUMBURG, IL 60196

### COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES, LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	<b>GENERAL LIABILITY</b> <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT	TB2-641-005169-076	7/01/2006	7/01/2007	GENERAL AGGREGATE \$ 1,000,000 PRODUCTS - COMP/OP AGG \$ INCLUDED PERSONAL & ADV INJURY \$ 1,000,000 EACH OCCURRENCE \$ 1,000,000 FIRE DAMAGE (Any one fire) \$ 250,000 MED EXP (Any one person) \$ 10,000
B	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS <input type="checkbox"/> GARAGEKEEPERS LIABILITY	AS2-641-005169-016	7/01/2006	7/01/2007	COMBINED SINGLE LIMIT \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE \$ AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EACH ACCIDENT \$ AGGREGATE \$
	<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				EACH OCCURRENCE \$ AGGREGATE \$
	<b>EXCESS LIABILITY</b> <input type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM				EACH OCCURRENCE \$ AGGREGATE \$
C	<b>WORKER'S COMPENSATION AND EMPLOYERS' LIABILITY</b> THE PROPRIETOR/ PARTNER/EXECUTIVE OFFICERS ARE: <input type="checkbox"/> INCL <input type="checkbox"/> EXCL	WA7-64D-005169-086 (ALL OTHER STATES) WC7-641-005169-096 (OR & WI)	7/01/2006	7/01/2007	<input checked="" type="checkbox"/> INC STATUTORY LIMITS <input type="checkbox"/> OTHER EL EACH ACCIDENT \$ 1,000,000 EL DISEASE - POLICY LIMIT \$ 1,000,000 EL DISEASE - EA EMPLOYEE \$ 1,000,000
	OTHER				

### DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

RE: 06-13044/BKP - CERTIFICATE HOLDER IS LISTED AS AN ADDITIONAL INSURED WITH RESPECT TO THE GENERAL LIABILITY POLICY OF THIS CONTRACT.

### CERTIFICATE HOLDER

CITY AND COUNTY OF SAN FRANCISCO  
ATTN: MARC ROSAAEN  
875 STEVENSON ST., 5TH FL  
SAN FRANCISCO, CA 94103-0948

### CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE OF AON RISK SERVICES, INC. OF ILLINOIS  
*Aon Risk Services, Inc. of Illinois*

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

### SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):	Location(s) Of Covered Operations
See Attached Extension Schedule	See Attached Extension Schedule
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. Section II – Who is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or

2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

This endorsement is executed by the LIBERTY MUTUAL FIRE INSURANCE COMPANY

Premium \$

Effective Date

Expiration Date

For attachment to Policy No.

TB2-641-005169-076

Audit Basis

Issued To

*Dexter R. Lapp*  
SECRETARY

*Edward F. Kelly*  
PRESIDENT

Countersigned by

\_\_\_\_\_  
Authorized Representative

Issued

Sales Office and No.

End. Serial No. 28



**ADDITIONAL INSURED – OWNERS, LESSEES OR  
CONTRACTORS – scheduled person or organization**

**Extension Schedule for CG 20 10 07 04**

**Name Of Additional Insured Person(s) Or Organization(s):**

The City and County of San Francisco, and its officers  
and employees

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**DESIGNATED INSURED**

This endorsement modified insurance provided under the following:

BUSINESS AUTO COVERAGE FORM  
GARAGE COVERAGE FORM  
MOTOR CARRIER COVERAGE FORM  
TRUCKERS COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by this endorsement.

This endorsement identifies person(s) or organization(s) who are "insureds" under the Who Is An Insured Provision of the Coverage Form. This endorsement does not alter coverage provided in the Coverage Form.

**SCHEDULE**

<b>Name of Person(s) or Organization(s):</b>	The City and County of San Francisco, and its officers and employees
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Each person or organization shown in the Schedule is an "insured" for Liability Coverage, but only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured Provision contained in Section II of the Coverage Form.

This endorsement is executed by the

Effective Date 7/1/2006      Expiration Date 7/1/2007

For attachment to Policy No. AS2-641-005169-016

Issued Motorola, Inc.  
To And as per Endorsement 1  
1303 East Algonquin Road  
Schaumburg, IL 60196-4041

Countersigned by \_\_\_\_\_  
Authorized Representative

End. Serial No.

