File No. 130392 Committee Item No. 1
Board Item No. _____

COMMITTEE/BOARD OF SUPERVISORS

AGENDA PACKET CONTENTS LIST

Committee: Budget and Finance Committee **Date: 06/17/2013**

Board of Supervisors Meeting **Date:** _____

Cmte	Board	
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OTHER **(Use back side if additional space is needed)**

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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]

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 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

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

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

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

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

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

FURTHER RESOLVED, That upon execution of the Seventh Amendment, the Director of the Department of Technology shall transmit to the Clerk of the Board of Supervisors a 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

RECEIVED
BOARD OF SUPERVISORS
SAN FRANCISCO
2013 APR 25 AM 11: 23

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 if you have any questions. Thank you for your review.

130392

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 Acord 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. 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.

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 Contactor 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. 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.

CITY

Recommended by:

Ken Bukowski
Acting Director, Department of Technology

CONTRACTOR

Motorola Solutions, Inc.

Name: Mark Schmidl

Title: MSSSI Vice President

City vendor number: 12872

Approved
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.

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 _____	By _____
Title MSSSI Vice President	Title MSSSI Vice President

Approved
MARK W. ANTHONY

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

MSDS

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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 of 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 ee 10D 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.

"**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 "WDN 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).

Amend # 2 $1,263,528

(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. Replaced mod 1

(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. Replaced MOD 1

(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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(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 posses 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.

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(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

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Amendment 4

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 Builts." 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 specials 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

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).

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(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.

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

WILLIE LEWIS BROWN, JR.
Mayor

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
SCOTT DODGE DATE
MOTOROLA
CONTRACTS AND COMPLIANCE DEPT.

RECOMMENDED:

Director
Department of Telecommunications
and Information Services

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

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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.

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

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

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.

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

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 remoted. Five positions are remoted 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 remoted 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

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.

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

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

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 hardwire 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 are 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

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.

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.

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,

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, Buchannan 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 7TH 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 TH Avenue on the

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.

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 appraised 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.

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

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.

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.

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.

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".

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.

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.

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.

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

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.

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 a75 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 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

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.

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 ¾" 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.

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.

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.

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.

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.

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.

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.

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.

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.

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 workings 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

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.

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

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

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

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

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

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.

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

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:

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

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

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

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.).

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:

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.

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

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

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

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

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)

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:

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)

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 Consolette and Astro Spectra Consolette
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.

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 groups 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)

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

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.

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
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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
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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.



0 1.0 2

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

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
User Equipment										
Radio Units	1955	510	136	450	794	48	136	23	146	4198
Portables	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
Mobiles	385	230	30	81	80	0	96	3	50	955
Dash Mount	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
Trunk Mount	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

Equipment Description	SFPD	SFFD	DPH	DPT	Sheriff	Water	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 Consolette, w/Kpd	0	50	0	5	14	2	0	0	10	81
ASTRO Spectra Consolette, 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	SFFD	DPH	DPT	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 [22]	17 [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

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.

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.

DEPARTMENT OF PUBLIC HEALTH NOTES

DPH dispatch at CECC

DEPARTMENT OF PARKING AND TRAFFIC NOTES

DPT dispatch at HoJ (850 Bryant).
Consoles to be installed at site 12 (Hall of Justice)

SHERIFF DEPARTMENT NOTES

Sheriff dispatch at Jail #9.

WATER DEPARTMENT NOTES

Water dispatch at Site 104
(1990 Newcomb).
32 vehicular adapters for portable radios shall be provided and installed.

DEPARTMENT OF RECREATION & PARKS NOTES

10 mobiles require "horns and lights" paging feature.

OFFICE OF EMERGENCY SERVICES NOTES

OES dispatch at CECC.
Consoles and RCSM to be installed at CECC (site 911).

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

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.).

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5. Exhibit D Cost schedule

EXHIBIT D: PROJECT COST ITEMIZATION SCHEDULE
Phase I and II Summary

Services			
Site Upgrade Work (Construction, Construction Management)			$ 4,135,588.00
One Market Plaza		$ 271,159.00	
Fort Miley		$ 366,662.00	
South Hill		$ 372,783.00	
Forest Hill		$ 192,775.00	
CRS		$ 1,517,368.00	
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
Total Services			$ 9,768,469.00
Radio Subscriber Equipment			
Mobile Radio Equipment			$ 2,348,230.00
Portable Radio Equipment			$ 7,725,393.00
Control Stations			$ 782,710.00
Radio Subscriber Total			$ 10,856,333.00
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		
Mandatory Special Areas	769,602		
System Sub Total			$ 35,494,824.00
System Discount			$ (1,055,625.00)
Net			$34,439,199
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

Site Upgrade Work (Construction, Construction Management)			$ 4,135,588.00
	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			$ 23,550.00
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
Total Services			$ 8,509,613.00

Radio Subscriber Equipment

Mobile Radio Equipment			$ 100,557.50
Portable Radio Equipment			$ 139,400.80
Control Stations			$ 49,809.00
Accessories			$ 19,801.25
Radio Subscriber Total			$ 309,568.55
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	
System Sub Total			$ 23,689,203.55
System Discount			$ (583,456.00)
Net			$ 23,105,747.55
Additions			
Tax			$ 1,075,598.00
Clay Jones Site Development			$ 175,000.00
System Total, phase 1 only			$ 24,356,345.55

Exhibit D: Project Cost Itemization
Phase II

Contracted Services (Installation, Programming)	$ 951,646.00
Training	$ 151,285.00
Freight	$ 155,925.00
Total Services	$ 1,258,856.00
Radio Subscriber Equipment	
Mobile Radio Equipment	$ 2,247,672.50
Portable Radio Equipment	$ 7,566,190.95
Control Stations	$ 732,901.00
Radio Subscriber Total	$ 10,546,764.45
System Sub Total, Phase 2 Only	$ 11,805,620.45
System Discount	$ (472,169.00)
Net	$ 11,333,451.45
Additions:	
Tax	$ 857,568.00
System Total	$ 12,191,019.45

Exhibit D: Project Cost Itemization Schedule
Optional Coverage Enhancement Phase

Services		
Civil (Construction, Construction Management)		**$ 1,100,439.00**
Potero Reservoir	$ 372,794.00	
Presidio	$ 727,645.00	
Engineering (System Techs, Engineers, Optimizations)		**$ 73,250.00**
System Integration (S.I. Personnel, Documentation, Warehouse)		**$ 32,730.00**
Freight		**$ 90,816.00**
Warranty		**$ 9,118.00**
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

Services	$ 350,000.00
System Integration/Engineering Services	
Project Management	
Engineering	
System Technologists	
Site inspection, installation, optimization	
Computer installation	
Acceptance Testing	
Documentation	
Training	
Warranty	
Freight	$ 11,000.00
Total Services	$ 361,000.00
Fixed Network Equipment	$ 663,682.00
Wireless Data Network Subtotal	$ 1,024,682.00
System Discount	$ (44,472.00)
Taxes	$ 83,318.00
Wireless Data Network Net Total	$ 1,063,528.00

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
						Labor		Material		Subcontracts			
				Man-Hours		Hrs	Total	Unit	Total	Unit	Total	Total	
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
1			1. Project Mangement			0		$1,214,594.00		$0.00		$0.00	$1,214,594.00
2			Temporary Facilities (Excludes Training Facility)	1		0		$0.00		$0.00	$234,900.00	$234,900.00	$234,900.00
3			Engineering Services	1		0		$0.00		$0.00	$2,153,220.00	$2,153,220.00	$2,153,220.00
4			Installation Services	1		0		$0.00		$0.00	$0.00	$0.00	$0.00
5			Construction Services (Civl)	1		0		$0.00		$0.00	$0.00	$0.00	$0.00
6			Field Staff			0		$0.00		$0.00		$0.00	$0.00
7			Miscellaneous Field Indirects			0		$0.00		$0.00		$0.00	$0.00
8			Home Office Services			0		$0.00		$0.00		$0.00	$0.00
9													
10													
11			2. Training Courses	1		0		$526,780.00		$0.00		$0.00	$526,780.00
12			Training Facility			0		$0.00		$0.00		$0.00	$0.00
13			Tech./Maintenance Training			0		$0.00		$0.00		$0.00	$0.00
14			Radio User Training			0		$0.00		$0.00		$0.00	$0.00
15			Console User Training			0		$0.00		$0.00		$0.00	$0.00
16			Trainer Training			0		$0.00		$0.00		$0.00	$0.00
17													
18			SECTION 1 AND 2 TOTAL										$4,129,494.00
19			3. Radio Equipment - End User										
20													
21		*****PORTABLES******											
22		*****MTS2000********	Model 1 w/o Kpd	1075		0		$0.00	$0.00	$0.00	$50.00	$53,750.00	$53,750.00
23		H01QX	MTS2000 PORTABLE SERIES	1075		0		$0.00	$963.60	$1,035,870.00		$0.00	$1,035,870.00
24		202H	MTS2000 I 3W 806-870 MHZ	1075		0		$0.00	$156.95	$168,721.25		$0.00	$168,721.25
25		H223	ALT: BATTERY,FACTORY MUTUAL	1075		0		$0.00	$48.91	$52,578.25		$0.00	$52,578.25
26		H43	ENH: TRUNKED REMOTE MONITOR	1075		0		$0.00	$73.00	$78,475.00		$0.00	$78,475.00
27		H37	ADD: SMARTNET SYSTEM PACKAGE	1075		0		$0.00	$502.24	$539,908.00		$0.00	$539,908.00
28		NTN8038	CASE, 3.0" HI ACTIVITY ULTRA HI CAP	1075		0		$0.00	$43.80	$47,085.00		$0.00	$47,085.00
29			SECTION TOTAL										$1,976,387.50
30		*****ASTRO XTS3000**	Model I w/o Kpd	1292		0		$0.00	$0.00	$0.00	$50.00	$64,600.00	$64,600.00
31		H09UCC9PW5 N	ASTRO DIG XTS 3000 BASIC 800MH PORT	1292		0		$0.00	$1,237.35	$1,598,656.20		$0.00	$1,598,656.20
32		H223	ALT: BATTERY ULTRA HIGH CAP NICD FM	1292		0		$0.00	$34.31	$44,328.52		$0.00	$44,328.52
33		H43	ENH: TRUNKED REMOTE MONITOR	1292		0		$0.00	$73.00	$94,316.00		$0.00	$94,316.00
34		Q241	ENH: ANALOG OPERATION	1292		0		$0.00	$0.00	$0.00		$0.00	$0.00
35		H37	ADD: SMARTNET SYSTEM PACKAGE	1292		0		$0.00	$876.00	$1,131,792.00		$0.00	$1,131,792.00
36		NTN0386	CASE, CARRY HIGH ACTIVITY	1292		0		$0.00	$43.80	$56,589.60		$0.00	$56,589.60
			SECTION TOTAL										$2,990,282.32
37													
38		*****ASTRO SABER****	Model 1 w/o Kdp	199		0		$0.00	$0.00	$0.00	$50.00	$9,950.00	$9,950.00
39		H99DX	ASTRO DIG SABER PORT SERIES	199		0		$0.00	$1,314.00	$261,486.00		$0.00	$261,486.00
40		210H	ASTRO DIGITAL SABER I 800MHZ PORT	199		0		$0.00	$142.35	$28,327.65		$0.00	$28,327.65
41		H223AJ	ALT: BATTERY, RUGGEDIZED FM	199		0		$0.00	$4.38	$871.62		$0.00	$871.62
42		H43	ENH: TRUNKED REMOTE MONITOR	199		0		$0.00	$73.00	$14,527.00		$0.00	$14,527.00
43		H46	ENH: TRUNKED ONE BUTTON STATUS/MSG	199		0		$0.00	$109.50	$21,790.50		$0.00	$21,790.50
44		H499	ALT: RUGGEDIZED ASTRO DIGITAL SABER	199		0		$0.00	$346.02	$68,857.98		$0.00	$68,857.98
45		Q241	ENH: ANALOG OPERATION	199		0		$0.00	$0.00	$0.00		$0.00	$0.00
46		H37	ADD: SMARTNET SYSTEM PACKAGE	199		0		$0.00	$481.80	$95,878.20		$0.00	$95,878.20
47		NTN7573	CARRY CASE, LEATHER SWIVEL SNAP	199		0		$0.00	$45.99	$9,152.01		$0.00	$9,152.01
48		NLN4530	BELT LOOP, SWIVEL 3 INCH	199		0		$0.00	$5.84	$1,162.16		$0.00	$1,162.16
			SECTION TOTAL										$512,003.12

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco					Rev: 7/97					
		Citywide 800MHz Radio System Project (CERS)					Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168						Material		Subcontracts		
				Man Hours		Labor Hrs	Total	Unit	Total	Unit	Total	Total
Item #	Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
49												
50	*****ASTRO XTS3000**	Model I w/o Kpd w/Encrypt	60		0		$0.00	$0.00	$0.00	$50.00	$3,000.00	$3,000.00
51	H09UCC9PW5 N	ASTRO DIG XTS 3000	60		0		$0.00	$1,237.35	$74,241.00		$0.00	$74,241.00
52	H223	ALT: BATTERY ULTRA HIGH CAP NICD FM	60		0		$0.00	$34.31	$2,058.60		$0.00	$2,058.60
53	H43	ENH: TRUNKED REMOTE MONITOR	60		0		$0.00	$73.00	$4,380.00		$0.00	$4,380.00
54	Q806	ADD: APCO 25 COMMON AIR INTERFACE	60		0		$0.00	$365.00	$21,900.00		$0.00	$21,900.00
55	Q274	ADD: DES-OFB AND DES-XL ENCRYPTION	60		0		$0.00	$663.57	$39,814.20		$0.00	$39,814.20
56	H37	ADD: SMARTNET SYSTEM PACKAGE	60		0		$0.00	$876.00	$52,560.00		$0.00	$52,560.00
57	NTN8386	CASE, CARRY HIGH ACTIVITY	60		0		$0.00	$43.80	$2,628.00		$0.00	$2,628.00
		SECTION TOTAL										$200,581.80
58												
59	*****MTS2000********	Model 1 w/o Kpd	133		0		$0.00	$0.00	$0.00	$50.00	$6,650.00	$6,650.00
60	H01QX	MTS2000 PORTABLE SERIES	133		0		$0.00	$963.60	$128,158.80		$0.00	$128,158.80
61	204H	MTS2000 III 3W 806-870 MHZ	133		0		$0.00	$638.75	$84,953.75		$0.00	$84,953.75
62	H223	ALT: BATTERY,FACTORY MUTUAL	133		0		$0.00	$48.91	$6,505.03		$0.00	$6,505.03
63	H43	ENH: TRUNKED REMOTE MONITOR	133		0		$0.00	$73.00	$9,709.00		$0.00	$9,709.00
64	H46	ENH: ONE TOUCH BUTTON	133		0		$0.00	$109.50	$14,563.50		$0.00	$14,563.50
65	H37	ADD: SMARTNET SYSTEM PACKAGE	133		0		$0.00	$502.24	$66,797.92		$0.00	$66,797.92
66	NTN8038	CASE, 3.0" HI ACTIVITY ULTRA HI CAP	133		0		$0.00	$43.80	$5,825.40		$0.00	$5,825.40
		SECTION TOTAL										$323,163.40
67												
68	*****ASTRO XTS3000**	Model I w/o Kpd	178		0		$0.00	$0.00	$0.00	$50.00	$8,900.00	$8,900.00
69	H09UCH9PW7 N	ASTRO DIG XTS 3000 FULL FEATURE 800	178		0		$0.00	$1,675.35	$298,212.30		$0.00	$298,212.30
70	H223	ALT: BATTERY ULTRA HIGH CAP NICD FM	178		0		$0.00	$34.31	$6,107.18		$0.00	$6,107.18
71	H43	ENH: TRUNKED REMOTE MONITOR	178		0		$0.00	$73.00	$12,994.00		$0.00	$12,994.00
72	H46	ENH: TRUNKED 1 BTN STATUS/MESSAGE	178		0		$0.00	$109.50	$19,491.00		$0.00	$19,491.00
73	Q241	ENH: ANALOG OPERATION	178		0		$0.00	$0.00	$0.00		$0.00	$0.00
74	H37	ADD: SMARTNET SYSTEM PACKAGE	178		0		$0.00	$876.00	$155,928.00		$0.00	$155,928.00
75	NTN8381	CASE, CARRY HIGH ACTIVITY	178		0		$0.00	$43.80	$7,796.40		$0.00	$7,796.40
		SECTION TOTAL										$509,428.88
76												
77	*****ASTRO SABER*****	Model II w/o Kdp	25		0		$0.00	$0.00	$0.00	$50.00	$1,250.00	$1,250.00
78	H99DX	ASTRO DIG SABER PORT SERIES	25		0		$0.00	$1,314.00	$32,850.00		$0.00	$32,850.00
79	212H	ASTRO DIGITAL SABER II 800MHZ PORT	25		0		$0.00	$361.35	$9,033.75		$0.00	$9,033.75
80	H223AJ	ALT: BATTERY, RUGGEDIZED FM	25		0		$0.00	$4.38	$109.50		$0.00	$109.50
81	H43	ENH: TRUNKED REMOTE MONITOR	25		0		$0.00	$73.00	$1,825.00		$0.00	$1,825.00
82	H46	ENH: TRUNKED ONE BUTTON STATUS/MSG	25		0		$0.00	$109.50	$2,737.50		$0.00	$2,737.50
83	H499	ALT: RUGGEDIZED ASTRO DIGITAL SABER	25		0		$0.00	$346.02	$8,650.50		$0.00	$8,650.50
84	Q241	ENH: ANALOG OPERATION	25		0		$0.00	$0.00	$0.00		$0.00	$0.00
85	H37	ADD: SMARTNET SYSTEM PACKAGE	25		0		$0.00	$481.80	$12,045.00		$0.00	$12,045.00
86	NLN4530	BELT LOOP, SWIVEL 3 INCH	25		0		$0.00	$5.84	$146.00		$0.00	$146.00
87	NTN7573	CARRY CASE, LEATHER SWIVEL SNAP	25		0		$0.00	$45.99	$1,149.75		$0.00	$1,149.75
		SECTION TOTAL										$69,797.00
88												
89	*****ASTRO XTS3000**	Model III w/Kpd w/Encrypt	132		0		$0.00	$0.00	$0.00	$50.00	$6,600.00	$6,600.00
90	H09UCH9PW7 N	ASTRO DIG XTS 3000 FULL FEATURE 800	132		0		$0.00	$1,675.35	$221,146.20		$0.00	$221,146.20
91	H223	ALT: BATTERY ULTRA HIGH CAP NICD FM	132		0		$0.00	$34.31	$4,528.92		$0.00	$4,528.92
92	H43	ENH: TRUNKED REMOTE MONITOR	132		0		$0.00	$73.00	$9,636.00		$0.00	$9,636.00
93	H46	ENH: TRUNKED 1 BTN STATUS/MESSAGE	132		0		$0.00	$109.50	$14,454.00		$0.00	$14,454.00
94	Q274	ADD: DES-OFB AND DES-XL ENCRYPTION	132		0		$0.00	$663.57	$87,591.24		$0.00	$87,591.24
95	Q806	ADD: APCO 25 COMMON AIR INTERFACE	132		0		$0.00	$365.00	$48,180.00		$0.00	$48,180.00
96	H37	ADD: SMARTNET SYSTEM PACKAGE	132		0		$0.00	$876.00	$115,632.00		$0.00	$115,632.00

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
				Man Hours		Labor Hrs		Material		Subcontracts			
Item #	Model	Item Description	Qty	Per Unit	Total	Rate	Total $	Unit Cost	Total $	Unit Cost	Total $	Total Costs
97	NTN8381	CASE, CARRY HIGH ACTIVITY	132		0		$0.00	$43.80	$5,781.60		$0.00	$5,781.60
		SECTION TOTAL										$513,549.96
98												
99	*****ASTRO SABER****	Model II w/Kdp & Encryp Rugged	6		0		$0.00	$0.00	$0.00	$50.00	$300.00	$300.00
100	H99DX	ASTRO DIG SABER PORT SERIES	6		0		$0.00	$1,314.00	$7,884.00		$0.00	$7,884.00
101	212H	ASTRO DIGITAL SABER II 800MHZ PORT	6		0		$0.00	$361.35	$2,168.10		$0.00	$2,168.10
102	H223AJ	ALT: BATTERY, RUGGEDIZED FM	6		0		$0.00	$4.38	$26.28		$0.00	$26.28
103	H43	ENH: TRUNKED REMOTE MONITOR	6		0		$0.00	$73.00	$438.00		$0.00	$438.00
104	H46	ENH: TRUNKED ONE BUTTON STATUS/MSG	6		0		$0.00	$109.50	$657.00		$0.00	$657.00
105	H499	ALT: RUGGEDIZED ASTRO DIGITAL SABER	6		0		$0.00	$346.02	$2,076.12		$0.00	$2,076.12
106	Q274	ADD: DES OFB AND DES-XL	6		0		$0.00	$663.57	$3,981.42		$0.00	$3,981.42
107	Q806	ADD: APCO 25 COMMON AIR INTERFACE	6		0		$0.00	$365.00	$2,190.00		$0.00	$2,190.00
108	H37	ADD: SMARTNET SYSTEM PACKAGE	6		0		$0.00	$481.80	$2,890.80		$0.00	$2,890.80
109	NLN4530	BELT LOOP, SWIVEL 3 INCH	6		0		$0.00	$5.84	$35.04		$0.00	$35.04
110	NTN7573	CARRY CASE, LEATHER SWIVEL SNAP	6		0		$0.00	$45.99	$275.94		$0.00	$275.94
		SECTION TOTAL										$22,922.70
111												
112	*****MOBILE**********	*****DASH MOUNT**********										
113	*****MCS2000*****	Model III, w/ Kpd	303		0		$0.00	$0.00	$0.00	$250.00	$75,750.00	$75,750.00
114	M01HX	MCS2000 HIGH SPEC MOBILE	303		0		$0.00	$693.50	$210,130.50		$0.00	$210,130.50
115	822W	800MHZ 15W MODEL II	303		0		$0.00	$653.35	$197,965.05		$0.00	$197,965.05
116	B688	ADD: PUSH SWITCH, EMERGENCY	303		0		$0.00	$25.55	$7,741.65		$0.00	$7,741.65
117	G495	ADD: ANTENNA 1/4 WAVE 806-900MHZ	303		0		$0.00	$0.00	$0.00		$0.00	$0.00
118	H43	ENH: TRUNKING REMOTE MONITOR	303		0		$0.00	$73.00	$22,119.00		$0.00	$22,119.00
119	H46	ENH: ONE TOUCH BUTTON	303		0		$0.00	$109.50	$33,178.50		$0.00	$33,178.50
120	H37	ADD: SMARTNET SYSTEM PACKAGE	303		0		$0.00	$456.25	$138,243.75		$0.00	$138,243.75
		SECTION TOTAL										$685,128.45
121												
122	*****ASTRO SPECTA***	Model A7, w/Kpd	252		0		$0.00	$0.00	$0.00	$250.00	$63,000.00	$63,000.00
123	T99DX	ASTRO DIG SPECTRA MOBILE SERIES	252		0		$0.00	$1,525.70	$384,476.40		$0.00	$384,476.40
124	132W	35W 800 806-870 A7	252		0		$0.00	$397.85	$100,258.20		$0.00	$100,258.20
125	W688	ADD: EXTERNAL EMERGENCY PUSHBUTTON	252		0		$0.00	$40.88	$10,301.76		$0.00	$10,301.76
126	W432	ENH: 10 WATT AUDIO	252		0		$0.00	$10.95	$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		$0.00	$481.80	$121,413.60		$0.00	$121,413.60
		SECTION TOTAL										$682,209.36
129												
130	*****ASTRO SPECTA***	Model A7, w/Kpd & Encrypt	59		0		$0.00	$0.00	$0.00	$250.00	$14,750.00	$14,750.00
131	T99DX	ASTRO DIG SPECTRA MOBILE SERIES	59		0		$0.00	$1,525.70	$90,016.30		$0.00	$90,016.30
132	132W	35W 800 806-870 A7	59		0		$0.00	$397.85	$23,473.15		$0.00	$23,473.15
133	G806	ENH: ASTRO DIGITAL CAI	59		0		$0.00	$401.50	$23,688.50		$0.00	$23,688.50
134	W688	ADD: EXTERNAL EMERGENCY PUSHBUTTON	59		0		$0.00	$40.88	$2,411.92		$0.00	$2,411.92
135	W432	ENH: 10 WATT AUDIO	59		0		$0.00	$10.95	$646.05		$0.00	$646.05
136	G274	ENH: DES-OFB/DES-XL	59		0		$0.00	$663.57	$39,150.63		$0.00	$39,150.63
137	G50	ENH: SMARTNET OPERATION	59		0		$0.00	$481.80	$28,426.20		$0.00	$28,426.20
		SECTION TOTAL										$222,562.75
138												
139	*****MOBILE**********	*****TRUNK MOUNT**********										
140	*****ASTRO SPECTA***	Model A7, w/Kpd	341		0		$0.00	$0.00	$0.00	$600.00	$204,600.00	$204,600.00
141	T99DX	ASTRO DIG SPECTRA MOBILE SERIES	341		0		$0.00	$1,525.70	$520,263.70		$0.00	$520,263.70
142	132W	35W 800 806-870 A7	341		0		$0.00	$397.85	$135,666.85		$0.00	$135,666.85
143	W688	ADD: EXTERNAL EMERGENCY PUSHBUTTON	341		0		$0.00	$40.88	$13,940.08		$0.00	$13,940.08

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
						Labor		Material		Subcontracts			
				Man Hours		Hrs	Total	Unit	Total	Unit	Total	Total	
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
144		W432	ENH: 10 WATT AUDIO	341		0		$0.00	$10.95	$3,733.95		$0.00	$3,733.95
145		G241	ENH: ANALOG OPERATION	341		0		$0.00	$0.00	$0.00		$0.00	$0.00
146		W496	ENH: REMOTE MOUNT WITH 17FT CABLE	341		0		$0.00	$216.81	$73,932.21		$0.00	$73,932.21
147		G50	ENH: SMARTNET OPERATION	341		0		$0.00	$481.80	$164,293.80		$0.00	$164,293.80
			SECTION TOTAL										$1,116,430.59
148													
149		*****ASTRO SPECTA***	Model A7, w/Kpd & Encrypt	0		0		$0.00	$0.00	$0.00	$600.00	$0.00	$0.00
150		T09DX	ASTRO DIG SPECTRA MOBILE SERIES	0		0		$0.00	$1,525.70	$0.00		$0.00	$0.00
151		132W	35W 800 806-870 A7	0		0		$0.00	$397.85	$0.00		$0.00	$0.00
152		G806	ENH: ASTRO DIGITAL CAI	0		0		$0.00	$401.50	$0.00		$0.00	$0.00
153		W688	ADD: EXTERNAL EMERGENCY PUSHBUTTON	0		0		$0.00	$40.88	$0.00		$0.00	$0.00
154		W432	ENH: 10 WATT AUDIO	0		0		$0.00	$10.95	$0.00		$0.00	$0.00
155		G274	ENH: DES-OFB/DES-XL	0		0		$0.00	$663.57	$0.00		$0.00	$0.00
156		W496	ENH: REMOTE MOUNT WITH 17FT CABLE	0		0		$0.00	$216.81	$0.00		$0.00	$0.00
157		G50	ENH: SMARTNET OPERATION	0		0		$0.00	$481.80	$0.00		$0.00	$0.00
			SECTION TOTAL										$0.00
158													
159		*****CONTROL STATION	**********										
160		*****SPECTRA********	Local Control, w/Kdp	79		0		$0.00	$0.00	$0.00	$750.00	$59,250.00	$59,250.00
161		L09DX	ASTRO SPECTRA	79		0		$0.00	$2,328.70	$183,967.30		$0.00	$183,967.30
162		259L	W7 25W 800MHZ	79		0		$0.00	$843.15	$66,608.85		$0.00	$66,608.85
163		G241	ADD: ANALOG ONLY MODE	79		0		$0.00	$0.00	$0.00		$0.00	$0.00
164		L114	ADD: CLOCK VU METER	79		0		$0.00	$73.00	$5,767.00		$0.00	$5,767.00
165		G50	ENH: SMARTNET OPERATION	79		0		$0.00	$481.80	$38,062.20		$0.00	$38,062.20
166		TDF6441	ANTENNA, 6DB 3 ELEMENT YAGI	79		0		$0.00	$80.30	$6,343.70		$0.00	$6,343.70
167		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	3950		0		$0.00	$2.12	$8,374.00		$0.00	$8,374.00
168		TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	158		0		$0.00	$32.85	$5,190.30		$0.00	$5,190.30
169		TDN9289	CABLE WRAP, WEATHERPROOFING	79		0		$0.00	$27.38	$2,163.02		$0.00	$2,163.02
170		RLN4264A	LIGHTNING ARRESTOR /SURGE	79		0		$0.00	$46.54	$3,676.66		$0.00	$3,676.66
			SECTION TOTAL										$379,403.03
171													
172		*****SPECTRA********	Remote Control, w/Kdp	4		0		$0.00	$0.00	$0.00	$750.00	$3,000.00	$3,000.00
173		L99DX	ASTRO SPECTRA	4		0		$0.00	$2,328.70	$9,314.80		$0.00	$9,314.80
174		254L	339L5-35W 800 MHZ	4		0		$0.00	$1,084.05	$4,336.20		$0.00	$4,336.20
175		G241	ADD: ANALOG ONLY MODE	4		0		$0.00	$0.00	$0.00		$0.00	$0.00
176		L114	ADD: CLOCK VU METER	4		0		$0.00	$73.00	$292.00		$0.00	$292.00
177		G50	ENH: SMARTNET OPERATION	4		0		$0.00	$481.80	$1,927.20		$0.00	$1,927.20
178		TRN7466	MOUNTING BRACKET EIA 19"	4		0		$0.00	$73.00	$292.00		$0.00	$292.00
179		TDF6441	ANTENNA, 6DB 3 ELEMENT YAGI	4		0		$0.00	$80.30	$321.20		$0.00	$321.20
180		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	200		0		$0.00	$2.12	$424.00		$0.00	$424.00
181		TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	8		0		$0.00	$32.85	$262.80		$0.00	$262.80
182		TDN9289	CABLE WRAP, WEATHERPROOFING	4		0		$0.00	$27.38	$109.52		$0.00	$109.52
183		RLN4264A	LIGHTNING ARRESTOR /SURGE	4		0		$0.00	$46.54	$186.16		$0.00	$186.16
184		L1751	DESKSET, REMOTE, ASTRO DGT9000	19		0		$0.00	$872.35	$16,574.65		$0.00	$16,574.65
185		L1752	ADAPTER, REMOTE, ASTRO DGT9000	4		0		$0.00	$580.35	$2,321.40		$0.00	$2,321.40
			SECTION TOTAL										$39,361.93
186													
187		*****ASTRO SECTRA***	Local Control, w/Kpd & Encrpt.	51		0		$0.00	$0.00	$0.00	$750.00	$38,250.00	$38,250.00
188		L09DX	ASTRO SPECTRA	51		0		$0.00	$2,328.70	$118,763.70		$0.00	$118,763.70
189		259L	W7 25W 800MHZ	51		0		$0.00	$843.15	$43,000.65		$0.00	$43,000.65
190		G241	ADD: ANALOG ONLY MODE	51		0		$0.00	$0.00	$0.00		$0.00	$0.00
191		L114	ADD: CLOCK VU METER	51		0		$0.00	$73.00	$3,723.00		$0.00	$3,723.00

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
				Man Hours		Labor Hrs	Material			Subcontracts			
Item #	Model	Item Description	Qty	Per Unit	Total	Rate	Total $	Unit Cost	Total $	Unit Cost	Total $	Total Costs
192	G50	ENH: SMARTNET OPERATION	51		0		$0.00	$481.80	$24,571.80		$0.00	$24,571.80
193	G274	ADD: DES OFB/DES-XL	51		0		$0.00	$663.57	$33,842.07		$0.00	$33,842.07
194	G806	ENH: ASTRO DIGITAL CAI OPERATION	51		0		$0.00	$401.50	$20,476.50		$0.00	$20,476.50
195	TDF6441	ANTENNA, 6DB 3 ELEMENT YAGI	51		0		$0.00	$80.30	$4,095.30		$0.00	$4,095.30
196	L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	2550		0		$0.00	$2.12	$5,406.00		$0.00	$5,406.00
197	TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	102		0		$0.00	$32.85	$3,350.70		$0.00	$3,350.70
198	TDN9289	CABLE WRAP, WEATHERPROOFING	51		0		$0.00	$27.38	$1,396.38		$0.00	$1,396.38
199	RLN4264A	LIGHTNING ARRESTOR /SURGE	51		0		$0.00	$46.54	$2,373.54		$0.00	$2,373.54
		SECTION TOTAL										$299,249.64
200												
201	*****ASTRO SECTRA***	Remote Control, w/Kpd & Encrypt	15		0		$0.00	$0.00	$0.00	$750.00	$11,250.00	$11,250.00
202	L99DX	ASTRO SPECTRA	15		0		$0.00	$2,328.70	$34,930.50		$0.00	$34,930.50
203	254L	339L5-35W 800 MHZ	15		0		$0.00	$1,084.05	$16,260.75		$0.00	$16,260.75
204	L114	ADD: CLOCK VU METER	15		0		$0.00	$73.00	$1,095.00		$0.00	$1,095.00
205	G274	ADD: DES OFB/DES-XL	15		0		$0.00	$663.57	$9,953.55		$0.00	$9,953.55
206	G806	ENH: ASTRO DIGITAL CAI OPERATION	15		0		$0.00	$401.50	$6,022.50		$0.00	$6,022.50
207	G50	ENH: SMARTNET OPERATION	15		0		$0.00	$481.80	$7,227.00		$0.00	$7,227.00
208	TRN7466	MOUNTING BRACKET EIA 19"	15		0		$0.00	$73.00	$1,095.00		$0.00	$1,095.00
209	TDF6441	ANTENNA, 6DB 3 ELEMENT YAGI	15		0		$0.00	$80.30	$1,204.50		$0.00	$1,204.50
210	L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	750		0		$0.00	$2.12	$1,590.00		$0.00	$1,590.00
211	TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	30		0		$0.00	$32.85	$985.50		$0.00	$985.50
212	TDN9289	CABLE WRAP, WEATHERPROOFING	30		0		$0.00	$27.38	$821.40		$0.00	$821.40
213	RLN4264A	LIGHTNING ARRESTOR /SURGE	30		0		$0.00	$46.54	$1,396.20		$0.00	$1,396.20
214	L1761	DESKSET, REMOTE, ASTRO DGT9000	15		0		$0.00	$872.35	$13,085.25		$0.00	$13,085.25
215	L1752	ADAPTER, REMOTE, ASTRO DGT9000	15		0		$0.00	$580.35	$8,705.25		$0.00	$8,705.25
		SECTION TOTAL										$115,622.40
216												
217	*****ACCESSORIES*****											
218	*****PORTABLE********	*****MTS2000**********										
219	NTN7147	BATTERY,FMIS,ULTRA-HIGH CAP	142		0		$0.00	$110.96	$15,756.32		$0.00	$15,756.32
220	NTN1171	CHARGER,110V SINGLE COMPACT	150		0		$0.00	$65.70	$9,855.00		$0.00	$9,855.00
221	NTN1177	CHARGER, 110V MULTI RAPID	152		0		$0.00	$492.75	$74,898.00		$0.00	$74,898.00
222	NMN6191	AUDIO ACC,REMOTE SPEAKER/MIC	1227		0		$0.00	$67.16	$82,405.32		$0.00	$82,405.32
223	NTN7318	CARRY ACC,BELT CLIP 3"	616		0		$0.00	$10.95	$6,745.20		$0.00	$6,745.20
224	NTN8038	CASE, 3.0" HI ACTIVITY ULTRA HI CAP	1191		0		$0.00	$43.80	$52,165.80		$0.00	$52,165.80
225	NAF5037	ANT, 1/2 WAVELENGTH WHIP	1237		0		$0.00	$24.09	$29,799.33		$0.00	$29,799.33
		SECTION TOTAL										$271,624.97
226												
227	*****PORTABLE********	*****XTS3000**********	0		0		$0.00	$0.00	$0.00		$0.00	$0.00
228	NTN8295	BATTERY, NICAD ULTRA HI CAP FM	657		0		$0.00	$137.97	$90,646.29		$0.00	$90,646.29
229	NTN1168	CHARGER,110V SINGLE ENH	260		0		$0.00	$91.25	$23,725.00		$0.00	$23,725.00
230	NTN1177	CHARGER, 110V MULTI RAPID	241		0		$0.00	$492.75	$118,752.75		$0.00	$118,752.75
231	NMN6191	AUDIO ACC,REMOTE SPEAKER/MIC	1662		0		$0.00	$67.16	$111,619.92		$0.00	$111,619.92
232	NTN8266	ATTACHMENT, REMOVEABLE BELT CLIP	514		0		$0.00	$7.30	$3,752.20		$0.00	$3,752.20
233	NTN8381	CASE, CARRY HIGH ACTIVITY	0		0		$0.00	$43.80	$0.00		$0.00	$0.00
234	NTN0386	CASE, CARRY HIGH ACTIVITY	1642		0		$0.00	$43.80	$71,919.60		$0.00	$71,919.60
235	NAF5037	ANT, 1/2 WAVELENGTH WHIP	1662		0		$0.00	$24.09	$40,037.58		$0.00	$40,037.58
		SECTION TOTAL										$460,453.34
236												
237	*******PORTABLE******	*****ASTRO SABER**********	0		0		$0.00	$0.00	$0.00		$0.00	$0.00
238	NTN7058	BATTERY, ULTRA HI CAP RUGGEDIZED	115		0		$0.00	$113.15	$13,012.25		$0.00	$13,012.25
239	NTN4734	CHARGER, DESKTOP SINGLE UNIT 117V	25		0		$0.00	$164.98	$4,124.50		$0.00	$4,124.50

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco						Rev: 7/97					
		Citywide 800MHz Radio System Project (CERS)						Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168											
				Man Hours			Labor Hrs	Total	Material Unit	Total	Subcontracts Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
240		NTN4796	CHARGER, DESKTOP MULTI UNIT 117V	20		0		$0.00	$575.24	$11,504.80		$0.00	$11,504.80
241		NMN6217	MICROPHONE, REMOTE SPEAKER	250		0		$0.00	$102.93	$25,732.50		$0.00	$25,732.50
242		NTN7309	BELT CLIP ATTACHMENT, REMOVEABLE	230		0		$0.00	$16.79	$3,861.70		$0.00	$3,861.70
243		NTN7573	CARRY CASE, LEATHER SWIVEL SNAP	0		0		$0.00	$45.99	$0.00		$0.00	$0.00
244		NAF5037	ANT, 1/2 WAVELENGTH WHIP	230		0		$0.00	$24.09	$5,540.70		$0.00	$5,540.70
245		RVN/68P	Software / Manuals- MCS,MTS,XTS,SABER,	1		0		$0.00	$27,243.41	$27,243.41		$0.00	$27,243.41
246			ASTRO SPECTRA										$91,019.86
			SECTION TOTAL										$11,481,183.00
247			SUBSRIBER TOTAL										
248		**********	4. Radios Sites										
249		**********	Site 1: Central Radio Site (CRS) --	1		0		$32,699.50	$0.00	$0.00	$1,617,368.00	$1,617,368.00	$1,650,067.50
250		**********	** SmartZone Controller **										
251		T5396D	FT ZONE CONTROLLER	1		0		$0.00	$261,376.50	$261,376.50		$0.00	$261,376.50
252		D150	ADD: ALARM OUTPUTS	1		0		$0.00	$6,409.40	$6,409.40		$0.00	$6,409.40
253		D943	ENH: EXPANDED RAM	1		0		$0.00	$39,712.00	$39,712.00		$0.00	$39,712.00
254		D698	ENH: RADIO DISPATCH MGMT	1		0		$0.00	$15,330.00	$15,330.00		$0.00	$15,330.00
255		D699	ENH: DYNAMIC REGROUPING	1		0		$0.00	$11,680.00	$11,680.00		$0.00	$11,680.00
256		D785	ENH: AIR TRAFFIC INFORMATION	1		0		$0.00	$6,570.00	$6,570.00		$0.00	$6,570.00
257		D707	ENH: LICENSE, MULTIPLE APPLICATIONS	1		0		$0.00	$3,650.00	$3,650.00		$0.00	$3,650.00
258		D997	ENH: CRITICAL USER SUPPORT	1		0		$0.00	$10,950.00	$10,950.00		$0.00	$10,950.00
259		D341	ENH: STATUS/MESSAGE	1		0		$0.00	$7,300.00	$7,300.00		$0.00	$7,300.00
260		D41	ENH: DYNAMIC SHARED SERVICES	1		0		$0.00	$5,475.00	$5,475.00		$0.00	$5,475.00
261		D51	ENH: SYS/CHNL UTIL TRACKING	1		0		$0.00	$3,650.00	$3,650.00		$0.00	$3,650.00
262		D52	ENH: ZONE WATCH/GRID SCREEN	1		0		$0.00	$32,850.00	$32,850.00		$0.00	$32,850.00
263		Z742	ENH: ZONEWATCH AFFILIATION DIS	1		0		$0.00	$7,300.00	$7,300.00		$0.00	$7,300.00
264		D802	ADD: DIGITAL OPERATION	1		0		$0.00	$36,500.00	$36,500.00		$0.00	$36,500.00
265		D980	ENH: SZM BASIC CADI & COMPUTER	1		0		$0.00	$70,080.00	$70,080.00		$0.00	$70,080.00
266		D999	ENH: LICENSE SECURITY PARTITIONING	1		0		$0.00	$17,520.00	$17,520.00		$0.00	$17,520.00
267		T5476C	SPARE BOARDS SET W/128MB CPU	1		0		$0.00	$104,871.80	$104,871.80		$0.00	$104,871.80
268		TLN3276	6-FAN COLLING ASSEMBLY (HT)	1		0		$0.00	$3,204.70	$3,204.70		$0.00	$3,204.70
269		TTN6117	ETHERNET INTERFACE MODULE (HT)	1		0		$0.00	$5,956.60	$5,956.60		$0.00	$5,956.60
270		TKN9038	CABLE ZC TO MBX 50'	1		0		$0.00	$53.29	$53.29		$0.00	$53.29
271		TKN9040	CABLE ZC TO AUDIO SWITCH 50'	2		0		$0.00	$89.06	$178.12		$0.00	$178.12
272		TKN0256	CABLE,RJ45-DB25MALE STRAIGHT 25'ASY	1		0		$0.00	$29.93	$29.93		$0.00	$29.93
273		**********	** Trunked Terminals **										
274		T5510	FIRST 6-SESSION USER SERVER	1		0		$0.00	$56,210.00	$56,210.00		$0.00	$56,210.00
275		D995AB	ENH: LICENSE, E-MAIL 6 USER	1		0		$0.00	$2,628.00	$2,628.00		$0.00	$2,628.00
276		T5511	ADDTL 6-SESSION USER SERVER	1		0		$0.00	$48,180.00	$48,180.00		$0.00	$48,180.00
277		D995AB	ENH: LICENSE, E-MAIL 6 USER	1		0		$0.00	$2,628.00	$2,628.00		$0.00	$2,628.00
278		T5719	HIGH-TIER DATABASE SERV-NEW	1		0		$0.00	$48,180.00	$48,180.00		$0.00	$48,180.00
279		CLN6662	17" COLOR MONITOR 110/220V	1		0		$0.00	$1,314.00	$1,314.00		$0.00	$1,314.00
280		T5515	ZONE MANAGER USER TERMINAL, 17" REM	6		0		$0.00	$4,161.00	$24,966.00		$0.00	$24,966.00
281		CDN1315	ACCESSBLDER BASE UNIT-ETHRNT	1		0		$0.00	$1,963.70	$1,963.70		$0.00	$1,963.70
282		CDN1318	8 PORT HI SPEED ASYNC MODULE	1		0		$0.00	$1,931.58	$1,931.58		$0.00	$1,931.58
283		CLN6666	64KPBPS NEST CARD-RM16M	6		0		$0.00	$773.80	$4,642.80		$0.00	$4,642.80
284		CLN1178	RM16M MODULE SHELF 110V	1		0		$0.00	$1,795.80	$1,795.80		$0.00	$1,795.80
285		CLN6660	64KBPS COMM DEVICE 110V	6		0		$0.00	$773.80	$4,642.80		$0.00	$4,642.80
286		TTN6100	PRINTER 9600BPS 110V	6		0		$0.00	$2,336.00	$14,016.00		$0.00	$14,016.00
287		CLN6664	BACK-UP CD MEDIUM UNIX 9.05	1		0		$0.00	$511.00	$511.00		$0.00	$511.00
288		TKN9113	CBL 10' ZM USER SERVER TO MODEM	6		0		$0.00	$29.20	$175.20		$0.00	$175.20
289		CKN6199	25'CBL TERM TO PRTR-PARALLEL	6		0		$0.00	$43.80	$262.80		$0.00	$262.80
290		**********	** Telco Interconnect **										

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
				Man Hours		Labor Hrs		Material Unit		Subcontracts Unit			
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	Total $	Cost	$	Cost	Total $	Total Costs
291		TDN8677A	CARD, PHONE LINE INTERFACE (PLIC)	2		0		$0.00	$1,971.00	$3,942.00		$0.00	$3,942.00
292		TDN8679A	MODULE, DID FOR MBX	5		0		$0.00	$1,284.80	$6,424.00		$0.00	$6,424.00
293		TDN8680A	CARD, TRUNKED REPEATER INTERFACE	1		0		$0.00	$4,102.60	$4,102.60		$0.00	$4,102.60
294		TDN8693A	BASIC SPARES KIT FOR MBX	1		0		$0.00	$14,183.90	$14,183.90		$0.00	$14,183.90
295		TDN8658A	SINGLE SHELF, MBX COMMON EQUIPMENT	1		0		$0.00	$24,371.05	$24,371.05		$0.00	$24,371.05
296		TDN8671A	LICENSE, CONVERSION SOFTWARE	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
297		TDN8681A	POWER SUPPLY, 110VAC 60HZ, MBX	1		0		$0.00	$3,504.00	$3,504.00		$0.00	$3,504.00
298		TDN8685A	110VAC DISTRIBUTION PANEL, MBX	1		0		$0.00	$438.00	$438.00		$0.00	$438.00
299		TDN8634A	SYSTEM INTEGRATION	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
300		TDN8691A	BLOWER, 110VAC 60HZ FOR MBX	1		0		$0.00	$328.50	$328.50		$0.00	$328.50
301		TDN8687	CABINET SHORT VENTED	1		0		$0.00	$985.50	$985.50		$0.00	$985.50
302		TDN8699A	SPARE TRIC ASSEMBLY FOR MBX	2		0		$0.00	$4,102.60	$8,205.20		$0.00	$8,205.20
303		TKN8634	100' CABLE MBX TO PUNCHBLOCK	1		0		$0.00	$124.10	$124.10		$0.00	$124.10
304		**********	** Audio Switch **										
305		B1042 C	GOLD SERIES AEB 3 CARD CAGE	1		0		$0.00	$50,503.59	$50,503.59		$0.00	$50,503.59
306		K762BE	ADD: EXT PERF 3 CC GOLD AEB	1		0		$0.00	$963.60	$963.60		$0.00	$963.60
307		K994AJ	ADD: ONE GOLD SERIES AMB CARD	6		0		$0.00	$9,744.77	$58,468.62		$0.00	$58,468.62
308		X762AB	ADD: REDUNDANT ZONE INTERFACE	1		0		$0.00	$19,488.81	$19,488.81		$0.00	$19,488.81
309		X909AJ	ADD: ASTRO SMARTZONE LICENSE	1		0		$0.00	$18,250.00	$18,250.00		$0.00	$18,250.00
310		X758AA	ADD: SMARTZONE GOLD AEB SPARES	1		0		$0.00	$13,364.11	$13,364.11		$0.00	$13,364.11
311		B1043	GOLD SERIES ZAMBI BOARD	1		0		$0.00	$9,744.77	$9,744.77		$0.00	$9,744.77
312		B1846	GOLD AEB RDNT AEB POWER SUPPLY	1		0		$0.00	$4,818.00	$4,818.00		$0.00	$4,818.00
313		**********	** CRS TeNSr Network Server **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
314		DSPREM8918	UNIVERSAL ENCLOSURE TENSR/800	4		0		$0.00	$1,095.00	$4,380.00		$0.00	$4,380.00
315		DSPREM8902	DC POWER SUPPLY 48 VDC	8		0		$0.00	$912.50	$7,300.00		$0.00	$7,300.00
316		DSPREM8920	INTERFACE CARDXS, 8 T1/E1 INTFC	4		0		$0.00	$1,642.50	$6,570.00		$0.00	$6,570.00
317		DSPREM8801	CPU CNTRL CARD W/2 T1/E1, RED 256	8		0		$0.00	$4,106.25	$32,850.00		$0.00	$32,850.00
318		DSPREM8870	SERVER CARD, ADPCM	2		0		$0.00	$5,748.75	$11,497.50		$0.00	$11,497.50
319		DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	4		0		$0.00	$1,781.20	$7,124.80		$0.00	$7,124.80
320		DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	4		0		$0.00	$1,551.25	$6,205.00		$0.00	$6,205.00
321		DSPREM812	CSU PLUG IN MODULE	16		0		$0.00	$912.50	$14,600.00		$0.00	$14,600.00
322		DSPREM8119	VOICE CARD, 8 PORT, 4 WIRE E&M/TO	11		0		$0.00	$1,368.75	$15,056.25		$0.00	$15,056.25
323		DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	6		0		$0.00	$2,190.00	$13,140.00		$0.00	$13,140.00
324		**********	** DIU / Data Broadcast **										
325		CHN1009	CARDCAGE, DIU 3000	6		0		$0.00	$219.00	$1,314.00		$0.00	$1,314.00
326		F2048	ASTRO DIU3000 HARDWARE	22		0		$0.00	$2,127.95	$46,814.90		$0.00	$46,814.90
327		X006	ENH: ASTRO CAI OPERATION	22		0		$0.00	$0.00	$0.00		$0.00	$0.00
328		X960	ADD: TRUNKING RELEASE SW.	22		0		$0.00	$2,529.45	$55,647.90		$0.00	$55,647.90
329		C20	ADD: BATTERY REVERT CABLE	22		0		$0.00	$64.24	$1,413.28		$0.00	$1,413.28
330		T5771	ASTRO DES-OFB ENC CARTRIDGE	5		0		$0.00	$546.77	$2,733.85		$0.00	$2,733.85
331		FLN8841	BLANK PANEL, DIU3000	1		0		$0.00	$21.17	$21.17		$0.00	$21.17
332		FLN8840	CENTER PANEL, DIU3000 CARDCAGE	6		0		$0.00	$18.25	$109.50		$0.00	$109.50
333		CDN6209	BLACK TEST HANDSET, DIU3000	1		0		$0.00	$40.15	$40.15		$0.00	$40.15
334		DLN6200	6 OUTLET AC POWER STRIP	1		0		$0.00	$68.62	$68.62		$0.00	$68.62
335		RVN4053	RSS, ASTRO DIG INTERFACE UNIT	1		0		$0.00	$255.50	$255.50		$0.00	$255.50
336		3080385B23	PROGRAM CABLE, T5600/T5620 SERIES	1		0		$0.00	$4.85	$4.85		$0.00	$4.85
337		3080385B30	ADAPTER, 8 PIN MODULAR TO DB25	1		0		$0.00	$15.15	$15.15		$0.00	$15.15
338		DQGDTL158AR2	GDTL158AR2	10		0		$0.00	$354.78	$3,547.80		$0.00	$3,547.80
339		DQGDTL486	RACK F/DATA BROADCAST BOX	10		0		$0.00	$21.90	$219.00		$0.00	$219.00
340		FKN4120A	25' CABLE DB TO DIU	32		0		$0.00	$18.62	$595.84		$0.00	$595.84
341		TKN9037A	25' CABLE ZC TO DB	2		0		$0.00	$41.61	$83.22		$0.00	$83.22
342		**********	Simulcast Prime Equipment										

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco						Rev: 7/97					
		Citywide 800MHz Radio System Project (CERS)						Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168						Material			Subcontracts		
			Man Hours			Labor Hrs	Total	Unit	Total	Unit	Total	Total
Item #	Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
343	**********	** Prime Controllers **										
344	T5272	SMARTNET II/28 CHNL CENTRAL	1		0		$0.00	$40,966.14	$40,966.14		$0.00	$40,966.14
345	D611	ADD: 21 CHANNEL CAPACITY	1		0		$0.00	$16,650.57	$16,650.57		$0.00	$16,650.57
346	D422 A	ADD: 5 RS232 PORTS	1		0		$0.00	$839.50	$839.50		$0.00	$839.50
347	D530	ENH: SIMULCAST PRIME SITE OPERATION	1		0		$0.00	$13,161.17	$13,161.17		$0.00	$13,161.17
348	D555	ADD: MANUAL, PRIME SITE CONTROLLER	1		0		$0.00	$40.15	$40.15		$0.00	$40.15
349	D389	ADD: REDUNDANT CONTROLLER INTERFACE	1		0		$0.00	$1,987.79	$1,987.79		$0.00	$1,987.79
350	D179BJ	ADD: SPARE BOARD FOR SIMUL PRIME	1		0		$0.00	$13,691.15	$13,691.15		$0.00	$13,691.15
351	D396	ADD: SMARTNETII+ CTLR SVC/DEPOT MAN	1		0		$0.00	$54.75	$54.75		$0.00	$54.75
352	D110	ALT: CABLE, 50'	1		0		$0.00	$94.90	$94.90		$0.00	$94.90
353	D404	ADD: 50 FT. RPTR INTERCONNECT CABLE	2		0		$0.00	$104.39	$208.78		$0.00	$208.78
354	D706	ENH: SMARTZONE OPER SIMULCAST PRIME	1		0		$0.00	$2,007.50	$2,007.50		$0.00	$2,007.50
355	Z389	ADD: ASTRO 2.0.3 MIXED MODE	1		0		$0.00	$4,708.50	$4,708.50		$0.00	$4,708.50
356	TDN8666	SOFTWARE, PROGRAMMING ACCESS, 3.5"	1		0		$0.00	$547.50	$547.50		$0.00	$547.50
357	TEN6081	EXTENDER BOARD AND HARDWARE	1		0		$0.00	$462.09	$462.09		$0.00	$462.09
358	T5272	SMARTNET II/28 CHNL CENTRAL	1		0		$0.00	$40,966.14	$40,966.14		$0.00	$40,966.14
359	D611	ADD: 21 CHANNEL CAPACITY	1		0		$0.00	$16,650.57	$16,650.57		$0.00	$16,650.57
360	D422 A	ADD: 5 RS232 PORTS	1		0		$0.00	$839.50	$839.50		$0.00	$839.50
361	D530	ENH: SIMULCAST PRIME SITE OPERATION	1		0		$0.00	$13,161.17	$13,161.17		$0.00	$13,161.17
362	D555	ADD: MANUAL, PRIME SITE CONTROLLER	1		0		$0.00	$40.15	$40.15		$0.00	$40.15
363	D389	ADD: REDUNDANT CONTROLLER INTERFACE	1		0		$0.00	$1,987.79	$1,987.79		$0.00	$1,987.79
364	D396	ADD: SMARTNETII+ CTLR SVC/DEPOT MAN	1		0		$0.00	$54.75	$54.75		$0.00	$54.75
365	D706	ENH: SMARTZONE OPER SIMULCAST PRIME	1		0		$0.00	$2,007.50	$2,007.50		$0.00	$2,007.50
366	Z389	ADD: ASTRO 2.0.3 MIXED MODE	1		0		$0.00	$4,708.50	$4,708.50		$0.00	$4,708.50
367	**********	** TBAR / Switch **										
368	DS58022	FRAME MASTER, 20 CHANNEL	3		0		$0.00	$1,131.50	$3,394.50		$0.00	$3,394.50
369	DS560330	PS 115VAC	2		0		$0.00	$912.50	$1,825.00		$0.00	$1,825.00
370	DS58083	POWER ALARM, REDUNDANT	1		0		$0.00	$912.50	$912.50		$0.00	$912.50
371	DS59522	POWER CABLE, 58033, P/S 2'	2		0		$0.00	$54.75	$109.50		$0.00	$109.50
372	DS58193	POWER CABLE FRAME, 3.0'	1		0		$0.00	$31.94	$31.94		$0.00	$31.94
373	DS58063	CABLE, POWER, 3.0' FRAME	2		0		$0.00	$39.24	$78.48		$0.00	$78.48
374	DS58196	POWER CABLE 6.0' FRAME	1		0		$0.00	$33.76	$33.76		$0.00	$33.76
375	DS58073	CABLE, CONTROL, 3' FRAME TO FRAME	2		0		$0.00	$22.81	$45.62		$0.00	$45.62
376	DS58044	CONTROL MODULE, WITH CONTACT	1		0		$0.00	$867.24	$867.24		$0.00	$867.24
377	DS58052	CONTROL MODULE, SLAVE	2		0		$0.00	$445.30	$890.60		$0.00	$890.60
378	DS58104	SWITCH MODULE, A/B ONLY	40		0		$0.00	$273.75	$10,950.00		$0.00	$10,950.00
379	DS70700206	CABLE, CROSSOVER	3		0		$0.00	$94.90	$284.70		$0.00	$284.70
380	DS58091	BLANK MODULE	20		0		$0.00	$11.86	$237.20		$0.00	$237.20
381	CLN1195	SWITCH FOR REDUNDANTTRNK CONTR	1		0		$0.00	$2,007.50	$2,007.50		$0.00	$2,007.50
382	**********	** Comparators **										
383	T5770	ASTRO CAI COMPARATOR	23		0		$0.00	$2,701.00	$62,123.00		$0.00	$62,123.00
384	X242	ENH: DIGITAL AND ANALOG OPRN	23		0		$0.00	$2,044.00	$47,012.00		$0.00	$47,012.00
385	X989	ENH: SZ TRUNKING OPERATION	23		0		$0.00	$3,431.00	$78,913.00		$0.00	$78,913.00
386	X880	ENH: GPS SIMULCAST OPERATION	23		0		$0.00	$2,044.00	$47,012.00		$0.00	$47,012.00
387	X156	ENH: REMOTE/STATUS CONTROL INTFC	23		0		$0.00	$292.00	$6,716.00		$0.00	$6,716.00
388	X227	ADD: 10 WIRELINE I/O PORTS-CAI	23		0		$0.00	$3,650.00	$83,950.00		$0.00	$83,950.00
389	X899	ADD: ASTRO V.24 WIRELINE INTERFACE	115		0		$0.00	$365.00	$41,975.00		$0.00	$41,975.00
390	X153	ADD: HARDWARE, RACKMOUNT	23		0		$0.00	$0.00	$0.00		$0.00	$0.00
391	X113	ALT: DC ONLY OP. DC TO DC CONVERTER	23		0		$0.00	$146.00	$3,358.00		$0.00	$3,358.00
392	CDN6163	RS232 CABLE 25C 25' M/M	23		0		$0.00	$29.20	$671.60		$0.00	$671.60
393	TKN9264	CABLE,RJ45-RJ45 STRAIGHT 25' SYNC	23		0		$0.00	$21.90	$503.70		$0.00	$503.70
394	HMN1001	TEST MICROPHONE	1		0		$0.00	$42.34	$42.34		$0.00	$42.34

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
				Man Hours		Labor Hrs		Material		Subcontracts			
Item #	Model	Item Description	Qty	Per Unit	Total	Rate	Total $	Unit Cost	Total $	Unit Cost	Total $	Total Costs
395	HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	1		0		$0.00	$72.27	$72.27		$0.00	$72.27
396	TRN7738	CABLE FOR EXTERNAL 5W SPEAKER	1		0		$0.00	$36.50	$36.50		$0.00	$36.50
397	RVN4154	RSS, ASTROTAC 3000 COMPARATOR	1		0		$0.00	$255.50	$255.50		$0.00	$255.50
398		PROGRAMMING CABLE, ASTRO COMPARATO	1		0		$0.00	$33.95	$33.95		$0.00	$33.95
399	**********	** SECURE Items **										
400	T3011 X	SECURENET DES/DES-XL KEY LOADR	6		0		$0.00	$2,299.50	$13,797.00		$0.00	$13,797.00
401	C542	ADD: CABLE FOR CIU,DIU,PX300-S	6		0		$0.00	$54.75	$328.50		$0.00	$328.50
402	NLN8858	BATTERY CHARGER, 1 UNIT/1 HOUR	6		0		$0.00	$163.52	$981.12		$0.00	$981.12
403	R2048	SYSTEM ANAL., EAMPS, DES, DVP, TCXO	2		0		$0.00	$21,644.50	$43,289.00		$0.00	$43,289.00
404	**********	** USCI / SDA **										
405	T5180	SIMULCAST CONTROLLER I/F MODEM	3		0		$0.00	$3,139.00	$9,417.00		$0.00	$9,417.00
406	D525	ADD: USCI CONTROLLER INTERFACE	23		0		$0.00	$781.10	$17,965.30		$0.00	$17,965.30
407	D567	ADD: SCI EXTENDER CARD	1		0		$0.00	$69.35	$69.35		$0.00	$69.35
408	MWQ3195	DIST AMP SHELF	3		0		$0.00	$1,003.75	$3,011.25		$0.00	$3,011.25
409	MWQLN3174	DISTRIBUTION AMPLIFIER	23		0		$0.00	$401.50	$9,234.50		$0.00	$9,234.50
410	**********	** Data Broadcast **										
411	DQGDTL158AR2	GDTL158AR2	6		0		$0.00	$354.78	$2,128.68		$0.00	$2,128.68
412	DQGDTL486	RACK F/DATA BROADCAST BOX	6		0		$0.00	$21.90	$131.40		$0.00	$131.40
413	FKN4120A	25' CABLE DB TO DIU	27		0		$0.00	$18.62	$502.74		$0.00	$502.74
414	TKN9037A	25' CABLE ZC TO DB	2		0		$0.00	$41.61	$83.22		$0.00	$83.22
415	**********	** TeNSr Network Server **										
416	DSPREM8918	UNIVERSAL ENCLOSURE TENSR/800	16		0		$0.00	$1,095.00	$17,520.00		$0.00	$17,520.00
417	DSPREM8902	DC POWER SUPPLY 48 VDC	32		0		$0.00	$912.50	$29,200.00		$0.00	$29,200.00
418	DSPREM8801	CPU CNTRL CARD W/2 T1/E1, RED 256	32		0		$0.00	$4,106.25	$131,400.00		$0.00	$131,400.00
419	DSPREM8920	INTERFACE CARDXS, 8 T1/E1 INTFC	16		0		$0.00	$1,642.50	$26,280.00		$0.00	$26,280.00
420	DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	16		0		$0.00	$1,781.20	$28,499.20		$0.00	$28,499.20
421	DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	16		0		$0.00	$1,551.25	$24,820.00		$0.00	$24,820.00
422	DSPREM812	CSU PLUG IN MODULE	64		0		$0.00	$912.50	$58,400.00		$0.00	$58,400.00
423	DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	32		0		$0.00	$2,190.00	$70,080.00		$0.00	$70,080.00
424	DSPREMDSM2	DIGITAL SIMULCAST MEDEM-II	48		0		$0.00	$6,935.00	$332,880.00		$0.00	$332,880.00
425	**********	** Simo Test Equipment **										
426	RTHP4934A	TRANSMISSION IMPAIRMENT TEST SET-HP	2		0		$0.00	$3,285.00	$6,570.00		$0.00	$6,570.00
427		AUDIO VOLTMETER, HP3400B	1		0		$0.00	$2,190.00	$2,190.00		$0.00	$2,190.00
428	RTHP5060/8762	RACK ADAPTER, FULL HEIGHT HP	1		0		$0.00	$193.45	$193.45		$0.00	$193.45
429		OSCILLOSCOPE	1		0		$0.00	$3,571.89	$3,571.89		$0.00	$3,571.89
430		RACKMOUNT FOR 01B0302E52	1		0		$0.00	$240.90	$240.90		$0.00	$240.90
431	BLN6200	6 OUTLET AC POWER STRIP	1		0		$0.00	$68.62	$68.62		$0.00	$68.62
432	L09ZX	SPECTRA DESKTOP STATION	1		0		$0.00	$3,190.00	$3,190.00		$0.00	$3,190.00
433	256L	15W 800 MHZ CONVENTIONAL	1		0		$0.00	$843.15	$843.15		$0.00	$843.15
434	6404596T01	PLATE RACK MT	1		0		$0.00	$113.15	$113.15		$0.00	$113.15
435	0382578B01	CONN T	1		0		$0.00	$10.77	$10.77		$0.00	$10.77
436	**********	** Racks **										
437	TRN7342	SEVEN FOOT RACK	15		0		$0.00	$343.10	$5,146.50		$0.00	$5,146.50
438	**********	** Power System **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
439	DQ031497BCA	UNITY ONE 60KVA, 15 MIN UPS	1		0		$0.00	$42,163.34	$42,163.34		$0.00	$42,163.34
440	DQSUU360A	SYSTEM ST-UP, ZONE 1, 5X8	1		0		$0.00	$1,733.75	$1,733.75		$0.00	$1,733.75
441	DQTWP48S800313A	TWINPACK PLUS -48VOLT/800AMP	1		0		$0.00	$36,978.88	$36,978.88		$0.00	$36,978.88
442	DS48TEL125F1R3Z4	48V 508 A HR 4 TRAY BATTERY SYSTEM	1		0		$0.00	$4,804.86	$4,804.86		$0.00	$4,804.86
443	DQ8411100120	CIRCUIT BREAKER PANEL	8		0		$0.00	$283.24	$2,265.92		$0.00	$2,265.92
444	DS1329120100	20AMP BREAKER	48		0		$0.00	$22.63	$1,086.24		$0.00	$1,086.24
445	**********	Co-Located Remote Equipment **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
446	**********	** Remote Controllers **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco						Rev: 7/97					
		Citywide 800MHz Radio System Project (CERS)						Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168							Material		Subcontracts		
				Man Hours		Labor Hrs	Total	Unit	Total	Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
447		T5293A	SIMULCAST 28 CHAN REMOTE CONTROLLER	1		0		$0.00	$20,741.49	$20,741.49		$0.00	$20,741.49
448		D611	ADD: 21 CHANNEL CAPACITY	1		0		$0.00	$16,650.57	$16,650.57		$0.00	$16,650.57
449		D555	ADD: MANUAL, PRIME SITE CONTROLLER	1		0		$0.00	$40.15	$40.15		$0.00	$40.15
450		D179	ADD: SPARE BOARDS	1		0		$0.00	$7,090.49	$7,090.49		$0.00	$7,090.49
451		Z389	ADD: ASTRO 2.0.3 MIXED MODE	1		0		$0.00	$4,708.50	$4,708.50		$0.00	$4,708.50
452		**********	** Repeaters **										
453		DQMFS205	GPS RX/CONTROLLER 28 CH	1		0		$0.00	$39,470.37	$39,470.37		$0.00	$39,470.37
454		C99ED	QUANTAR/QUANTRO FAMILY	23		0		$0.00	$4,946.48	$113,769.04		$0.00	$113,769.04
455		001C	QUANTAR/QUANTRO CONFIGURATION	23		0		$0.00	$0.00	$0.00		$0.00	$0.00
456		X750	ADD: 100W 800 MHZ OPERATION	23		0		$0.00	$4,609.22	$106,012.06		$0.00	$106,012.06
457		X897 A	ENH: SZ6809 ASTR CAI TRK QTAR	23		0		$0.00	$803.00	$18,469.00		$0.00	$18,469.00
458		X337	ALT: CABLE, 50FT REPEATER	23		0		$0.00	$63.51	$1,460.73		$0.00	$1,460.73
459		X880	ADD: GPS SIMULCAST	23		0		$0.00	$730.00	$16,790.00		$0.00	$16,790.00
460		X889	ADD: INTFC, WIRELINE, 9.6 KB	23		0		$0.00	$365.00	$8,395.00		$0.00	$8,395.00
461		X153	ADD: HARDWARE, RACKMOUNT	23		0		$0.00	$0.00	$0.00		$0.00	$0.00
462		X113	ALT: DC ONLY OP. DC TO DC CONVERTER	23		0		$0.00	$146.00	$3,358.00		$0.00	$3,358.00
463		DSDB0882A350	BIDIRECTIONAL SENSOR	23		0		$0.00	$159.87	$3,677.01		$0.00	$3,677.01
464		HMN1001	TEST MICROPHONE	5		0		$0.00	$42.34	$211.70		$0.00	$211.70
465		HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5		0		$0.00	$72.27	$361.35		$0.00	$361.35
466		TRN7736	CABLE FOR EXTERNAL 6W SPEAKER	5		0		$0.00	$36.50	$182.50		$0.00	$182.50
467		TRN4599	DUAL PHONE LINE SUPPRESSOR	23		0		$0.00	$64.42	$1,481.66		$0.00	$1,481.66
468		**********	** Antenna System **										
469		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	20		0		$0.00	$2.12	$42.40		$0.00	$42.40
470		TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	12		0		$0.00	$32.85	$394.20		$0.00	$394.20
471		L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	1300		0		$0.00	$5.18	$6,734.00		$0.00	$6,734.00
472		TDN8817	7/8" CONNECTOR, N PLUG (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
473		TDN8818	7/8" CONNECTOR, N JACK (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
474		TDN6674	7/8" CABLE GROUND CLAMP KIT	18		0		$0.00	$24.46	$440.28		$0.00	$440.28
475		TDN0964	7/8" SNAP-IN HANGER KIT, 10PK	30		0		$0.00	$39.42	$1,182.60		$0.00	$1,182.60
476		TDN6672	7/8" CABLE HOISTING GRIP	6		0		$0.00	$36.50	$219.00		$0.00	$219.00
477		L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$3.07	$1,074.50		$0.00	$1,074.50
478		TDN8809	1/2" CONNECTOR, N PLUG S-FLEX PLTD	46		0		$0.00	$37.78	$1,737.88		$0.00	$1,737.88
479		TDN9209	CABLE WRAP, WEATHERPROOFING	6		0		$0.00	$27.38	$164.28		$0.00	$164.28
480		L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$1.39	$486.50		$0.00	$486.50
481		TDN9714	1/4"CONN, N PLUG S-FLEX (PLTD)	23		0		$0.00	$12.23	$281.29		$0.00	$281.29
482		TDN9715	1/4"CONN, BNC PLUG S-FLEX (PLTD)	23		0		$0.00	$10.59	$243.57		$0.00	$243.57
483		DSTJD8008T	COMBINER,806-1K MHZ,8CH,CAV-FER CWA	4		0		$0.00	$9,135.95	$36,543.80		$0.00	$36,543.80
484		DSRMC80024	RMC 806-824 MHZ, 24CH, CWA	2		0		$0.00	$3,003.95	$6,007.90		$0.00	$6,007.90
485		RRX4639A	LIGHTNING SUPRESSOR	6		0		$0.00	$47.45	$284.70		$0.00	$284.70
486		DSDB806T6TLXT	8B TPL 6 DEG DOWNTILT	2		0		$0.00	$2,536.75	$5,073.50		$0.00	$5,073.50
487		DSDB0882A1000	BIDIRECTIONAL SENSOR	4		0		$0.00	$159.87	$639.48		$0.00	$639.48
488		**********	** Racks **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
489		TRN7342	SEVEN FOOT RACK	9		0		$0.00	$343.10	$3,087.90		$0.00	$3,087.90
490													
491		**PRIME SITE (CRS)	**********										
492		B1827	GOLD SERIES LICENSE MANAGER	1		0		$0.00	$80.30	$80.30		$0.00	$80.30
493		X293	ADD: GOLD ELITE OPR SFWR LIC	1		0		$0.00	$2,920.00	$2,920.00		$0.00	$2,920.00
494		X597AE	ADD: CONVL CHAN SFWRLIC	69		0		$0.00	$146.00	$10,074.00		$0.00	$10,074.00
495		X295	ADD: SMARTZONE ASTRO SFWR LIC	1		0		$0.00	$730.00	$730.00		$0.00	$730.00
496		B1044	GOLD SERIES AMB BOARD	10		0		$0.00	$9,744.77	$97,447.70		$0.00	$97,447.70
497		INVBS	ELITE API	1		0		$0.00	$18,250.00	$18,250.00		$0.00	$18,250.00
498		B1811 D	GOLD SERIES 4 CARD CAGE CEB	5		0		$0.00	$27,221.70	$136,108.50		$0.00	$136,108.50

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800Mhz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
						Labor		Material		Subcontracts			
				Man Hours		Hrs	Total	Unit	Total	Unit	Total	Total	
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
499		K995 C	ALT: AIMI PAIR TRUNK	5		0		$0.00	$8,011.75	$40,058.75		$0.00	$40,058.75
500		K837AD	ADD: EXPRESS SERVICE	5		0		$0.00	$1,449.05	$7,245.25		$0.00	$7,245.25
501		K565	ADD: DIAGNOSTIC INTERFACE	8		0		$0.00	$217.54	$1,740.32		$0.00	$1,740.32
502		B1840	GOLD BASE INFC MODULE	51		0		$0.00	$634.37	$32,352.87		$0.00	$32,352.87
503		K489P	ADD: SUPERVISORY TAKE-OVER RELAY	51		0		$0.00	$59.13	$3,015.63		$0.00	$3,015.63
504		K146AB	ENH: RETAIN TONE REMOTE CONTROL	51		0		$0.00	$0.00	$0.00		$0.00	$0.00
505		B1840	GOLD BASE INFC MODULE	18		0		$0.00	$634.37	$11,418.66		$0.00	$11,418.66
506		K489P	ADD: SUPERVISORY TAKE-OVER RELAY	18		0		$0.00	$59.13	$1,064.34		$0.00	$1,064.34
507		K146AB	ENH: RETAIN TONE REMOTE CONTROL	18		0		$0.00	$0.00	$0.00		$0.00	$0.00
508		Q3304	WWV BIM	1		0		$0.00	$1,007.40	$1,007.40		$0.00	$1,007.40
509		DQNETCLOCK2OPT02	WWVB RECEIVER W/RS232	1		0		$0.00	$1,971.00	$1,971.00		$0.00	$1,971.00
510		DQOPT1	19" RACK MOUNT	1		0		$0.00	$168.63	$168.63		$0.00	$168.63
511		DQ6208	ANTENNA	1		0		$0.00	$267.91	$267.91		$0.00	$267.91
512		DQ8213	ANTENNA MOUNT	1		0		$0.00	$60.59	$60.59		$0.00	$60.59
513		CDN1218	LINKBUILDER FMS II 12-PORT	1		0		$0.00	$576.70	$576.70		$0.00	$576.70
514		TDN1113	ETHERNET CABLE, 50'	5		0		$0.00	$16.79	$83.95		$0.00	$83.95
515		CDN6210	SINGLE PORT WAN BRIDGE	4		0		$0.00	$1,269.47	$5,077.88		$0.00	$5,077.88
516		CDN6213	V.35 CABLE MALE/MALE 20FT	4		0		$0.00	$83.22	$332.88		$0.00	$332.88
517		B1022	GOLD SERIES ELITE/CRT DESKTOP	1		0		$0.00	$6,945.95	$6,945.95		$0.00	$6,945.95
518		K811AB	ALT: MICROPHONE, DESK	1		0		$0.00	$85.41	$85.41		$0.00	$85.41
519		K570	ADD: HEADSET JACK	1		0		$0.00	$160.60	$160.60		$0.00	$160.60
520		K704AA	ADD: SECOND HEADSET JACK	1		0		$0.00	$160.60	$160.60		$0.00	$160.60
521		K572AF	ADD: FOOTSWITCH	1		0		$0.00	$70.08	$70.08		$0.00	$70.08
522		DDN6651	HEADSET, STARSET II W/PTT	1		0		$0.00	$261.34	$261.34		$0.00	$261.34
523		TDN9927	HP PENT CPU 100MZ CD ETH WINNT	1		0		$0.00	$3,149.95	$3,149.95		$0.00	$3,149.95
524		TDN1165	TOUCHSCREEN MONITOR 17"	1		0		$0.00	$1,565.85	$1,565.85		$0.00	$1,565.85
525		TDN8154	ML320T EPSON PRINTER	1		0		$0.00	$481.07	$481.07		$0.00	$481.07
526		INVJAA01	PUC	1		0		$0.00	$1,460.00	$1,460.00		$0.00	$1,460.00
527													
528		*****CRS*****	*****MOSCAD FAULT MANAGER*****										
529		SPQ34BCA0096	DATA CENTRAL APPLICATION	1		0		$0.00	$803.00	$803.00		$0.00	$0.00
530		V511ABSP	ADD: DEVELOPMENT LABOR 2	1		0		$0.00	$803.00	$803.00		$0.00	$0.00
531		SPQ34BCA	GRAPHIC MASTER CUST DATA BASE PROG	1		0		$0.00	$73.00	$73.00		$0.00	$0.00
532		V511AXSP	ADD: DEVELOPMENT LABOR	22		0		$0.00	$73.00	$1,606.00		$0.00	$0.00
533		V511AXSP	ADD: DEVELOPMENT QUANTAR ALARMING	246		0		$0.00	$36.50	$8,979.00		$0.00	$0.00
534		V511AXSP	ADD: DEVELOPMENT LABOR QUANTAR RSS	246		0		$0.00	$73.00	$17,958.00		$0.00	$0.00
535		V511AXSP	ADD: DEVELOPMENT LABOR PREMISYS	44		0		$0.00	$73.00	$3,212.00		$0.00	$0.00
536		V511AXSP	ADD: DEVELOPMENT LABOR EFRATOM GPS	10		0		$0.00	$36.50	$365.00		$0.00	$0.00
537		V511AXSP	ADD: DEVELOPMENT LABOR I/O MODULE	32		0		$0.00	$146.00	$4,672.00		$0.00	$0.00
538		V511AXSP	ADD: DEVELOPMENT LABOR HARRIS M/W	36		0		$0.00	$73.00	$2,628.00		$0.00	$0.00
539		V511AXSP	ADD: DEVELOPMENT LABOR REDUNDANT	22		0		$0.00	$219.00	$4,818.00		$0.00	$0.00
540		V511AXSP	ADD: DEVELOPMENT LABOR 2ND LINK	17		0		$0.00	$219.00	$3,723.00		$0.00	$0.00
541		SPQ34BCA	MOSCAD FRONT END PROCESSOR APPLICAT	1		0		$0.00	$73.00	$73.00		$0.00	$0.00
542		V511AXSP	ADD: DEVELOPMENT LABOR PER SITE	17		0		$0.00	$54.75	$930.75		$0.00	$0.00
543		SPQ34BCA0105	DATA ENG SVC (IN HOUSE 5 DAY)	5		0		$0.00	$6,022.50	$30,112.50		$0.00	$0.00
544		SPQ34BCA0113	DATA ENG SVC (ONSITE 3 DAY Z1)	4		0		$0.00	$5,767.00	$23,068.00		$0.00	$0.00
545		SPQ34BCA0099	DETAILED SYSTEM IMPLEMENTATION	1		0		$0.00	$803.00	$803.00		$0.00	$0.00
546		V511AFSP	ADD: DEVELOPMENT LABOR 6	3		0		$0.00	$4,015.00	$12,045.00		$0.00	$0.00
547		SPQ34BCA0101	DATA ENG SVC (OPERERTOR TRINING)	1		0		$0.00	$1,204.50	$1,204.50		$0.00	$0.00
548		SPQ34BCA0101	DATA ENG SVC (M.A. TRAINING)	1		0		$0.00	$1,204.50	$1,204.50		$0.00	$0.00
549		SPQ34BCA0101	DATA ENG SVC (SYS OPER/MA MAN. SET)	1		0		$0.00	$1,204.50	$1,204.50		$0.00	$0.00
550		6802991G90	MOSCAD RTU SERVICE MANUAL	17		0		$0.00	$81.76	$1,389.92		$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)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
				Man Hours		Labor		Material		Subcontracts			
						Hrs	Total	Unit	Total	Unit	Total	Total	
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
551		[illegible]	MOSCAD GRAPHIC CENTRAL										$0.00
552		SPQ34BCA0096	DATA CENTRAL APPLICATION	11		0		$0.00	$730.00	$8,030.00		$0.00	$0.00
553		V511ABSP	ADD: DEVELOPMENT LABOR 2	11		0		$0.00	$730.00	$8,030.00		$0.00	$0.00
554		V511AGSP	ADD: DEVELOPMENT LABOR 7	11		0		$0.00	$5,475.00	$60,225.00		$0.00	$0.00
555		SPQ34BCA0096	DATA CENTRAL APPLICATION	11		0		$0.00	$730.00	$8,030.00		$0.00	$0.00
556		V511AASP	ADD: DEVELOPMENT LABOR 1	11		0		$0.00	$365.00	$4,015.00		$0.00	$0.00
557		DQ6209542300010	28.8 LFSTYL PC CD	11		0		$0.00	$200.75	$2,208.25		$0.00	$0.00
558		DQ201M	SHORT HAUL MODEM	11		0		$0.00	$94.17	$1,035.87		$0.00	$0.00
559		DQ209FT	SHORT HAUL MODEM	11		0		$0.00	$94.17	$1,035.87		$0.00	$0.00
560		FLN6457ASP96554	LINE DRIVER CABLE	11		0		$0.00	$73.00	$803.00		$0.00	$0.00
561		T5742	MICROSOFT EXCEL SOFTWARE	11		0		$0.00	$365.00	$4,015.00		$0.00	$0.00
562		SPQ34BCA0096	DATA CENTRAL APPLICATION	11		0		$0.00	$730.00	$8,030.00		$0.00	$0.00
563		V511AJSP	ADD: DEVELOPMENT LABOR 9	11		0		$0.00	$9,125.00	$100,375.00		$0.00	$0.00
564		SPQ34BCA0096	DATA CENTRAL APPLICATION	3		0		$0.00	$730.00	$2,190.00		$0.00	$0.00
565		V511AESP	ADD: DEVELOPMENT LABOR 5	3		0		$0.00	$2,920.00	$8,760.00		$0.00	$0.00
566		T5739	INTOUCH RUNTIME W/O IO SOFTWARE	3		0		$0.00	$4,197.50	$12,592.50		$0.00	$0.00
567		DQ6209542300010	28.8 LFSTYL PC CD	3		0		$0.00	$200.75	$602.25		$0.00	$0.00
568		SPQ34BCA0096	DATA CENTRAL APPLICATION	3		0		$0.00	$730.00	$2,190.00		$0.00	$0.00
569		V511AESP	ADD: DEVELOPMENT LABOR 5	3		0		$0.00	$2,920.00	$8,760.00		$0.00	$0.00
570		SPQ34BCA0112	DATA ENG SVC (ONSITE 2 DAY Z1)	3		0		$0.00	$3,942.00	$11,826.00		$0.00	$0.00
571		SPQ34BCA0096	DATA CENTRAL APPLICATION	5		0		$0.00	$730.00	$3,650.00		$0.00	$0.00
572		V511AGSP	ADD: DEVELOPMENT LABOR 7	5		0		$0.00	$5,475.00	$27,375.00		$0.00	$0.00
573		DQ6209542300010	28.8 LFSTYL PC CD	5		0		$0.00	$200.75	$1,003.75		$0.00	
574			MOSCAD FRONT END PROCESSOR										
575		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	4		0		$0.00	$1,443.94	$5,775.76		$0.00	$0.00
576		V051	ALT: NEMA TO RACKMOUNT	4		0		$0.00	$0.00	$0.00		$0.00	$0.00
577		V410	REPLACE 8-SLOT MB W/8CPU+NO I/O	4		0		$0.00	$146.00	$584.00		$0.00	$0.00
578		V425	ADD: MOSCAD CPU 300	28		0		$0.00	$972.36	$27,226.08		$0.00	$0.00
579		V345	ADD: ASYNC RS232	32		0		$0.00	$113.15	$3,620.80		$0.00	$0.00
580		V120	ADD: 8 MOD W/EXPANSION MODULE	1		0		$0.00	$693.50	$693.50		$0.00	$0.00
581		V437	ADD: 8AI 5V MODULE	10		0		$0.00	$477.42	$4,774.20		$0.00	$0.00
582		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
583		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
584		V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
585		V345	ADD: ASYNC RS232	3		0		$0.00	$113.15	$339.45		$0.00	$0.00
586		V380	ADD: 60 DI. MODULE	2		0		$0.00	$277.40	$554.80		$0.00	$0.00
587		V516	ADD: 16DO LATCH MODULE	2		0		$0.00	$375.95	$751.90		$0.00	$0.00
588		V360	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
589		V425	ADD: CPU 300	2		0		$0.00	$972.36	$1,944.72		$0.00	$0.00
590		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
591		V104	ADD: 300/1200 BPS AUTO ANSWER	1		0		$0.00	$263.53	$263.53		$0.00	$0.00
592		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
593		FKN4400	FLAT OVAL 2.5M CABLE	36		0		$0.00	$10.95	$394.20		$0.00	$0.00
594		FRN5727	LAN ADAPTER ASSEMBLY	7		0		$0.00	$36.50	$255.50		$0.00	$0.00
595		FLN6457	CPU TO COMPUTER RS232 ASYNC 3M	1		0		$0.00	$52.56	$52.56		$0.00	$0.00
596		FLN8259	COMPUTER ADAPT, 9 PIN TYPE TO RJ45	1		0		$0.00	$32.85	$32.85		$0.00	$0.00
597		TDN9871	MODEM, DESKTOP, LIFESTYLE 28.8-PC	1		0		$0.00	$210.97	$210.97		$0.00	$0.00
598		TDN9263	MODEM, 14,400 BPS V.32BIS	3		0		$0.00	$580.35	$1,741.05		$0.00	$0.00
599		DQEVMBSM0006	MODEM CABLE	4		0		$0.00	$23.36	$93.44		$0.00	$0.00
600		F2316	MOSCAD PROGRAMMING TOOL BOX	1		0		$0.00	$438.00	$438.00		$0.00	$0.00
601		V377	ENH: 3RD PARTY DRIVER	1		0		$0.00	$365.00	$365.00		$0.00	$0.00
602		FKN5934	EXTERNAL DC PS TO MB CABLE	1		0		$0.00	$10.95	$10.95		$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)					Rev: 7/97					
			Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule					
					Man Hours		Labor Hrs	Material			Subcontracts		
								Total	Unit	Total	Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
603													
604		**********	NPSPAC Repeaters										
605		**********	** Repeaters **										
606		C99ED	QUANTAR/QUANTRO CRS	10		0		$0.00	$4,946.48	$49,464.80		$0.00	$49,464.80
607		001C	QUANTAR/QUANTRO CONFIGURATION	10		0		$0.00	$0.00	$0.00		$0.00	$0.00
608		X750	ADD: 100W 800 MHZ OPERATION	10		0		$0.00	$4,609.22	$46,092.20		$0.00	$46,092.20
609		X597 A	ENH: CONVENTIONAL ONLY QTAR	10		0		$0.00	$0.00	$0.00		$0.00	$0.00
610		X580	ADD: REPEATER OPERATION	10		0		$0.00	$0.00	$0.00		$0.00	$0.00
611		X153	ADD: HARDWARE, RACKMOUNT	10		0		$0.00	$0.00	$0.00		$0.00	$0.00
612		X432	ADD: MANUAL, SERVICE	10		0		$0.00	$146.00	$1,460.00		$0.00	$1,460.00
613		X113	ALT: DC ONLY OP. DC TO DC CONVERTER	10		0		$0.00	$146.00	$1,460.00		$0.00	$1,460.00
614		DSDB8882A350	BIDIRECTIONAL SENSOR	10		0		$0.00	$159.87	$1,598.70		$0.00	$1,598.70
615		HMN1001	TEST MICROPHONE	1		0		$0.00	$42.34	$42.34		$0.00	$42.34
616		HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	1		0		$0.00	$72.27	$72.27		$0.00	$72.27
617		TRN7738	CABLE FOR EXTERNAL 6W SPEAKER	1		0		$0.00	$36.50	$36.50		$0.00	$36.50
618		TRN4589	DUAL PHONE LINE SUPPRESSOR	10		0		$0.00	$64.42	$644.20		$0.00	$644.20
619		**********	** Antenna System **										
620		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	40		0		$0.00	$2.12	$84.80		$0.00	$84.80
621		TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	22		0		$0.00	$32.85	$722.70		$0.00	$722.70
622		L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	1200		0		$0.00	$5.18	$6,216.00		$0.00	$6,216.00
623		TDN8817	7/8" CONNECTOR, N PLUG (PLATED)	22		0		$0.00	$80.30	$1,766.60		$0.00	$1,766.60
624		TDN8818	7/8" CONNECTOR, N JACK (PLATED)	22		0		$0.00	$80.30	$1,766.60		$0.00	$1,766.60
625		TDN6674	7/8" CABLE GROUND CLAMP KIT	33		0		$0.00	$24.46	$807.18		$0.00	$807.18
626		TDN0964	7/8" SNAP-IN HANGER KIT, 10PK	30		0		$0.00	$39.42	$1,182.60		$0.00	$1,182.60
627		TDN6672	7/8" CABLE HOISTING GRIP	3		0		$0.00	$36.50	$109.50		$0.00	$109.50
628		L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	150		0		$0.00	$3.07	$460.50		$0.00	$460.50
629		TDN8809	1/2" CONNECTOR, N PLUG S-FLEX PLTD	36		0		$0.00	$37.78	$1,360.08		$0.00	$1,360.08
630		TDN9289	CABLE WRAP, WEATHERPROOFING	11		0		$0.00	$27.38	$301.18		$0.00	$301.18
631		L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	150		0		$0.00	$1.39	$208.50		$0.00	$208.50
632		TDN9714	1/4"CONN, N PLUG S-FLEX (PLTD)	18		0		$0.00	$12.23	$220.14		$0.00	$220.14
633		TDN9715	1/4"CONN, BNC PLUG S-FLEX (PLTD)	18		0		$0.00	$10.59	$190.62		$0.00	$190.62
634		DSTJT8005T	XMTR COMBINER	2		0		$0.00	$6,323.26	$12,646.52		$0.00	$12,646.52
635		DSTJT8002T	XMTR CAVITY CMBNR 2 FREQ	0		0		$0.00	$3,064.54	$0.00		$0.00	$0.00
636		DSRMC80012	RMC 806-824 MHZ, 12CH, CWA	1		0		$0.00	$2,182.70	$2,182.70		$0.00	$2,182.70
637		DSRMC8004N	RMC 806-824MHZ, 4CH, CWA	0		0		$0.00	$1,549.06	$0.00		$0.00	$0.00
638		RRX4039A	LIGHTNING SUPRESSOR	4		0		$0.00	$47.45	$189.80		$0.00	$189.80
639		DSDB806DXT	BB DUAL OMNI	2		0		$0.00	$1,729.37	$3,458.74		$0.00	$3,458.74
640		DSDB806XT	BB OMNI	0		0		$0.00	$759.93	$0.00		$0.00	$0.00
641		DSDB8882A1000	BIDIRECTIONAL SENSOR	2		0		$0.00	$159.87	$319.74		$0.00	$319.74
642		**********	** Racks **										
643		TRN7342	SEVEN FOOT RACK	5		0		$0.00	$343.10	$1,715.50		$0.00	$1,715.50
644		**********	Existing Trunk System Upgrades	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
645		T5432	SMARTZONE OP SIMULCAST PRIME	2		0		$0.00	$2,007.50	$4,015.00		$0.00	$4,015.00
646													
647		**********	Additional Spares										
648		T5716	REMOTE TERMINAL ACCESS SVR	1		0		$0.00	$3,358.00	$3,358.00		$0.00	$3,358.00
649		Z381	ADD: 8 USER MODULE	1		0		$0.00	$1,971.00	$1,971.00		$0.00	$1,971.00
650		CLN6666	64KPBPS NEST CARD-RM16M	1		0		$0.00	$773.80	$773.80		$0.00	$773.80
651		CLN6660	64KBPS COMM DEVICE 110V	1		0		$0.00	$773.80	$773.80		$0.00	$773.80
652		DS560330	PS 115VAC	1		0		$0.00	$912.50	$912.50		$0.00	$912.50
653		DS58044	CONTROL MODULE, WITH CONTACT	1		0		$0.00	$867.24	$867.24		$0.00	$867.24
654		DS58083	POWER ALARM, REDUNDANT	1		0		$0.00	$912.50	$912.50		$0.00	$912.50

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco					Rev: 7/97					
		Citywide 800MHz Radio System Project (CERS)					Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168				Labor		Material		Subcontracts		
			Man Hours			Hrs	Total	Unit	Total	Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
655		DS58052	CONTROL MODULE, SLAVE	1		0		$0.00	$445.30	$445.30		$0.00	$445.30
656		DS58104	SWITCH MODULE, A/B ONLY	1		0		$0.00	$273.75	$273.75		$0.00	$273.75
657		CLN1195	SWITCH FOR REDUNDANTTRNK CONTR	1		0		$0.00	$2,007.50	$2,007.50		$0.00	$2,007.50
658		CLN1161	FRU-CONTROL, COMPARATOR, TRK	1		0		$0.00	$2,336.00	$2,336.00		$0.00	$2,336.00
659		CLN1165	FRU-DSP DAUGHTER BOARD	1		0		$0.00	$949.00	$949.00		$0.00	$949.00
660		CLN1162	FRU-TPC	1		0		$0.00	$2,190.00	$2,190.00		$0.00	$2,190.00
661		CLN1160	FRU-WIRELINE, COMPARATOR, TRK	1		0		$0.00	$730.00	$730.00		$0.00	$730.00
662		TLN3262	FRU POWER SUPPLY W/ 12 V DC REVERT	1		0		$0.00	$1,533.00	$1,533.00		$0.00	$1,533.00
663		CLN1163	FRU-V.24 W/RJ48	1		0		$0.00	$365.00	$365.00		$0.00	$365.00
664		F2048	ASTRO DIU3000 HARDWARE	1		0		$0.00	$2,127.95	$2,127.95		$0.00	$2,127.95
665		X006	ENH: ASTRO CAI OPERATION	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
666		X960	ADD: TRUNKING RELEASE SW.	1		0		$0.00	$2,529.45	$2,529.45		$0.00	$2,529.45
667		C20	ADD: BATTERY REVERT CABLE	1		0		$0.00	$64.24	$64.24		$0.00	$64.24
668		T5771	ASTRO DES-OFB ENC CARTRIDGE	1		0		$0.00	$546.77	$546.77		$0.00	$546.77
669		T5307	SPARE UNIVERSAL SCI	2		0		$0.00	$292.00	$584.00		$0.00	$584.00
670		MWOLN3174	DISTRIBUTION AMPLIFIER	1		0		$0.00	$401.50	$401.50		$0.00	$401.50
671		DSPREM8902	DC POWER SUPPLY 48 VDC	1		0		$0.00	$912.50	$912.50		$0.00	$912.50
672		DSPREM8801	CPU CNTRL CARD W/2 T1/E1, RED 256	1		0		$0.00	$4,106.25	$4,106.25		$0.00	$4,106.25
673		DSPREM8870	SERVER CARD, ADPCM	1		0		$0.00	$5,748.75	$5,748.75		$0.00	$5,748.75
674		DSPREMDSM2	DIGITAL SIMULCAST MEDEM-II	1		0		$0.00	$6,935.00	$6,935.00		$0.00	$6,935.00
675		DSPREM8119	VOICE CARD, 8 PORT, 4 WIRE E&M/TO	1		0		$0.00	$1,368.75	$1,368.75		$0.00	$1,368.75
676		DSPREM8920	INTERFACE CARDXS, 8 T1/E1 INTFC	1		0		$0.00	$1,642.50	$1,642.50		$0.00	$1,642.50
677		DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	1		0		$0.00	$1,551.25	$1,551.25		$0.00	$1,551.25
678		DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	1		0		$0.00	$1,781.20	$1,781.20		$0.00	$1,781.20
679		DSPREM812	CSU PLUG IN MODULE	1		0		$0.00	$912.50	$912.50		$0.00	$912.50
680		DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	1		0		$0.00	$2,190.00	$2,190.00		$0.00	$2,190.00
681		DQMFS205	GPS RX/CONTROLLER 28 CH	1		0		$0.00	$39,470.37	$39,470.37		$0.00	$39,470.37
682		C99ED	QUANTAR/QUANTRO FAMILY	1		0		$0.00	$4,946.48	$4,946.48		$0.00	$4,946.48
683		001C	QUANTAR/QUANTRO CONFIGURATION	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
684		X750	ADD: 100W 800 MHZ OPERATION	1		0		$0.00	$4,609.22	$4,609.22		$0.00	$4,609.22
685		X097 A	ENH: SZ6809 ASTR CAI TRK QTAR	1		0		$0.00	$803.00	$803.00		$0.00	$803.00
686		X937	ALT: CABLE, 50FT REPEATER	1		0		$0.00	$63.51	$63.51		$0.00	$63.51
687		X800	ADD: GPS SIMULCAST	1		0		$0.00	$730.00	$730.00		$0.00	$730.00
688		X809	ADD: INTFC, WIRELINE, 9.6 KB	1		0		$0.00	$365.00	$365.00		$0.00	$365.00
689		X113	ALT: DC ONLY OP. DC TO DC CONVERTER	1		0		$0.00	$146.00	$146.00		$0.00	$146.00
690		**********	Additional Manuals										
691			SMARTZONE 2.0.3 OVERVIEW GUIDE	20		0		$0.00	$10.95	$219.00		$0.00	$219.00
692			SMARTZONE 2.0.3 INSTALL MANUAL	20		0		$0.00	$43.80	$876.00		$0.00	$876.00
693			SMTZONE MGR 2.0.3 USER MANUAL	20		0		$0.00	$91.25	$1,825.00		$0.00	$1,825.00
694			MANUAL, TRUNKED SYS DUAL PATH	20		0		$0.00	$73.00	$1,460.00		$0.00	$1,460.00
695			MANUAL, SYS MANAGER OPERATING	20		0		$0.00	$36.50	$730.00		$0.00	$730.00
696			MANUAL, INSTR CC TRK SMARTNET II	20		0		$0.00	$36.50	$730.00		$0.00	$730.00
697			MAN INSTR SYS MANAGER OPERATOR	20		0		$0.00	$7.30	$146.00		$0.00	$146.00
698			MAN INSTR 001SSP5253351	20		0		$0.00	$25.55	$511.00		$0.00	$511.00
699			MAN INSTR T3014DX DVP-XL KVL	20		0		$0.00	$23.91	$478.20		$0.00	$478.20
700			MANUAL, T5007BX CONSOLE INTERFACE	20		0		$0.00	$12.23	$244.60		$0.00	$244.60
701			TENSR/800 REFERENCE GUIDE	20		0		$0.00	$27.38	$547.60		$0.00	$547.60
702			MAN INSTR T1 EMBASSY SW SERV	20		0		$0.00	$18.25	$365.00		$0.00	$365.00
703			DIU3000 Owners/Install Manual	20		0		$0.00	$73.00	$1,460.00		$0.00	$1,460.00
704			DIU3000 Service Manual	20		0		$0.00	$73.00	$1,460.00		$0.00	$1,460.00
705			DVI/DVP/DES ENCRYPT MOD USERS	20		0		$0.00	$17.89	$357.80		$0.00	$357.80
706			MAN ASTRO DVI/DVP DES SERVICE	20		0		$0.00	$27.01	$540.20		$0.00	$540.20

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
				Man Hours		Labor Hrs	Total	Material Unit	Total	Subcontracts Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
707			DIU3000 Centracom Signalling Man.	20		0		$0.00	$73.00	$1,460.00		$0.00	$1,460.00
708			DIU3000 Trunked Operation Manual	20		0		$0.00	$73.00	$1,460.00		$0.00	$1,460.00
709			MANUAL, SERV QUANTAR/QUANTRO	20		0		$0.00	$146.00	$2,920.00		$0.00	$2,920.00
710			MAN INSTR QUANTAR 800	20		0		$0.00	$36.50	$730.00		$0.00	$730.00
711			ASTRO-TAC 2000 COMP RSS USER MANUAL	20		0		$0.00	$18.25	$365.00		$0.00	$365.00
712			ASTRO-TAC 2000 COMP FUNC MAN	20		0		$0.00	$36.50	$730.00		$0.00	$730.00
713													
714		CRS Harris	Microwave	6		0		$0.00	$49,667.00	$298,002.00	$22,500.00	$135,000.00	$433,002.00
			CRS SITE TOTAL										$6,084,127.69
715													
716		**********	Site 2: Bernal Heights --	1		0		$32,699.50	$0.00	$0.00	$294,875.00	$294,875.00	$327,574.50
717		**********	** Remote Controllers **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
718		T5293A	SIMULCAST 28 CHAN REMOTE CONTROLLER	1		0		$0.00	$20,741.49	$20,741.49		$0.00	$20,741.49
719		D611	ADD: 21 CHANNEL CAPACITY	1		0		$0.00	$16,650.57	$16,650.57		$0.00	$16,650.57
720		D179	ADD: SPARE BOARDS	1		0		$0.00	$7,090.49	$7,090.49		$0.00	$7,090.49
721		Z309	ADD: ASTRO 2.0.3 MIXED MODE	1		0		$0.00	$4,708.50	$4,708.50		$0.00	$4,708.50
722		**********	** TeNSr Network Server **										
723		DSPREM8918	UNIVERSAL ENCLOSURE TENSR/800	2		0		$0.00	$1,095.00	$2,190.00		$0.00	$2,190.00
724		DSPREM8902	DC POWER SUPPLY 48 VDC	4		0		$0.00	$912.50	$3,650.00		$0.00	$3,650.00
725		DSPREM8920	INTERFACE CARDXS, 8 T1/E1 INTFC	2		0		$0.00	$1,642.50	$3,285.00		$0.00	$3,285.00
726		DSPREM8801	CPU CNTRL CARD W/2 T1/E1, RED 256	4		0		$0.00	$4,106.25	$16,425.00		$0.00	$16,425.00
727		DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	2		0		$0.00	$1,781.20	$3,562.40		$0.00	$3,562.40
728		DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	2		0		$0.00	$1,551.25	$3,102.50		$0.00	$3,102.50
729		DSPREM812	CSU PLUG IN MODULE	8		0		$0.00	$912.50	$7,300.00		$0.00	$7,300.00
730		DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	4		0		$0.00	$2,190.00	$8,760.00		$0.00	$8,760.00
731		DSPREMDSM2	DIGITAL SIMULCAST MEDEM-II	6		0		$0.00	$6,935.00	$41,610.00		$0.00	$41,610.00
732		**********	** Repeaters **										
733		DQMFS205	GPS RX/CONTROLLER 28 CH	1		0		$0.00	$39,470.37	$39,470.37		$0.00	$39,470.37
734		C99ED	QUANTAR/QUANTRO FAMILY	23		0		$0.00	$4,946.48	$113,769.04		$0.00	$113,769.04
735		001C	QUANTAR/QUANTRO CONFIGURATION	23		0		$0.00	$0.00	$0.00		$0.00	$0.00
736		X750	ADD: 100W 800 MHZ OPERATION	23		0		$0.00	$4,609.22	$106,012.06		$0.00	$106,012.06
737		X897 A	ENH: SZ6809 ASTR CAI TRK QTAR	23		0		$0.00	$803.00	$18,469.00		$0.00	$18,469.00
738		X337	ALT: CABLE, 50FT REPEATER	23		0		$0.00	$63.51	$1,460.73		$0.00	$1,460.73
739		X808	ADD: GPS SIMULCAST	23		0		$0.00	$730.00	$16,790.00		$0.00	$16,790.00
740		X889	ADD: INTFC, WIRELINE, 9.6 KB	23		0		$0.00	$365.00	$8,395.00		$0.00	$8,395.00
741		X153	ADD: HARDWARE, RACKMOUNT	23		0		$0.00	$0.00	$0.00		$0.00	$0.00
742		X113	ALT: DC ONLY OP. DC TO DC CONVERTER	23		0		$0.00	$146.00	$3,358.00		$0.00	$3,358.00
743		DSDB8882A350	BIDIRECTIONAL SENSOR	23		0		$0.00	$159.87	$3,677.01		$0.00	$3,677.01
744		HMN1001	TEST MICROPHONE	5		0		$0.00	$42.34	$211.70		$0.00	$211.70
745		HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5		0		$0.00	$72.27	$361.35		$0.00	$361.35
746		TRN7738	CABLE FOR EXTERNAL 6W SPEAKER	5		0		$0.00	$36.50	$182.50		$0.00	$182.50
747		TRN4589	DUAL PHONE LINE SUPPRESSOR	23		0		$0.00	$64.42	$1,481.66		$0.00	$1,481.66
748		**********	** Antenna System **										
749		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	20		0		$0.00	$2.12	$42.40		$0.00	$42.40
750		TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	12		0		$0.00	$32.85	$394.20		$0.00	$394.20
751		L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	900		0		$0.00	$5.18	$4,662.00		$0.00	$4,662.00
752		TDN8817	7/8" CONNECTOR, N PLUG (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
753		TDN8818	7/8" CONNECTOR, N JACK (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
754		TDN6674	7/8" CABLE GROUND CLAMP KIT	18		0		$0.00	$24.46	$440.28		$0.00	$440.28
755		TDN8964	7/8" SNAP-IN HANGER KIT, 10PK	20		0		$0.00	$39.42	$788.40		$0.00	$788.40
756		TDN6672	7/8" CABLE HOISTING GRIP	6		0		$0.00	$36.50	$219.00		$0.00	$219.00
757		L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$3.07	$1,074.50		$0.00	$1,074.50

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
				Man Hours		Labor		Material		Subcontracts			
Item #	Model	Item Description	Qty	Per Unit	Total	Hrs Rate	Total $	Unit Cost	Total $	Unit Cost	Total $	Total Costs
758	TDN8809	1/2" CONNECTOR, N PLUG S-FLEX PLTD	46		0		$0.00	$37.78	$1,737.88		$0.00	$1,737.88
759	TDN9289	CABLE WRAP, WEATHERPROOFING	6		0		$0.00	$27.38	$164.28		$0.00	$164.28
760	L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$1.39	$486.50		$0.00	$486.50
761	TDN9714	1/4"CONN, N PLUG S-FLEX (PLTD)	23		0		$0.00	$12.23	$281.29		$0.00	$281.29
762	TDN9715	1/4"CONN, BNC PLUG S-FLEX (PLTD)	23		0		$0.00	$10.59	$243.57		$0.00	$243.57
763	DSTJD8008T	COMBINER,806-1K MHZ,8CH,CAV-FER CWA	4		0		$0.00	$9,135.95	$36,543.80		$0.00	$36,543.80
764	DSRMC80024	RMC 806-824 MHZ, 24CH, CWA	2		0		$0.00	$3,003.95	$6,007.90		$0.00	$6,007.90
765	RRX4039A	LIGHTNING SUPRESSOR	6		0		$0.00	$47.45	$284.70		$0.00	$284.70
766	DSDB806T6TLXT	BB TPL 6 DEG DOWNTILT	2		0		$0.00	$2,536.75	$5,073.50		$0.00	$5,073.50
767	DSDB8882A1000	BIDIRECTIONAL SENSOR	4		0		$0.00	$159.87	$639.48		$0.00	$639.48
768	**********	** Racks **										
769	TRN7342	SEVEN FOOT RACK	9		0		$0.00	$343.10	$3,087.90		$0.00	$3,087.90
770	**********	** Power System **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
771	DQUT3KH19MBS	3KVA/3KW 24V IN, 120/240V OUT	1		0		$0.00	$3,968.28	$3,968.28		$0.00	$3,968.28
772	DQTWP48S800313B	TWINPACK -48V/800A IM CAP 400A	1		0		$0.00	$25,746.37	$25,746.37		$0.00	$25,746.37
773	DS48TEL126F1R2Z4	48V 361 A HR 3 TRAY BATTERY SYSTEM	1		0		$0.00	$3,765.34	$3,765.34		$0.00	$3,765.34
774	DQ8411100120	CIRCUIT BREAKER PANEL	6		0		$0.00	$283.24	$1,699.44		$0.00	$1,699.44
775	DS1329120100	20AMP BREAKER	38		0		$0.00	$22.63	$859.94		$0.00	$859.94
776												
777	Bernal Heights	REMOTE TERMINAL UNIT										
778	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
779	V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
780	V345	ADD: ASYNC RS232	8		0		$0.00	$113.15	$905.20		$0.00	$0.00
781	V418	REPLACE 8-SLOT MB W/8CPU+NO I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
782	V425	ADD: MOSCAD CPU 300	7		0		$0.00	$972.36	$6,806.52		$0.00	$0.00
783	V120	ADD: 8 MOD W/EXPANSION MODULE	1		0		$0.00	$693.50	$693.50		$0.00	$0.00
784	V437	ADD: 8AI 5V MODULE	7		0		$0.00	$477.42	$3,341.94		$0.00	$0.00
785	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
786	V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
787	V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
788	V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
789	V425	ADD: CPU 300	2		0		$0.00	$972.36	$1,944.72		$0.00	$0.00
790	V345	ADD: ASYNC RS232	3		0		$0.00	$113.15	$339.45		$0.00	$0.00
791	V380	ADD: 60 DI. MODULE	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
792	V516	ADD: 16DO LATCH MODULE	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
793	F6933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
794	V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
795	V104	ADD: 2400 DIAL-UP	1		0		$0.00	$300.76	$300.76		$0.00	$0.00
796	FKN4400	FLAT OVAL 2.5M CABLE	12		0		$0.00	$10.95	$131.40		$0.00	$0.00
797	FRN5727	LAN ADAPTER ASSEMBLY	2		0		$0.00	$36.50	$73.00		$0.00	$0.00
798	FRN5734	CPU RS-232 MULTIPLEXER INTF 1 TO 4	6		0		$0.00	$182.50	$1,095.00		$0.00	$0.00
799	TDN9263	MODEM, 14,400 BPS V.32BIS	1		0		$0.00	$560.35	$560.35		$0.00	$0.00
800	DQEVMBSM0006	MODEM CABLE	1		0		$0.00	$23.36	$23.36		$0.00	$0.00
801	FKN5934	EXTERNAL DC PS TO MB CABLE	1		0		$0.00	$10.95	$10.95		$0.00	$0.00
802												
803	Bernal Harris	Microwave	2		0		$0.00	$49,667.00	$99,334.00	$22,500.00	$45,000.00	$144,334.00
		BERNAL HEIGHTS TOTAL										$1,024,761.02
804												
805	**********	Site 3: Ft. Miley --	1		0		$32,699.50	$0.00	$0.00	$366,662.50	$366,662.50	$399,362.00
806	**********	** Remote Controllers **										
807	T5293A	SIMULCAST 28 CHAN REMOTE CONTROLLER	1		0		$0.00	$20,741.49	$20,741.49		$0.00	$20,741.49
808	D611	ADD: 21 CHANNEL CAPACITY	1		0		$0.00	$16,650.57	$16,650.57		$0.00	$16,650.57

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco						Rev: 7/97					
			Citywide 800MHz Radio System Project (CERS)					Project Cost Itemization Schedule					
			Motorola Proposal for Bid No. 168										
							Labor		Material		Subcontracts		
				Man Hours			Hrx	Total	Unit	Total	Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
809		D179	ADD: SPARE BOARDS	1		0		$0.00	$7,090.49	$7,090.49		$0.00	$7,090.49
810		Z369	ADD: ASTRO 2.0.3 MIXED MODE	1		0		$0.00	$4,708.50	$4,708.50		$0.00	$4,708.50
811		**********	** TeNSr Network Server **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
812		DSPREM8918	UNIVERSAL ENCLOSURE TENSR/800	2		0		$0.00	$1,095.00	$2,190.00		$0.00	$2,190.00
813		DSPREM8902	DC POWER SUPPLY 48 VDC	4		0		$0.00	$912.50	$3,650.00		$0.00	$3,650.00
814		DSPREM8920	INTERFACE CARDXS, 8 T1/E1 INTFC	2		0		$0.00	$1,642.50	$3,285.00		$0.00	$3,285.00
815		DSPREM8801	CPU CNTRL CARD W/2 T1/E1, RED 256	4		0		$0.00	$4,106.25	$16,425.00		$0.00	$16,425.00
816		DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	2		0		$0.00	$1,781.20	$3,562.40		$0.00	$3,562.40
817		DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	2		0		$0.00	$1,551.25	$3,102.50		$0.00	$3,102.50
818		DSPREM812	CSU PLUG IN MODULE	8		0		$0.00	$912.50	$7,300.00		$0.00	$7,300.00
819		DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	4		0		$0.00	$2,190.00	$8,760.00		$0.00	$8,760.00
820		DSPREMDSM2	DIGITAL SIMULCAST MEDEM-II	6		0		$0.00	$6,935.00	$41,610.00		$0.00	$41,610.00
821		**********	** Repealers **										
822		DQMFS205	GPS RX/CONTROLLER 28 CH	1		0		$0.00	$39,470.37	$39,470.37		$0.00	$39,470.37
823		C09ED	QUANTAR/QUANTRO FAMILY	23		0		$0.00	$4,946.48	$113,769.04		$0.00	$113,769.04
824		001C	QUANTAR/QUANTRO CONFIGURATION	23		0		$0.00	$0.00	$0.00		$0.00	$0.00
825		X750	ADD: 100W 800 MHZ OPERATION	23		0		$0.00	$4,609.22	$106,012.06		$0.00	$106,012.06
826		X897 A	ENH: SZ6809 ASTR CAI TRK QTAR	23		0		$0.00	$803.00	$18,469.00		$0.00	$18,469.00
827		X397	ALT: CABLE, 50FT REPEATER	23		0		$0.00	$63.51	$1,460.73		$0.00	$1,460.73
828		X806	ADD: GPS SIMULCAST	23		0		$0.00	$730.00	$16,790.00		$0.00	$16,790.00
829		X869	ADD: INTFC, WIRELINE, 9.6 KB	23		0		$0.00	$365.00	$8,395.00		$0.00	$8,395.00
830		X153	ADD: HARDWARE, RACKMOUNT	23		0		$0.00	$0.00	$0.00		$0.00	$0.00
831		X113	ALT: DC ONLY OP. DC TO DC CONVERTER	23		0		$0.00	$146.00	$3,358.00		$0.00	$3,358.00
832		DSDB8882A350	BIDIRECTIONAL SENSOR	23		0		$0.00	$159.87	$3,677.01		$0.00	$3,677.01
833		HMN1001	TEST MICROPHONE	5		0		$0.00	$42.34	$211.70		$0.00	$211.70
834		HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5		0		$0.00	$72.27	$361.35		$0.00	$361.35
835		TRN7736	CABLE FOR EXTERNAL 6W SPEAKER	5		0		$0.00	$36.50	$182.50		$0.00	$182.50
836		TRN4589	DUAL PHONE LINE SUPPRESSOR	23		0		$0.00	$64.42	$1,481.66		$0.00	$1,481.66
837		**********	** Antenna System **										
838		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	20		0		$0.00	$2.12	$42.40		$0.00	$42.40
839		TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	12		0		$0.00	$32.85	$394.20		$0.00	$394.20
840		L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	900		0		$0.00	$5.18	$4,662.00		$0.00	$4,662.00
841		TDN8817	7/8" CONNECTOR, N PLUG (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
842		TDN8818	7/8" CONNECTOR, N JACK (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
843		TDN6074	7/8" CABLE GROUND CLAMP KIT	18		0		$0.00	$24.46	$440.28		$0.00	$440.28
844		TDN8964	7/8" SNAP-IN HANGER KIT, 10PK	20		0		$0.00	$39.42	$788.40		$0.00	$788.40
845		TDN6672	7/8" CABLE HOISTING GRIP	6		0		$0.00	$36.50	$219.00		$0.00	$219.00
846		L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$3.07	$1,074.50		$0.00	$1,074.50
847		TDN8809	1/2" CONNECTOR, N PLUG S-FLEX PLTD	46		0		$0.00	$37.78	$1,737.88		$0.00	$1,737.88
848		TDN9289	CABLE WRAP, WEATHERPROOFING	6		0		$0.00	$27.38	$164.28		$0.00	$164.28
849		L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$1.39	$486.50		$0.00	$486.50
850		TDN9714	1/4"CONN, N PLUG S-FLEX (PLTD)	23		0		$0.00	$12.23	$281.29		$0.00	$281.29
851		TDN9715	1/4"CONN, BNC PLUG S-FLEX (PLTD)	23		0		$0.00	$10.59	$243.57		$0.00	$243.57
852		DSTJD8008T	COMBINER,806-1K MHZ,8CH,CAV-FER CWA	4		0		$0.00	$9,135.95	$36,543.80		$0.00	$36,543.80
853		DSRMCB0024	RMC 806-824 MHZ, 24CH, CWA	2		0		$0.00	$3,003.95	$6,007.90		$0.00	$6,007.90
854		RRX4039A	LIGHTNING SUPRESSOR	6		0		$0.00	$47.45	$284.70		$0.00	$284.70
855		DSDB806T6TLXT	BB TPL 6 DEG DOWNTILT	2		0		$0.00	$2,536.75	$5,073.50		$0.00	$5,073.50
856		DSDB8882A1000	BIDIRECTIONAL SENSOR	4		0		$0.00	$159.87	$639.48		$0.00	$639.48
857		**********	** Racks **										
858		TRN7342	SEVEN FOOT RACK	9		0		$0.00	$343.10	$3,087.90		$0.00	$3,087.90
859		**********	** Power System **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
860		DQUT3KH19MBS	3KVA/3KW 24V IN, 120/240V OUT	1		0		$0.00	$3,968.28	$3,968.28		$0.00	$3,968.28

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco					Rev: 7/97					
		Citywide 800MHz Radio System Project (CERS)					Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168						Material		Subcontracts		
			Man Hours			Labor Hrs	Total	Unit	Total	Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
861		DQTWP4BS800913B	TWINPACK -48V/800A IM CAP 400A	1		0		$0.00	$25,746.37	$25,746.37		$0.00	$25,746.37
862		DS48TEL125F1R2Z4	48V 361 A HR 3 TRAY BATTERY SYSTEM	1		0		$0.00	$3,765.34	$3,765.34		$0.00	$3,765.34
863		DQ0411100120	CIRCUIT BREAKER PANEL	6		0		$0.00	$283.24	$1,699.44		$0.00	$1,699.44
864		DS1329120100	20AMP BREAKER	38		0		$0.00	$22.63	$859.94		$0.00	$859.94
865													
866		**REMOTE RF SITES***	REMOTE TERMINAL UNIT										
867		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
868		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
869		V345	ADD: ASYNC RS232	7		0		$0.00	$113.15	$792.05		$0.00	$0.00
870		V416	REPLACE 8-SLOT MB W/8CPU+NO I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
871		V425	ADD: MOSCAD CPU 300	6		0		$0.00	$972.36	$5,834.16		$0.00	$0.00
872		V120	ADD: 8 MOD W/EXPANSION MODULE	1		0		$0.00	$693.50	$693.50		$0.00	$0.00
873		V437	ADD: 8AI 5V MODULE	7		0		$0.00	$477.42	$3,341.94		$0.00	$0.00
874		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
875		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
876		V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
877		V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
878		V425	ADD: CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
879		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
880		V380	ADD: 60 DI. MODULE	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
881		V516	ADD: 16DO LATCH MODULE	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
882		F6933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
883		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
884		V104	ADD: 2400 DIAL-UP	9		0		$0.00	$300.76	$300.76		$0.00	$0.00
885		FRN4400	FLAT OVAL 2.5M CABLE	2		0		$0.00	$10.95	$98.55		$0.00	$0.00
886		FRN5727	LAN ADAPTER ASSEMBLY	6		0		$0.00	$36.50	$73.00		$0.00	$0.00
887		FRN5734	CPU RS-232 MULTIPLEXER INTF 1 TO 4	1		0		$0.00	$182.50	$1,095.00		$0.00	$0.00
888		FRN5934	EXTERNAL DC PS TO MB CABLE					$0.00	$10.95	$10.95			
889													
890		Ft Miley Harris	Microwave	2		0		$0.00	$49,667.00	$99,334.00	$22,500.00	$45,000.00	$144,334.00
			FT. MILEY TOTAL										$1,096,548.52
891													
892		**********	Site 4: SF State --	1		0		$32,699.50	$0.00	$0.00	$354,396.25	$354,396.25	$387,095.75
893		**********	** Remote Controllers **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
894		T5293A	SIMULCAST 28 CHAN REMOTE CONTROLLER	1		0		$0.00	$20,741.49	$20,741.49		$0.00	$20,741.49
895		D611	ADD: 21 CHANNEL CAPACITY	1		0		$0.00	$16,650.57	$16,650.57		$0.00	$16,650.57
896		D179	ADD: SPARE BOARDS	1		0		$0.00	$7,090.49	$7,090.49		$0.00	$7,090.49
897		Z369	ADD: ASTRO 2.0.3 MIXED MODE	1		0		$0.00	$4,708.50	$4,708.50		$0.00	$4,708.50
898		**********	** TeNSr Network Server **										
899		DSPREM8918	UNIVERSAL ENCLOSURE TENSR/800	2		0		$0.00	$1,095.00	$2,190.00		$0.00	$2,190.00
900		DSPREM8902	DC POWER SUPPLY 48 VDC	4		0		$0.00	$912.50	$3,650.00		$0.00	$3,650.00
901		DSPREM8920	INTERFACE CARDXS, 8 T1/E1 INTFC	2		0		$0.00	$1,642.50	$3,285.00		$0.00	$3,285.00
902		DSPREM8801	CPU CNTRL CARD W/2 T1/E1, RED 256	4		0		$0.00	$4,106.25	$16,425.00		$0.00	$16,425.00
903		DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	2		0		$0.00	$1,781.20	$3,562.40		$0.00	$3,562.40
904		DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	2		0		$0.00	$1,551.25	$3,102.50		$0.00	$3,102.50
905		DSPREM812	CSU PLUG IN MODULE	8		0		$0.00	$912.50	$7,300.00		$0.00	$7,300.00
906		DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	4		0		$0.00	$2,190.00	$8,760.00		$0.00	$8,760.00
907		DSPREMDSM2	DIGITAL SIMULCAST MEDEM-II	6		0		$0.00	$6,935.00	$41,610.00		$0.00	$41,610.00
908		**********	** Repeaters **										
909		DQMFS205	GPS RX/CONTROLLER 28 CH	1		0		$0.00	$39,470.37	$39,470.37		$0.00	$39,470.37
910		C99ED	QUANTAR/QUANTRO FAMILY	23		0		$0.00	$4,946.48	$113,769.04		$0.00	$113,769.04
911		0010	QUANTAR/QUANTRO CONFIGURATION	23		0		$0.00	$0.00	$0.00		$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)					Rev: 7/97					
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule					
				Man Hours		Labor		Material		Subcontracts		
Item #	Model	Item Description	Qty	Per Unit	Total	Hrs Rate	Total $	Unit Cost	Total $	Unit Cost	Total $	Total Costs
912	X750	ADD: 100W 800 MHZ OPERATION	23		0		$0.00	$4,609.22	$106,012.06		$0.00	$106,012.06
913	X697 A	ENH: SZ6809 ASTR CAI TRK QTAR	23		0		$0.00	$803.00	$18,469.00		$0.00	$18,469.00
914	X337	ALT: CABLE, 50FT REPEATER	23		0		$0.00	$63.51	$1,460.73		$0.00	$1,460.73
915	X868	ADD: GPS SIMULCAST	23		0		$0.00	$730.00	$16,790.00		$0.00	$16,790.00
916	X809	ADD: INTFC, WIRELINE, 9.6 KB	23		0		$0.00	$365.00	$8,395.00		$0.00	$8,395.00
917	X153	ADD: HARDWARE, RACKMOUNT	23		0		$0.00	$0.00	$0.00		$0.00	$0.00
918	X113	ALT: DC ONLY OP. DC TO DC CONVERTER	23		0		$0.00	$146.00	$3,358.00		$0.00	$3,358.00
919	DSDB8882A350	BIDIRECTIONAL SENSOR	23		0		$0.00	$159.87	$3,677.01		$0.00	$3,677.01
920	HMN1001	TEST MICROPHONE	5		0		$0.00	$42.34	$211.70		$0.00	$211.70
921	HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5		0		$0.00	$72.27	$361.35		$0.00	$361.35
922	TRN7738	CABLE FOR EXTERNAL 6W SPEAKER	5		0		$0.00	$36.50	$182.50		$0.00	$182.50
923	TRN4589	DUAL PHONE LINE SUPPRESSOR	23		0		$0.00	$64.42	$1,481.66		$0.00	$1,481.66
924	**********	** Antenna System **										
925	L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	20		0		$0.00	$2.12	$42.40		$0.00	$42.40
926	TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	12		0		$0.00	$32.85	$394.20		$0.00	$394.20
927	L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	900		0		$0.00	$5.18	$4,662.00		$0.00	$4,662.00
928	TDN8817	7/8" CONNECTOR, N PLUG (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
929	TDN8818	7/8" CONNECTOR, N JACK (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
930	TDN6674	7/8" CABLE GROUND CLAMP KIT	18		0		$0.00	$24.46	$440.28		$0.00	$440.28
931	TDN8964	7/8" SNAP-IN HANGER KIT, 10PK	20		0		$0.00	$39.42	$788.40		$0.00	$788.40
932	TDN6672	7/8" CABLE HOISTING GRIP	6		0		$0.00	$36.50	$219.00		$0.00	$219.00
933	L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$3.07	$1,074.50		$0.00	$1,074.50
934	TDN8809	1/2" CONNECTOR, N PLUG S-FLEX PLTD	46		0		$0.00	$37.78	$1,737.88		$0.00	$1,737.88
935	TDN9289	CABLE WRAP, WEATHERPROOFING	6		0		$0.00	$27.36	$164.28		$0.00	$164.28
936	L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$1.39	$486.50		$0.00	$486.50
937	TDN9714	1/4"CONN, N PLUG S-FLEX (PLTD)	23		0		$0.00	$12.23	$281.29		$0.00	$281.29
938	TDN9715	1/4"CONN, BNC PLUG S-FLEX (PLTD)	23		0		$0.00	$10.59	$243.57		$0.00	$243.57
939	DSTJD8008T	COMBINER,806-1K MHZ,8CH,CAV-FER CWA	4		0		$0.00	$9,135.95	$36,543.80		$0.00	$36,543.80
940	DSRMC80024	RMC 806-824 MHZ, 24CH, CWA	2		0		$0.00	$3,003.95	$6,007.90		$0.00	$6,007.90
941	RRX4039A	LIGHTNING SUPRESSOR	6		0		$0.00	$47.45	$284.70		$0.00	$284.70
942	DSDB806T6TLXT	BB TPL 6 DEG DOWNTILT	2		0		$0.00	$2,536.75	$5,073.50		$0.00	$5,073.50
943	DSDB8882A1000	BIDIRECTIONAL SENSOR	4		0		$0.00	$159.87	$639.48		$0.00	$639.48
944	**********	** Racks **										
945	TRN7342	SEVEN FOOT RACK	9		0		$0.00	$343.10	$3,087.90		$0.00	$3,087.90
946	**********	** Power System **										
947	DQUT3KH19MBS	3KVA/3KW 24V IN, 120/240V OUT	1		0		$0.00	$3,968.28	$3,968.28		$0.00	$3,968.28
948	DQTWP48S800313B	TWINPACK -48V/800A IM CAP 400A	1		0		$0.00	$25,746.37	$25,746.37		$0.00	$25,746.37
949	DS48TEL125F1R2Z4	48V 361 A HR 3 TRAY BATTERY SYSTEM	1		0		$0.00	$3,765.34	$3,765.34		$0.00	$3,765.34
950	DQ8411100120	CIRCUIT BREAKER PANEL	6		0		$0.00	$283.24	$1,699.44		$0.00	$1,699.44
951	DS1329120100	20AMP BREAKER	38		0		$0.00	$22.63	$859.94		$0.00	$859.94
952												
953	**REMOTE RF SITES***	REMOTE TERMINAL UNIT										
954	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
955	V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
956	V345	ADD: ASYNC RS232	7		0		$0.00	$113.15	$792.05		$0.00	$0.00
957	V410	REPLACE 8-SLOT MB W/8CPU+NO I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
958	V426	ADD: MOSCAD CPU 300	6		0		$0.00	$972.36	$5,834.16		$0.00	$0.00
959	V120	ADD: 8 MOD W/EXPANSION MODULE	1		0		$0.00	$693.50	$693.50		$0.00	$0.00
960	V437	ADD: 8AI 5V MODULE	7		0		$0.00	$477.42	$3,341.94		$0.00	$0.00
961	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
962	V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
963	V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco						Rev: 7/97					
		Citywide 800Mllz Radio System Project (CERS)						Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168							Material		Subcontracts		
				Man Hours		Labor Hrs	Total	Unit	Total	Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
964		V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
965		V425	ADD: CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
966		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
967		V380	ADD: 60 DI. MODULE	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
968		V516	ADD: 16DO LATCH MODULE	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
969		FG933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
970		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
971		V104	ADD: 2400 DIAL-UP	1		0		$0.00	$300.76	$300.76		$0.00	$0.00
972		FKN4400	FLAT OVAL 2.5M CABLE	9		0		$0.00	$10.95	$98.55		$0.00	$0.00
973		FRN5727	LAN ADAPTER ASSEMBLY	2		0		$0.00	$36.50	$73.00		$0.00	$0.00
974		FRN5734	CPU RS-232 MULTIPLEXER INTF 1 TO 4	6		0		$0.00	$182.60	$1,095.00		$0.00	$0.00
975		FKN5934	EXTERNAL DC PS TO MB CABLE	1		0		$0.00	$10.95	$10.95		$0.00	
977													
978		SF State Harris	Microwave	2		0		$0.00	$49,667.00	$99,334.00	$22,500.00	$45,000.00	$144,334.00
			S.F. STATE TOTAL										$1,084,282.27
979													
980		**********	Site 5; Forest Hill –	1		0		$32,699.50	$0.00	$0.00	$192,775.00	$192,775.00	$225,474.50
981		**********	** Remote Controllers **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
982		T5293A	SIMULCAST 28 CHAN REMOTE CONTROLLER	1		0		$0.00	$20,741.49	$20,741.49		$0.00	$20,741.49
983		D611	ADD: 21 CHANNEL CAPACITY	1		0		$0.00	$16,650.57	$16,650.57		$0.00	$16,650.57
984		D179	ADD: SPARE BOARDS	1		0		$0.00	$7,090.49	$7,090.49		$0.00	$7,090.49
985		Z309	ADD: ASTRO 2.0.3 MIXED MODE	1		0		$0.00	$4,708.50	$4,708.50		$0.00	$4,708.50
986		**********	** TeNSr Network Server **										
987		DSPREM8918	UNIVERSAL ENCLOSURE TENSR/800	2		0		$0.00	$1,095.00	$2,190.00		$0.00	$2,190.00
988		DSPREM8902	DC POWER SUPPLY 48 VDC	4		0		$0.00	$912.50	$3,650.00		$0.00	$3,650.00
989		DSPREM8920	INTERFACE CARDXS, 8 T1/E1 INTFC	2		0		$0.00	$1,642.50	$3,285.00		$0.00	$3,285.00
990		DSPREM8801	CPU CNTRL CARD W/2 T1/E1, RED 256	4		0		$0.00	$4,106.25	$16,425.00		$0.00	$16,425.00
991		DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	2		0		$0.00	$1,781.20	$3,562.40		$0.00	$3,562.40
992		DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	2		0		$0.00	$1,551.25	$3,102.50		$0.00	$3,102.50
993		DSPREM812	CSU PLUG IN MODULE	8		0		$0.00	$912.50	$7,300.00		$0.00	$7,300.00
994		DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	4		0		$0.00	$2,190.00	$8,760.00		$0.00	$8,760.00
995		DSPREMDSM2	DIGITAL SIMULCAST MEDEM-II	6		0		$0.00	$6,935.00	$41,610.00		$0.00	$41,610.00
996		**********	** Repeaters **										
997		DCMFS205	GPS RX/CONTROLLER 28 CH	1		0		$0.00	$39,470.37	$39,470.37		$0.00	$39,470.37
998		C09ED	QUANTAR/QUANTRO FAMILY	23		0		$0.00	$4,946.48	$113,769.04		$0.00	$113,769.04
999		001C	QUANTAR/QUANTRO CONFIGURATION	23		0		$0.00	$0.00	$0.00		$0.00	$0.00
1000		X750	ADD: 100W 800 MHZ OPERATION	23		0		$0.00	$4,609.22	$106,012.06		$0.00	$106,012.06
1001		X897 A	ENH: SZ6809 ASTR CAI TRK QTAR	23		0		$0.00	$803.00	$18,469.00		$0.00	$18,469.00
1002		X337	ALT: CABLE, 50FT REPEATER	23		0		$0.00	$63.51	$1,460.73		$0.00	$1,460.73
1003		X880	ADD: GPS SIMULCAST	23		0		$0.00	$730.00	$16,790.00		$0.00	$16,790.00
1004		X809	ADD: INTFC, WIRELINE, 9.6 KB	23		0		$0.00	$385.00	$8,395.00		$0.00	$8,395.00
1005		X153	ADD: HARDWARE, RACKMOUNT	23		0		$0.00	$0.00	$0.00		$0.00	$0.00
1006		X113	ALT: DC ONLY OP. DC TO DC CONVERTER	23		0		$0.00	$146.00	$3,358.00		$0.00	$3,358.00
1007		DSDB0882A350	BIDIRECTIONAL SENSOR	23		0		$0.00	$159.87	$3,677.01		$0.00	$3,677.01
1008		HMN1001	TEST MICROPHONE	5		0		$0.00	$42.34	$211.70		$0.00	$211.70
1009		HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5		0		$0.00	$72.27	$361.35		$0.00	$361.35
1010		TRN7738	CABLE FOR EXTERNAL 6W SPEAKER	5		0		$0.00	$36.50	$182.50		$0.00	$182.50
1011		TRN4589	DUAL PHONE LINE SUPPRESSOR	23		0		$0.00	$64.42	$1,481.66		$0.00	$1,481.66
1012		**********	** Antenna System **										
1013		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	20		0		$0.00	$2.12	$42.40		$0.00	$42.40
1014		TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	12		0		$0.00	$32.85	$394.20		$0.00	$394.20
1015		L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	900		0		$0.00	$5.18	$4,662.00		$0.00	$4,662.00

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
			Citywide 800MHz Radio System Project (CERS)					Rev: 7/97					
			Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule					
							Labor		Material		Subcontracts		
				Man Hours			Hrs	Total	Unit	Total	Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
1016		TDN6817	7/8" CONNECTOR, N PLUG (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
1017		TDN6818	7/8" CONNECTOR, N JACK (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
1018		TDN6674	7/8" CABLE GROUND CLAMP KIT	18		0		$0.00	$24.46	$440.28		$0.00	$440.28
1019		TDN6964	7/8" SNAP-IN HANGER KIT, 10PK	20		0		$0.00	$39.42	$788.40		$0.00	$788.40
1020		TDN6672	7/8" CABLE HOISTING GRIP	6		0		$0.00	$36.50	$219.00		$0.00	$219.00
1021		L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$3.07	$1,074.50		$0.00	$1,074.50
1022		TDN6009	1/2" CONNECTOR, N PLUG S-FLEX PLTD	46		0		$0.00	$37.78	$1,737.88		$0.00	$1,737.88
1023		TDN9289	CABLE WRAP, WEATHERPROOFING	6		0		$0.00	$27.38	$164.28		$0.00	$164.28
1024		L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$1.39	$486.50		$0.00	$486.50
1025		TDN9714	1/4"CONN, N PLUG S-FLEX (PLTD)	23		0		$0.00	$12.23	$281.29		$0.00	$281.29
1026		TDN9715	1/4"CONN, BNC PLUG S-FLEX (PLTD)	23		0		$0.00	$10.59	$243.57		$0.00	$243.57
1027		DSTJD8008T	COMBINER,806-1K MHZ,8CH,CAV-FER CWA	4		0		$0.00	$9,135.95	$36,543.80		$0.00	$36,543.80
1028		DSRMC80024	RMC 806-824 MHZ, 24CH, CWA	2		0		$0.00	$3,003.95	$6,007.90		$0.00	$6,007.90
1029		RRX4039A	LIGHTNING SUPRESSOR	6		0		$0.00	$47.45	$284.70		$0.00	$284.70
1030		DSDB806T6TLXT	BB TPL 6 DEG DOWNTILT	2		0		$0.00	$2,536.75	$5,073.50		$0.00	$5,073.50
1031		DSDD8082A1000	BIDIRECTIONAL SENSOR	4		0		$0.00	$159.87	$639.48		$0.00	$639.48
1032		**********	** Racks **										
1033		TRN7342	SEVEN FOOT RACK	9		0		$0.00	$343.10	$3,087.90		$0.00	$3,087.90
1034		**********	** Power System **										
1035		DQUT3KH19MBS	3KVA/3KW 24V IN, 120/240V OUT	1		0		$0.00	$3,968.28	$3,968.28		$0.00	$3,968.28
1036		DQTWP48S800313B	TWINPACK -48V/800A IM CAP 400A	1		0		$0.00	$25,746.37	$25,746.37		$0.00	$25,746.37
1037		DS48TEL125F1R2Z4	48V 361 A HR 3 TRAY BATTERY SYSTEM	1		0		$0.00	$3,765.34	$3,765.34		$0.00	$3,765.34
1038		DQ0411100120	CIRCUIT BREAKER PANEL	6		0		$0.00	$283.24	$1,699.44		$0.00	$1,699.44
1039		DS1329120100	20AMP BREAKER	38		0		$0.00	$22.63	$859.94		$0.00	$859.94
1040													
1041		**REMOTE RF SITES***	REMOTE TERMINAL UNIT										
1042		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1043		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1044		V345	ADD: ASYNC RS232	7		0		$0.00	$113.15	$792.05		$0.00	$0.00
1045		V416	REPLACE 8-SLOT MB W/8CPU+NO I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1046		V425	ADD: MOSCAD CPU 300	6		0		$0.00	$972.36	$5,834.16		$0.00	$0.00
1047		V120	ADD: 8 MOD W/EXPANSION MODULE	1		0		$0.00	$693.50	$693.50		$0.00	$0.00
1048		V437	ADD: 8AI 5V MODULE	7		0		$0.00	$477.42	$3,341.94		$0.00	$0.00
1049		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1050		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1051		V360	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1052		V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
1053		V425	ADD: CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
1054		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1055		V380	ADD: 60 DI. MODULE	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
1056		V516	ADD: 16DO LATCH MODULE	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
1057		F6933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
1058		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1059		V104	ADD: 2400 DIAL-UP	1		0		$0.00	$300.76	$300.76		$0.00	$0.00
1060		FKN4400	FLAT OVAL 2.5M CABLE	9		0		$0.00	$10.95	$98.55		$0.00	$0.00
1061		FRN5727	LAN ADAPTER ASSEMBLY	2		0		$0.00	$36.50	$73.00		$0.00	$0.00
1062		FRN5734	CPU RS-232 MULTIPLEXER INTF 1 TO 4	6		0		$0.00	$182.50	$1,095.00		$0.00	$0.00
1063		FKN5934	EXTERNAL DC PS TO MB CABLE	1		0		$0.00	$10.95	$10.95		$0.00	$0.00
1064													
1065		Forest Hill Harris	Microwave	2		0		$0.00	$49,667.00	$99,334.00	$22,500.00	$45,000.00	$144,334.00
			FOREST HILL TOTAL										$921,661.02
1066													

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco						Rev: 7/97					
		Citywide 800Mllz Radio System Project (CERS)						Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168							Material		Subcontracts		
				Man Hours			Labor Hrs	Total	Unit	Total	Unit	Total	Total
Item #	Model	Item Description	Qty	Per Unit	Total		Rate	$	Cost	$	Cost	$	Costs
1067	**********	Sie 6: One Market Plaza --	1		0			$32,699.50	$0.00	$0.00	$271,159.00	$271,159.00	$303,858.50
1068	**********	** Remote Controllers **										$0.00	$20,741.49
1069	T5293A	SIMULCAST 28 CHAN REMOTE CONTROLLER	1		0			$0.00	$20,741.49	$20,741.49		$0.00	$16,650.57
1070	D611	ADD: 21 CHANNEL CAPACITY	1		0			$0.00	$16,650.57	$16,650.57		$0.00	$7,090.49
1071	D179	ADD: SPARE BOARDS	1		0			$0.00	$7,090.49	$7,090.49		$0.00	$4,708.50
1072	Z389	ADD: ASTRO 2.0.3 MIXED MODE	1		0			$0.00	$4,708.50	$4,708.50			
1073	**********	** TeNSr Network Server **										$0.00	$2,190.00
1074	DSPREM8916	UNIVERSAL ENCLOSURE TENSR/800	2		0			$0.00	$1,095.00	$2,190.00		$0.00	$3,650.00
1075	DSPREM8902	DC POWER SUPPLY 48 VDC	4		0			$0.00	$912.50	$3,650.00		$0.00	$3,285.00
1076	DSPREM8920	INTERFACE CARDXS, 8 T1/E1 INTFC	2		0			$0.00	$1,642.50	$3,285.00		$0.00	$16,425.00
1077	DSPREM8801	CPU CNTRL CARD W/2 T1/E1, RED 256	4		0			$0.00	$4,106.25	$16,425.00		$0.00	$3,562.40
1078	DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	2		0			$0.00	$1,781.20	$3,562.40		$0.00	$3,102.50
1079	DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	2		0			$0.00	$1,551.25	$3,102.50		$0.00	$7,300.00
1080	DSPREM812	CSU PLUG IN MODULE	8		0			$0.00	$912.50	$7,300.00		$0.00	$8,760.00
1081	DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	4		0			$0.00	$2,190.00	$8,760.00		$0.00	$41,610.00
1082	DSPREMDSM2	DIGITAL SIMULCAST MEDEM-II	6		0			$0.00	$6,935.00	$41,610.00			
1083	**********	** Repeaters **										$0.00	$39,470.37
1084	DQMFS205	GPS RX/CONTROLLER 28 CH	1		0			$0.00	$39,470.37	$39,470.37		$0.00	$113,769.04
1085	C89ED	QUANTAR/QUANTRO FAMILY	23		0			$0.00	$4,946.48	$113,769.04		$0.00	$0.00
1086	001C	QUANTAR/QUANTRO CONFIGURATION	23		0			$0.00	$0.00	$0.00		$0.00	$106,012.06
1087	X750	ADD: 100W 800 MHZ OPERATION	23		0			$0.00	$4,609.22	$106,012.06		$0.00	$18,469.00
1088	X897 A	ENH: SZ6809 ASTR CAI TRK QTAR	23		0			$0.00	$803.00	$18,469.00		$0.00	$1,460.73
1089	X337	ALT: CABLE, 50FT REPEATER	23		0			$0.00	$63.51	$1,460.73		$0.00	$16,790.00
1090	X888	ADD: GPS SIMULCAST	23		0			$0.00	$730.00	$16,790.00		$0.00	$8,395.00
1091	X889	ADD: INTFC, WIRELINE, 9.6 KB	23		0			$0.00	$365.00	$8,395.00		$0.00	$0.00
1092	X153	ADD: HARDWARE, RACKMOUNT	23		0			$0.00	$0.00	$0.00		$0.00	$3,358.00
1093	X113	ALT: DC ONLY OP. DC TO DC CONVERTER	23		0			$0.00	$146.00	$3,358.00		$0.00	$3,677.01
1094	DSDB8082A350	BIDIRECTIONAL SENSOR	23		0			$0.00	$159.87	$3,677.01		$0.00	$211.70
1095	HMN1001	TEST MICROPHONE	5		0			$0.00	$42.34	$211.70		$0.00	$361.35
1096	HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5		0			$0.00	$72.27	$361.35		$0.00	$182.50
1097	TRN7738	CABLE FOR EXTERNAL 6W SPEAKER	5		0			$0.00	$36.50	$182.50		$0.00	$1,481.66
1098	TRN4589	DUAL PHONE LINE SUPPRESSOR	23		0			$0.00	$64.42	$1,481.66			
1099	**********	** Antenna System **										$0.00	$42.40
1100	L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	20		0			$0.00	$2.12	$42.40		$0.00	$394.20
1101	TDN0814	1/2" CONNECTOR, N PLUG LDF PLTD	12		0			$0.00	$32.85	$394.20		$0.00	$4,662.00
1102	L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	900		0			$0.00	$5.18	$4,662.00		$0.00	$963.60
1103	TDN9817	7/8" CONNECTOR, N PLUG (PLATED)	12		0			$0.00	$80.30	$963.60		$0.00	$963.60
1104	TDN0818	7/8" CONNECTOR, N JACK (PLATED)	12		0			$0.00	$80.30	$963.60		$0.00	$440.28
1105	TDN6674	7/8" CABLE GROUND CLAMP KIT	18		0			$0.00	$24.46	$440.28		$0.00	$788.40
1106	TDN0964	7/8" SNAP-IN HANGER KIT, 10PK	20		0			$0.00	$39.42	$788.40		$0.00	$219.00
1107	TDN6672	7/8" CABLE HOISTING GRIP	6		0			$0.00	$36.50	$219.00		$0.00	$1,074.50
1108	L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	350		0			$0.00	$3.07	$1,074.50		$0.00	$1,737.88
1109	TDN8609	1/2" CONNECTOR, N PLUG S-FLEX PLTD	46		0			$0.00	$37.78	$1,737.88		$0.00	$164.28
1110	TDN9289	CABLE WRAP, WEATHERPROOFING	6		0			$0.00	$27.38	$164.28		$0.00	$486.50
1111	L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	350		0			$0.00	$1.39	$486.50		$0.00	$281.29
1112	TDN9714	1/4"CONN, N PLUG S-FLEX (PLTD)	23		0			$0.00	$12.23	$281.29		$0.00	$243.57
1113	TDN9715	1/4"CONN, BNC PLUG S-FLEX (PLTD)	23		0			$0.00	$10.59	$243.57		$0.00	$36,543.80
1114	DSTJD8008T	COMBINER,806-1K MHZ,8CH,CAV-FER CWA	4		0			$0.00	$9,135.95	$36,543.80		$0.00	$6,007.90
1115	DSRMC80024	RMC 806-824 MHZ, 24CH, CWA	2		0			$0.00	$3,003.95	$6,007.90		$0.00	$284.70
1116	RRX4039A	LIGHTNING SUPRESSOR	6		0			$0.00	$47.45	$284.70		$0.00	$5,073.50
1117	DSDB8006T6TLXT	BB TPL 6 DEG DOWNTILT	2		0			$0.00	$2,536.75	$5,073.50		$0.00	$639.48
1118	DSDB8082A1000	BIDIRECTIONAL SENSOR	4		0			$0.00	$159.87	$639.48			

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
				Man Hours		Labor Hrs	Total	Material Unit	Total	Subcontracts Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
1119		**********	** Racks **										
1120		TRN7342	SEVEN FOOT RACK	9		0		$0.00	$343.10	$3,087.90		$0.00	$3,087.90
1121		**********	** Power System **										
1122		DQUT3KH19MBS	3KVA/3KW 24V IN, 120/240V OUT	1		0		$0.00	$3,968.28	$3,968.28		$0.00	$3,968.28
1123		DQTWP48S800313B	TWINPACK -48V/800A IM CAP 400A	1		0		$0.00	$25,746.37	$25,746.37		$0.00	$25,746.37
1124		DS48TEL125F1R2Z4	48V 361 A HR 3 TRAY BATTERY SYSTEM	1		0		$0.00	$3,765.34	$3,765.34		$0.00	$3,765.34
1125		DQ0411100120	CIRCUIT BREAKER PANEL	6		0		$0.00	$283.24	$1,699.44		$0.00	$1,699.44
1126		DS1329120100	20AMP BREAKER	38		0		$0.00	$22.63	$859.94		$0.00	$859.94
1127													
1128		**REMOTE RF SITES***	REMOTE TERMINAL UNIT										
1129		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1130		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1131		V345	ADD: ASYNC RS232	7		0		$0.00	$113.15	$792.05		$0.00	$0.00
1132		V418	REPLACE 8-SLOT MB W/8CPU+NO I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1133		V425	ADD: MOSCAD CPU 300	6		0		$0.00	$972.36	$5,834.16		$0.00	$0.00
1134		V120	ADD: 8 MOD W/EXPANSION MODULE	1		0		$0.00	$693.50	$693.50		$0.00	$0.00
1135		V437	ADD: 8AI 5V MODULE	7		0		$0.00	$477.42	$3,341.94		$0.00	$0.00
1136		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1137		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1138		V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1139		V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
1140		V425	ADD: CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
1141		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1142		V360	ADD: 60 DL MODULE	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
1143		V516	ADD: 16DO LATCH MODULE	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
1144		F6933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
1145		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1146		V104	ADD: 2400 DIAL-UP	1		0		$0.00	$300.76	$300.76		$0.00	$0.00
1147		FKN4400	FLAT OVAL 2.5M CABLE	9		0		$0.00	$10.95	$98.55		$0.00	$0.00
1148		FRN5727	LAN ADAPTER ASSEMBLY	2		0		$0.00	$36.50	$73.00		$0.00	$0.00
1149		FRN5734	CPU RS-232 MULTIPLEXER INTF 1 TO 4	6		0		$0.00	$182.50	$1,095.00		$0.00	$0.00
1150		FKN5934	EXTERNAL DC PS TO MB CABLE	1		0		$0.00	$10.95	$10.95		$0.00	$0.00
1151													
1152		Market Harris	Microwave	2		0		$0.00	$49,667.00	$99,334.00	$22,500.00	$45,000.00	$144,334.00
			ONE MARKET PLAZA TOTAL										$1,001,045.02
1153													
1154		**********	Site 7: Clay Jones --	1		0		$12,699.50	$0.00	$0.00	$0.00	$0.00	$12,699.50
1155		**********	** Remote Controllers **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1156		T5293A	SIMULCAST 28 CHAN REMOTE CONTROLLER	1		0		$0.00	$20,741.49	$20,741.49		$0.00	$20,741.49
1157		D611	ADD: 21 CHANNEL CAPACITY	1		0		$0.00	$16,650.57	$16,650.57		$0.00	$16,650.57
1158		D179	ADD: SPARE BOARDS	1		0		$0.00	$7,090.49	$7,090.49		$0.00	$7,090.49
1159		Z389	ADD: ASTRO 2.0.3 MIXED MODE	1		0		$0.00	$4,708.50	$4,708.50		$0.00	$4,708.50
1160		**********	** TeNSr Network Server **										
1161		DSPREM8918	UNIVERSAL ENCLOSURE TENSR/800	2		0		$0.00	$1,095.00	$2,190.00		$0.00	$2,190.00
1162		DSPREM8902	DC POWER SUPPLY 48 VDC	4		0		$0.00	$912.50	$3,650.00		$0.00	$3,650.00
1163		DSPREM8920	INTERFACE CARDXS, 8 T1/E1 INTFC	2		0		$0.00	$1,642.50	$3,285.00		$0.00	$3,285.00
1164		DSPREM8801	CPU CNTRL CARD W/2 T1/E1, RED 256	4		0		$0.00	$4,106.25	$16,425.00		$0.00	$16,425.00
1165		DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	2		0		$0.00	$1,781.20	$3,562.40		$0.00	$3,562.40
1166		DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	2		0		$0.00	$1,551.25	$3,102.50		$0.00	$3,102.50
1167		DSPREM812	CSU PLUG IN MODULE	8		0		$0.00	$912.50	$7,300.00		$0.00	$7,300.00
1168		DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	4		0		$0.00	$2,190.00	$8,760.00		$0.00	$8,760.00
1169		DSPREMDSM2	DIGITAL SIMULCAST MEDEM-II	6		0		$0.00	$6,935.00	$41,610.00		$0.00	$41,610.00

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco					Rev: 7/97					
		Citywide 800MHz Radio System Project (CER5)					Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168						Material		Subcontracts		
				Man Hours		Labor Hrs	Total	Unit	Total	Unit	Total	Total
Item #	Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
1170	**********	** Repeaters **									$0.00	$39,470.37
1171	DQMFS205	GPS RX/CONTROLLER 28 CH	1		0		$0.00	$39,470.37	$39,470.37		$0.00	$113,769.04
1172	C09ED	QUANTAR/QUANTRO FAMILY	23		0		$0.00	$4,946.48	$113,769.04		$0.00	$0.00
1173	001C	QUANTAR/QUANTRO CONFIGURATION	23		0		$0.00	$0.00	$0.00		$0.00	$106,012.06
1174	X750	ADD: 100W 800 MHZ OPERATION	23		0		$0.00	$4,609.22	$106,012.06		$0.00	$18,469.00
1175	X897 A	ENH: SZ6809 ASTR CAI TRK QTAR	23		0		$0.00	$803.00	$18,469.00		$0.00	$1,460.73
1176	X337	ALT: CABLE, 50FT REPEATER	23		0		$0.00	$63.51	$1,460.73		$0.00	$16,790.00
1177	X886	ADD: GPS SIMULCAST	23		0		$0.00	$730.00	$16,790.00		$0.00	$8,395.00
1178	X889	ADD: INTFC, WIRELINE, 9.6 KB	23		0		$0.00	$365.00	$8,395.00		$0.00	$0.00
1179	X153	ADD: HARDWARE, RACKMOUNT	23		0		$0.00	$0.00	$0.00		$0.00	$3,358.00
1180	X113	ALT: DC ONLY OP. DC TO DC CONVERTER	23		0		$0.00	$146.00	$3,358.00		$0.00	$3,677.01
1181	DSDB6682A350	BIDIRECTIONAL SENSOR	23		0		$0.00	$159.87	$3,677.01		$0.00	$211.70
1182	HMN1001	TEST MICROPHONE	5		0		$0.00	$42.34	$211.70		$0.00	$361.35
1183	HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5		0		$0.00	$72.27	$361.35		$0.00	$182.50
1184	TRN7738	CABLE FOR EXTERNAL 6W SPEAKER	5		0		$0.00	$36.50	$182.50		$0.00	$1,481.66
1185	TRN4509	DUAL PHONE LINE SUPPRESSOR	23		0		$0.00	$64.42	$1,481.66			
1186	**********	** Antenna System **									$0.00	$42.40
1187	L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	20		0		$0.00	$2.12	$42.40		$0.00	$394.20
1188	TDN8614	1/2" CONNECTOR, N PLUG LDF PLTD	12		0		$0.00	$32.85	$394.20		$0.00	$2,331.00
1189	L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	450		0		$0.00	$5.18	$2,331.00		$0.00	$963.60
1190	TDN8617	7/8" CONNECTOR, N PLUG (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
1191	TDN8618	7/8" CONNECTOR, N JACK (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$440.28
1192	TDN6674	7/8" CABLE GROUND CLAMP KIT	18		0		$0.00	$24.46	$440.28		$0.00	$591.30
1193	TDN8664	7/8" SNAP-IN HANGER KIT, 10PK	15		0		$0.00	$39.42	$591.30		$0.00	$219.00
1194	TDN6672	7/8" CABLE HOISTING GRIP	6		0		$0.00	$36.50	$219.00		$0.00	$1,074.50
1195	L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$3.07	$1,074.50		$0.00	$1,737.88
1196	TDN8609	1/2" CONNECTOR, N PLUG S-FLEX PLTD	46		0		$0.00	$37.78	$1,737.88		$0.00	$164.28
1197	TDN9289	CABLE WRAP, WEATHERPROOFING	6		0		$0.00	$27.38	$164.28		$0.00	$486.50
1198	L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$1.39	$486.50		$0.00	$281.29
1199	TDN9714	1/4"CONN, N PLUG S-FLEX (PLTD)	23		0		$0.00	$12.23	$281.29		$0.00	$243.57
1200	TDN9715	1/4"CONN, BNC PLUG S-FLEX (PLTD)	23		0		$0.00	$10.59	$243.57		$0.00	$36,543.80
1201	DSTJD8008T	COMBINER,806-1K MHZ,8CH,CAV-FER CWA	4		0		$0.00	$9,135.95	$36,543.80		$0.00	$6,007.90
1202	DSRMC80024	RMC 806-824 MHZ, 24CH, CWA	2		0		$0.00	$3,003.95	$6,007.90		$0.00	$284.70
1203	RRX4039A	LIGHTNING SUPRESSOR	6		0		$0.00	$47.45	$284.70		$0.00	$5,073.50
1204	DSDB806T6TLXT	BB TPL 6 DEG DOWNTILT	2		0		$0.00	$2,536.75	$5,073.50		$0.00	$639.48
1205	DSDB8682A1000	BIDIRECTIONAL SENSOR	4		0		$0.00	$159.87	$639.48			
1206	**********	** Racks **									$0.00	$3,087.90
1207	TRN7342	SEVEN FOOT RACK	9		0		$0.00	$343.10	$3,087.90			
1208	**********	** Power System **									$0.00	$3,968.28
1209	DQUT3KH19MBS	3KVA/3KW 24V IN, 120/240V OUT	1		0		$0.00	$3,968.28	$3,968.28		$0.00	$25,746.37
1210	DQTWP48S800313B	TWINPACK -48V/800A IM CAP 400A	1		0		$0.00	$25,746.37	$25,746.37		$0.00	$3,765.34
1211	DS48TEL125F1R2Z4	48V 361 A HR 3 TRAY BATTERY SYSTEM	1		0		$0.00	$3,765.34	$3,765.34		$0.00	$1,699.44
1212	DQ8411100120	CIRCUIT BREAKER PANEL	6		0		$0.00	$283.24	$1,699.44		$0.00	$859.94
1213	DS1328120100	20AMP BREAKER	38		0		$0.00	$22.63	$859.94			
1214											$0.00	$0.00
1215	**REMOTE RF SITES***	REMOTE TERMINAL UNIT									$0.00	$0.00
1216	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1217	V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1218	V345	ADD: ASYNC RS232	7		0		$0.00	$113.15	$792.05		$0.00	$0.00
1219	V410	REPLACE 8-SLOT MB W/8CPU+NO I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1220	V425	ADD: MOSCAD CPU 300	6		0		$0.00	$972.36	$5,834.16		$0.00	$0.00
1221	V120	ADD: 8 MOD W/EXPANSION MODULE	1		0		$0.00	$693.50	$693.50			

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
			Citywide 800MHz Radio System Project (CERS)					Rev: 7/97					
			Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule					
							Labor		Material		Subcontracts		
				Man Hours			Hrs	Total	Unit	Total	Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
1222		V437	ADD: 8AI 5V MODULE	7		0		$0.00	$477.42	$3,341.94		$0.00	$0.00
1223		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1224		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1225		V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1226		V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
1227		V425	ADD: CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
1228		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1229		V360	ADD: 60 DI. MODULE	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
1230		V516	ADD: 16DO LATCH MODULE	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
1231		F6933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
1232		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1233		V104	ADD: 2400 DIAL-UP	1		0		$0.00	$300.76	$300.76		$0.00	$0.00
1234		FKN4400	FLAT OVAL 2.5M CABLE	9		0		$0.00	$10.95	$98.55		$0.00	$0.00
1235		FRN5727	LAN ADAPTER ASSEMBLY	2		0		$0.00	$36.50	$73.00		$0.00	$0.00
1236		FRN5734	CPU RS-232 MULTIPLEXER INTF 1 TO 4	6		0		$0.00	$182.50	$1,095.00		$0.00	$0.00
1237		FKN5934	EXTERNAL DC PS TO MB CABLE	1		0		$0.00	$10.95	$10.95		$0.00	$0.00
1238													
1239		Clay Jones Harris	Microwave	2		0		$0.00	$49,667.00	$99,334.00	$22,500.00	$45,000.00	$144,334.00
			CLAY JONES TOTAL										$727,357.92
1240													
1241		**********	Sie 8: South Hill --	1		0		$32,699.50	$0.00	$0.00	$372,782.50	$372,782.50	$405,482.00
1242		**********	** Remote Controllers **										
1243		T5293A	SIMULCAST 28 CHAN REMOTE CONTROLLER	1		0		$0.00	$20,741.49	$20,741.49		$0.00	$20,741.49
1244		D811	ADD: 21 CHANNEL CAPACITY	1		0		$0.00	$16,650.57	$16,650.57		$0.00	$16,650.57
1245		D179	ADD: SPARE BOARDS	1		0		$0.00	$7,090.49	$7,090.49		$0.00	$7,090.49
1246		Z389	ADD: ASTRO 2.0.3 MIXED MODE	1		0		$0.00	$4,708.50	$4,708.50		$0.00	$4,708.50
1247		**********	** TeNSr Network Server **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1248		DSPREM8918	UNIVERSAL ENCLOSURE TENSR/800	2		0		$0.00	$1,095.00	$2,190.00		$0.00	$2,190.00
1249		DSPREM8902	DC POWER SUPPLY 48 VDC	4		0		$0.00	$912.50	$3,650.00		$0.00	$3,650.00
1250		DSPREM8920	INTERFACE CARDXS, 8 T1/E1 INTFC	2		0		$0.00	$1,642.50	$3,285.00		$0.00	$3,285.00
1251		DSPREM8601	CPU CNTRL CARD W/2 T1/E1, RED 256	4		0		$0.00	$4,106.25	$16,425.00		$0.00	$16,425.00
1252		DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	2		0		$0.00	$1,781.20	$3,562.40		$0.00	$3,562.40
1253		DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	2		0		$0.00	$1,551.25	$3,102.50		$0.00	$3,102.50
1254		DSPREM812	CSU PLUG IN MODULE	8		0		$0.00	$912.50	$7,300.00		$0.00	$7,300.00
1255		DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	4		0		$0.00	$2,190.00	$8,760.00		$0.00	$8,760.00
1256		DSPREMDSM2	DIGITAL SIMULCAST MEDEM-II	6		0		$0.00	$6,935.00	$41,610.00		$0.00	$41,610.00
1257		**********	** Repeaters **										
1258		DQMFS205	GPS RX/CONTROLLER 28 CH	1		0		$0.00	$39,470.37	$39,470.37		$0.00	$39,470.37
1259		C99ED	QUANTAR/QUANTRO FAMILY	23		0		$0.00	$4,946.48	$113,769.04		$0.00	$113,769.04
1260		C01C	QUANTAR/QUANTRO CONFIGURATION	23		0		$0.00	$0.00	$0.00		$0.00	$0.00
1261		X750	ADD: 100W 800 MHZ OPERATION	23		0		$0.00	$4,609.22	$106,012.06		$0.00	$106,012.06
1262		X897 A	ENH: SZ6809 ASTR CAI TRK QTAR	23		0		$0.00	$803.00	$18,469.00		$0.00	$18,469.00
1263		X337	ALT: CABLE, 50FT REPEATER	23		0		$0.00	$63.51	$1,460.73		$0.00	$1,460.73
1264		X688	ADD: GPS SIMULCAST	23		0		$0.00	$730.00	$16,790.00		$0.00	$16,790.00
1265		X889	ADD: INTFC, WIRELINE, 9.6 KB	23		0		$0.00	$365.00	$8,395.00		$0.00	$8,395.00
1266		X153	ADD: HARDWARE, RACKMOUNT	23		0		$0.00	$0.00	$0.00		$0.00	$0.00
1267		X113	ALT: DC ONLY OP. DC TO DC CONVERTER	23		0		$0.00	$146.00	$3,358.00		$0.00	$3,358.00
1268		DSDB0882A350	BIDIRECTIONAL SENSOR	23		0		$0.00	$159.87	$3,677.01		$0.00	$3,677.01
1269		HMN1001	TEST MICROPHONE	5		0		$0.00	$42.34	$211.70		$0.00	$211.70
1270		HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	5		0		$0.00	$72.27	$361.35		$0.00	$361.35
1271		TRN7738	CABLE FOR EXTERNAL 6W SPEAKER	5		0		$0.00	$36.50	$182.50		$0.00	$182.50
1272		TRN4509	DUAL PHONE LINE SUPPRESSOR	23		0		$0.00	$64.42	$1,481.66		$0.00	$1,481.66

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
				Man Hours		Labor Hrs	Total	Material Unit	Total	Subcontracts Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
1273		**********	** Antenna System **										
1274		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	20		0		$0.00	$2.12	$42.40		$0.00	$42.40
1275		TDN6614	1/2" CONNECTOR, N PLUG LDF PLTD	12		0		$0.00	$32.85	$394.20		$0.00	$394.20
1276		L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	900		0		$0.00	$5.18	$4,662.00		$0.00	$4,662.00
1277		TDN6617	7/8" CONNECTOR, N PLUG (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
1278		TDN6618	7/8" CONNECTOR, N JACK (PLATED)	12		0		$0.00	$80.30	$963.60		$0.00	$963.60
1279		TDN6674	7/8" CABLE GROUND CLAMP KIT	18		0		$0.00	$24.46	$440.28		$0.00	$440.28
1280		TDN8964	7/8" SNAP-IN HANGER KIT, 10PK	20		0		$0.00	$39.42	$788.40		$0.00	$788.40
1281		TDN6672	7/8" CABLE HOISTING GRIP	6		0		$0.00	$36.50	$219.00		$0.00	$219.00
1282		L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$3.07	$1,074.50		$0.00	$1,074.50
1283		TDN6609	1/2" CONNECTOR, N PLUG S-FLEX PLTD	46		0		$0.00	$37.78	$1,737.88		$0.00	$1,737.88
1284		TDN9289	CABLE WRAP, WEATHERPROOFING	6		0		$0.00	$27.38	$164.28		$0.00	$164.28
1285		L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	350		0		$0.00	$1.39	$486.50		$0.00	$486.50
1286		TDN9714	1/4"CONN, N PLUG S-FLEX (PLTD)	23		0		$0.00	$12.23	$281.29		$0.00	$281.29
1287		TDN9715	1/4"CONN, BNC PLUG S-FLEX (PLTD)	23		0		$0.00	$10.59	$243.57		$0.00	$243.57
1288		DSTJD800BT	COMBINER,806-1K MHZ,8CH,CAV-FER CWA	4		0		$0.00	$9,135.95	$36,543.80		$0.00	$36,543.80
1289		DSRMC80024	RMC 806-824 MHZ, 24CH, CWA	2		0		$0.00	$3,003.95	$6,007.90		$0.00	$6,007.90
1290		RRX4039A	LIGHTNING SUPRESSOR	6		0		$0.00	$47.45	$284.70		$0.00	$284.70
1291		DSDB806T6TLXT	BB TPL 6 DEG DOWNTILT	2		0		$0.00	$2,536.75	$5,073.50		$0.00	$5,073.50
1292		DSDB8882A1000	BIDIRECTIONAL SENSOR	4		0		$0.00	$159.87	$639.48		$0.00	$639.48
1293		**********	** Racks **										
1294		TRN7342	SEVEN FOOT RACK	9		0		$0.00	$343.10	$3,087.90		$0.00	$3,087.90
1295		**********	** Power System **										
1296		DQUT3KH19MBS	3KVA/3KW 24V IN, 120/240V OUT	1		0		$0.00	$3,968.28	$3,968.28		$0.00	$3,968.28
1297		DQTWP48S800313B	TWINPACK -48V/800A IM CAP 400A	1		0		$0.00	$25,746.37	$25,746.37		$0.00	$25,746.37
1298		DS48TEL125F1R2Z4	48V 361 A HR 3 TRAY BATTERY SYSTEM	1		0		$0.00	$3,765.34	$3,765.34		$0.00	$3,765.34
1299		DQ8411100120	CIRCUIT BREAKER PANEL	6		0		$0.00	$283.24	$1,699.44		$0.00	$1,699.44
1300		DS1329120100	20AMP BREAKER	38		0		$0.00	$22.63	$859.94		$0.00	$859.94
1301													
1302		**REMOTE RF SITES***	REMOTE TERMINAL UNIT										
1303		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1304		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1305		V345	ADD: ASYNC RS232	7		0		$0.00	$113.15	$792.05		$0.00	$0.00
1306		V410	REPLACE 8-SLOT MB W/8CPU+NO I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1307		V425	ADD: MOSCAD CPU 300	6		0		$0.00	$972.36	$5,834.16		$0.00	$0.00
1308		V120	ADD: 8 MOD W/EXPANSION MODULE	1		0		$0.00	$693.50	$693.50		$0.00	$0.00
1309		V437	ADD: 8AI 5V MODULE	7		0		$0.00	$477.42	$3,341.94		$0.00	$0.00
1310		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1311		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1312		V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1313		V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
1314		V425	ADD: CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
1315		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1316		V360	ADD: 60 DI MODULE	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
1317		V516	ADD: 16DO LATCH MODULE	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
1318		F6933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
1319		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1320		V104	ADD: 2400 DIAL-UP	1		0		$0.00	$300.76	$300.76		$0.00	$0.00
1321		FKN4400	FLAT OVAL 2.5M CABLE	9		0		$0.00	$10.95	$98.55		$0.00	$0.00
1322		FRN5727	LAN ADAPTER ASSEMBLY	2		0		$0.00	$36.50	$73.00		$0.00	$0.00
1323		FRN5734	CPU RS-232 MULTIPLEXER INTF 1 TO 4	6		0		$0.00	$182.50	$1,095.00		$0.00	$0.00
1324		FKN5934	EXTERNAL DC PS TO MB CABLE	1		0		$0.00	$10.95	$10.95		$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)					Rev: 7/97					
			Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule					
							Labor		Material		Subcontracts		
				Man Hours			Hrs	Total	Unit	Total	Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
1325													
1326		South Hill Harris	Microwave	2		0		$0.00	$49,667.00	$99,334.00	$22,500.00	$45,000.00	$144,334.00
			SOUTH HILL TOTAL										$1,102,668.52
1327													
1328			Site 9: Bank of America										
1329													
1330		B of A Harris	Microwave	1		0		$0.00	$49,160.00	$49,160.00	$19,500.00	$19,500.00	$68,660.00
1331			B OF A TOTAL										$68,660.00
1332			RADIO SITE TOTALS										$13,032,111.98
1333			5: Dispatch Facilities										
1334			Site 1: CECC at Turk	1		0		$32,699.50		$0.00	$65,000.00	$65,000.00	$97,699.50
1335		**********	CECC TeNSr Network Server **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1336		DSPREM8918	UNIVERSAL ENCLOSURE TENSR/800	1		0		$0.00	$1,095.00	$1,095.00		$0.00	$1,095.00
1337		DSPREM8902	DC POWER SUPPLY 48 VDC	2		0		$0.00	$912.50	$1,825.00		$0.00	$1,825.00
1338		DSPREM8920	INTERFACE CARDXS, 8 T1/E1 INTFC	1		0		$0.00	$1,642.50	$1,642.50		$0.00	$1,642.50
1339		DSPREM8901	CPU CNTRL CARD W/2 T1/E1, RED 256	2		0		$0.00	$4,106.25	$8,212.50		$0.00	$8,212.50
1340		DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	1		0		$0.00	$1,781.20	$1,781.20		$0.00	$1,781.20
1341		DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	1		0		$0.00	$1,551.25	$1,551.25		$0.00	$1,551.25
1342		DSPREM812	CSU PLUG IN MODULE	2		0		$0.00	$912.50	$1,825.00		$0.00	$1,825.00
1343		DSPREM8119	VOICE CARD, 8 PORT, 4 WIRE E&M/TO	5		0		$0.00	$1,368.75	$6,843.75		$0.00	$6,843.75
1344		DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	1		0		$0.00	$2,190.00	$2,190.00		$0.00	$2,190.00
1345		DSPREM8212	DATA CARD, 2 PORT V.35	1		0		$0.00	$1,332.25	$1,332.25		$0.00	$1,332.25
1346													
1347		********** CECC	**********										
1348		X597AE	ADD: CONV CHAN SFWR	5		0		$0.00	$146.00	$730.00		$0.00	$730.00
1349		X299	ADD: TELEPHONE INTEG	3		0		$0.00	$73.00	$219.00		$0.00	$219.00
1350		TDN9928	HP PENT CPU 100MHZ SERVER	1		0		$0.00	$3,963.90	$3,963.90		$0.00	$3,963.90
1351		TDN1165	TOUCHSCREEN MONITOR 17"	1		0		$0.00	$1,565.85	$1,565.85		$0.00	$1,565.85
1352		CDN1221	LINKBUILDER FMS II 24-PORT TP	2		0		$0.00	$1,003.75	$2,007.50		$0.00	$2,007.50
1353		TDN1113	ETHERNET CABLE, 50'	40		0		$0.00	$16.79	$671.60		$0.00	$671.60
1354		CDN1219	HUB EXPANSION CABLE	1		0		$0.00	$43.80	$43.80		$0.00	$43.80
1355		CDN6210	SINGLE PORT WAN BRIDGE	1		0		$0.00	$1,269.47	$1,269.47		$0.00	$1,269.47
1356		CDN6213	V.35 CABLE MALE/MALE 20FT	1		0		$0.00	$83.22	$83.22		$0.00	$83.22
1357		TDN8154	ML320T EPSON PRINTER	1		0		$0.00	$481.07	$481.07		$0.00	$481.07
1358		X293	ADD: GOLD ELITE OPR	38		0		$0.00	$2,920.00	$110,960.00		$0.00	$110,960.00
1359		B1811 D	GOLD SERIES 4 CARD CAGE CEB	5		0		$0.00	$27,221.70	$136,108.50		$0.00	$136,108.50
1360		K995 C	ALT: AIMI PAIR TRUNK	5		0		$0.00	$8,011.75	$40,058.75		$0.00	$40,058.75
1361		K837AD	ADD: EXPRESS SERVICE	5		0		$0.00	$1,449.05	$7,245.25		$0.00	$7,245.25
1362		K565	ADD: DIAGNOSTIC INTERFACE	38		0		$0.00	$217.54	$8,266.52		$0.00	$8,266.52
1363		Q3207A	MODULE, SMART PHONE INTERFACE	3		0		$0.00	$995.72	$2,987.16		$0.00	$2,987.16
1364		B1040	GOLD BASE INFC MODULE	5		0		$0.00	$634.37	$3,171.85		$0.00	$3,171.85
1365		K700	ADD: PTT OUTPUT RELAY (M LEAD)	5		0		$0.00	$59.13	$295.65		$0.00	$295.65
1366		B1822	GOLD SERIES ELITE/CRT DESKTOP	38		0		$0.00	$6,945.95	$263,946.10		$0.00	$263,946.10
1367		K011AB	ALT: MICROPHONE, DESK	5		0		$0.00	$85.41	$427.05		$0.00	$427.05
1368		K570	ADD: HEADSET JACK	38		0		$0.00	$160.60	$6,102.80		$0.00	$6,102.80
1369		K704AA	ADD: SECOND HEADSET JACK	76		0		$0.00	$160.60	$12,205.60		$0.00	$12,205.60
1370		K572AF	ADD: FOOTSWITCH	38		0		$0.00	$70.08	$2,663.04		$0.00	$2,663.04
1371		B1442	AUXILIARY INPUT/OUTPUT INTERFACE	8		0		$0.00	$992.07	$7,936.56		$0.00	$7,936.56
1372		BDN6651	HEADSET, STARSET II W/PTT	73		0		$0.00	$261.34	$19,077.82		$0.00	$19,077.82
1373		TDN9927	HP PENT CPU 100MZ CD ETH WINNT	38		0		$0.00	$3,149.95	$119,698.10		$0.00	$119,698.10
1374		TDN1165	TOUCHSCREEN MONITOR 17"	38		0		$0.00	$1,565.85	$59,502.30		$0.00	$59,502.30
1375		TDN9841	MOUSEPAD, 5 PACK	8		0		$0.00	$36.50	$292.00		$0.00	$292.00

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco					Rev: 7/97					
		Citywide 800MHz Radio System Project (CERS)					Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168										
				Man Hours		Labor Hrs		Material Unit		Subcontracts Unit		
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	Total $	Cost	Total $	Cost	Total $	Total Costs
1376		DQ32221024XXTR	NET GUARDIAN DDS2 24 CH 160IPM	1		0		$0.00	$45,795.09	$45,795.09		$0.00	$45,795.09
1377		DQ9926N	WORK STATION NETWORKED AUDIO	1		0		$0.00	$5,561.87	$5,561.87		$0.00	$5,561.87
1378		DQ0917	FILE SERVER	1		0		$0.00	$5,610.78	$5,610.78		$0.00	$5,610.78
1379		T5491	SWII SFTWR 1-10 SYS/HDWR KEY	1		0		$0.00	$3,886.52	$3,886.52		$0.00	$3,886.52
1380		D952	ADD: RIM II WITH CABLES	1		0		$0.00	$511.00	$511.00		$0.00	$511.00
1381		TDN9455	PENTIUM PC	1		0		$0.00	$2,186.35	$2,186.35		$0.00	$2,186.35
1382		T99DX	ASTRO DIG SPECTRA MOBILE SERIES	1		0		$0.00	$2,090.00	$2,090.00		$0.00	$2,090.00
1383		130W	35W 800 806-870 A4	1		0		$0.00	$156.95	$156.95		$0.00	$156.95
1384		G806	ENH: ASTRO DIGITAL CAI	1		0		$0.00	$401.50	$401.50		$0.00	$401.50
1385		G51	ENH: ENHANCED SMARTNET OPERATION	1		0		$0.00	$722.70	$722.70		$0.00	$722.70
1386		W87	DEL: SPEAKER	1		0		$0.00	($20.44)	($20.44)		$0.00	($20.44)
1387		W70	DEL: ANTENNA 800MHZ	1		0		$0.00	($15.33)	($15.33)		$0.00	($15.33)
1388		W71	DEL: MICROPHONE	1		0		$0.00	($29.20)	($29.20)		$0.00	($29.20)
1389		CVN6085	RSS XTS ASTRO SAB SPEC/CONSOLE	1		0		$0.00	$255.50	$255.50		$0.00	$255.50
1390		3080369B73	CABLE, SPECTRA TO RIB, EXCPT HI PWR	1		0		$0.00	$55.85	$55.85		$0.00	$55.85
1391		T99DX	ASTRO DIG SPECTRA MOBILE SERIES	23		0		$0.00	$2,090.00	$48,070.00		$0.00	$48,070.00
1392		130W	35W 800 806-870 A4	23		0		$0.00	$156.95	$3,609.85		$0.00	$3,609.85
1393		G806	ENH: ASTRO DIGITAL CAI	23		0		$0.00	$401.50	$9,234.50		$0.00	$9,234.50
1394		G49	ENH: SYSTEM, CONVENTIONAL	23		0		$0.00	$160.60	$3,693.80		$0.00	$3,693.80
1395		W87	DEL: SPEAKER	23		0		$0.00	($20.44)	($470.12)		$0.00	($470.12)
1396		W70	DEL: ANTENNA 800MHZ	23		0		$0.00	($15.33)	($352.59)		$0.00	($352.59)
1397		W71	DEL: MICROPHONE	23		0		$0.00	($29.20)	($671.60)		$0.00	($671.60)
1398		DSRMC80024	RMC 806-824 MHZ, 24CH, CWA	1		0		$0.00	$3,003.95	$3,003.95		$0.00	$3,003.95
1399		TDF6441	ANTENNA, 6DB 3 ELEMENT YAGI	1		0		$0.00	$80.30	$80.30		$0.00	$80.30
1400		RRX4049A	COAX PROTECTOR	1		0		$0.00	$75.92	$75.92		$0.00	$75.92
1401		TDN6673	1/2" CABLE GROUND CLAMP KIT	3		0		$0.00	$19.35	$58.05		$0.00	$58.05
1402		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	100		0		$0.00	$2.12	$212.00		$0.00	$212.00
1403		TDN6677	1/2" CONNECTOR, N PLUG (MALE)	4		0		$0.00	$26.65	$106.60		$0.00	$106.60
1404		L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	150		0		$0.00	$1.39	$208.50		$0.00	$208.50
1405		TDN9715	1/4"CONN, BNC PLUG S-FLEX (PLTD)	24		0		$0.00	$10.59	$254.16		$0.00	$254.16
1406		TDN8958	1/4"CONN, MINI-UHF PLUG S-FLEX	24		0		$0.00	$17.70	$424.80		$0.00	$424.80
1407		DQGB19100	BUSS BAR	1		0		$0.00	$53.29	$53.29		$0.00	$53.29
1408		DQSPK1924VL18R	BKR PNL W/18 3-AMP BKR'S	2		0		$0.00	$940.24	$1,880.48		$0.00	$1,880.48
1409		DQ115121D0RM	110A RACK MOUNT P.S.	1		0		$0.00	$2,153.50	$2,153.50		$0.00	$2,153.50
1410		INVJAA00	PUC SOFTWARE SETUP	1		0		$0.00	$146,000.00	$146,000.00		$0.00	$146,000.00
1411		INVJAA01	PUC	38		0		$0.00	$1,460.00	$55,480.00		$0.00	$55,480.00
1412													
1413		*****CONSOLE/CEB	REMOTE TERMINAL UNIT*****	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1414		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1415		V051	ALT: NEMA TO RACKMOUNT	2		0		$0.00	$240.90	$481.80		$0.00	$0.00
1416		V329	ADD: 16DI 28VAC/DC MODULE	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1417		V345	ADD: ASYNC RS232	2		0		$0.00	$375.95	$751.90		$0.00	$0.00
1418		V516	ADD: 16DO LATCH MODULE										
1419													
1420		CECC	MOSCAD FRONT END PROCESSOR	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1421		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1422		V051	ALT: NEMA TO RACKMOUNT	7		0		$0.00	$113.15	$792.05		$0.00	$0.00
1423		V345	ADD: ASYNC RS232	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1424		V418	REPL: 8-SLOT MB W/8CPU+NO I/O	6		0		$0.00	$972.36	$5,834.16		$0.00	$0.00
1425		V425	ADD: CPU 300	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1426		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$0.00	$0.00			
1427		V051	ALT: NEMA TO RACKMOUNT										

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco										
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97					
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule					
				Man Hours		Labor Hrs		Material		Subcontracts		
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	Total $	Unit Cost	Total $	Unit Cost	Total $	Total Costs
1428		V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
1429		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1430		V360	ADD: 60 DI. MODULE	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
1431		V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1432		V516	ADD: 16DO LATCH MODULE	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
1433		F6933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
1434		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1435		V104	ADD: 2400 DIAL-UP	1		0		$0.00	$300.76	$300.76		$0.00	$0.00
1436		FKN4400	FLAT OVAL 2.5M CABLE	9		0		$0.00	$10.95	$98.55		$0.00	$0.00
1437		FRN5727	LAN ADAPTER ASSEMBLY	2		0		$0.00	$36.50	$73.00		$0.00	$0.00
1438		FLN6457	CPU TO COMPUTER RS232 ASYNC 3M	1		0		$0.00	$52.56	$52.56		$0.00	$0.00
1439		FLN8259	COMPUTER ADAPT, 9 PIN TYPE TO RJ45	1		0		$0.00	$32.85	$32.85		$0.00	$0.00
1440		TDN9871	MODEM, DESKTOP, LIFESTYLE 28.8-PC	1		0		$0.00	$210.97	$210.97		$0.00	$0.00
1441		DQEVMBSM0006	MODEM CABLE	1		0		$0.00	$23.36	$23.36		$0.00	$0.00
1442		F2916	MOSCAD PROGRAMMING TOOL BOX	1		0		$0.00	$438.00	$438.00		$0.00	$0.00
1443		V377	ENH: 3RD PARTY DRIVER	1		0		$0.00	$365.00	$365.00		$0.00	$0.00
1444		FKN5934	EXTERNAL DC PS TO MB CABLE	1		0		$0.00	$10.95	$10.95		$0.00	$0.00
			SECTION TOTAL										$1,278,252.94
1445													
1446			Site 2: DTIS	1		0		$32,699.50		$0.00	$668,070.00	$668,070.00	$700,769.50
1447		**********	** DTIS TeNSr Network Server **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1448		DSPREM8918	UNIVERSAL ENCLOSURE TENSR/800	1		0		$0.00	$1,095.00	$1,095.00		$0.00	$1,095.00
1449		DSPREM8902	DC POWER SUPPLY 48 VDC	2		0		$0.00	$912.50	$1,825.00		$0.00	$1,825.00
1450		DSPREM8920	INTERFACE CARDXS, 8 T1/E1 INTFC	1		0		$0.00	$1,642.50	$1,642.50		$0.00	$1,642.50
1451		DSPREM8801	CPU CNTRL CARD W/2 T1/E1, RED 256	2		0		$0.00	$4,106.25	$8,212.50		$0.00	$8,212.50
1452		DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	1		0		$0.00	$1,781.20	$1,781.20		$0.00	$1,781.20
1453		DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	1		0		$0.00	$1,551.25	$1,551.25		$0.00	$1,551.25
1454		DSPREM812	CSU PLUG IN MODULE	2		0		$0.00	$912.50	$1,825.00		$0.00	$1,825.00
1455		DSPREM8119	VOICE CARD, 8 PORT, 4 WIRE E&M/TO	2		0		$0.00	$1,368.75	$2,737.50		$0.00	$2,737.50
1456		DSPREM8220	DATA CARD, 10 PORT RS232C SUB-RATE	1		0		$0.00	$2,190.00	$2,190.00		$0.00	$2,190.00
1457		DSPREM8212	DATA CARD, 2 PORT V.35	1		0		$0.00	$1,332.25	$1,332.25		$0.00	$1,332.25
1458													
1459		**********DTIS	**********										
1460		X203	ADD: GOLD ELITE OPR	1		0		$0.00	$2,920.00	$2,920.00		$0.00	$2,920.00
1461		B1822	GOLD SERIES ELITE/CRT DESKTOP	1		0		$0.00	$6,945.95	$6,945.95		$0.00	$6,945.95
1462		K811AB	ALT: MICROPHONE, DESK	1		0		$0.00	$85.41	$85.41		$0.00	$85.41
1463		K570	ADD: HEADSET JACK	1		0		$0.00	$160.60	$160.60		$0.00	$160.60
1464		K704AA	ADD: SECOND HEADSET JACK	1		0		$0.00	$160.60	$160.60		$0.00	$160.60
1465		K572AF	ADD: FOOTSWITCH	1		0		$0.00	$70.08	$70.08		$0.00	$70.08
1466		K238BPSP	ADD: REMOTE OPERATOR	1		0		$0.00	$2,465.21	$2,465.21		$0.00	$2,465.21
1467		BDN6651	HEADSET, STARSET II W/PTT	1		0		$0.00	$261.34	$261.34		$0.00	$261.34
1468		TDN9927	HP PENT CPU 100MZ CD ETH WINNT	1		0		$0.00	$3,149.95	$3,149.95		$0.00	$3,149.95
1469		TDN1165	TOUCHSCREEN MONITOR 17"	1		0		$0.00	$1,565.85	$1,565.85		$0.00	$1,565.85
1470		TDN8503	MODEM V.3225, 9600BPS, V.32 W/MNP5	1		0		$0.00	$474.50	$474.50		$0.00	$474.50
1471		TDN8361	RACK ADAPTER, 19" RM1M LCD	1		0		$0.00	$54.75	$54.75		$0.00	$54.75
1472		CDN5216	10 BASE-CROSS-OVER CABLE 15FT	1		0		$0.00	$12.41	$12.41		$0.00	$12.41
1473		TDN1113	ETHERNET CABLE, 50'	3		0		$0.00	$16.79	$50.37		$0.00	$50.37
1474		CDN6210	SINGLE PORT WAN BRIDGE	2		0		$0.00	$1,269.47	$2,538.94		$0.00	$2,538.94
1475		CDN6213	V.35 CABLE MALE/MALE 20FT	1		0		$0.00	$83.22	$83.22		$0.00	$83.22
1476		CDN6225	CABLE	1		0		$0.00	$18.25	$18.25		$0.00	$18.25
1477		TDN9875	DDS/MR64 STANDALONE	1		0		$0.00	$507.35	$507.35		$0.00	$507.35
1478		TDN8154	ML320T EPSON PRINTER	1		0		$0.00	$481.07	$481.07		$0.00	$481.07

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco						Rev: 7/97					
		Citywide 800MHz Radio System Project (CERS)						Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168							Material		Subcontracts		
			Man Hours			Labor Hrs	Total	Unit	Total	Unit	Total	Total
Item #	Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
1479	INVJAA01	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	$554.80		$0.00	$554.80
1481	E511	ENH: LOCAL INTERCOM	2		0		$0.00	$21.90	$43.80		$0.00	$43.80
1482	E376	ALT: 4 WIRE AUDIO, 2 PAIRS	2		0		$0.00	$120.45	$240.90		$0.00	$240.90
1483	E304	ADD: LINE OPERATED TX LIGHT	2		0		$0.00	$91.25	$182.50		$0.00	$182.50
1484		GUIDE, SYSTEMWATCH II USERS	20		0		$0.00	$8.21	$164.20		$0.00	$164.20
1485		MAN INSTR T1 EMBASSY SW SERV	20		0		$0.00	$18.25	$365.00		$0.00	$365.00
1486		CENT ELITE DISPATCHERS GUIDE	20		0		$0.00	$18.25	$365.00		$0.00	$365.00
1487		CENT ELITE ADMIN GUIDE	20		0		$0.00	$23.54	$470.80		$0.00	$470.80
1488		ADM & CDM USER'S GUIDE	20		0		$0.00	$40.15	$803.00		$0.00	$803.00
1489		ELITE/CLASSIC CIE MAINT MANUAL	20		0		$0.00	$24.82	$496.40		$0.00	$496.40
1490		CEB MAINTENANCE MANUAL	20		0		$0.00	$80.30	$1,606.00		$0.00	$1,606.00
1491		ELITE CEB INSTALL MANUAL	20		0		$0.00	$73.00	$1,460.00		$0.00	$1,460.00
1492	6880392B52	MANUAL, TONE REMOTE	20		0		$0.00	$3.65	$73.00		$0.00	$73.00
1493	B1814	GOLD CRT/ELITE OP SPARES	2		0		$0.00	$2,183.43	$4,366.86		$0.00	$4,366.86
1494	B1844	GOLD SERIES AMB BOARD	1		0		$0.00	$9,744.77	$9,744.77		$0.00	$9,744.77
1495	B1845	GOLD SERIES AEB TIMER	1		0		$0.00	$1,830.84	$1,830.84		$0.00	$1,830.84
1496	B1813	GOLD SERIES SYS SPARES	2		0		$0.00	$3,613.50	$7,227.00		$0.00	$7,227.00
1497	B1820	SPARE CEB POWER SUPPLY	1		0		$0.00	$4,015.00	$4,015.00		$0.00	$4,015.00
1498	B1792	SPARE AIMI	1		0		$0.00	$4,279.26	$4,279.26		$0.00	$4,279.26
1499	B1816	CEB SPARES TRUNKINGS	1		0		$0.00	$3,409.10	$3,409.10		$0.00	$3,409.10
1500	B1819	CEB SPARES CONVENTIONAL	1		0		$0.00	$2,418.49	$2,418.49		$0.00	$2,418.49
1501	B1840	GOLD BASE INFC MODULE	4		0		$0.00	$634.37	$2,537.48		$0.00	$2,537.48
1502	X597AE	ADD: CONV CHAN SFWR	4		0		$0.00	$146.00	$584.00		$0.00	$584.00
1503												
1504	*****DTIS*****	MOSCAD FRONT END PROCESSOR	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1505	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1506	V051	ALT: NEMA TO RACKMOUNT	4		0		$0.00	$113.15	$452.60		$0.00	$0.00
1507	V345	ADD: ASYNC RS232	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
1508	V300	ADD: 60 DI. MODULE	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1509	V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
1510	V516	ADD: 16DO LATCH MODULE	3		0		$0.00	$972.36	$2,917.08		$0.00	$0.00
1511	V425	ADD: CPU 300	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1512	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1513	V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1514	V345	ADD: ASYNC RS232	1		0		$0.00	$263.53	$263.53		$0.00	$0.00
1515	V104	ADD: 300/1200 BPS AUTO ANSWER	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1516	V369	REPL: 8-SLOT MB W/4CPU+4I/O	5		0		$0.00	$10.95	$54.75		$0.00	$0.00
1517	FKN4400	FLAT OVAL 2.6M CABLE	1		0		$0.00	$36.50	$36.50		$0.00	$0.00
1518	FRN5727	LAN ADAPTER ASSEMBLY	1		0		$0.00	$52.56	$52.56		$0.00	$0.00
1519	FLN6457	CPU TO COMPUTER RS232 ASYNC 3M	1		0		$0.00	$32.85	$32.85		$0.00	$0.00
1520	FLN8259	COMPUTER ADAPT, 9 PIN TYPE TO RJ45	1		0		$0.00	$210.97	$210.97		$0.00	$0.00
1521	TDN9071	MODEM, DESKTOP, LIFESTYLE 28.8-PC	1		0		$0.00	$23.36	$23.36		$0.00	$0.00
1522	DQEVMBSM0006	MODEM CABLE	1		0		$0.00	$438.00	$438.00		$0.00	$0.00
1523	F2316	MOSCAD PROGRAMMING TOOL BOX	1		0		$0.00	$365.00	$365.00		$0.00	$0.00
1524	V377	ENH: 3RD PARTY DRIVER										$795,665.75
		SITE 2 TOTAL										
1525			1		0		$0.00		$0.00	$7,000.00	$7,000.00	$7,000.00
1526		Site 3: DPT at HOJ	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1527	**********	** HOJ TeNSr Network Server **	1		0		$0.00	$1,095.00	$1,095.00		$0.00	$1,095.00
1528	DSPREM8918	UNIVERSAL ENCLOSURE TENSR/800	1		0		$0.00	$912.50	$1,825.00		$0.00	$1,825.00
1529	DSPREM8902	DC POWER SUPPLY 48 VDC	2		0							

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
						Labor		Material		Subcontracts			
			Man Hours			Hrs	Total	Unit	Total	Unit	Total	Total	
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
1530		DSPREM8920	INTERFACE CAROXS, 8 T1/E1 INTFC	1		0		$0.00	$1,642.50	$1,642.50		$0.00	$1,642.50
1531		DSPREM8801	CPU CNTRL CARD W/2 T1/E1, RED 256	2		0		$0.00	$4,106.25	$8,212.50		$0.00	$8,212.50
1532		DSPREM8014	WAN CARD, DUAL T1/E1 INTERFACE	1		0		$0.00	$1,781.20	$1,781.20		$0.00	$1,781.20
1533		DSPREM8010	WAN CARD, DUAL T1/E1 INTERFACE	1		0		$0.00	$1,551.25	$1,551.25		$0.00	$1,551.25
1534		DSPREM812	CSU PLUG IN MODULE	2		0		$0.00	$912.50	$1,825.00		$0.00	$1,825.00
1535		DSPREM8119	VOICE CARD, 8 PORT, 4 WIRE E&M/TO	2		0		$0.00	$1,368.75	$2,737.50		$0.00	$2,737.50
1536													
1537		**********DPT	**********										
1538		X293	ADD: GOLD ELITE OPR	4		0		$0.00	$2,920.00	$11,680.00		$0.00	$11,680.00
1539		CDN1218	LINKBUILDER FMS II 12-PORT	1		0		$0.00	$576.70	$576.70		$0.00	$576.70
1540		TDN1113	ETHERNET CABLE, 50'	5		0		$0.00	$16.79	$83.95		$0.00	$83.95
1541		CDN6210	SINGLE PORT WAN BRIDGE	1		0		$0.00	$1,269.47	$1,269.47		$0.00	$1,269.47
1542		CDN6213	V.35 CABLE MALE/MALE 20FT	1		0		$0.00	$83.22	$83.22		$0.00	$83.22
1543		B1022	GOLD SERIES ELITE/CRT DESKTOP	4		0		$0.00	$6,945.95	$27,783.80		$0.00	$27,783.80
1544		K576	ADD: HEADSET JACK	4		0		$0.00	$160.60	$642.40		$0.00	$642.40
1545		K704AA	ADD: SECOND HEADSET JACK	4		0		$0.00	$160.60	$642.40		$0.00	$642.40
1546		K572AF	ADD: FOOTSWITCH	4		0		$0.00	$70.08	$280.32		$0.00	$280.32
1547		K238BPSP	ADD: REMOTE OPERATOR	4		0		$0.00	$2,465.21	$9,860.84		$0.00	$9,860.84
1548		BDN6651	HEADSET, STARSET II W/PTT	4		0		$0.00	$261.34	$1,045.36		$0.00	$1,045.36
1549		TDN9927	HP PENT CPU 100MZ CD ETH WINNT	4		0		$0.00	$3,149.95	$12,599.80		$0.00	$12,599.80
1550		TDN1165	TOUCHSCREEN MONITOR 17"	4		0		$0.00	$1,565.85	$6,263.40		$0.00	$6,263.40
1551		TDN9841	MOUSEPAD, 5 PACK	1		0		$0.00	$36.50	$36.50		$0.00	$36.50
1552		INVJAA01	PUC	4		0		$0.00	$1,460.00	$5,840.00		$0.00	$5,840.00
1553													
1554		******DPT******	REMOTE TERMINAL UNIT										
1555		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1556		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1557		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1558		V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1559		F6933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
1560		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1561		V104	ADD: 2400 DIAL-UP	1		0		$0.00	$300.76	$300.76		$0.00	$0.00
1562		FLN0457	CPU TO COMPUTER RS232 ASYNC 3M	1		0		$0.00	$52.56	$52.56		$0.00	$0.00
1563		FLN6259	COMPUTER ADAPT, 9 PIN TYPE TO RJ45	1		0		$0.00	$32.85	$32.85		$0.00	$0.00
1564		TDN9871	MODEM, DESKTOP, LIFESTYLE 28.8-PC	1		0		$0.00	$210.97	$210.97		$0.00	$0.00
1565		TDN9203	MODEM, 14,400 BPS V.32BIS	1		0		$0.00	$580.35	$580.35		$0.00	$0.00
1566		DQEVMBSM0006	MODEM CABLE	2		0		$0.00	$23.36	$46.72		$0.00	$0.00
1567		F2916	MOSCAD PROGRAMMING TOOL BOX	1		0		$0.00	$438.00	$438.00		$0.00	$0.00
1568		V377	ENH: 3RD PARTY DRIVER	1		0		$0.00	$365.00	$365.00		$0.00	$0.00
			SITE 3 TOTAL										$106,358.11
1569													
1570			Site 4: CMED										
1571		**********	** CMED Backup Power **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1572		DQUT31016MBS	10KVA 3 PHASE 16 MIN RUN UPS	1		0		$0.00	$18,447.83	$18,447.83		$0.00	$18,447.83
1573		DQSUU321A	SYSTEM START UP	1		0		$0.00	$1,067.99	$1,067.99		$0.00	$1,067.99
1574		DQ7001900016	MOUNTING SHELF	1		0		$0.00	$219.00	$219.00		$0.00	$219.00
1575		DQ9144100216	SWITCHMODE RECTIFIER MOD	2		0		$0.00	$949.00	$1,898.00		$0.00	$1,898.00
			SITE 4 TOTAL										$21,632.82
1576													
1577			Site 5: Sheriff	1		0		$0.00		$0.00	$1,750.00	$1,750.00	$1,750.00
1578		**********SHERIFF	**********										
1579		X293	ADD: GOLD ELITE OPR	1		0		$0.00	$2,920.00	$2,920.00		$0.00	$2,920.00

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco					Rev: 7/97					
		Citywide 800MHz Radio System Project (CERS)					Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168					Material			Subcontracts		
			Man Hours			Labor Hrs	Total	Unit	Total	Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
1580		TDN1113	ETHERNET CABLE, 50'	1		0		$0.00	$16.79	$16.79		$0.00	$16.79
1581		B1822	GOLD SERIES ELITE/CRT DESKTOP	1		0		$0.00	$6,945.95	$6,945.95		$0.00	$6,945.95
1582		K011AB	ALT: MICROPHONE, DESK	1		0		$0.00	$85.41	$85.41		$0.00	$85.41
1583		K570	ADD: HEADSET JACK	1		0		$0.00	$160.60	$160.60		$0.00	$160.60
1584		K704AA	ADD: SECOND HEADSET JACK	1		0		$0.00	$160.60	$160.60		$0.00	$160.60
1585		K672AF	ADD: FOOTSWITCH	1		0		$0.00	$70.08	$70.08		$0.00	$70.08
1586		K238BPSP	ADD: REMOTE OPERATOR	1		0		$0.00	$2,465.21	$2,465.21		$0.00	$2,465.21
1587		BDN6651	HEADSET, STARSET II W/PTT	1		0		$0.00	$261.34	$261.34		$0.00	$261.34
1588		TDN9927	HP PENT CPU 100MZ CD ETH WINNT	1		0		$0.00	$3,149.95	$3,149.95		$0.00	$3,149.95
1589		TDN1165	TOUCHSCREEN MONITOR 17"	1		0		$0.00	$1,565.85	$1,565.85		$0.00	$1,565.85
1590		TDN9041	MOUSEPAD, 5 PACK	1		0		$0.00	$36.50	$36.50		$0.00	$36.50
1591		INVJAA01	PUC	1		0		$0.00	$1,460.00	$1,460.00		$0.00	$1,460.00
			SITE 6 TOTAL										$21,048.28
1592													
1593			Site 6: Water	1		0		$0.00		$0.00	$1,750.00	$1,750.00	$1,750.00
1594		***** WATER	**********										
1595		X293	ADD: GOLD ELITE OPR	1		0		$0.00	$2,920.00	$2,920.00		$0.00	$2,920.00
1596		B1822	GOLD SERIES ELITE/CRT DESKTOP	1		0		$0.00	$6,945.95	$6,945.95		$0.00	$6,945.95
1597		K570	ADD: HEADSET JACK	1		0		$0.00	$160.60	$160.60		$0.00	$160.60
1598		K704AA	ADD: SECOND HEADSET JACK	1		0		$0.00	$160.60	$160.60		$0.00	$160.60
1599		K672AF	ADD: FOOTSWITCH	1		0		$0.00	$70.08	$70.08		$0.00	$70.08
1600		K238BPSP	ADD: REMOTE OPERATOR	1		0		$0.00	$2,465.21	$2,465.21		$0.00	$2,465.21
1601		BDN6651	HEADSET, STARSET II W/PTT	1		0		$0.00	$261.34	$261.34		$0.00	$261.34
1602		TDN9927	HP PENT CPU 100MZ CD ETH WINNT	1		0		$0.00	$3,149.95	$3,149.95		$0.00	$3,149.95
1603		TDN1165	TOUCHSCREEN MONITOR 17"	1		0		$0.00	$1,565.85	$1,565.85		$0.00	$1,565.85
1604		TDN8503	MODEM V.3225, 9600BPS, V.32 W/MNP5	1		0		$0.00	$474.50	$474.50		$0.00	$474.50
1605		TDN8351	RACK ADAPTER, 19" RM1M LCD	1		0		$0.00	$54.75	$54.75		$0.00	$54.75
1606		CDN6210	SINGLE PORT WAN BRIDGE	1		0		$0.00	$1,269.47	$1,269.47		$0.00	$1,269.47
1607		CDN6219	10 BASE-CROSS-OVER CABLE 25FT	1		0		$0.00	$13.14	$13.14		$0.00	$13.14
1608		CDN6225	CABLE	1		0		$0.00	$18.25	$18.25		$0.00	$18.25
1609		TDN9075	DDS/MR64 STANDALONE	1		0		$0.00	$507.35	$507.35		$0.00	$507.35
1610		INVJAA01	PUC	2		0		$0.00	$1,460.00	$1,460.00		$0.00	$1,460.00
1611		B1604 B	CC2 ENCL 2B 4HI FREESTANDING	1		0		$0.00	$3,338.29	$6,676.58		$0.00	$6,676.58
1612		K750	ADD: LEFT SIDE FILLER PANEL	1		0		$0.00	$102.20	$102.20		$0.00	$102.20
1613		K749	ADD: RIGHT SIDE FILLER PANEL	2		0		$0.00	$102.20	$102.20		$0.00	$102.20
1614		K752	ADD: BOTH FOOT SUPPORTS	2		0		$0.00	$122.64	$245.28		$0.00	$245.28
1615		L1089	CC2 WRITNG SURF 2B RND EDGEE	4		0		$0.00	$349.67	$699.34		$0.00	$699.34
1616		BLN6199	RAIL RACK MOUNTING SHORT					$0.00	$48.18	$192.72		$0.00	$192.72
			SITE 6 TOTAL										$31,265.36
1617			DISPATCH FACILITIES TOTAL										
1618													$2,254,223.26
1619			DISPATCH FACILITIES TOTAL										
1620			6. Coverage Enhancement										
1621			Site 1: HOJ										
1622													
1623			BiDirectional Amplifier System Network	1		0		$0.00		$0.00	$192,400.00	$192,400.00	$192,400.00
1624													
1625		****SPECIAL AREAS***	REMOTE TERMINAL UNIT										
1626		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1627		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1628		V345	ADD: ASYNC RS232	4		0		$0.00	$113.15	$452.60		$0.00	$0.00
1629		V418	REPLACE 8-SLOT MB W/8CPU+NO I/O	1		0		$0.00	$146.00	$146.00		$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)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
				Man Hours		Labor		Material		Subcontracts			
Item #	Model	Item Description	Qty	Per Unit	Total	Hrs Rate	Total $	Unit Cost	Total $	Unit Cost	Total $	Total Costs
1630	V425	ADD: MOSCAD CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
1631	V437	ADD: 8AI 5V MODULE	1		0		$0.00	$477.42	$477.42		$0.00	$0.00
1632	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1633	V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1634	V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1635	V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
1636	V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1637	V380	ADD: 60 DI. MODULE	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
1638	V516	ADD: 16DO LATCH MODULE	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
1639	V437	ADD: 8AI 5V MODULE	1		0		$0.00	$477.42	$477.42		$0.00	$0.00
1640	V425	ADD: CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
1641	F6933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
1642	V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1643	V104	ADD: 2400 DIAL-UP	1		0		$0.00	$101.06	$101.06		$0.00	$0.00
1644	FKN4400	FLAT OVAL 2.5M CABLE	18		0		$0.00	$10.95	$197.10		$0.00	$0.00
		HOJ TOTAL										$192,400.00
1645												
1646		Site 2: San Bruno Jails										
1647												
1648		BiDirectional Amplifier System Network	1		0		$11,276.55		$0.00	$192,400.00	$192,400.00	$203,676.55
1649												
1650	****SPECIAL AREAS***	REMOTE TERMINAL UNIT										
1651	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1652	V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1653	V345	ADD: ASYNC RS232	4		0		$0.00	$113.15	$452.60		$0.00	$0.00
1654	V418	REPLACE 8-SLOT MB W/8CPU+NO I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1655	V425	ADD: MOSCAD CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
1656	V437	ADD: 8AI 5V MODULE	1		0		$0.00	$477.42	$477.42		$0.00	$0.00
1657	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1658	V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1659	V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1660	V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
1661	V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1662	V380	ADD: 60 DI. MODULE	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
1663	V516	ADD: 16DO LATCH MODULE	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
1664	V437	ADD: 8AI 5V MODULE	1		0		$0.00	$477.42	$477.42		$0.00	$0.00
1665	V425	ADD: CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
1666	F6933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
1667	V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1668	V104	ADD: 2400 DIAL-UP	1		0		$0.00	$300.76	$300.76		$0.00	$0.00
1669	FKN4400	FLAT OVAL 2.5M CABLE	18		0		$0.00	$10.95	$197.10		$0.00	$0.00
		SITE 2 TOTAL										$203,676.55
1670												
1671		Site 3: Moscone Center										
1672												
1673		BiDirectional Amplifier System Network	1		0		$10,000.00		$0.00	$192,400.00	$192,400.00	$202,400.00
1674												
1675	****SPECIAL AREAS***	REMOTE TERMINAL UNIT										
1676	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1677	V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1678	V345	ADD: ASYNC RS232	4		0		$0.00	$113.15	$452.60		$0.00	$0.00
1679	V418	REPLACE 8-SLOT MB W/8CPU+NO I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco					Rev: 7/97					
		Citywide 800MHz Radio System Project (CERS)					Project Cost Itemization Schedule					
		Motorola Proposal for Bid No. 168				Labor		Material		Subcontracts		
			Man Hours			Hrs	Total	Unit	Total	Unit	Total	Total
Item #	Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
1680	V425	ADD: MOSCAD CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
1681	V437	ADD: 8AI 5V MODULE	1		0		$0.00	$477.42	$477.42		$0.00	$0.00
1682	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1683	V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1684	V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1685	V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
1686	V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1687	V380	ADD: 60 DI. MODULE	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
1688	V516	ADD: 16DO LATCH MODULE	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
1689	V437	ADD: 8AI 5V MODULE	1		0		$0.00	$477.42	$477.42		$0.00	$0.00
1690	V425	ADD: CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
1691	F6933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
1692	V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1693	V104	ADD: 2400 DIAL-UP	1		0		$0.00	$300.76	$300.76		$0.00	$0.00
1694	FKN4400	FLAT OVAL 2.5M CABLE	18		0		$0.00	$10.95	$197.10			$202,400.00
		SITE 3 TOTAL										
1695											$0.00	$32,699.50
1696		Site 4: Muni Tunel Netork	1		0		$32,699.50		$0.00			
1697										$2,861,749.00	$2,861,749.00	$2,861,749.00
1698		BiDirectional Amplifier System Network	1		0		$0.00					
1699											$0.00	$29,678.88
1700	C99ED	QUANTAR/QUANTRO MUNI	6		0		$0.00	$4,946.48	$29,678.88		$0.00	$0.00
1701	001C	QUANTAR/QUANTRO CONFIGURATION	6		0		$0.00	$0.00	$0.00		$0.00	$15,982.62
1702	X250	ADD: 600 20W PA	6		0		$0.00	$2,663.77	$15,982.62		$0.00	$0.00
1703	X597 A	ENH: CONVENTIONAL ONLY QTAR	6		0		$0.00	$0.00	$0.00		$0.00	$0.00
1704	X500	ADD: REPEATER OPERATION	6		0		$0.00	$0.00	$0.00		$0.00	$0.00
1705	X153	ADD: HARDWARE, RACKMOUNT	6		0		$0.00	$0.00	$0.00		$0.00	$876.00
1706	X432	ADD: MANUAL, SERVICE	6		0		$0.00	$146.00	$876.00		$0.00	$876.00
1707	X113	ALT: DC ONLY OP. DC TO DC CONVERTER	6		0		$0.00	$146.00	$876.00		$0.00	$876.00
1708	DSDJ8882A350	BIDIRECTIONAL SENSOR	6		0		$0.00	$159.87	$959.22		$0.00	$959.22
1709	HMN1001	TEST MICROPHONE	3		0		$0.00	$42.34	$127.02		$0.00	$127.02
1710	HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	3		0		$0.00	$72.27	$216.81		$0.00	$216.81
1711	TRN7738	CABLE FOR EXTERNAL 6W SPEAKER	3		0		$0.00	$36.50	$109.50		$0.00	$109.50
1712	TRN4509	DUAL PHONE LINE SUPPRESSOR	6		0		$0.00	$64.42	$386.52		$0.00	$386.52
1713	**********	** Racks **	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1714	TRN7342	SEVEN FOOT RACK	3		0		$0.00	$343.10	$1,029.30		$0.00	$1,029.30
1715											$0.00	$0.00
1716	***SPECIAL AREAS***	REMOTE TERMINAL UNIT	0		0		$0.00	$0.00	$0.00		$0.00	$0.00
1717	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	3		0		$0.00	$1,443.94	$4,331.82		$0.00	$0.00
1718	V051	ALT: NEMA TO RACKMOUNT	3		0		$0.00	$0.00	$0.00		$0.00	$0.00
1719	V345	ADD: ASYNC RS232	12		0		$0.00	$113.15	$1,357.80		$0.00	$0.00
1720	V418	REPLACE 8-SLOT MB W/6CPU+NO I/O	3		0		$0.00	$146.00	$438.00		$0.00	$0.00
1721	V425	ADD: MOSCAD CPU 300	3		0		$0.00	$972.36	$2,917.08		$0.00	$0.00
1722	V437	ADD: 8AI 5V MODULE	3		0		$0.00	$477.42	$1,432.26		$0.00	$0.00
1723	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	3		0		$0.00	$1,443.94	$4,331.82		$0.00	$0.00
1724	V051	ALT: NEMA TO RACKMOUNT	3		0		$0.00	$0.00	$0.00		$0.00	$0.00
1725	V369	REPL: 8-SLOT MB W/4CPU+4I/O	3		0		$0.00	$146.00	$438.00		$0.00	$0.00
1726	V274	DEL: 3 AMP PS AND BATTERY	3		0		$0.00	($240.90)	($722.70)		$0.00	$0.00
1727	V345	ADD: ASYNC RS232	3		0		$0.00	$113.15	$339.45		$0.00	$0.00
1728	V380	ADD: 60 DI. MODULE	3		0		$0.00	$277.40	$832.20		$0.00	$0.00
1729	V516	ADD: 16DO LATCH MODULE	3		0		$0.00	$375.95	$1,127.85		$0.00	$0.00
1730	V437	ADD: 8AI 5V MODULE	3		0		$0.00	$477.42	$1,432.26			

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule						
				Man Hours		Labor Hrs		Material		Subcontracts			
Item #	Model	Item Description	Qty	Per Unit	Total	Rate	Total $	Unit Cost	Total $	Unit Cost	Total $	Total Costs
1731	V425	ADD: CPU 300	3		0		$0.00	$972.36	$2,917.08		$0.00	$0.00
1732	F6933	SERIES 300 CPU	3		0		$0.00	$1,045.36	$3,136.08		$0.00	$0.00
1733	V345	ADD: ASYNC RS232	3		0		$0.00	$113.15	$339.45		$0.00	$0.00
1734	V104	ADD: 2400 DIAL-UP	3		0		$0.00	$300.76	$902.28		$0.00	$0.00
1735	FKN4400	FLAT OVAL 2.5M CABLE	36		0		$0.00	$10.95	$394.20		$0.00	$0.00
		SITE 4 TOTAL										$2,944,690.37
1736												
1737		Site 5: San Francisco Internation Airport - SFIA	1		0		$10,000.00		$0.00		$0.00	$10,000.00
1738												
1739		BiDirectional Amplifier System Network	1		0		$0.00		$0.00	$192,402.00	$192,402.00	$192,402.00
1740												
1741	C99ED	QUANTAR/QUANTRO SFIA	2		0		$0.00	$4,946.48	$9,892.96		$0.00	$9,892.96
1742	001C	QUANTAR/QUANTRO CONFIGURATION	2		0		$0.00	$0.00	$0.00		$0.00	$0.00
1743	X750	ADD: 100W 800 MHZ OPERATION	2		0		$0.00	$4,609.22	$9,218.44		$0.00	$9,218.44
1744	X597 A	ENH: CONVENTIONAL ONLY QTAR	2		0		$0.00	$0.00	$0.00		$0.00	$0.00
1745	X580	ADD: REPEATER OPERATION	2		0		$0.00	$0.00	$0.00		$0.00	$0.00
1746	X153	ADD: HARDWARE, RACKMOUNT	2		0		$0.00	$0.00	$0.00		$0.00	$0.00
1747	X432	ADD: MANUAL, SERVICE	2		0		$0.00	$146.00	$292.00		$0.00	$292.00
1748	X113	ALT: DC ONLY OP. DC TO DC CONVERTER	2		0		$0.00	$146.00	$292.00		$0.00	$292.00
1749	DSDB8682A350	BIDIRECTIONAL SENSOR	2		0		$0.00	$159.87	$319.74		$0.00	$319.74
1750	HMN1001	TEST MICROPHONE	1		0		$0.00	$42.34	$42.34		$0.00	$42.34
1751	HSN1000 R	6W AMPLIFIED EXTERNAL SPKR-PA AUDIO	1		0		$0.00	$72.27	$72.27		$0.00	$72.27
1752	TRN7738	CABLE FOR EXTERNAL 6W SPEAKER	1		0		$0.00	$36.50	$36.50		$0.00	$36.50
1753	TRN4589	DUAL PHONE LINE SUPPRESSOR	2		0		$0.00	$64.42	$128.84		$0.00	$128.84
1754	**********	** Antenna System **										
1755	L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	40		0		$0.00	$2.12	$84.80		$0.00	$84.80
1756	TDN6814	1/2" CONNECTOR, N PLUG LDF PLTD	22		0		$0.00	$32.85	$722.70		$0.00	$722.70
1757	L1709	7/8" LDF HELIAX, POLY JKT, PER FOOT	200		0		$0.00	$5.18	$1,036.00		$0.00	$1,036.00
1758	TDN6817	7/8" CONNECTOR, N PLUG (PLATED)	6		0		$0.00	$80.30	$481.80		$0.00	$481.80
1759	TDN6818	7/8" CONNECTOR, N JACK (PLATED)	6		0		$0.00	$80.30	$481.80		$0.00	$481.80
1760	TDN6674	7/8" CABLE GROUND CLAMP KIT	2		0		$0.00	$24.46	$48.92		$0.00	$48.92
1761	TDN0964	7/8" SNAP-IN HANGER KIT, 10PK	2		0		$0.00	$39.42	$78.84		$0.00	$78.84
1762	TDN6672	7/8" CABLE HOISTING GRIP	2		0		$0.00	$36.50	$73.00		$0.00	$73.00
1763	L1702	1/2" SUPERFLEX, POLY JKT, PER FOOT	15		0		$0.00	$3.07	$46.05		$0.00	$46.05
1764	TDN6809	1/2" CONNECTOR, N PLUG S-FLEX PLTD	6		0		$0.00	$37.78	$226.68		$0.00	$226.68
1765	TDN9209	CABLE WRAP, WEATHERPROOFING	1		0		$0.00	$27.38	$27.38		$0.00	$27.38
1766	L1700	1/4" SUPERFLEX, POLY JKT, PER FOOT	20		0		$0.00	$1.39	$27.80		$0.00	$27.80
1767	TDN9714	1/4"CONN, N PLUG S-FLEX (PLTD)	2		0		$0.00	$12.23	$24.46		$0.00	$24.46
1768	TDN9715	1/4"CONN, BNC PLUG S-FLEX (PLTD)	2		0		$0.00	$10.59	$21.18		$0.00	$21.18
1769	DSTJT8005T	XMTR COMBINER	0		0		$0.00	$6,323.26	$0.00		$0.00	$0.00
1770	DSTJT8002T	XMTR CAVITY CMBNR 2 FREQ	1		0		$0.00	$3,064.54	$3,064.54		$0.00	$3,064.54
1771	DSRMC80012	RMC 806-824 MHZ, 12CH, CWA	0		0		$0.00	$2,182.70	$0.00		$0.00	$0.00
1772	DSRMC8004N	RMC 806-824MHZ, 4CH, CWA	1		0		$0.00	$1,549.06	$1,549.06		$0.00	$1,549.06
1773	RTX4039A	LIGHTNING SUPRESSOR	2		0		$0.00	$47.45	$94.90		$0.00	$94.90
1774	DSDB806DXT	BB DUAL OMNI	1		0		$0.00	$1,729.37	$1,729.37		$0.00	$1,729.37
1775	DSDB806XT	BB OMNI	0		0		$0.00	$759.93	$0.00		$0.00	$0.00
1776	DSDB8682A1000	BIDIRECTIONAL SENSOR	1		0		$0.00	$159.87	$159.87		$0.00	$159.87
1777	**********	** Racks **										
1778	TRN7342	SEVEN FOOT RACK	1		0		$0.00	$343.10	$343.10		$0.00	$343.10
1779												
1780	****SPECIAL AREAS***	REMOTE TERMINAL UNIT										
1781	F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

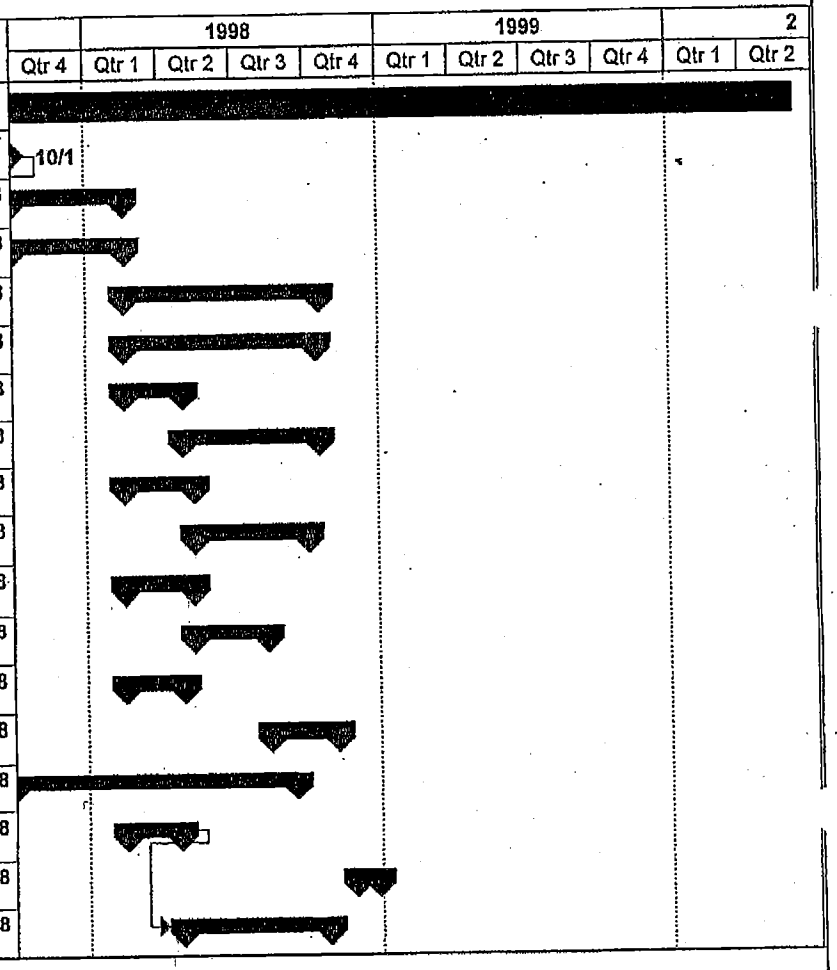
		City and County of San Francisco											
			Citywide 800MHz Radio System Project (CERS)					Rev: 7/97					
			Motorola Proposal for Bid No. 168					Project Cost Itemization Schedule					
							Labor		Material		Subcontracts		
				Man Hours			Hrs	Total	Unit	Total	Unit	Total	Total
Item #		Model	Item Description	Qty	Per Unit	Total	Rate	$	Cost	$	Cost	$	Costs
1782		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1783		V345	ADD: ASYNC RS232	4		0		$0.00	$113.15	$452.60		$0.00	$0.00
1784		V418	REPLACE 8-SLOT MB W/8CPU+NO I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1785		V425	ADD: MOSCAD CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
1786		V437	ADD: 8AI 5V MODULE	1		0		$0.00	$477.42	$477.42		$0.00	$0.00
1787		F6900	MOSCAD EXTERNAL MODEM COMMUNICATIO	1		0		$0.00	$1,443.94	$1,443.94		$0.00	$0.00
1788		V051	ALT: NEMA TO RACKMOUNT	1		0		$0.00	$0.00	$0.00		$0.00	$0.00
1789		V369	REPL: 8-SLOT MB W/4CPU+4I/O	1		0		$0.00	$146.00	$146.00		$0.00	$0.00
1790		V274	DEL: 3 AMP PS AND BATTERY	1		0		$0.00	($240.90)	($240.90)		$0.00	$0.00
1791		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1792		V360	ADD: 60 DI. MODULE	1		0		$0.00	$277.40	$277.40		$0.00	$0.00
1793		V516	ADD: 16DO LATCH MODULE	1		0		$0.00	$375.95	$375.95		$0.00	$0.00
1794		V437	ADD: 8AI 5V MODULE	1		0		$0.00	$477.42	$477.42		$0.00	$0.00
1795		V425	ADD: CPU 300	1		0		$0.00	$972.36	$972.36		$0.00	$0.00
1796		F6933	SERIES 300 CPU	1		0		$0.00	$1,045.36	$1,045.36		$0.00	$0.00
1797		V345	ADD: ASYNC RS232	1		0		$0.00	$113.15	$113.15		$0.00	$0.00
1798		V404	ADD: 2400 DIAL-UP	1		0		$0.00	$300.76	$300.76		$0.00	$0.00
1799		FKN4400	FLAT OVAL 2.5M CABLE	18		0		$0.00	$10.95	$197.10		$0.00	$0.00
			SITE 5 TOTAL										$233,019.34
			COVERAGE ENH. TOTAL										$3,776,186.26
1800													
1801			7. Warranty	1		0		$128,311.00		$0.00		$0.00	$128,311.00
1802													
1803													
1804			8. Maintenance			0		$0.00		$0.00		$0.00	$0.00
1805													
1806													
1807			9. Documentation			0		$44,390.00		$0.00		$0.00	$44,390.00
1808													
1809													
1810			10. Test Equipment	1		0		$0.00	$293,000.00	$293,000.00		$0.00	$293,000.00
1811													
1812		R2674/4497/4492	Communication System Analyzer/Service Mon/Trunkin	4		0		$0.00		$0.00		$0.00	$0.00
1813		DQTCCFireBerd6000	FireBerd T1 Digital Link Analyser	1		0		$0.00		$0.00		$0.00	$0.00
1814		DQTTCTBerd209	FireBerd Bit Error Analyser	2		0		$0.00		$0.00		$0.00	$0.00
1815		RTHP54600	HP Digital Sampling Oscilloscope	3		0		$0.00		$0.00		$0.00	$0.00
1816		TDN9430	MTS2000 Battery Maintenance System	20		0		$0.00		$0.00		$0.00	$0.00
1817		DQLAT/475MC	Dell Latitude LapTop PC	5		0		$0.00		$0.00		$0.00	$0.00
1818		RTHP5348A	Microwave Frequency Counter/Power Meter - 26.5GHz	1		0		$0.00		$0.00		$0.00	$0.00
1819		RTHP71209A	Microwave Spectrum Analyzer - 26.5GHz	1		0		$0.00		$0.00		$0.00	$0.00
1820		RTHP12501462	Patch Cords, SMA-M to SMA-F to 26.5GHz	1		0		$0.00		$0.00		$0.00	$0.00
1821		TJ014X	DES-XL Encryption Keyloader	5		0		$0.00		$0.00		$0.00	$0.00
1822		NLN8858	6-Unit Battery Charger/Analyser	6		0		$0.00		$0.00		$0.00	$0.00
1823		R2014D/0900	Encryption Test Set	2		0		$0.00		$0.00		$0.00	$0.00
1824		RTHP4935A	HP TIMS 4935	4		0		$0.00		$0.00		$0.00	$0.00
1825		DQCW4374	Celwave Wideband Wattmeter	4		0		$0.00		$0.00		$0.00	$0.00
1826		RTHP435B8485A	Power Meter - 26.5GHz, -65 to +44 dBm Power Range	1		0		$0.00		$0.00		$0.00	$0.00
1827		DQ87	Fluke 87 True RMS Multimeter	3		0		$0.00		$0.00		$0.00	$0.00
										GRAND TOTAL			$35,138,899.50
										SYSTEM DISCOUNT (4.34% OF $24,203,904)			$ (1,055,625.00)

Exhibit D: Project Cost Itemization Schedule
Detail Cost Breakdown

		City and County of San Francisco											
		Citywide 800MHz Radio System Project (CERS)					Rev: 7/97						
		Motorola Proposal for Bid No. 168					Project Cost Itemiznton Schedule						
				Man Hours		Labor		Material		Subcontracts			
Item #	Model	Item Description	Qty	Per Unit	Total	Hrs Rate	Total $	Unit Cost	Total $	Unit Cost	Total $	Total Costs
									FREIGHT			$355,925.00
									NET			$34,439,199.50
									ADDITIONS:			
									TAX			$1,933,166.00
									CLAY JONES			$175,000.00
									SYSTEM TOTAL			$36,547,365.50

Master Project Schedule (Summary)

ID	Task Name	Duration	Start	Finish
1	1 The Project	701d	10/1/97	6/7/00
2	2 Contract Award	0d	10/1/97	10/1/97
3	3 Detail Design	100d	10/1/97	2/17/98
12	4 City Site Documentation	101d	10/1/97	2/18/98
21	5 Civil Construction	174d	2/18/98	10/19/98
22	5.1 Twin Peaks Site	172d	2/18/98	10/15/98
38	5.2 One Market Plaza	52d	2/18/98	4/30/98
47	5.3 Forest Hill	122d	5/1/98	10/19/98
61	5.4 Bernal Heights	62d	2/18/98	5/14/98
73	5.5 South Hill	102d	5/15/98	10/5/98
88	5.6 SF State	61d	2/18/98	5/13/98
99	5.7 Ft. Miley	67d	5/14/98	8/14/98
113	5.8 Clay Jones	52d	2/18/98	4/30/98
120	6 901 Rankin Remodel	61d	8/17/98	11/9/98
124	7 Fleet Map Configuration	252d	10/1/97	9/17/98
130	8 Order Entry Phase I	48d	2/18/98	4/24/98
135	9 Notice to Proceed Phase II	20d	12/1/98	12/28/98
140	10 CCSI Factory Staging	132d	4/27/98	10/27/98



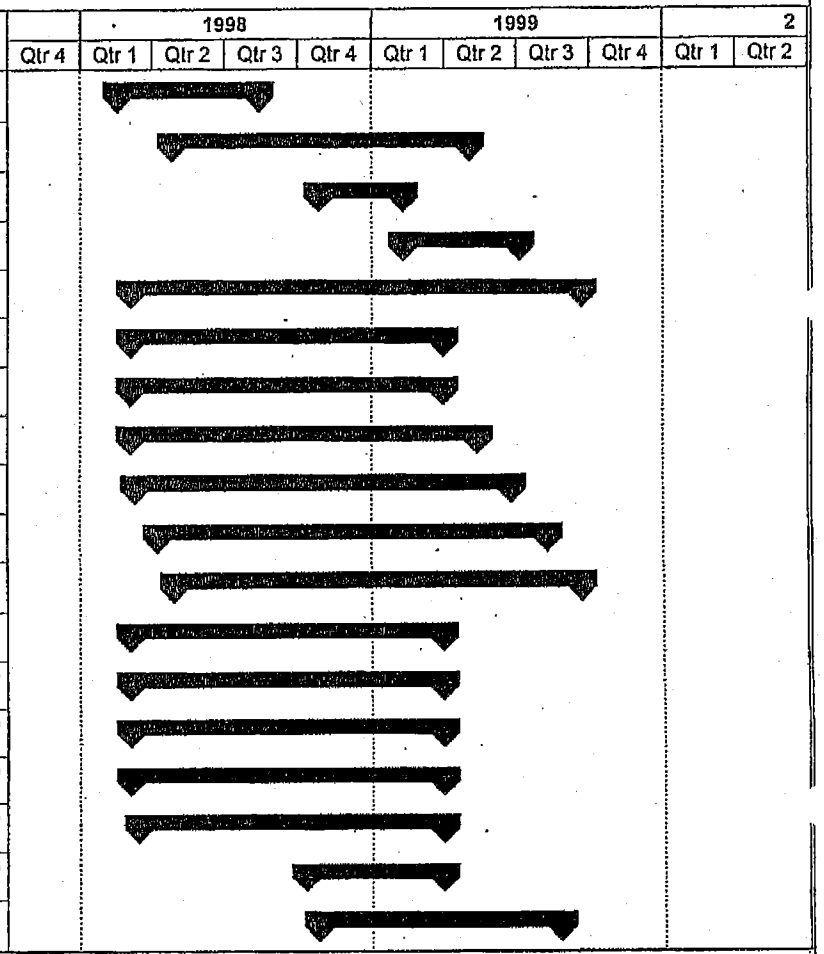
Project: 800 MHz Project
Date: 7/29/97

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

6. Exhibit E
Master project schedule

Master Project Schedule (Summary)

ID	Task Name	Duration	Start	Finish
150	11 Microwave Staging	128d	2/18/98	8/14/98
157	12 Mobiles, Portables, and Control Station Delivery	266d	4/27/98	5/3/99
162	13 Fixed Network Equip. (FNE) Installation	75d	10/28/98	2/9/99
170	14 Fixed Network Equip. (FNE) Acceptance Testing	104d	2/10/99	7/5/99
179	15 Special Areas of Coverage	403d	3/6/98	9/21/99
180	15.1 MUNI Tunnel System	279d	3/6/98	3/31/99
187	15.2 Van Ness Station	279d	3/6/98	3/31/99
195	15.3 Church St. Station	310d	3/6/98	5/13/99
203	15.4 Castro St. Station	337d	3/12/98	6/25/99
211	15.5 Forest Hill Station	348d	4/9/98	8/9/99
219	15.6 Moscone Center	364d	4/30/98	9/21/99
227	15.7 City Jail	279d	3/6/98	3/31/99
235	15.8 Hall of Justice	279d	3/6/98	3/31/99
243	15.9 San Bruno Jail # 3 Building	279d	3/6/98	3/31/99
251	15.10 San Bruno Annex	279d	3/6/98	3/31/99
259	15.11 Admin. Bldg.	273d	3/16/98	3/31/99
267	15.12 San Francisco International Airport	123d	10/12/98	3/31/99
275	16 Radio Console Systems (RCS) Installations	216d	10/28/98	8/25/99

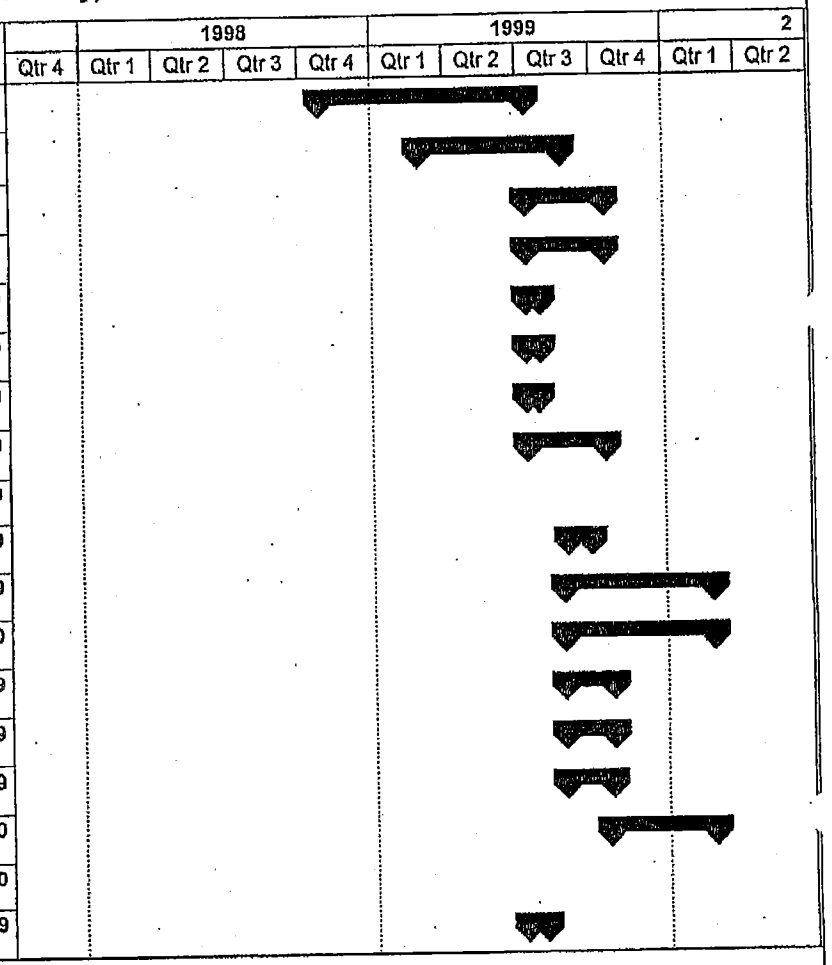


Project: 800 MHz Project
Date: 7/29/97

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

Master Project Schedule (Summary)

ID	Task Name	Duration	Start	Finish
276	16.1 CC1 Implementation	184d	10/28/98	7/12/99
280	16.2 CC2 Implementation	128d	3/1/99	8/25/99
285	17 Training/Cut-over	70d	7/13/99	10/18/99
286	17.1 Group 1	70d	7/13/99	10/18/99
287	17.1.1 Training	13d	7/13/99	7/29/99
288	17.1.1.1 Subscriber	13d	7/13/99	7/29/99
294	17.1.1.2 Console	11d	7/13/99	7/27/99
299	17.1.2 Subscriber Installation Group 1	70d	7/13/99	10/18/99
305	17.2 CCE1 Cut-over	0d	10/18/99	10/18/99
307	18 30 Day Confidence test	22d	8/31/99	9/29/99
310	19 Training/Cut-over	134d	8/26/99	2/29/00
311	19.1 Group 2	134d	8/26/99	2/29/00
312	19.1.1 Training	43d	8/26/99	10/25/99
313	19.1.1.1 Subscriber	43d	8/26/99	10/25/99
318	19.1.1.2 Console	42d	8/26/99	10/22/99
322	19.1.2 Subscriber Installation Group 2	96d	10/19/99	2/29/00
327	19.2 CCE2 Cut-over	0d	2/29/00	2/29/00
329	20 System Management Component Training	18d	7/6/99	7/29/99

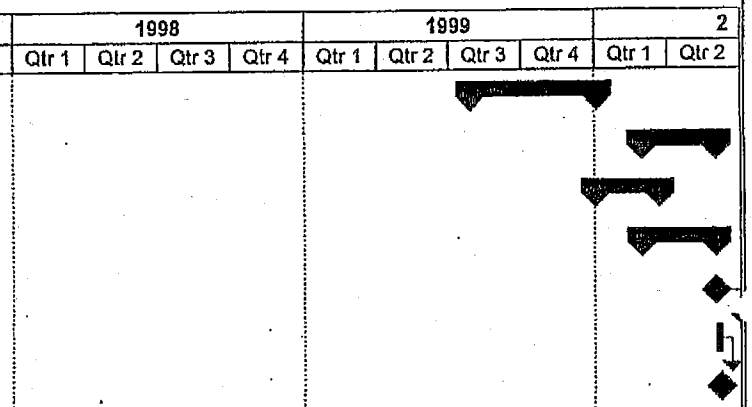


Project: 800 MHz Project
Date: 7/29/97

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

Master Project Schedule (Summary)

ID	Task Name	Duration	Start	Finish
333	21 Technical Training	113d	7/30/99	1/4/00
338	22 Documentations	66d	3/1/00	5/31/00
341	23 Contours	58d	1/3/00	3/22/00
345	24 Agreement to Begin Proof of Performance Testing	66d	3/1/00	5/31/00
348	25 Final System Acceptance	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

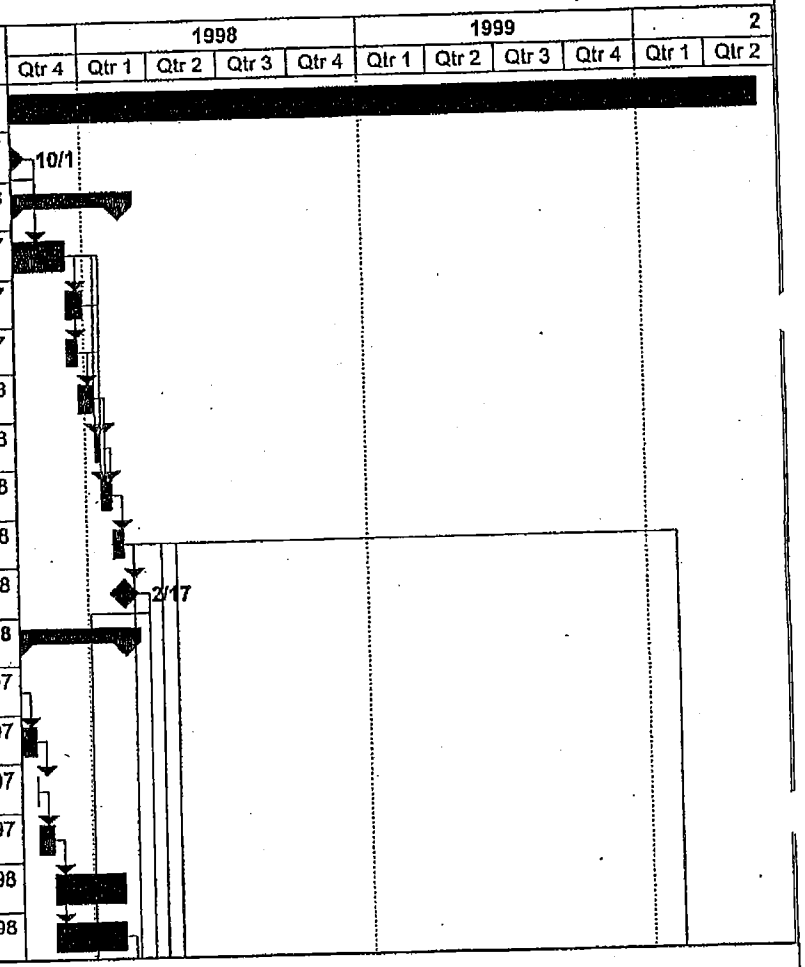


Project: 800 MHz Project
Date: 7/29/97

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

Master Project Schedule

ID	Task Name	Duratio	Start	Finish
1	1 The Project	701d	10/1/97	6/7/00
2	2 Contract Award	0d	10/1/97	10/1/97
3	3 Detail Design	100d	10/1/97	2/17/98
4	3.1 Final System Design	50d	10/1/97	12/9/97
5	3.2 Final Equipment List	15d	12/10/97	12/30/97
6	3.3 Final Site Walks	10d	12/10/97	12/23/97
7	3.4 Final Site Design	15d	12/24/97	1/13/98
8	3.5 Master Schedule	5d	1/14/98	1/20/98
9	3.6 Detail Design Review	10d	1/21/98	2/3/98
10	3.7 Detail Design Approval	10d	2/4/98	2/17/98
11	3.8 City Approves The Detail Design	0d	2/17/98	2/17/98
12	4 City Site Documentation	101d	10/1/97	2/18/98
13	4.1 Draft Site Documentation Delivered to Motorola, A&E's	1d	10/1/97	10/1/97
14	4.2 Motorola Evaluation of Draft A&E's	14d	10/2/97	10/21/97
15	4.3 Motorola Delivery of Draft A&E's Evaluation to the City	1d	10/22/97	10/22/97
16	4.4 City Evaluation Review	14d	10/23/97	11/11/97
17	4.5 City and Motorola Final Site Documents and Pac 17 Cost Revie	66d	11/12/97	2/11/98
18	4.6 Civil Permitting Process, City	66d	11/12/97	2/11/98

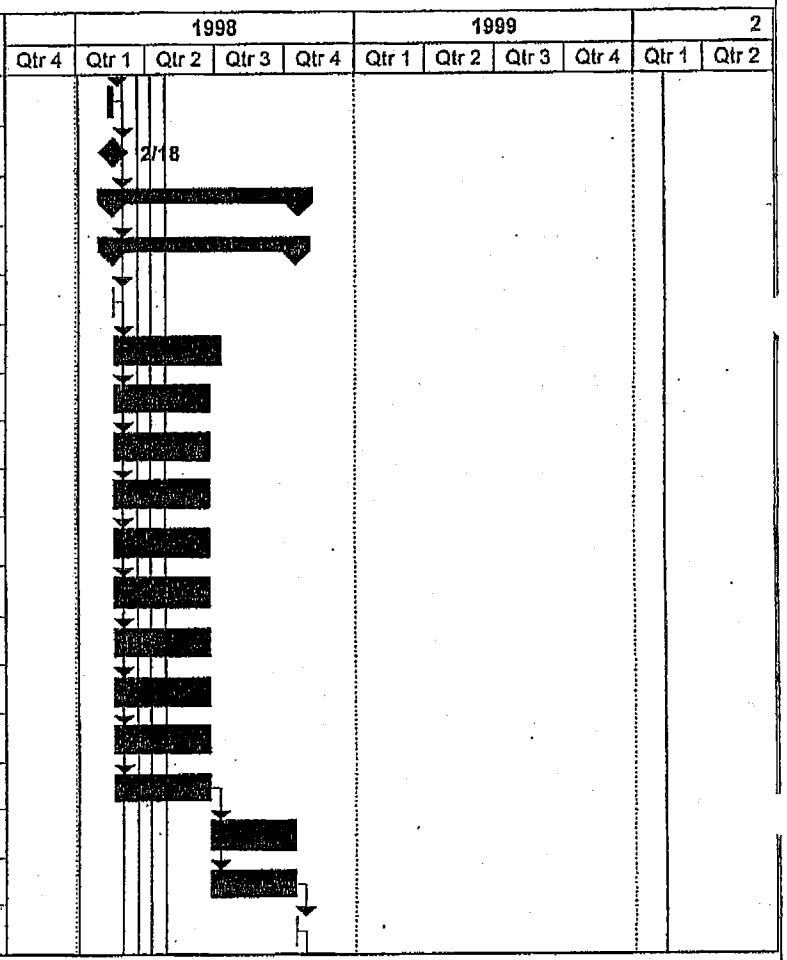


Project: 800 MHz Project
Date: 7/29/97

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

Master Project Schedule

ID	Task Name	Duratio	Start	Finish
19	4.7 City Delivery of Civil Permits to Motorola	5d	2/12/98	2/18/98
20	4.8 Motorola and City Acceptance of Site Documentation	0d	2/18/98	2/18/98
21	**5 Civil Construction**	**174d**	**2/18/98**	**10/19/98**
22	**5.1 Twin Peaks Site**	**172d**	**2/18/98**	**10/15/98**
23	5.1.1 Permits Issued	1d	2/18/98	2/18/98
24	5.1.2 Remodel	100d	2/19/98	7/8/98
25	5.1.3 Site Building	90d	2/19/98	6/24/98
26	5.1.4 Tower Slab/Walls/Foundations Demolitions	90d	2/19/98	6/24/98
27	5.1.5 Commercial Power	90d	2/19/98	6/24/98
28	5.1.6 Install Emergency Power and Fuel Supply	90d	2/19/98	6/24/98
29	5.1.7 Exterior Grounding	90d	2/19/98	6/24/98
30	5.1.8 Cable Ladders and Bridges	90d	2/19/98	6/24/98
31	5.1.9 Antenna Mnts. and Ancillary support struct.	90d	2/19/98	6/24/98
32	5.1.10 Tower Inspection, Paint, and Relocation of Antennas	90d	2/19/98	6/24/98
33	5.1.11 Install 150 foot Tower	90d	2/19/98	6/24/98
34	5.1.12 Microwave Ant. and Trans. line	80d	6/25/98	10/14/98
35	5.1.13 RF Ant. and Trans. line	80d	6/25/98	10/14/98
36	5.1.14 City and Motorola Inspection	1d	10/15/98	10/15/98

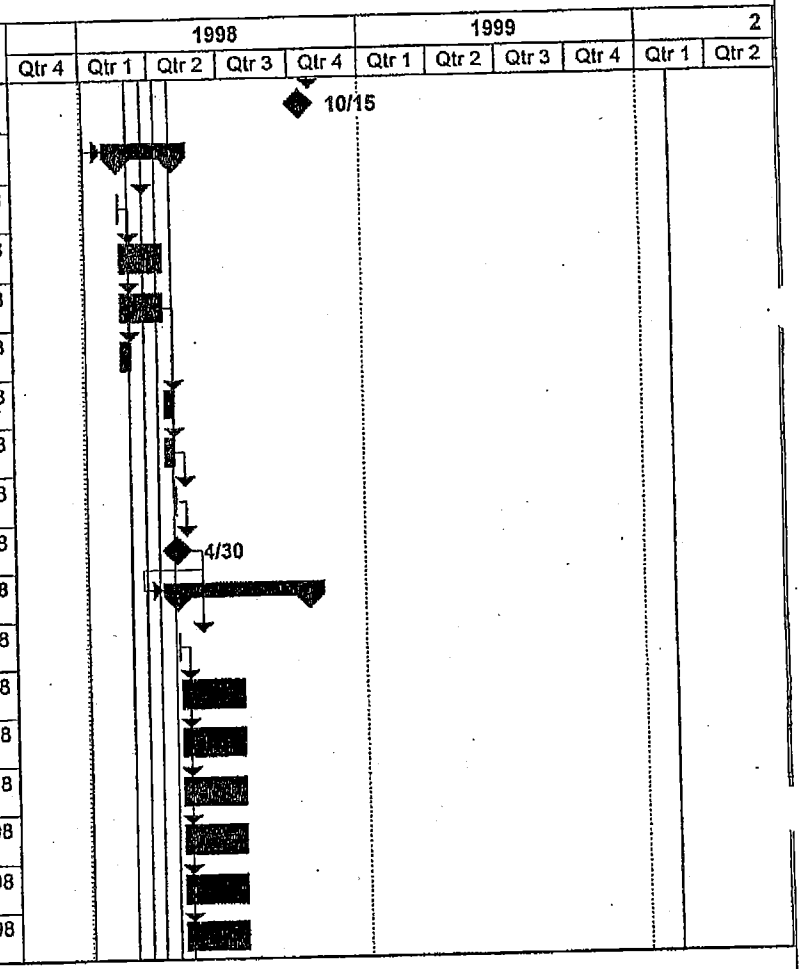


Project: 800 MHz Project
Date: 7/29/97

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

Master Project Schedule

ID	Task Name	Duratio	Start	Finish
37	5.1.15 Civil Construction Acceptance	0d	10/15/98	10/15/98
38	5.2 One Market Plaza	52d	2/18/98	4/30/98
39	5.2.1 Permits Issued	1d	2/18/98	2/18/98
40	5.2.2 Emergency Power, Fuel Supply	40d	2/19/98	4/15/98
41	5.2.3 Install Cable Ladders, Bridges	40d	2/19/98	4/15/98
42	5.2.4 Antenna Mnts. & Ancillary support struct.	10d	2/19/98	3/4/98
43	5.2.5 Microwave Ant. Trans. Line	10d	4/16/98	4/29/98
44	5.2.6 RF Ant. and Trans. line	10d	4/16/98	4/29/98
45	5.2.7 City and Motorola Inspection	1d	4/30/98	4/30/98
46	5.2.8 Civil Construction Acceptance	0d	4/30/98	4/30/98
47	5.3 Forest Hill	122d	5/1/98	10/19/98
48	5.3.1 Permits Issued	1d	5/1/98	5/1/98
49	5.3.2 Install Pre-fab Building	60d	5/4/98	7/24/98
50	5.3.3 Grading	60d	5/4/98	7/24/98
51	5.3.4 Commercial Power	60d	5/4/98	7/24/98
52	5.3.5 Install Emergency Power and Fuel Supply	60d	5/4/98	7/24/98
53	5.3.6 Exterior Grounding	60d	5/4/98	7/24/98
54	5.3.7 Cable Ladders and Ancillary support struct.	60d	5/4/98	7/24/98



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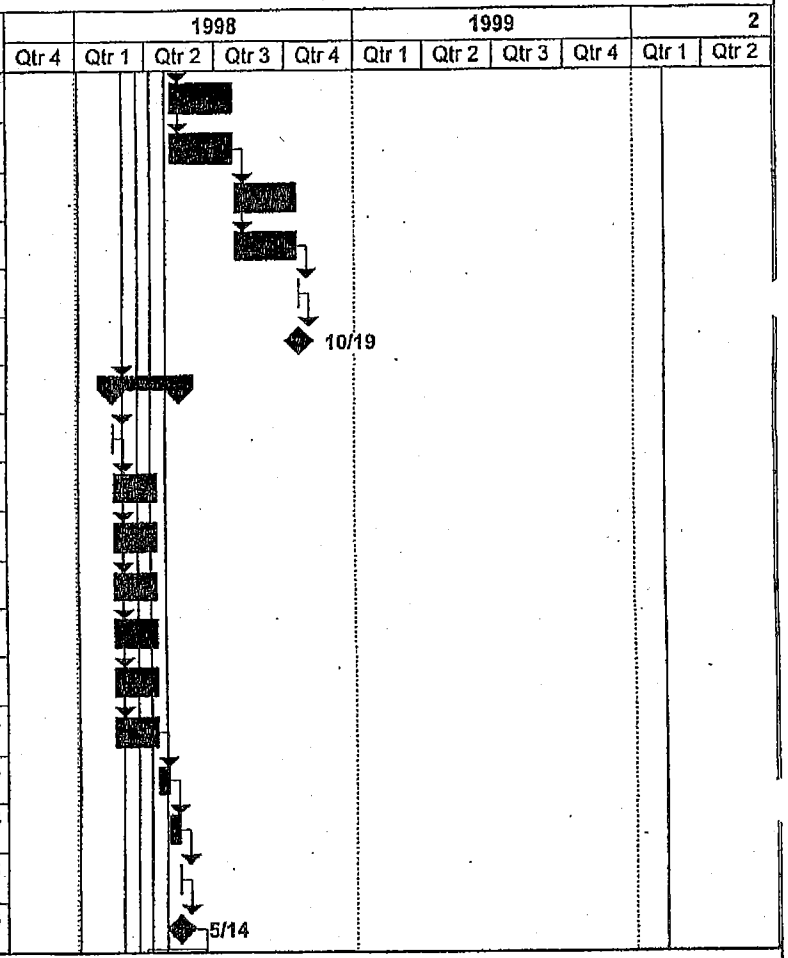
ID	Task Name	Duratio	Start	Finish
55	5.3.8 Tower Demolition (after CCE2 Cutover)	60d	5/4/98	7/24/98
56	5.3.9 Install 100 foot tower	60d	5/4/98	7/24/98
57	5.3.10 Microwave Ant. and Trans. line	60d	7/27/98	10/16/98
58	5.3.11 RF Ant. and Trans. line	60d	7/27/98	10/16/98
59	5.3.12 City and Motorola Inspection	1d	10/19/98	10/19/98
60	5.3.13 Civil Construction Acceptance	0d	10/19/98	10/19/98
61	5.4 Bernal Heights	62d	2/18/98	5/14/98
62	5.4.1 Permits Issued	1d	2/18/98	2/18/98
63	5.4.2 Site building	40d	2/19/98	4/15/98
64	5.4.3 Commercial Power	40d	2/19/98	4/15/98
65	5.4.4 Emergency Power	40d	2/19/98	4/15/98
66	5.4.5 Exterior Grounding	40d	2/19/98	4/15/98
67	5.4.6 Earthquake Retrofit	40d	2/19/98	4/15/98
68	5.4.7 Cable Ladders and Ancillary support struct.	40d	2/19/98	4/15/98
69	5.4.8 Microwave Ant. and Trans. line	10d	4/16/98	4/29/98
70	5.4.9 RF Ant. and Trans. line	10d	4/30/98	5/13/98
71	5.4.10 City and Motorola Inspection	1d	5/14/98	5/14/98
72	5.4.11 Civil Construction Acceptance	0d	5/14/98	5/14/98



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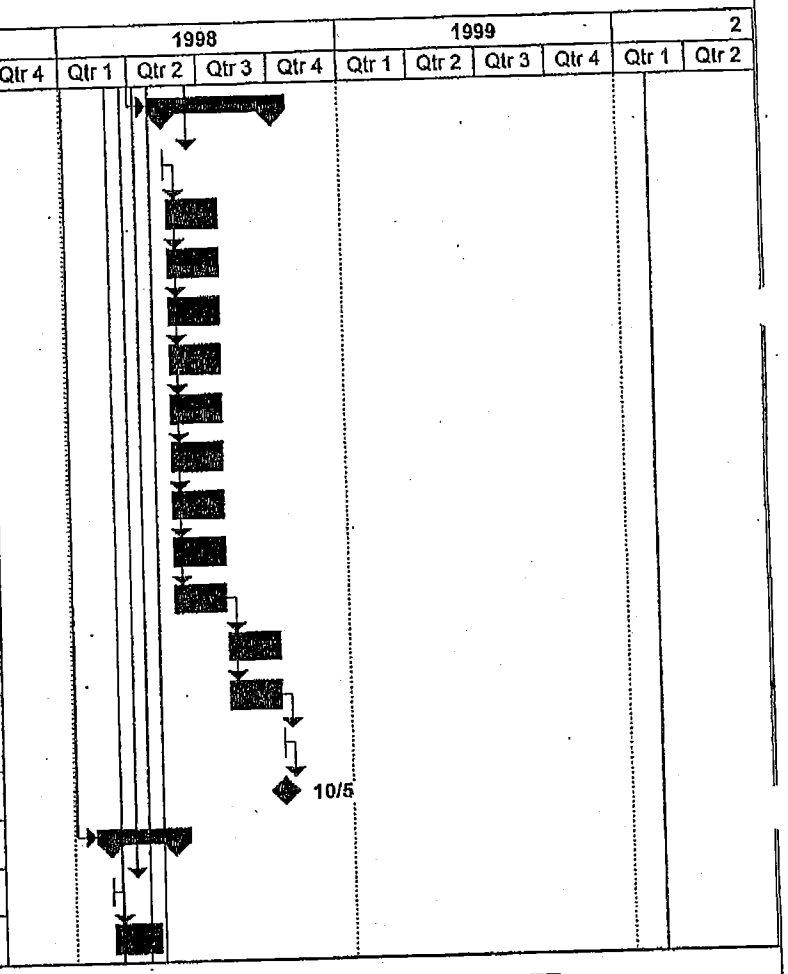
ID	Task Name	Duratio	Start	Finish
73	5.5 South Hill	102d	5/15/98	10/5/98
74	5.5.1 Permits Issued	1d	5/15/98	5/15/98
75	5.5.2 Install Pre-fab Building	50d	5/18/98	7/24/98
76	5.5.3 Grading	50d	5/18/98	7/24/98
77	5.5.4 Paving	50d	5/18/98	7/24/98
78	5.5.5 Fencing	50d	5/18/98	7/24/98
79	5.5.6 Commercial Power	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



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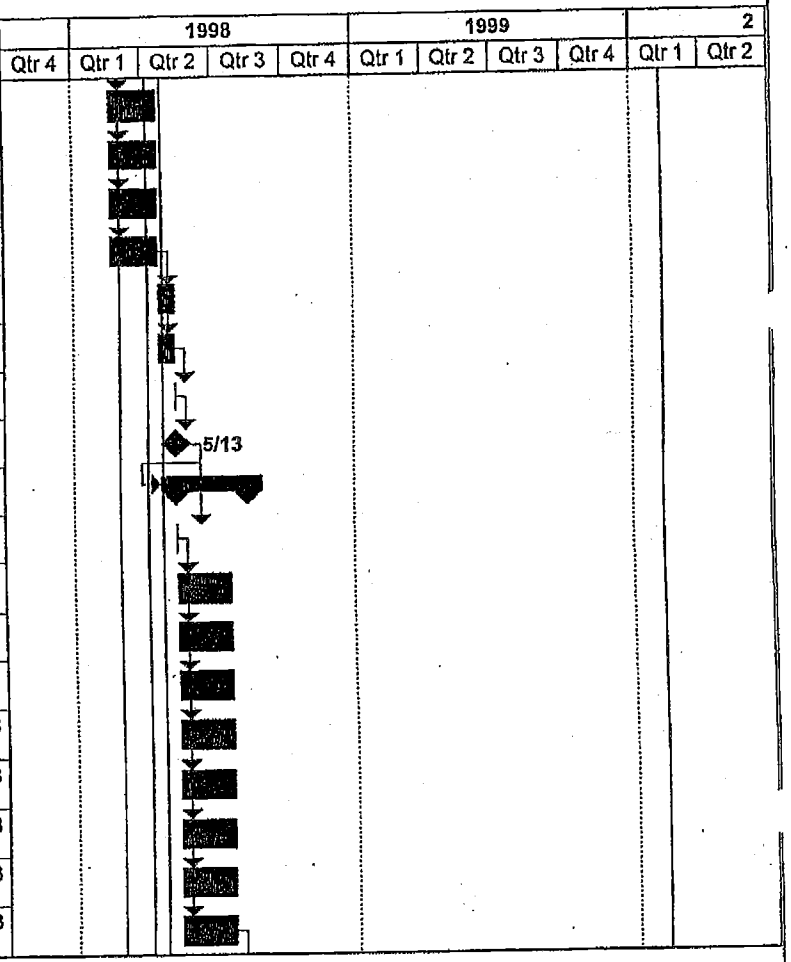
91	5.6.3 Commercial Power	44d	2/19/98	4/21/98
92	5.6.4 Install Emergency Power and Fuel Supply	44d	2/19/98	4/21/98
93	5.6.5 Cable Ladders, and Bridges	44d	2/19/98	4/21/98
94	5.6.6 Antenna Mnts. and Ancillary support struct.	44d	2/19/98	4/21/98
95	5.6.7 Microwave Ant. and Tans. line	15d	4/22/98	5/12/98
96	5.6.8 RF Ant. and Trans. line	15d	4/22/98	5/12/98
97	5.6.9 City and Motorola Inspection	1d	5/13/98	5/13/98
98	5.6.10 Civil Construction Acceptance	0d	5/13/98	5/13/98
99	5.7 Ft. Miley	67d	5/14/98	8/14/98
100	5.7.1 Permits Issued	1d	5/14/98	5/14/98
101	5.7.2 Install Pre-fab Building	50d	5/15/98	7/23/98
102	5.7.3 Install Emergency Power and Fuel Supply	50d	5/15/98	7/23/98
103	5.7.4 Grading	50d	5/15/98	7/23/98
104	5.7.5 Fencing	50d	5/15/98	7/23/98
105	5.7.6 Commercial Power	50d	5/15/98	7/23/98
106	5.7.7 Exterior Grounding	50d	5/15/98	7/23/98
107	5.7.8 Cable Ladders, Bridges	50d	5/15/98	7/23/98
108	5.7.9 Antenna Mnts. & Ancillary support struct.	50d	5/15/98	7/23/98



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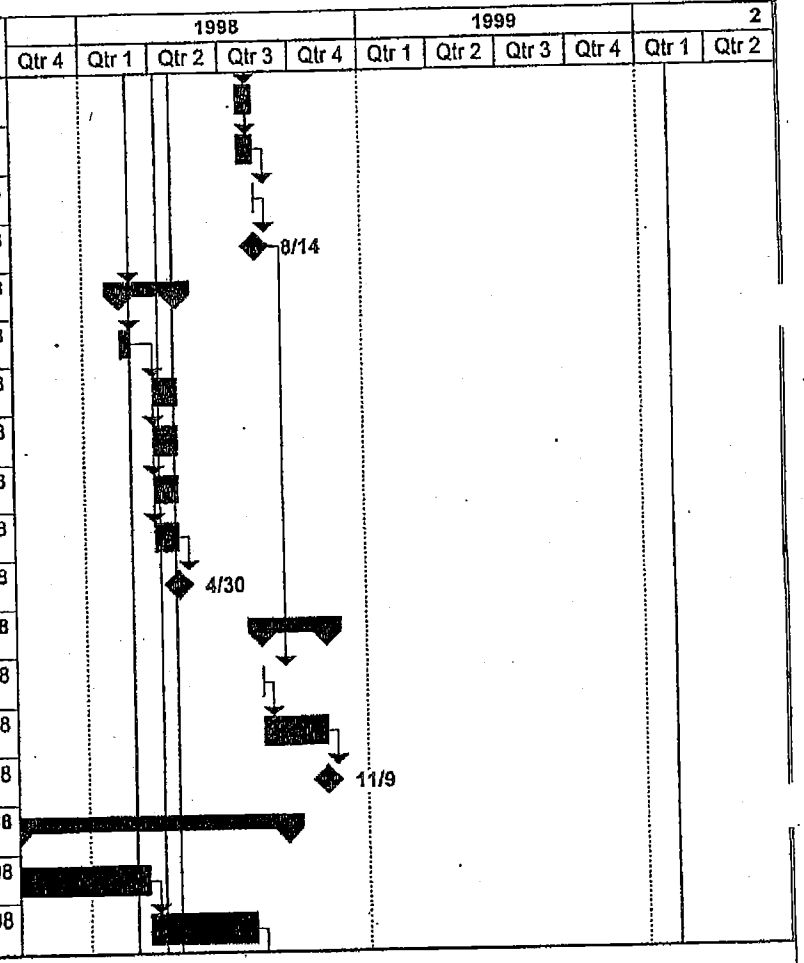
ID	Task Name	Duratio	Start	Finish
109	5.7.10 Microwave Ant. and Trans. line	15d	7/24/98	8/13/98
110	5.7.11 RF Ant. and Trans. line	15d	7/24/98	8/13/98
111	5.7.12 City and Motorola Inspection	1d	8/14/98	8/14/98
112	5.7.13 Civil Construction Acceptance	0d	8/14/98	8/14/98
113	**5.8 Clay Jones**	**52d**	**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 Ports, 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	60d	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



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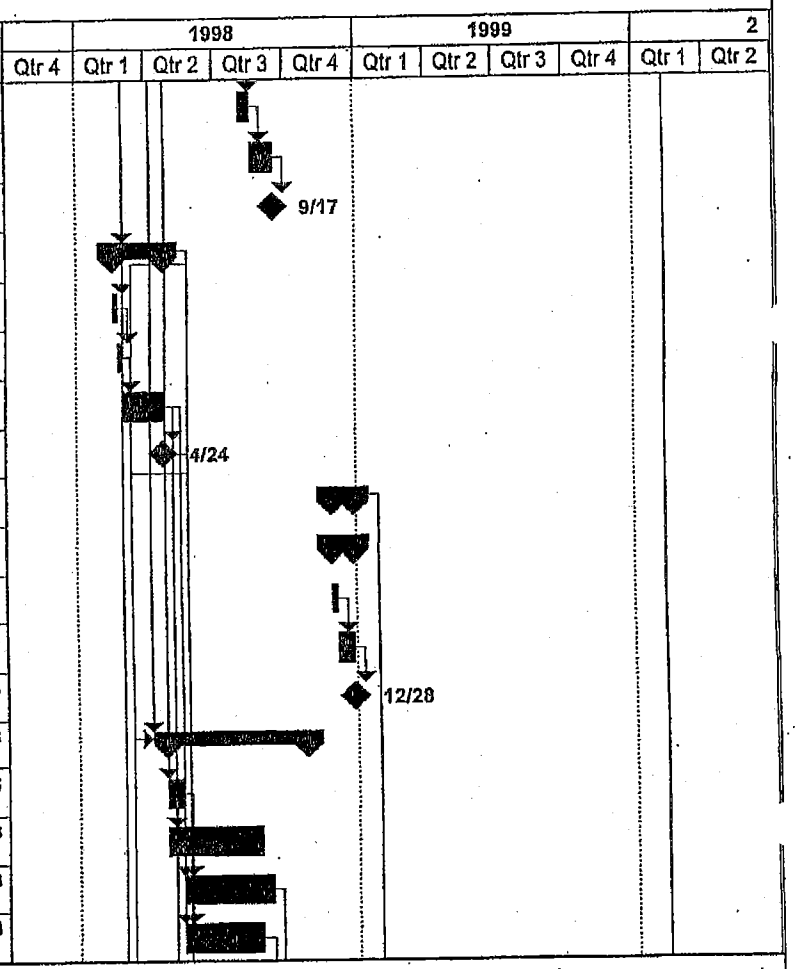
127	7.3 City Review	10d	8/5/98	8/18/98
128	7.4 Motorola Re-Writes	22d	8/19/98	9/17/98
129	7.5 Fleet Map and Template Acceptance	0d	9/17/98	9/17/98
130	**8 Order Entry Phase I**	**48d**	**2/18/98**	**4/24/98**
131	8.1 Equipment List Entry	5d	2/18/98	2/24/98
132	8.2 Special Areas of Coverage equipment order	3d	2/25/98	2/27/98
133	8.3 Clear Reviews and Holds	40d	3/2/98	4/24/98
134	8.4 Order Entry Complete	0d	4/24/98	4/24/98
135	**9 Notice to Proceed Phase II**	**20d**	**12/1/98**	**12/28/98**
136	**9.1 Order Entry Phase II**	**20d**	**12/1/98**	**12/28/98**
137	9.1.1 Equipment List Entry	5d	12/1/98	12/7/98
138	9.1.2 Clear Reviews and Holds	15d	12/8/98	12/28/98
139	9.1.3 Phase II Order Entry Complete	0d	12/28/98	12/28/98
140	**10 CCSI Factory Staging**	**132d**	**4/27/98**	**10/27/98**
141	10.1 Staging Documentation	15d	4/27/98	5/15/98
142	10.2 Equipment Manufacture and Delivery to CCSI	90d	4/27/98	8/28/98
143	10.3 TRS Staging Assembly	85d	5/18/98	9/11/98
144	10.4 RCS Staging Assembly	75d	5/18/98	8/28/98



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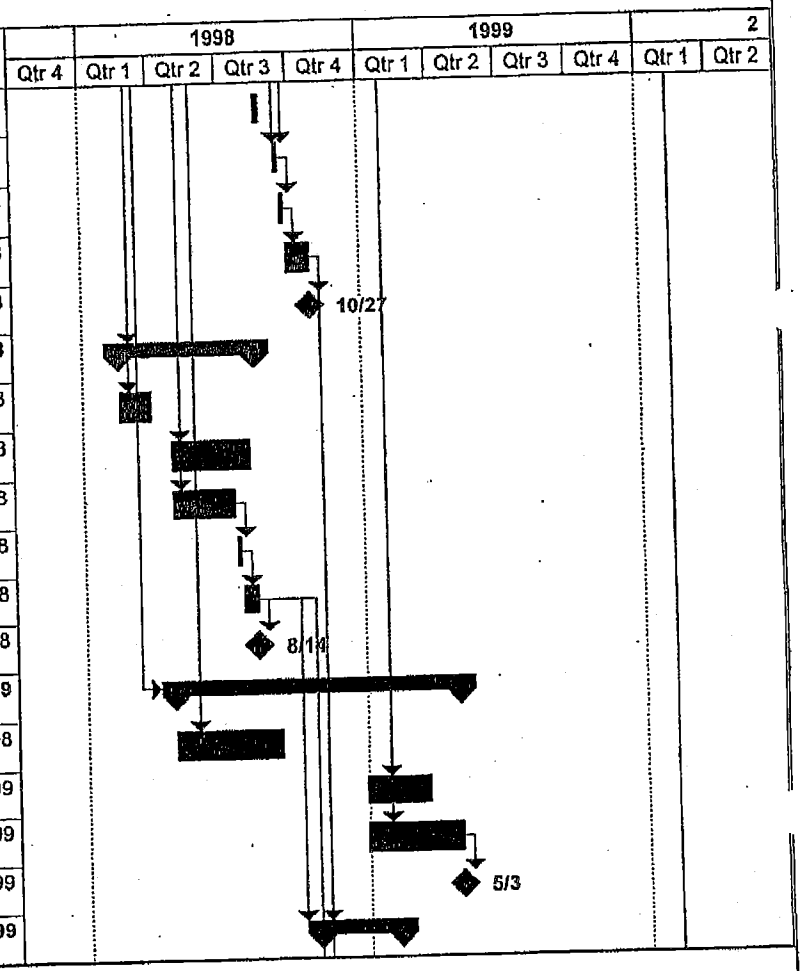
ID	Task Name	Duratio	Start	Finish
145	10.5 Customer at CCSI	5d	8/20/98	8/26/98
146	10.6 System Management Systems	5d	9/14/98	9/18/98
147	10.7 CCSI Customer Acceptance	5d	9/21/98	9/25/98
148	10.8 TRS Shipping and Delivery	22d	9/28/98	10/27/98
149	10.9 Equipment Delivered to San Francisco	0d	10/27/98	10/27/98
150	**11 Microwave Staging**	128d	2/18/98	8/14/98
151	11.1 MRS Staging Documentation	30d	2/18/98	3/31/98
152	11.2 MRS Equipment Manufacture and Delivery to Staging	75d	4/27/98	8/7/98
153	11.3 MRS Staging Assembly	60d	4/27/98	7/17/98
154	11.4 Customer Acceptance	5d	7/20/98	7/24/98
155	11.5 MRS Shipping and Delivery	15d	7/27/98	8/14/98
156	11.6 Equipment Delivered to San Francisco	0d	8/14/98	8/14/98
157	**12 Mobiles, Portables, and Control Station Delivery**	266d	4/27/98	5/3/99
158	12.1 Other Units (Appendix L)	100d	4/27/98	9/11/98
159	12.2 Group 1 Units	60d	12/29/98	3/22/99
160	12.3 Group 2 Units	90d	12/29/98	5/3/99
161	12.4 Mobiles, Portables, and Control Station Delivery Complete	0d	5/3/99	5/3/99
162	**13 Fixed Network Equip. (FNE) Installation**	75d	10/28/98	2/9/99



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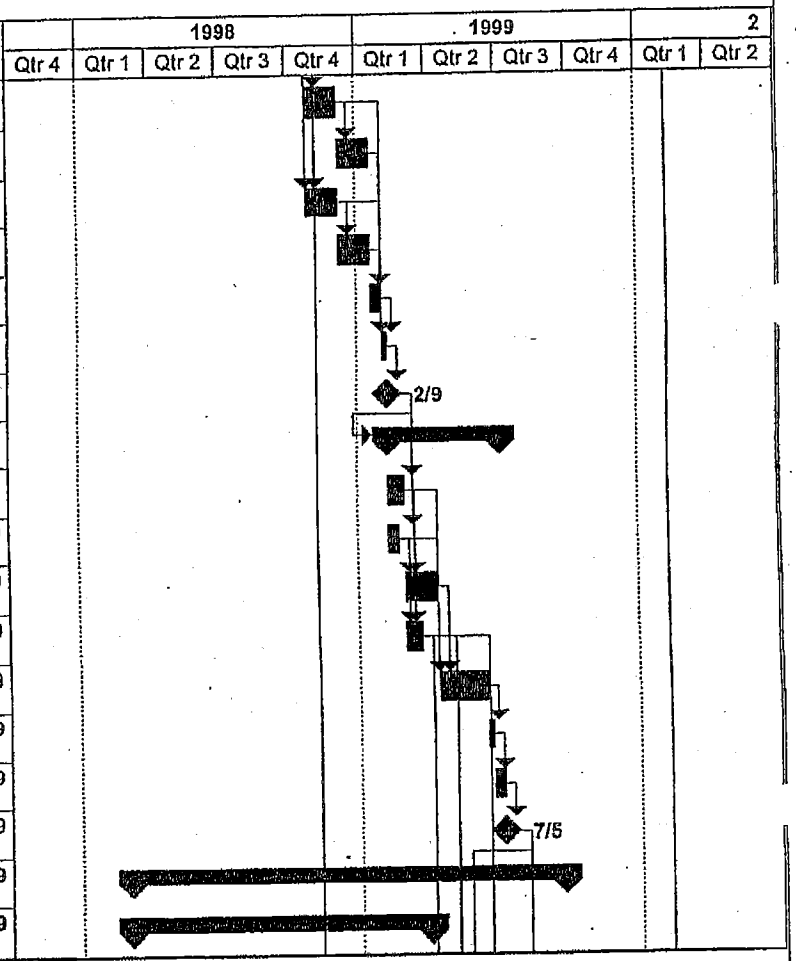
ID	Task Name	Duratio	Start	Finish
163	13.1 TRS Rack Bolt Down	30d	10/28/98	12/8/98
164	13.2 TRS Interconnection	30d	12/9/98	1/19/99
165	13.3 MTS Rack Bolt Down	30d	10/28/98	12/8/98
166	13.4 MTS Interconnection	30d	12/9/98	1/19/99
167	13.5 System Management Components Interconnection	10d	1/20/99	2/2/99
168	13.6 City and Motorola Inspection	5d	2/3/99	2/9/99
169	13.7 City Acceptance of FNE Installation	0d	2/9/99	2/9/99
170	**14 Fixed Network Equip. (FNE) Acceptance Testing**	**104d**	**2/10/99**	**7/5/99**
171	14.1 TRS Testing	15d	2/10/99	3/2/99
172	14.2 MTS Testing	10d	2/10/99	2/23/99
173	14.3 System Optimization	30d	3/3/99	4/13/99
174	14.4 System Management Component Testing	15d	3/3/99	3/23/99
175	14.5 RF Coverage Testing	44d	4/14/99	6/14/99
176	14.6 Deliver Coverage Documents	5d	6/15/99	6/21/99
177	14.7 City Review	10d	6/22/99	7/5/99
178	14.8 TRS, MTS, SMC, and RF Coverage ATP CRITICAL MILESTO	0d	7/5/99	7/5/99
179	**15 Special Areas of Coverage**	**403d**	**3/6/98**	**9/21/99**
180	**15.1 MUNI Tunnel System**	**279d**	**3/6/98**	**3/31/99**



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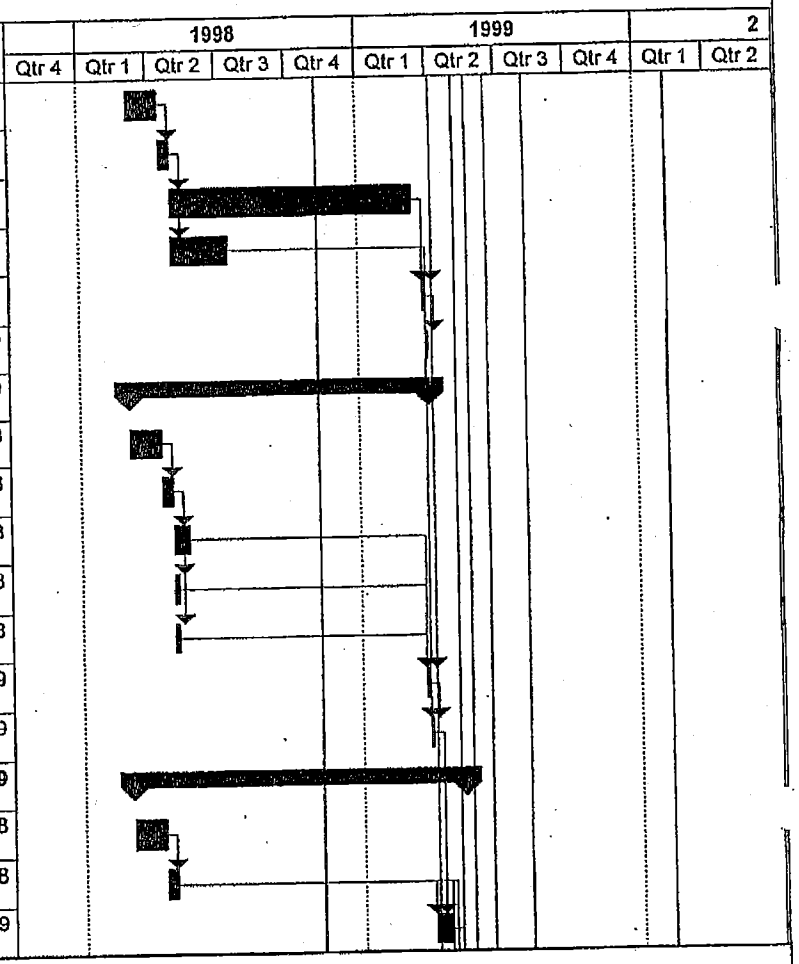
181	15.1.1 Equipment Manufacture	30d	3/6/98	4/16/98
182	15.1.2 Equipment Delivery	10d	4/17/98	4/30/98
183	15.1.3 Cable Installation	225d	5/1/98	3/11/99
184	15.1.4 Amplifier Implementation	54d	5/1/98	7/15/98
185	15.1.5 System Testing	3d	3/24/99	3/26/99
186	15.1.6 System Acceptance	3d	3/29/99	3/31/99
187	**15.2 Van Ness Station**	**279d**	**3/6/98**	**3/31/99**
188	15.2.1 Equipment Manufacture	30d	3/6/98	4/16/98
189	15.2.2 Equipment Delivery	10d	4/17/98	4/30/98
190	15.2.3 Cable Installation	15d	5/1/98	5/21/98
191	15.2.4 Antenna Installation	5d	5/1/98	5/7/98
192	15.2.5 Amplifier Implementation	5d	5/1/98	5/7/98
193	15.2.6 System Testing	3d	3/24/99	3/26/99
194	15.2.7 System Acceptance	3d	3/29/99	3/31/99
195	**15.3 Church St. Station**	**310d**	**3/6/98**	**5/13/99**
196	15.3.1 Equipment Manufacture	30d	3/6/98	4/16/98
197	15.3.2 Equipment Delivery	10d	4/17/98	4/30/98
198	15.3.3 Cable Installation	15d	4/1/99	4/21/99



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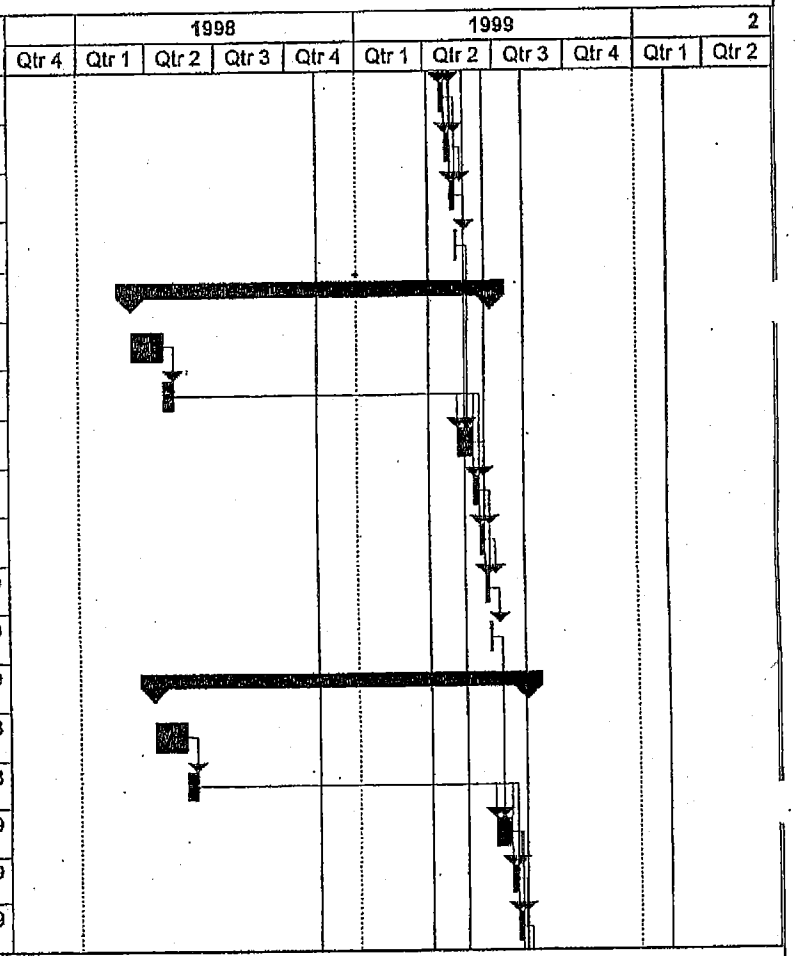
199	15.3.4 Antenna Installation	5d	4/22/99	4/28/99
200	15.3.5 Amplifier Implementation	5d	4/29/99	5/5/99
201	15.3.6 System Testing	3d	5/6/99	5/10/99
202	15.3.7 System Acceptance	3d	5/11/99	5/13/99
203	**15.4 Castro St. Station**	**337d**	**3/12/98**	**6/25/99**
204	15.4.1 Equipment Manufacture	30d	3/12/98	4/22/98
205	15.4.2 Equipment Delivery	10d	4/23/98	5/6/98
206	15.4.3 Cable Installation	15d	5/14/99	6/3/99
207	15.4.4 Antenna Installation	5d	6/4/99	6/10/99
208	15.4.5 Amplifier Implementation	5d	6/11/99	6/17/99
209	15.4.6 System Testing	3d	6/18/99	6/22/99
210	15.4.7 System Acceptance	3d	6/23/99	6/25/99
211	**15.5 Forest Hill Station**	**348d**	**4/9/98**	**8/9/99**
212	15.5.1 Equipment Manufacture	30d	4/9/98	5/20/98
213	15.5.2 Equipment Delivery	10d	5/21/98	6/3/98
214	15.5.3 Cable Installation	15d	6/28/99	7/16/99
215	15.5.4 Antenna Installation	5d	7/19/99	7/23/99
216	15.5.5 Amplifier Implementation	5d	7/26/99	7/30/99



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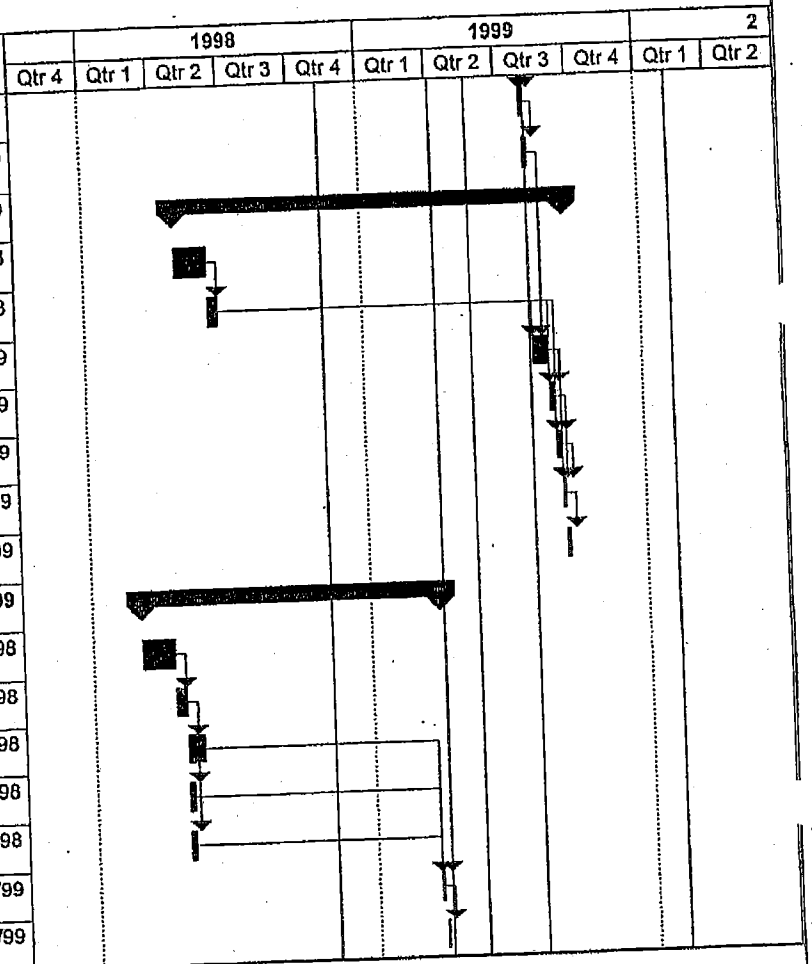
217	15.5.6 System Testing	3d	8/2/99	8/4/99
218	15.5.7 System Acceptance	3d	8/5/99	8/9/99
219	15.6 Moscone Center	364d	4/30/98	9/21/99
220	15.6.1 Equipment Manufacture	30d	4/30/98	6/10/98
221	15.6.2 Equipment Delivery	10d	6/11/98	6/24/98
222	15.6.3 Cable Installation	15d	8/10/99	8/30/99
223	15.6.4 Antenna Installation	5d	8/31/99	9/6/99
224	15.6.5 Amplifier Implementation	5d	9/7/99	9/13/99
225	15.6.6 System Testing	3d	9/14/99	9/16/99
226	15.6.7 System Acceptance	3d	9/17/99	9/21/99
227	15.7 City Jail	279d	3/6/98	3/31/99
228	15.7.1 Equipment Manufacture	30d	3/6/98	4/16/98
229	15.7.2 Equipment Delivery	10d	4/17/98	4/30/98
230	15.7.3 Cable Installation	15d	5/1/98	5/21/98
231	15.7.4 Antenna Installation	5d	5/1/98	5/7/98
232	15.7.5 Amplifier Implementation	5d	5/1/98	5/7/98
233	15.7.6 System Testing	3d	3/24/99	3/26/99
234	15.7.7 System Acceptance	3d	3/29/99	3/31/99



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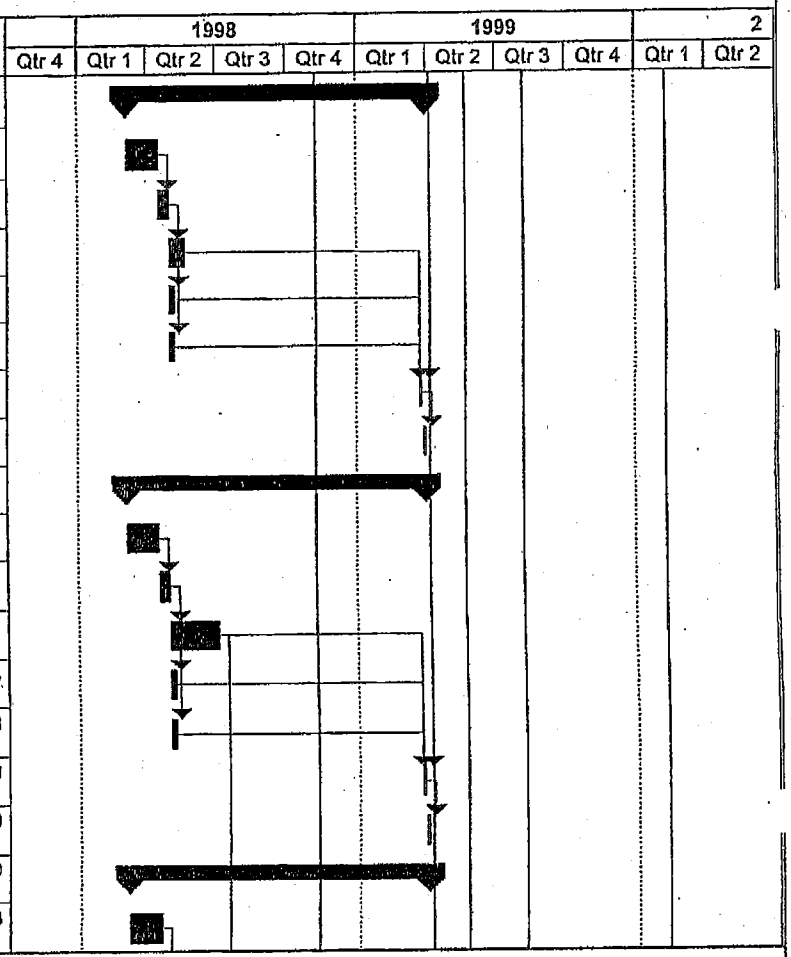
235	15.8 Hall of Justice	279d	3/6/98	3/31/99
236	15.8.1 Equipment Manufacture	30d	3/6/98	4/16/98
237	15.8.2 Equipment Delivery	10d	4/17/98	4/30/98
238	15.8.3 Cable Installation	15d	5/1/98	5/21/98
239	15.8.4 Antenna Installation	5d	5/1/98	5/7/98
240	15.8.5 Amplifier Implementation	5d	5/1/98	5/7/98
241	15.8.6 System Testing	3d	3/24/99	3/26/99
242	15.8.7 System Acceptance	3d	3/29/99	3/31/99
243	15.9 San Bruno Jail # 3 Building	279d	3/6/98	3/31/99
244	15.9.1 Equipment Manufacture	30d	3/6/98	4/16/98
245	15.9.2 Equipment Delivery	10d	4/17/98	4/30/98
246	15.9.3 Cable Installation	46d	5/1/98	7/3/98
247	15.9.4 Antenna Installation	5d	5/1/98	5/7/98
248	15.9.5 Amplifier Implementation	5d	5/1/98	5/7/98
249	15.9.6 System Testing	3d	3/24/99	3/26/99
250	15.9.7 System Acceptance	3d	3/29/99	3/31/99
251	15.10 San Bruno Annex	279d	3/6/98	3/31/99
252	15.10.1 Equipment Manufacture	30d	3/6/98	4/16/98



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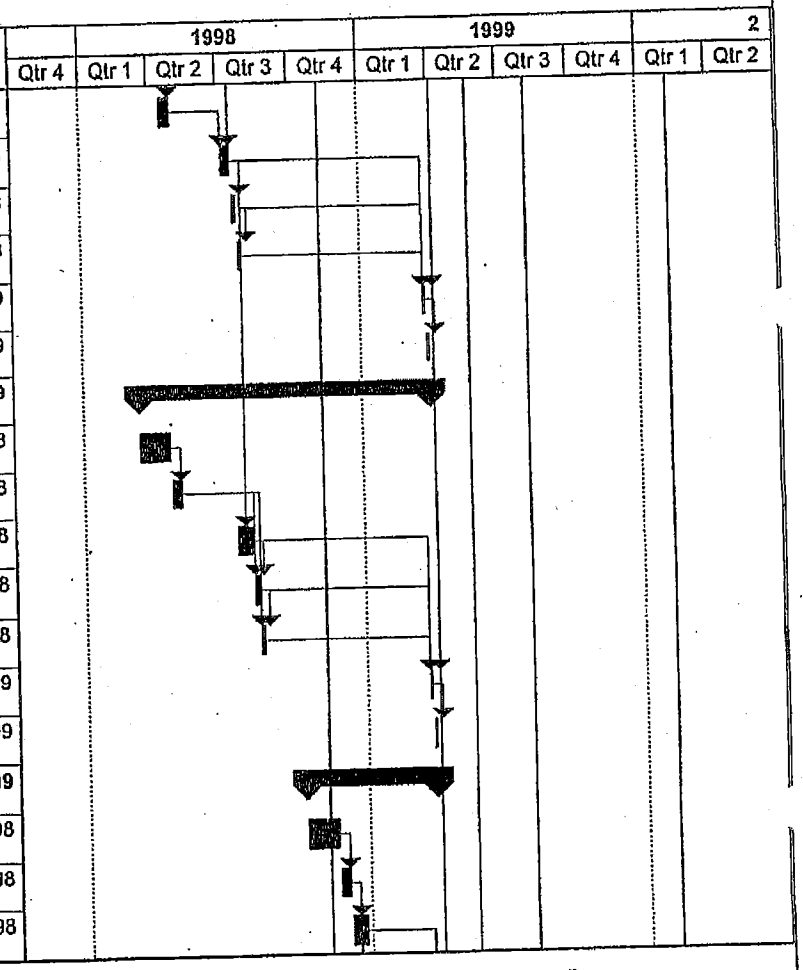
Master Project Schedule

ID	Task Name	Duratio	Start	Finish
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



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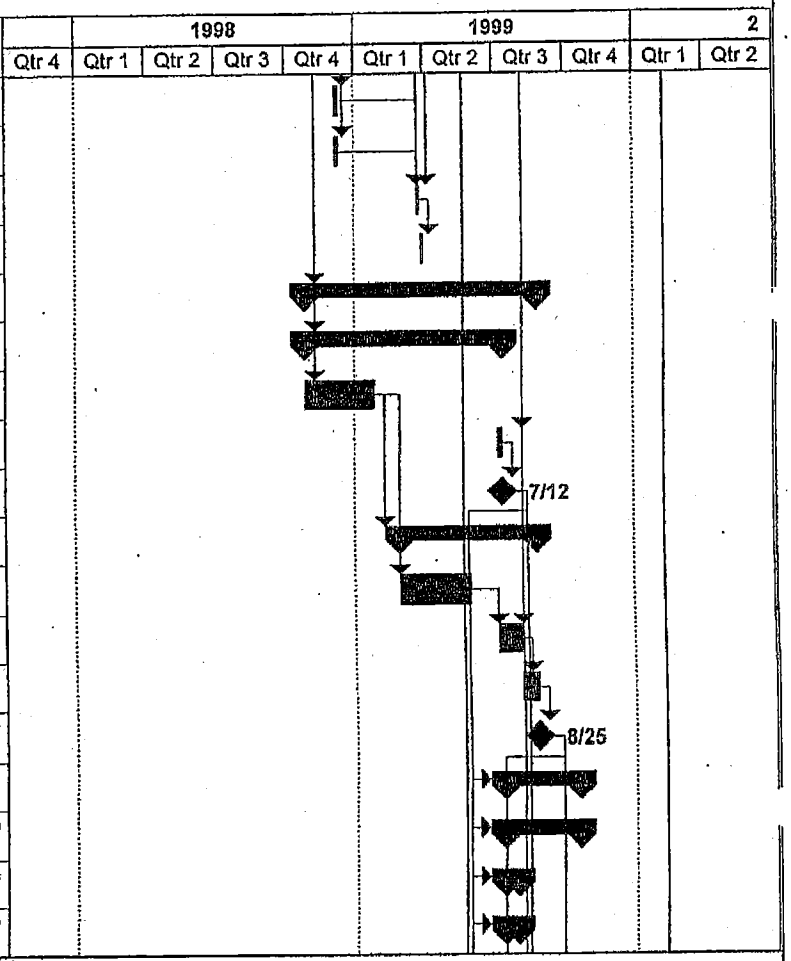
Master Project Schedule

ID	Task Name	Duratio	Start	Finish
271	15.12.4 Antenna Installation	5d	12/7/98	12/11/98
272	15.12.5 Amplifier Implementation	5d	12/7/98	12/11/98
273	15.12.6 System Testing	3d	3/24/99	3/26/99
274	15.12.7 System Acceptance	3d	3/29/99	3/31/99
275	**16 Radio Console Systems (RCS) Installations**	**216d**	**10/28/98**	**8/25/99**
276	**16.1 CC1 Implementation**	**184d**	**10/28/98**	**7/12/99**
277	16.1.1 CCE1 Console System Installation (Group 1)	66d	10/28/98	1/27/99
278	16.1.2 CCE1 System Acceptance Testing	5d	7/6/99	7/12/99
279	16.1.3 CCE1 System Acceptance	0d	7/12/99	7/12/99
280	**16.2 CC2 Implementation**	**128d**	**3/1/99**	**8/25/99**
281	16.2.1 CCE2 Console System Installation (Group2)	66d	3/1/99	5/31/99
282	16.2.2 CCE2 Console Integration	22d	7/6/99	8/4/99
283	16.2.3 CCE2 System Testing	15d	8/5/99	8/25/99
284	16.2.4 CCE2 System Acceptance CRITICAL MILESTONE	0d	8/25/99	8/25/99
285	**17 Training/Cut-over**	**70d**	**7/13/99**	**10/18/99**
286	**17.1 Group 1**	**70d**	**7/13/99**	**10/18/99**
287	**17.1.1 Training**	**13d**	**7/13/99**	**7/29/99**
288	**17.1.1.1 Subscriber**	**13d**	**7/13/99**	**7/29/99**



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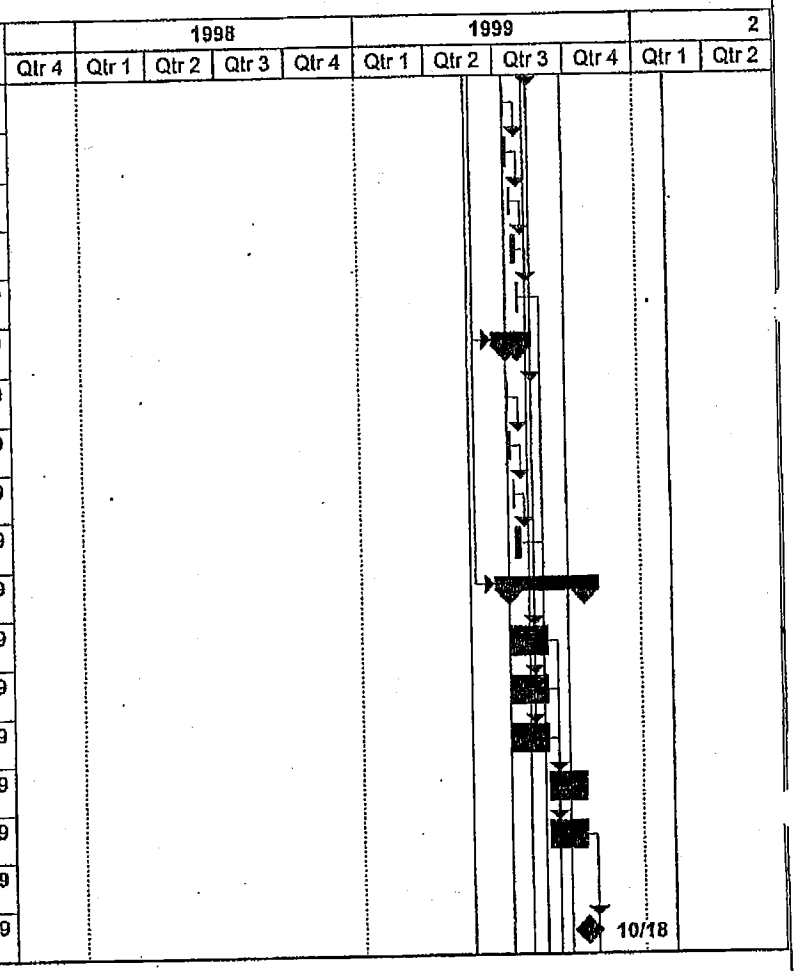
Master Project Schedule

ID	Task Name	Duratio	Start	Finish
289	17.1.1.1.1 DET	2d	7/13/99	7/14/99
290	17.1.1.1.2 RecPark	2d	7/15/99	7/16/99
291	17.1.1.1.3 Water	2d	7/19/99	7/20/99
292	17.1.1.1.4 DPT	4d	7/21/99	7/26/99
293	17.1.1.1.5 Sheriff	3d	7/27/99	7/29/99
294	**17.1.1.2 Console**	**11d**	**7/13/99**	**7/27/99**
295	17.1.1.2.1 DET	2d	7/13/99	7/14/99
296	17.1.1.2.2 Water	2d	7/15/99	7/16/99
297	17.1.1.2.3 DPT	2d	7/19/99	7/20/99
298	17.1.1.2.4 Sheriff	5d	7/21/99	7/27/99
299	**17.1.2 Subscriber Installation Group 1**	**70d**	**7/13/99**	**10/18/99**
300	17.1.2.1 DET (50MD, 25C, 71P)	35d	7/13/99	8/30/99
301	17.1.2.2 RecPark (92MD, 5C, 39P)	35d	7/13/99	8/30/99
302	17.1.2.3 Water (0M, 2C, 46P)	35d	7/13/99	8/30/99
303	17.1.2.4 DPT (81MD, 5C, 364P)	35d	8/31/99	10/18/99
304	17.1.2.5 Sheriff (80MD, 14C, 700P)	35d	8/31/99	10/18/99
305	**17.2 CCE1 Cut-over**	**0d**	**10/18/99**	**10/18/99**
306	17.2.1 CCE1 Cut-over complete CRITICAL MILESTONE	0d	10/18/99	10/18/99



Project: 800 MHz Project
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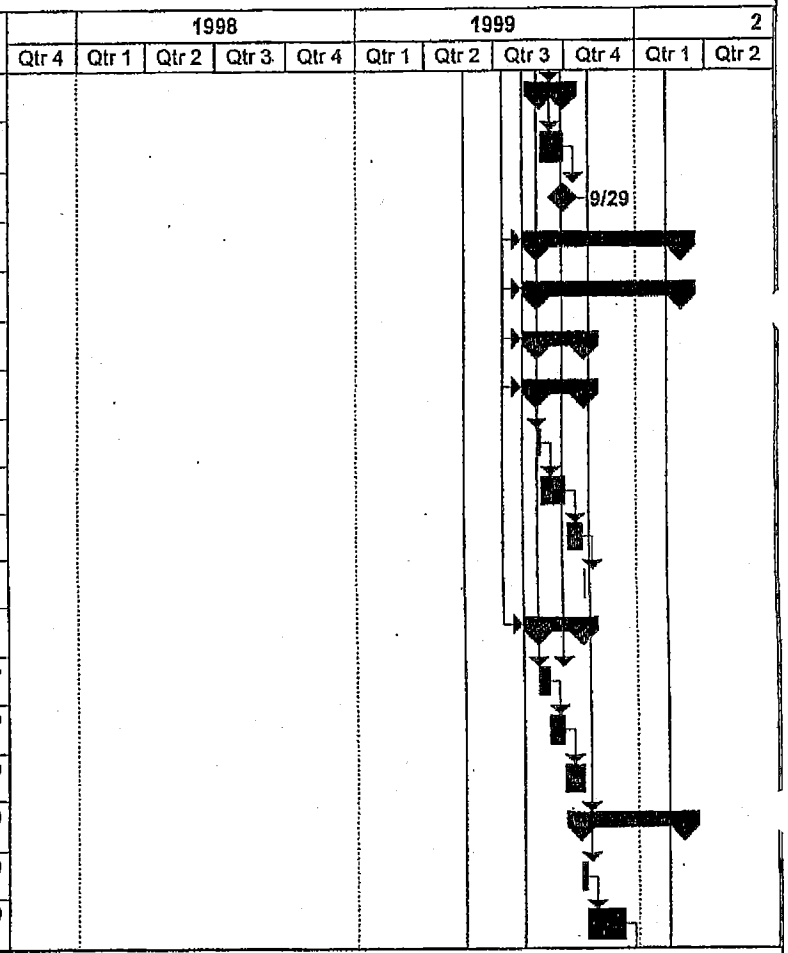
ID	Task Name	Duratio	Start	Finish
307	18 30 Day Confidence test	22d	8/31/99	9/29/99
308	18.1 30 Day Confidence Test	22d	8/31/99	9/29/99
309	18.2 Confidence Test Complete	0d	9/29/99	9/29/99
310	19 Training/Cut-over	134d	8/26/99	2/29/00
311	19.1 Group 2	134d	8/26/99	2/29/00
312	19.1.1 Training	43d	8/26/99	10/25/99
313	19.1.1.1 Subscriber	43d	8/26/99	10/25/99
314	19.1.1.1.1 DPH	3d	8/26/99	8/30/99
315	19.1.1.1.2 Fire	24d	8/31/99	10/1/99
316	19.1.1.1.3 Police	15d	10/4/99	10/22/99
317	19.1.1.1.4 OES	1d	10/25/99	10/25/99
318	19.1.1.2 Console	42d	8/26/99	10/22/99
319	19.1.1.2.1 DPH	10d	8/26/99	9/8/99
320	19.1.1.2.2 Fire	13d	9/9/99	9/27/99
321	19.1.1.2.3 Police	19d	9/28/99	10/22/99
322	19.1.2 Subscriber Installation Group 2	96d	10/19/99	2/29/00
323	19.1.2.1 DPH (30MD, 16C, 90P)	5d	10/19/99	10/25/99
324	19.1.2.2 Fire (230MT, 50C, 230P)	35d	10/26/99	12/13/99



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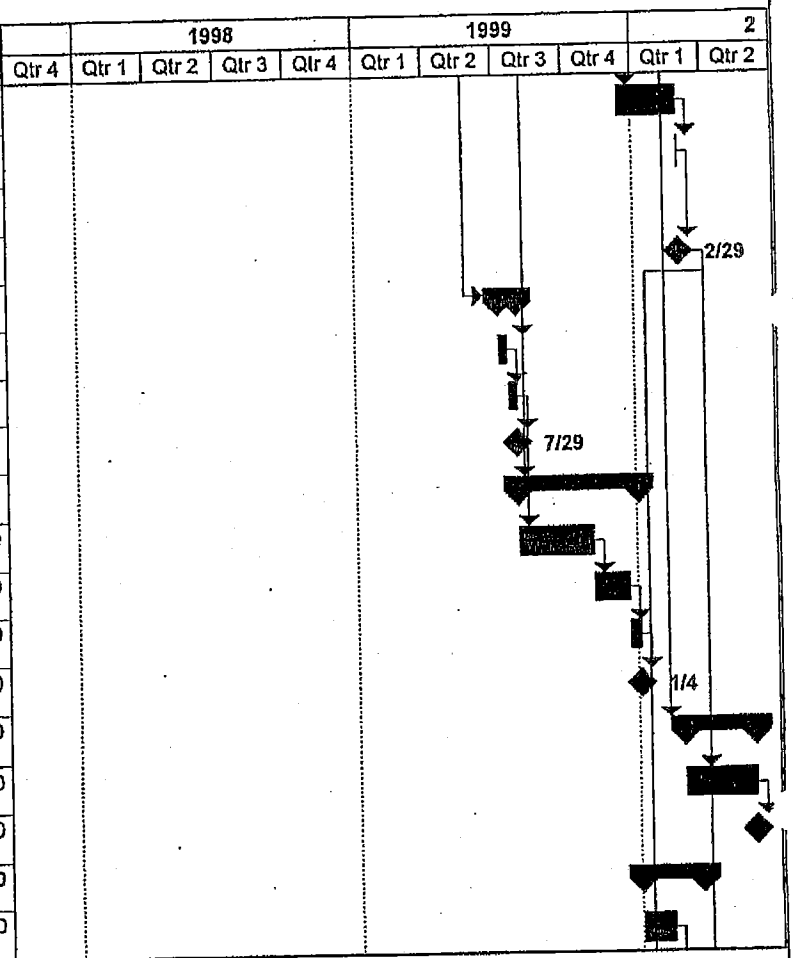
ID	Task Name	Duratio	Start	Finish
325	19.1.2.3 Police (273MD, 111MT, 30C, 1540P)	55d	12/14/99	2/28/00
326	19.1.2.4 OES (3MD ,0C, 20P)	1d	2/29/00	2/29/00
327	19.2 CCE2 Cut-over	0d	2/29/00	2/29/00
328	19.2.1 CCE2 Cut-over complete CRITICAL MILESTONE	0d	2/29/00	2/29/00
329	20 System Management Component Training	18d	7/6/99	7/29/99
330	20.1 Project Manager Training	9d	7/6/99	7/16/99
331	20.2 Technician Training	9d	7/19/99	7/29/99
332	20.3 System Management Component Training Complete	0d	7/29/99	7/29/99
333	21 Technical Training	113d	7/30/99	1/4/00
334	21.1 FNE Training	70d	7/30/99	11/4/99
335	21.2 Subscriber Training	33d	11/5/99	12/21/99
336	21.3 Console Training	10d	12/22/99	1/4/00
337	21.4 Technical Training Complete	0d	1/4/00	1/4/00
338	22 Documentations	66d	3/1/00	5/31/00
339	22.1 As-Built Documentation Preparation	66d	3/1/00	5/31/00
340	22.2 As-Built Document Complete	0d	5/31/00	5/31/00
341	23 Contours	58d	1/3/00	3/22/00
342	23.1 Interference Analysis	30d	1/3/00	2/11/00



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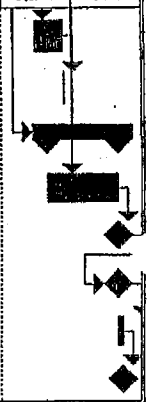
ID	Task Name	Duratio	Start	Finish
343	23.2 Verification Measurements	27d	2/14/00	3/21/00
344	23.3 Contours Complete	1d	3/22/00	3/22/00
345	24 Agreement to Begin Proof of Performance Testing	66d	3/1/00	5/31/00
346	24.1 Proof of Performance Testing	66d	3/1/00	5/31/00
347	24.2 Proof of Performance Testing 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



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4. FINAL ACCEPTANCE 59
5. PROOF OF PERFORMANCE TEST PLAN 60

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.

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

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.

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RF COVERAGE TESTS

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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

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.

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.

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.

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 _____

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.

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.

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative _____ date _____

Motorola Representative _____ date _____

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.

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.**

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative _____ date _____

Motorola Representative _____ date _____

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.

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.**

The signatures below signify that the installation of Motorola supplied equipment complies with the requirements of the City.

City Representative _____ date _____

Motorola Representative _____ date _____

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.

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.

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 _____

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.

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.

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 _____

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.

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

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 _____

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.

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

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 _____

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

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 _____

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.

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 _____

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 _____

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 _____

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 _____

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.

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: _____

2.4.2 Performance Test

CITY AND COUNTY OF SAN FRANCISCO

FIELD

ACCEPTANCE TEST PLAN

SECTION 2

PERFORMANCE TESTS

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.

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.

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.

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 _____

2.4.3 Radio Frequency (RF) Coverage Test

CITY AND COUNTY OF SAN FRANCISCO

FIELD

ACCEPTANCE TEST PLAN

SECTION 3

RF COVERAGE
TESTS

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(SM) 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.

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.

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 s 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.

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 an 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, Buchannan 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)

- 7TH 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

- 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 TH 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(SM) (Fully Automated Coverage Test), will be used to test the radio system coverage. FACTWare(SM) 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(SM) 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(SM) 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(SM). 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(SM) 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.

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(SM), 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(SM) 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

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(SM) 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(SM) equipment will be provided by Motorola for each of the test vehicles and will gather signal data which will be stored and analyzed. The

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(SM) 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.

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(SM) 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(SM) test equipment that was used for the detailed signal level tests performed within the City an 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.

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(SM) 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

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.

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

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.

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 (CERS)
Additional Equipment Price Schedule

Rev: 7/97

Item #		Model	Item Description	Qty	Man Hours Per Unit	Man Hours Total	Labor Hrs Rate	Total $	Material Unit Cost	Material Total $	Subcontracts Unit Cost	Subcontracts Total $	Total Costs
			Exhibit G: User Equipment Price Schedule										
1		*****PORTABLES******											
2		*****MTS2000********	Model 1 w/o Kpd	1		0		$0.00	$0.00	$1,788.50	$50.00	$50.00	$1,838.50
3		H01QX	MTS2000 PORTABLE SERIES			0		$0.00	$963.60				
4		202H	MTS2000 I 3W 806-870 MHZ			0		$0.00	$156.95				
5		H223	ALT: BATTERY,FACTORY MUTUAL			0		$0.00	$48.91				
6		H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
7		H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$502.24				
8		NTN8038	CASE, 3.0" HI ACTIVITY ULTRA HI CAP			0		$0.00	$43.80				
9		*****ASTRO XTS3000**	Model I w/o Kpd	1		0		$0.00	$0.00	$2,264.46	$50.00	$50.00	$2,314.46
10		H09UCC9PW5 N	ASTRO DIG XTS 3000 BASIC 800MH PORT			0		$0.00	$1,237.35				
11		H223	ALT: BATTERY ULTRA HIGH CAP NICD FM			0		$0.00	$34.31				
12		H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
13		Q241	ENH: ANALOG OPERATION			0		$0.00	$0.00				
14		H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$876.00				
15		NTN8386	CASE, CARRY HIGH ACTIVITY			0		$0.00	$43.80				
16		*****ASTRO SABER****	Model 1 w/o Kdp	1		0		$0.00	$0.00	$2,522.88	$50.00	$50.00	$2,572.88
17		H99DX	ASTRO DIG SABER PORT SERIES			0		$0.00	$1,314.00				
18		210H	ASTRO DIGITAL SABER I 800MHZ PORT			0		$0.00	$142.35				
19		H223AJ	ALT: BATTERY, RUGGEDIZED FM			0		$0.00	$4.38				
20		H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
21		H46	ENH: TRUNKED ONE BUTTON STATUS/MSG			0		$0.00	$109.50				
22		H499	ALT: RUGGEDIZED ASTRO DIGITAL SABER			0		$0.00	$346.02				
23		Q241	ENH: ANALOG OPERATION			0		$0.00	$0.00				
24		H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$481.80				
25		NTN7573	CARRY CASE, LEATHER SWIVEL SNAP			0		$0.00	$45.99				
26		NLN4530	BELT LOOP, SWIVEL 3 INCH			0		$0.00	$5.84				
27		*****ASTRO XTS3000**	Model I w/o Kpd w/Encrypt	1		0		$0.00	$0.00	$3,293.03	$50.00	$50.00	$3,343.03
28		H09UCC9PW5 N	ASTRO DIG XTS 3000			0		$0.00	$1,237.35				
29		H223	ALT: BATTERY ULTRA HIGH CAP NICD FM			0		$0.00	$34.31				
30		H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
31		Q806	ADD: APCO 25 COMMON AIR INTERFACE			0		$0.00	$365.00				
32		Q274	ADD: DES-OFB AND DES-XL ENCRYPTION			0		$0.00	$663.57				
33		H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$876.00				
34		NTN8386	CASE, CARRY HIGH ACTIVITY			0		$0.00	$43.80				
35		*****MTS2000********	Model 1 w/o Kpd	1		0		$0.00	$0.00	$2,379.80	$50.00	$50.00	$2,429.80
36		H01QX	MTS2000 PORTABLE SERIES			0		$0.00	$963.60				
37		204H	MTS2000 III 3W 806-870 MHZ			0		$0.00	$636.75				
38		H223	ALT: BATTERY,FACTORY MUTUAL			0		$0.00	$48.91				
39		H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
40		H46	ENH: ONE TOUCH BUTTON			0		$0.00	$109.50				
41		H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$502.24				
42		NTN8038	CASE, 3.0" HI ACTIVITY ULTRA HI CAP			0		$0.00	$43.80				

EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

City and County of San Francisco
Citywide 800MHz Radio System Project-(CERS)
Additional Equipment Price Schedule
Rev: 7/97

Item #		Model	Item Description	Qty	Man Hours Per Unit	Man Hours Total	Labor Hrs Rate	Total $	Material Unit Cost	Material Total $	Subcontracts Unit Cost	Subcontracts Total $	Total Costs
43		*****ASTRO XTS3000**	Model I w/o Kpd	1		0		$0.00	$0.00	$2,811.96	$50.00	$50.00	$2,861.96
44		H09UCH9PW7 N	ASTRO DIG XTS 3000 FULL FEATURE 800			0		$0.00	$1,675.35				
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	$876.00				
50		NTN8381	CASE, CARRY HIGH ACTIVITY			0		$0.00	$43.80				
51		*****ASTRO SABER****	Model II w/o Kdp	1		0		$0.00	$0.00	$2,741.88	$50.00	$50.00	$2,791.88
52		H99DX	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	$4.38				
55		H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
56		H46	ENH: TRUNKED ONE BUTTON 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	$481.80				
60		NLN4530	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/Kpd w/Encrypt	1		0		$0.00	$0.00	$3,840.53	$50.00	$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-OFB AND DES-XL ENCRYPTION			0		$0.00	$663.57				
68		Q806	ADD: APCO 25 COMMON AIR INTERFACE			0		$0.00	$365.00				
69		H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$876.00				
70		NTN8381	CASE, CARRY HIGH ACTIVITY			0		$0.00	$43.80				
71		*****ASTRO SABER****	Model II w/Kdp & Encryp Rugged	1		0		$0.00	$0.00	$3,770.45	$50.00	$50.00	$3,820.45
72		H99DX	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	$4.38				
75		H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
76		H46	ENH: TRUNKED ONE BUTTON STATUS/MSG			0		$0.00	$109.50				
77		H499	ALT: RUGGEDIZED ASTRO DIGITAL SABER			0		$0.00	$346.02				
78		Q274	ADD: DES OFB AND DES-XL			0		$0.00	$663.57				
79		Q806	ADD: APCO 25 COMMON AIR INTERFACE			0		$0.00	$365.00				
80		H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$481.80				
81		NLN4530	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**********										
84		*****MCS2000*****	Model III, w/ Kpd	1		0		$0.00	$0.00	$2,011.15	$250.00	$250.00	$2,261.15
85		M01HX	MCS2000 HIGH SPEC MOBILE			0		$0.00	$693.50				
86		822W	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: TRUNKING 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				

City and County of San Francisco
Citywide 800MHz Radio System Project (CERS)
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Item #		Model	Item Description	Qty	Man Hours Per Unit	Man Hours Total	Labor Hrs Rate	Labor Total $	Material Unit Cost	Material Total $	Subcontracts Unit Cost	Subcontracts Total $	Total Costs
92		*****ASTRO SPECTA***	Model A7, w/Kpd	1		0		$0.00	$0.00	$2,457.18	$250.00	$250.00	$2,707.18
93		T99DX	ASTRO DIG SPECTRA MOBILE SERIES			0		$0.00	$1,525.70				
94		132W	35W 800 806-870 A7			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/Kpd & Encrypt	1		0		$0.00	$0.00	$3,522.25	$250.00	$250.00	$3,772.25
100		T99DX	ASTRO DIG SPECTRA MOBILE SERIES			0		$0.00	$1,525.70				
101		132W	35W 800 806-870 A7			0		$0.00	$397.85				
102		G806	ENH: ASTRO DIGITAL CAI			0		$0.00	$401.50				
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-OFB/DES-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/Kpd	1		0		$0.00	$0.00	$2,673.99	$600.00	$600.00	$3,273.99
109		T99DX	ASTRO DIG SPECTRA MOBILE SERIES			0		$0.00	$1,525.70				
110		132W	35W 800 806-870 A7			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/Kpd & Encrypt	1		0		$0.00	$0.00	$3,739.06	$600.00	$600.00	$4,339.06
117		T99DX	ASTRO DIG SPECTRA MOBILE SERIES			0		$0.00	$1,525.70				
118		132W	35W 800 806-870 A7			0		$0.00	$397.85				
119		G806	ENH: ASTRO DIGITAL CAI			0		$0.00	$401.50				
120		W688	ADD: EXTERNAL EMERGENCY PUSHBUTTON			0		$0.00	$40.88				
121		W432	ENH: 10 WATT AUDIO			0		$0.00	$10.96				
122		G274	ENH: DES-OFB/DES-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/Kdp	1		0		$0.00	$0.00	$3,915.84	$750.00	$750.00	$5,057.46
127		L99DX	ASTRO SPECTRA			0		$0.00	$2,328.70				
128		259L	W7 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		TDF6441	ANTENNA, 6DB 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	$2.12	$106.00			
134		TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	4		0		$0.00	$32.85	$131.40			
135		TDN9289	CABLE WRAP, WEATHERPROOFING	1		0		$0.00	$27.38	$27.38			
136		RLN4264A	LIGHTNING ARRESTOR /SURGE	1		0		$0.00	$46.54	$46.54			

City and County of San Francisco
Citywide 800MHz Radio System Project (CERS)
Additional Equipment Price Schedule

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Item #		Model	Item Description	Qty	Man Hours Per Unit	Man Hours Total	Labor Hrs Rate	Total $	Material Unit Cost	Material Total $	Subcontracts Unit Cost	Subcontracts Total $	Total Costs
137		*****SPECTRA********	Remote Control, w/Kdp	1		0		$0.00	$0.00	$5,682.44	$750.00	$750.00	$8,276.76
138		L99DX	ASTRO SPECTRA			0		$0.00	$2,328.70				
139		254L	339L5-35W 800 MHZ			0		$0.00	$1,084.05				
140		G241	ADD: ANALOG ONLY MODE			0		$0.00	$0.00				
141		L114	ADD: CLOCK VU METER			0		$0.00	$73.00				
142		G50	ENH: SMARTNET OPERATION			0		$0.00	$461.80				
143		TRN7466	MOUNTING BRACKET EIA 19"			0		$0.00	$73.00				
144		TDF6441	ANTENNA, 6DB 3 ELEMENT YAGI	1		0		$0.00	$80.30	$80.30			
145		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	50		0		$0.00	$2.12	$106.00			
146		TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	4		0		$0.00	$32.85	$131.40			
147		TDN9289	CABLE WRAP, WEATHERPROOFING	1		0		$0.00	$27.38	$27.38			
148		RLN4264A	LIGHTNING ARRESTOR /SURGE	1		0		$0.00	$46.54	$46.54			
149		L1751	DESKSET, REMOTE, ASTRO DGT9000	1		0		$0.00	$872.35	$872.35			
150		L1752	ADAPTER, REMOTE, ASTRO DGT9000	1		0		$0.00	$580.35	$580.35			
151		*****ASTRO SECTRA***	Local Control, w/Kpd & Encrpt.	1		0		$0.00	$0.00	$4,980.91	$750.00	$750.00	$6,122.53
152		L99DX	ASTRO SPECTRA			0		$0.00	$2,328.70				
153		259L	W7 25W 800MHZ			0		$0.00	$843.15				
154		G241	ADD: ANALOG ONLY MODE			0		$0.00	$0.00				
155		L114	ADD: CLOCK VU METER			0		$0.00	$73.00				
156		G50	ENH: SMARTNET OPERATION			0		$0.00	$461.80				
157		G274	ADD: DES OFB/DES-XL			0		$0.00	$663.57				
158		G806	ENH: ASTRO DIGITAL CAI OPERATION			0		$0.00	$401.50				
159		TDF6441	ANTENNA, 6DB 3 ELEMENT YAGI	1		0		$0.00	$80.30	$80.30			
160		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	50		0		$0.00	$2.12	$106.00			
161		TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	4		0		$0.00	$32.85	$131.40			
162		TDN9289	CABLE WRAP, WEATHERPROOFING	1		0		$0.00	$27.38	$27.38			
163		RLN4264A	LIGHTNING ARRESTOR /SURGE	1		0		$0.00	$46.54	$46.54			
164		*****ASTRO SECTRA***	Remote Control, w/Kpd & Encrypt	1		0		$0.00	$0.00	$6,747.51	$750.00	$750.00	$9,341.83
165		L99DX	ASTRO SPECTRA	1		0		$0.00	$2,328.70				
166		254L	339L5-35W 800 MHZ			0		$0.00	$1,084.05				
167		L114	ADD: CLOCK VU METER			0		$0.00	$73.00				
168		G274	ADD: DES OFB/DES-XL			0		$0.00	$663.57				
169		G806	ENH: ASTRO DIGITAL CAI OPERATION			0		$0.00	$401.50				
170		G50	ENH: SMARTNET OPERATION			0		$0.00	$461.80				
171		TRN7466	MOUNTING BRACKET EIA 19"			0		$0.00	$73.00				
172		TDF6441	ANTENNA, 6DB 3 ELEMENT YAGI	1		0		$0.00	$80.30	$80.30			
173		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	50		0		$0.00	$2.12	$106.00			
174		TDN8814	1/2" CONNECTOR, N PLUG LDF PLTD	4		0		$0.00	$32.85	$131.40			
175		TDN9289	CABLE WRAP, WEATHERPROOFING	1		0		$0.00	$27.38	$27.38			
176		RLN4264A	LIGHTNING ARRESTOR /SURGE	1		0		$0.00	$46.54	$46.54			
177		L1751	DESKSET, REMOTE, ASTRO DGT9000	1		0		$0.00	$872.35	$872.35			
178		L1752	ADAPTER, REMOTE, ASTRO DGT9000	1		0		$0.00	$580.35	$580.35			

EXHIBIT G: ADDITIONAL EQUIPMENT PRICE SCHEDULE

City and County of San Francisco
Citywide 800MHz Radio System Project (CERS)
Additional Equipment Price Schedule
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Item #	Model	Item Description	Man Hours Qty	Man Hours Per Unit	Man Hours Total	Labor Hrs Rate	Labor Total $	Material Unit Cost	Material Total $	Subcontracts Unit Cost	Subcontracts Total $	Total Costs
179	****ACCESSORIES****				0		$0.00					
180	******PORTABLE*******	******MTS2000**********			0		$0.00	$0.00				
181	NTN7147	BATTERY,FMIS,ULTRA-HIGH CAP	1		0		$0.00	$110.96	$110.96		$0.00	$110.96
182	NTN1171	CHARGER,110V SINGLE COMPACT	1		0		$0.00	$65.70	$65.70		$0.00	$65.70
183	NTN1177	CHARGER, 110V MULTI RAPID	1		0		$0.00	$492.75	$492.75		$0.00	$492.75
184	NMN6191	AUDIO ACC,REMOTE SPEAKER/MIC	1		0		$0.00	$67.16	$67.16		$0.00	$67.16
185	NTN7318	CARRY ACC,BELT CLIP 3"	1		0		$0.00	$10.95	$10.95		$0.00	$10.95
186	NTN8038	CASE, 3.0" HI ACTIVITY ULTRA HI CAP	1		0		$0.00	$43.80	$43.80		$0.00	$43.80
187	NAF5037	ANT, 1/2 WAVELENGTH WHIP	1		0		$0.00	$24.09	$24.09		$0.00	$24.09
188	******PORTABLE*******	******XTS3000**********			0		$0.00	$0.00	$0.00		$0.00	$0.00
189	NTN8295	BATTERY, NICAD ULTRA HI CAP FM	1		0		$0.00	$137.97	$137.97		$0.00	$137.97
190	NTN1168	CHARGER,110V SINGLE ENH	1		0		$0.00	$91.25	$91.25		$0.00	$91.25
191	NTN1177	CHARGER, 110V MULTI RAPID	1		0		$0.00	$492.75	$492.75		$0.00	$492.75
192	NMN6191	AUDIO ACC,REMOTE SPEAKER/MIC	1		0		$0.00	$67.16	$67.16		$0.00	$67.16
193	NTN8266	ATTACHMENT, REMOVEABLE BELT CLIP	1		0		$0.00	$7.30	$7.30		$0.00	$7.30
194	NTN8381	CASE, CARRY HIGH ACTIVITY	1		0		$0.00	$43.80	$43.80		$0.00	$43.80
195	NTN8386	CASE, CARRY HIGH ACTIVITY	1		0		$0.00	$43.80	$43.80		$0.00	$43.80
196	NAF5037	ANT, 1/2 WAVELENGTH WHIP	1		0		$0.00	$24.09	$24.09		$0.00	$24.09
197	********PORTABLE******	******ASTRO SABER**********			0		$0.00	$0.00	$0.00		$0.00	$0.00
198	NTN7058	BATTERY, ULTRA HI CAP RUGGEDIZED	1		0		$0.00	$113.15	$113.15		$0.00	$113.15
199	NTN4734	CHARGER, DESKTOP SINGLE UNIT 117V	1		0		$0.00	$164.98	$164.98		$0.00	$164.98
200	NTN4796	CHARGER, DESKTOP MULTI UNIT 117V	1		0		$0.00	$575.24	$575.24		$0.00	$575.24
201	NMN6217	MICROPHONE, REMOTE SPEAKER	1		0		$0.00	$102.93	$102.93		$0.00	$102.93
202	NTN7309	BELT CLIP ATTACHMENT, REMOVEABLE	1		0		$0.00	$16.79	$16.79		$0.00	$16.79
203	NTN7573	CARRY CASE, LEATHER SWIVEL SNAP	1		0		$0.00	$45.99	$45.99		$0.00	$45.99
204	NAF5037	ANT, 1/2 WAVELENGTH WHIP	1		0		$0.00	$24.09	$24.09		$0.00	$24.09

Note: Additional equipment not found on this list is contained in the "R01 domestic price book," "RD-PP-7/97 radius price book," and "R81R 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

Classification	Rate Per Hour
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 "WDN 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

11. Exhibit J
Form of SW license

SOFTWARE LICENSE AGREEMENT

This Software License Agreement ("Agreement") dated as of September 22, 1997 is between Motorola, Inc., a Delaware corporation, 1301 E. Algonquin Road, Schaumburg, IL 60196 ("Motorola"), and the City and County of San Francisco 901 Rankin St.,San Francisco, CA 94124 ("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 Agreement defined herein. This Agreement is subject to the terms and conditions of the Citywide 800 MHz Radio System Project Agreement, dated as of September 22, 1997, including Article 11 thereof (the "Agreement").

Section 3 LIMITATIONS ON USE

Licensee may use Motorola Software only for Licensee's internal business purposes and only as described in the 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. <u>Consent required</u>. With the prior written consent of Motorola, the Licensee 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. <u>Consent for Assignment to the Corporation</u>. Licensee hereby represents to Motorola that the Licensee intends to finance the 800 MHz radio system with governmental securities

secured by certain lease payments of the Licensee. In connection with the financing, certain assignments of the software licenses (including Radio Service Software and FLASHport Software) between the Licensee, the Financial Trustee (as defined in the Agreement) and the City and County of San Francisco Finance Corporation will be necessary for the financing ("Financing Assignments"). To allow the Licensee 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 Licensee'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 Agreement.

Section 8 LIMITED WARRANTY

For two (2) years after initial shipment of Motorola Software, or for the Warranty Period specified in the 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 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 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 Licensee, Motorola shall send written notice to the Licensee and the Corporation. Both the Licensee and the Corporation shall have thirty (30) days to cure such breach. Should the Licensee 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 Licensee and Corporation.

Section 11 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:

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

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 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 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 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

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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 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 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

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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
SCOTT DODGE DATE
MOTOROLA
CONTRACTS AND COMPLIANCE DEPT.

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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 License 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 _____

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 FlexSAFEEnrollments. 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 servi 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:

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

Invoices to Depositor should be addressed to:

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:

DSI
Contract Administration
Suite 200
9555 Chesapeake Drive
San Diego, CA 92123

Telephone: (619) 694-1900
Facsimile: (619) 694-1919

Invoice inquiries and fee remittances to DSI should be addressed to:

DSI
Accounts Receivable
Suite 1450
425 California Street
San Francisco, CA 94104

(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 toFlexSAFE 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

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EXHIBIT L: PROJECT TRAINING

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.

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%.

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

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

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.

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.

Table 1 – Training Sessions

Department	Portable	Mobile	Control Station	Console / User	Console/ Instructor
Police					
Day	10	10	10	5	3
After Hours	5	5	5	8	0
Fire	24	24	24	9	2
Sheriff					
Day	2	2	2	2	1
After Hours	1	1	1	1	0
DPH					
Day	2	2	2	4	2
After Hours	1	1	1	2	0
Water	3	0	0	2	2
Park & Rec	2	2	2	0	0
DES	2	0	0	0	0
DET	2	2	2	2	0
TOTAL	**54**	**49**	**49**	**35**	**10**

Table 2, below, lists the total number of students to be trained.

EXHIBIT L: PROJECT TRAINING

Table 2—User Training Requirements

	Type	Portable			Mobile			Consoles			
DEPT		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	14
	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	1
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-	Staff	18	94	18	10	61	10	n/a	n/a	0	0
Park	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	
TOTALS				706			655			291	52

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

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 VersiTility 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

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 SystemWatch II product, and will provide in-depth, hands-on training for SystemWatch 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 SystemWatch II Trunking Terminal System and to prepare them to operate the system on a daily basis.
Class Size
Nine students.

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

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

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

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

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

PrismPlus Options
Introduction
Alarm system for the PrismPlus
Weather resistant version of the PrismPlus
Troubleshooting
Introduction
Troubleshooting procedures
Troubleshooting steps
Specifications

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

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

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

7.4 MICROWAVE TRANSMISSION SYSTEM

7.4.1 The Digital VersiTility 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

Day 4
Discussion of Alignment Procedures
Alignment Lab

Day 5
Discuss Troubleshooting Procedures
Troubleshooting Lab

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

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

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

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

7.5.5 Astro Spectra Mobile

To be included later.

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.

7.5.7 Astro Saber Portable

To be included later.

7.5.8 XTS 3000 Portables

To be included later.

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 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 22nd 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

(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
PAGERNO.	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:

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:

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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

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:

Signature for Department

M. Lee Martin
Printed Name

911 Director
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:

Steven D. Nelson
Director of Administrative Services

CONTRACTOR

MOTOROLA, INC.

By

Title VICE PRESIDENT

APPROVED AS TO FORM 5/21/98
RICHARD F. RYAN DATE
MOTOROLA

City and County of San Francisco
Citywide 800MHz Radio System Project (CERS)
Additional Equipment Price Schedule

Rev: 5/98

Item #	Model	Item Description	Qty	Man Hours Per Unit	Man Hours Total	Labor Hrs Rate	Labor Total $	Material Unit Cost	Material Total $	Subcontracts Unit Cost	Subcontracts Total $	Total Costs
		Exhibit G: User Equipment Price Schedule										
1	*****PORTABLES******											
2	*****MTS2000********	Model 1 w/o Kpd	1		0		$0.00	$0.00	$1,788.50	$50.00	$50.00	$1,838.50
3	H01QX --	MTS2000 PORTABLE SERIES			0		$0.00	$963.60				
4	202H	MTS2000 I 3W 806-870 MHZ			0		$0.00	$156.95				
5	H223	ALT: BATTERY,FACTORY MUTUAL			0		$0.00	$48.91				
6	H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
7	H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$502.24				
8	NTN8038	CASE, 3.0" HI ACTIVITY ULTRA HI CAP			0		$0.00	$43.80				
9	*****ASTRO XTS3000**	Model I w/o Kpd	1		0		$0.00	$0.00	$2,264.46	$50.00	$50.00	$2,314.46
10	H09UCC9PW5 N	ASTRO DIG XTS 3000 BASIC 800MH PORT			0		$0.00	$1,237.35				
11	H223	ALT: BATTERY ULTRA HIGH CAP NICD FM			0		$0.00	$34.31				
12	H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
13	Q241	ENH: ANALOG OPERATION			0		$0.00	$0.00				
14	H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$876.00				
15	NTN8366	CASE, CARRY HIGH ACTIVITY			0		$0.00	$43.80				
16	*****ASTRO SABER*****	Model 1 w/o Kdp	1		0		$0.00	$0.00	$2,522.88	$50.00	$50.00	$2,572.88
17	H99QX	ASTRO DIG SABER PORT SERIES			0		$0.00	$1,314.00				
18	210H	ASTRO DIGITAL SABER I 800MHZ PORT			0		$0.00	$142.35				
19	H223AJ	ALT: BATTERY, RUGGEDIZED FM			0		$0.00	-$4.38				
20	H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
21	H48	ENH: TRUNKED ONE BUTTON STATUS/MSG			0		$0.00	$109.50				
22	H499	ALT: RUGGEDIZED ASTRO DIGITAL SABER			0		$0.00	$346.02				
23	Q241	ENH: ANALOG OPERATION			0		$0.00	$0.00				
24	H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$481.80				
25	NTN7673	CARRY CASE, LEATHER SWIVEL SNAP			0		$0.00	$45.09				
26	NLN4530	BELT LOOP, SWIVEL 3 INCH			0		$0.00	$5.84				
27	*****ASTRO XTS3000**	Model I w/o Kpd w/Encrypt	1		0		$0.00	$0.00	$3,176.23	$50.00	$50.00	$3,226.23
28	H09UCC9PW5 N	ASTRO DIG XTS 3000			0		$0.00	$1,237.35				
29	H223	ALT: BATTERY ULTRA HIGH CAP NICD FM			0		$0.00	$34.31				
30	H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
31	Q806	ADD: APCO 25 COMMON AIR INTERFACE			0		$0.00	$365.00				
32	H69	ADD; DES-OFB			0		$0.00	$546.77				
33	H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$876.00				
34	NTN8366	CASE, CARRY HIGH ACTIVITY			0		$0.00	$43.80				
35	*****MTS2000********	Model 1 w/o Kpd	1		0		$0.00	$0.00	$2,379.80	$50.00	$50.00	$2,429.80
36	H01QX	MTS2000 PORTABLE SERIES			0		$0.00	$963.60				
37	204H	MTS2000 III 3W 806-870 MHZ			0		$0.00	$636.75				
38	H223	ALT: BATTERY,FACTORY MUTUAL			0		$0.00	$48.91				
39	H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
40	H48	ENH: ONE TOUCH BUTTON			0		$0.00	$109.50				
41	H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$502.24				
42	NTN8038	CASE, 3.0" HI ACTIVITY ULTRA HI CAP			0		$0.00	$43.80				

City and County of San Francisco
Citywide 800MHz Radio System Project (CERS)
Additional Equipment Price Schedule
Rev: 5/98

Item #		Model	Item Description	Qty	Man Hours Per Unit	Man Hours Total	Labor Hrs Rate	Labor Total $	Material Unit Cost	Material Total $	Subcontracts Unit Cost	Subcontracts Total $	Total Costs
43		*****ASTRO XTS3000**	Model I w/o Kpd	1		0		$0.00	$0.00	$2,811.96	$50.00	$50.00	$2,861.96
44		H09UCH9PW7 N	ASTRO DIG XTS 3000 FULL FEATURE 800			0		$0.00	$1,675.35				
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	$876.00				
50		NTN8381	CASE, CARRY HIGH ACTIVITY			0		$0.00	$43.80				
51		*****ASTRO SABER****	Model II w/o Kdp	1		0		$0.00	$0.00	$2,741.88	$50.00	$50.00	$2,791.88
52		H99DX	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	$4.38				
55		H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
56		H46	ENH: TRUNKED ONE BUTTON 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	$481.80				
60		NLN4530	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/Kpd w/Encrypt	1		0		$0.00	$0.00	$3,840.53	$50.00	$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-OFB AND DES-XL ENCRYPTION			0		$0.00	$683.57				
68		Q806	ADD: APCO 25 COMMON AIR INTERFACE			0		$0.00	$365.00				
69		H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$876.00				
70		NTN8381	CASE, CARRY HIGH ACTIVITY			0		$0.00	$43.80				
71		*****ASTRO SABER****	Model II w/Kdp & Encryp Rugged	1		0		$0.00	$0.00	$3,653.65	$50.00	$50.00	$3,703.65
72		H99DX	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	$4.38				
75		H43	ENH: TRUNKED REMOTE MONITOR			0		$0.00	$73.00				
76		H46	ENH: TRUNKED ONE BUTTON STATUS/MSG			0		$0.00	$109.50				
77		H499	ALT: RUGGEDIZED ASTRO DIGITAL SABER			0		$0.00	$346.02				
78		H80	ADD: DES OFB			0		$0.00	$546.77				
79		Q806	ADD: APCO 25 COMMON AIR INTERFACE			0		$0.00	$365.00				
80		H37	ADD: SMARTNET SYSTEM PACKAGE			0		$0.00	$481.80				
81		NLN4530	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**********										
84		*****MCS2000*****	Model III, w/ Kpd	1		0		$0.00	$0.00	$2,011.15	$250.00	$250.00	$2,261.15
85		M01HDC	MCS2000 HIGH SPEC MOBILE			0		$0.00	$693.50				
86		822W	800MHZ 15W MODEL II			0		$0.00	$653.35				
87		B880	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: TRUNKING 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				

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City and County of San Francisco
Citywide 800Mhz Radio System Project (CERS)
Additional Equipment Price Schedule

Rev: 5/98

Item #	Model	Item Description	Man Hours Qty	Man Hours Per Unit	Man Hours Total	Labor Hrs Rate	Labor Total $	Material Unit Cost	Material Total $	Subcontracts Unit Cost	Subcontracts Total $	Total Costs
92	*****ASTRO SPECTA***	Model A7, w/Kpd	1		0		$0.00	$0.00	$2,457.18	$250.00	$250.00	$2,707.18
93	T99DX	ASTRO DIG SPECTRA MOBILE SERIES			0		$0.00	$1,525.70				
94	132W	35W 800 806-870 A7			0		$0.00	$397.85				
95	W888	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/Kpd & Encrypt	1		0		$0.00	$0.00	$3,405.45	$250.00	$250.00	$3,655.45
100	T99DX	ASTRO DIG SPECTRA MOBILE SERIES			0		$0.00	$1,525.70				
101	132W	35W 800 806-870 A7			0		$0.00	$397.85				
102	G806	ENH: ASTRO DIGITAL CAI			0		$0.00	$401.50				
103	W888	ADD: EXTERNAL EMERGENCY PUSHBUTTON			0		$0.00	$40.88				
104	W432	ENH: 10 WATT AUDIO			0		$0.00	$10.95				
105	G105	ENH: DES-OFB			0		$0.00	$546.77				
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/Kpd	1		0		$0.00	$0.00	$2,673.99	$600.00	$600.00	$3,273.99
109	T99DX	ASTRO DIG SPECTRA MOBILE SERIES			0		$0.00	$1,525.70				
110	132W	35W 800 806-870 A7			0		$0.00	$397.85				
111	W888	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	W486	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/Kpd & Encrypt	1		0		$0.00	$0.00	$3,622.26	$600.00	$600.00	$4,222.26
117	T99DX	ASTRO DIG SPECTRA MOBILE SERIES			0		$0.00	$1,525.70				
118	132W	35W 800 806-870 A7			0		$0.00	$397.85				
119	G806	ENH: ASTRO DIGITAL CAI			0		$0.00	$401.50				
120	W888	ADD: EXTERNAL EMERGENCY PUSHBUTTON			0		$0.00	$40.88				
121	W432	ENH: 10 WATT AUDIO			0		$0.00	$10.95				
122	G105	ENH: DES-OFB			0		$0.00	$546.77				
123	W486	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/Kdp	1		0		$0.00	$0.00	$3,915.64	$850.00	$850.00	$5,157.46
127	L99DX	ASTRO SPECTRA			0		$0.00	$2,328.70				
128	259L	W7 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	TDF8441	ANTENNA, 8DB 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	$2.12	$106.00			
134	TDN9814	1/2" CONNECTOR, N PLUG LDF PLTD	4		0		$0.00	$32.85	$131.40			
135	TDN9289	CABLE WRAP, WEATHERPROOFING	1		0		$0.00	$27.38	$27.38			
136	RLN4284A	LIGHTNING ARRESTOR /SURGE	1		0		$0.00	$46.54	$46.54			

City and County of San Francisco
Citywide 800MHz Radio System Project (CERS)
Additional Equipment Price Schedule

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Item #		Model	Item Description	Man Hours Qty	Man Hours Per Unit	Man Hours Total	Labor Hrs Rate	Labor Total $	Material Unit Cost	Material Total $	Subcontracts Unit Cost	Subcontracts Total $	Total Costs
137		*****SPECTRA********	Remote Control, w/Kdp	1		0		$0.00	$0.00	$5,682.44	$750.00	$750.00	$8,276.76
138		L99DX	ASTRO SPECTRA			0		$0.00	$2,328.70				
139		254L	339L5-35W 800 MHZ			0		$0.00	$1,084.05				
140		G241	ADD: ANALOG ONLY MODE			0		$0.00	$0.00				
141		L114	ADD: CLOCK VU METER			0		$0.00	$73.00				
142		G50	ENH: SMARTNET OPERATION			0		$0.00	$481.80				
143		TRN7466	MOUNTING BRACKET EIA 19"			0		$0.00	$73.00				
144		TDF6441	ANTENNA, 6DB 3 ELEMENT YAGI	1		0		$0.00	$80.30	$80.30			
145		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	50		0		$0.00	$2.12	$106.00			
146		TDN6814	1/2" CONNECTOR, N PLUG LDF PLTD	4		0		$0.00	$32.85	$131.40			
147		TDN9289	CABLE WRAP, WEATHERPROOFING	1		0		$0.00	$27.38	$27.38			
148		RLN4264A	LIGHTNING ARRESTOR /SURGE	1		0		$0.00	$46.54	$46.54			
149		L1751	DESKSET, REMOTE, ASTRO DGT9000	1		0		$0.00	$872.35	$872.35			
150		L1752	ADAPTER, REMOTE, ASTRO DGT9000	1		0		$0.00	$580.35	$580.35			
151		*****ASTRO SECTRA***	Local Control, w/Kpd & Encrpt.	1		0		$0.00	$0.00	$4,864.11	$750.00	$750.00	$6,005.73
152		L99DX	ASTRO SPECTRA			0		$0.00	$2,328.70				
153		259L	W7 25W 800MHZ			0		$0.00	$843.15				
154		G241	ADD: ANALOG ONLY MODE			0		$0.00	$0.00				
155		L114	ADD: CLOCK VU METER			0		$0.00	$73.00				
156		G50	ENH: SMARTNET OPERATION			0		$0.00	$481.80				
157		G185	ADD: DES OFB			0		$0.00	$546.77				
158		G808	ENH: ASTRO DIGITAL CAI OPERATION			0		$0.00	$401.50				
159		TDF6441	ANTENNA, 6DB 3 ELEMENT YAGI	1		0		$0.00	$80.30	$80.30			
160		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	50		0		$0.00	$2.12	$106.00			
161		TDN6814	1/2" CONNECTOR, N PLUG LDF PLTD	4		0		$0.00	$32.85	$131.40			
162		TDN9289	CABLE WRAP, WEATHERPROOFING	1		0		$0.00	$27.38	$27.38			
163		RLN4264A	LIGHTNING ARRESTOR /SURGE	1		0		$0.00	$46.54	$46.54			
164		*****ASTRO SECTRA***	Remote Control, w/Kpd & Encrypt	1		0		$0.00	$0.00	$8,830.71	$750.00	$750.00	$9,225.03
165		L99DX	ASTRO SPECTRA	1		0		$0.00	$2,328.70				
166		254L	339L5-35W 800 MHZ			0		$0.00	$1,084.05				
167		L114	ADD: CLOCK VU METER			0		$0.00	$73.00				
168		G185	ADD: DES OFB			0		$0.00	$546.77				
169		G808	ENH: ASTRO DIGITAL CAI OPERATION			0		$0.00	$401.50				
170		G50	ENH: SMARTNET OPERATION			0		$0.00	$481.80				
171		TRN7466	MOUNTING BRACKET EIA 19"			0		$0.00	$73.00				
172		TDF6441	ANTENNA, 6DB 3 ELEMENT YAGI	1		0		$0.00	$80.30	$80.30			
173		L1705	1/2" LDF HELIAX, POLY JKT, PER FOOT	50		0		$0.00	$2.12	$106.00			
174		TDN6814	1/2" CONNECTOR, N PLUG LDF PLTD	4		0		$0.00	$32.85	$131.40			
175		TDN9289	CABLE WRAP, WEATHERPROOFING	1		0		$0.00	$27.38	$27.38			
176		RLN4264A	LIGHTNING ARRESTOR /SURGE	1		0		$0.00	$46.54	$46.54			
177		L1751	DESKSET, REMOTE, ASTRO DGT9000	1		0		$0.00	$872.35	$872.35			
178		L1752	ADAPTER, REMOTE, ASTRO DGT9000	1		0		$0.00	$580.35	$580.35			

City and County of San Francisco
Citywide 800MHz Radio System Project (CERS)
Additional Equipment Price Schedule

Rev: 5/98

Item #		Model	Item Description	Man Hours Qty	Man Hours Per Unit	Man Hours Total	Labor Hrs Rate	Total $	Material Unit Cost	Material Total $	Subcontract Unit Cost	Subcontract Total $	Total Costs
179		*****ACCESSORIES*****				0		$0.00	$0.00				
180		*****PORTABLE*******	*****MTS2000**********			0		$0.00	$0.00				
181		NTN7147	BATTERY,FMIS,ULTRA-HIGH CAP	1		0		$0.00	$110.96	$110.96		$0.00	$110.96
182		NTN1171 **	CHARGER,110V SINGLE COMPACT	1		0		$0.00	$65.70	$65.70		$0.00	$65.70
183		NTN1177	CHARGER, 110V MULTI RAPID	1		0		$0.00	$492.75	$492.75		$0.00	$492.75
184		NMN6191	AUDIO ACC,REMOTE SPEAKER/MIC	1		0		$0.00	$67.16	$67.16		$0.00	$67.16
185		NTN7318	CARRY ACC,BELT CLIP 3"	1		0		$0.00	$10.95	$10.95		$0.00	$10.95
186		NTN8038	CASE, 3.0" HI ACTIVITY ULTRA HI CAP	1		0		$0.00	$43.80	$43.80		$0.00	$43.80
187		NAF5037	ANT, 1/2 WAVELENGTH WHIP	1		0		$0.00	$24.09	$24.09		$0.00	$24.09
188		*****PORTABLE*******	*****XTS3000**********			0		$0.00	$0.00	$0.00		$0.00	$0.00
189		NTN8295	BATTERY, NICAD ULTRA HI CAP FM	1		0		$0.00	$137.97	$137.97		$0.00	$137.97
190		NTN1166	CHARGER,110V SINGLE ENH	1		0		$0.00	$91.25	$91.25		$0.00	$91.25
191		NTN1177	CHARGER, 110V MULTI RAPID	1		0		$0.00	$492.75	$492.75		$0.00	$492.75
192		NMN6191	AUDIO ACC,REMOTE SPEAKER/MIC	1		0		$0.00	$67.16	$67.16		$0.00	$67.16
193		NTN8266	ATTACHMENT, REMOVEABLE BELT CLIP	1		0		$0.00	$7.30	$7.30		$0.00	$7.30
194		NTN8381	CASE, CARRY HIGH ACTIVITY	1		0		$0.00	$43.80	$43.80		$0.00	$43.80
195		NTN8388	CASE, CARRY HIGH ACTIVITY	1		0		$0.00	$43.80	$43.80		$0.00	$43.80
196		NAF5037	ANT, 1/2 WAVELENGTH WHIP	1		0		$0.00	$24.09	$24.09		$0.00	$24.09
197		*******PORTABLE******	*****ASTRO SABER**********			0		$0.00	$0.00	$0.00		$0.00	$0.00
198		NTN7058	BATTERY, ULTRA HI CAP RUGGEDIZED	1		0		$0.00	$113.15	$113.15		$0.00	$113.15
199		NTN4734	CHARGER, DESKTOP SINGLE UNIT 117V	1		0		$0.00	$164.98	$164.98		$0.00	$164.98
200		NTN4708	CHARGER, DESKTOP MULTI UNIT 117V	1		0		$0.00	$575.24	$575.24		$0.00	$575.24
201		NMN6217	MICROPHONE, REMOTE SPEAKER	1		0		$0.00	$102.93	$102.93		$0.00	$102.93
202		NTN7309	BELT CLIP ATTACHMENT, REMOVEABLE	1		0		$0.00	$16.79	$16.79		$0.00	$16.79
203		NTN7573	CARRY CASE, LEATHER SWIVEL SNAP	1		0		$0.00	$45.99	$45.99		$0.00	$45.99
204		NAF5037	ANT, 1/2 WAVELENGTH WHIP	1		0		$0.00	$24.09	$24.09		$0.00	$24.09
205		********WIRELESS DATA NETWORK SUBSCRIBER UNITS **********											
206		MW520	120 MHz Pentium, 8 MB RAM, 2 Type II PCMCIA, 9.4" diagonal display	1									
207		F5201	MW520 600 MHz 3 Watt	1					$ 4,935.05	$4,935.05			$4,935.05
208		V500	RD-LAP Protocol 19.2 kbps	1					$ 222.50	$222.50			$222.50
209		V661	MDC4800 Protocol	1					$ 222.50	$222.50			$222.50
210		V140	35 Power Amplifier	1					$ 707.55	$707.55			$707.55
211		V440	32 MB RAM	1					$ 351.55	$351.55			$351.55
212		V525	1.4 Gigabyte Hard Drive	1					$ 351.55	$351.55			$351.55
213		V532	Windows 95	1					$ 173.55	$173.55			$173.55
214		V503	TX for MW520	1					$ 311.50	$311.50			$311.50
215		ZB50	RWQ4055 WaveSoft Link	1					$ 667.50	$667.50			$667.50
216		RRA4966	Antenna	1					$ 35.60	$35.60			$35.60
217		RLN4509	Mounting for Keyboard and Terminal	1					$ 267.00	$267.00			$267.00
218		HLN6015	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,	1									
220			7.4" diagonal display	1									
221		F2157	Forte' 800 MHz 3 Watt	1					$ 4,628.00	$4,628.00			$4,628.00
222		V500	RD-LAP Protocol 19.2 kbps	1					$ 222.50	$222.50			$222.50
223		V661	MDC 4800 Protocol	1					$ 222.50	$222.50			$222.50
224		V440	16 MB RAM	1					$ 400.50	$400.50			$400.50
225		V492	Windows 3.1	1					$ 173.55	$173.55			$173.55
226		V503	TX	1					$ 311.50	$311.50			$311.50

City and County of San Francisco
Citywide 800Mhz Radio System Project (CERS)
Additional Equipment Price Schedule
Rev: 5/98

Item #	Model	Item Description	Man Hours Qty	Man Hours Per Unit	Man Hours Total	Labor Hrs Rate	Total $	Material Unit Cost	Material Total $	Subcontracts Unit Cost	Subcontracts Total $	Total Costs
227	V466	AC wall Charger	1					$ 155.75	$155.75			$155.75
228	Z849	RWQ4055 WaveSoft Link	1					$ 667.50	$667.50			$667.50
229	RRA4966	Antenna	1					$ 35.60	$35.60			$35.60
230	FRN1524	Vehicle Docking Station	1					$ 707.55	$707.55			$707.55
231	FLN6603	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	PRM600											
236	F2274	Basic modem, 800, 821, 19.2 and 9.6	1					$ 1,290.50	$1,290.50			$1,290.50
237	V681	MDC4800	1					$ 222.50	$222.50			$222.50
238	V466	AC Wall Adapter	1					$ -	$0.00			$0.00
239	V320	Spare Standard Battery	1					$ 31.35	$31.35			$31.35
240	V43	Spare High Capacity Battery and cover	1					$ 71.20	$71.20			$71.20
241	V468	Cigarette Lighter Adapter	1					$ 44.50	$44.50			$44.50
242	V443	Cable, 3' RJ-45 to DB9 F	1					$ 35.60	$35.60			$35.60
243	V465	Leatherette Carrying Case	1					$ 59.63	$59.63			$59.63
244	V177	Swivel Belt Loop Nylon Carrying Case	1					$ 61.41	$61.41			$61.41
245	FKN4399	Ext. Adapter Cable	1					$ 33.82	$33.82			$33.82
246	2880376E84	Antenna Connector	1					$ 2.67	$2.67			$2.67
247	HAE4002	Roof Mount Antenna	1					$ 12.46	$12.46			$12.46
248	HTN9026	Standard Battery Charger	1					$ 48.06	$48.06			$48.06
249	FLN2325	Battery Charger & Conditioner (for both types)	1					$ 113.92	$113.92			$113.92
250	HTN9295	6 Battery Gang Charger (for both types)	1					$ 95.23	$95.23			$95.23
251	VRM600											
252	F2400 series	Basic modem, UHF, 800, 821, 900, 19.2 and 9.6	1					$ 2,371.85	$2,371.85			$2,371.85
253	J929	RD-LAP Protocol 19.2 kbps	1					$ 222.50	$222.50			$222.50
254	J942	MDC4800	1					$ 222.50	$222.50			$222.50
255	J968	Cable	1					$ 66.75	$66.75			$66.75
256	RRA4966	Antenna	1					$ 35.60	$35.60			$35.60
257	RLN4075	Radio Mount	1					$ 99.68	$99.68			$99.68
258	RLN4076	Vehicle Mount	1					$ 97.01	$97.01			$97.01
259	RLN4078	Flat Bracket	1					$ 6.23	$6.23			$6.23
260	VRM660											
261	F2168 series	Basic modem, 800, 821, 19.2 and 9.6	1					$ 1,246.00	$1,246.00			$1,246.00
262	V500	RD-LAP Protocol 19.2 kbps	1					$ 222.50	$222.50			$222.50
263	V681	MDC4800	1					$ 222.50	$222.50			$222.50
264	J968	Cable	1					$ 66.75	$66.75			$66.75
265	RRA4917	Antenna	1					$ 35.60	$35.60			$35.60
266	SLN4103	Mounting Kit	1					$ 45.39	$45.39			$45.39
267	Panasonic	166 MHz Pentium, 32 MB RAM, 12.1" display, 2 GB hard drive,	1									
268		Windows 95	1									
269	DSCF25LJF6EAM	Color Laptop	1					$ 5,390.00	$5,390.00			$5,390.00
270	Z850	RWQ4055 WaveSoft Link	1					$ 667.50	$667.50			$667.50
271	Panasonic	166 MHz Pentium, 16 MB RAM, 10.4" display, 1.35 GB Hard Drive,	1									
272		Windows 95	1									
273	DSCF25LGC4EAM	Color Laptop	1					$ 4,182.11	$4,182.11			$4,182.11
274	Z850	RWQ4055 WaveSoft Link	1					$ 667.50	$667.50			$667.50

City and County of San Francisco
Citywide 800MHz Radio System Project (CERS)
Additional Equipment Price Schedule

Rev: 5/98

Item #	Model	Item Description	Man Hours Qty	Man Hours Per Unit	Man Hours Total	Labor Hrs Rate	Total $	Material Unit Cost	Material Total $	Subcontracts Unit Cost	Subcontracts Total $	Total Costs
	Software											$1,495.00
275	RWQ4018	Accident	1					$ 1,495.00	$1,495.00			$750.00
276	RWQ4019	Citation	1					$ 750.00	$750.00			$1,495.00
277	RWQ4020	Incident	1					$ 1,495.00	$1,495.00			$750.00
278	RWQ4021	Arrest & Booking	1					$ 750.00	$750.00			$750.00
279	RWQ4022	Tow Slip	1					$ 750.00	$750.00			$750.00
280	RWQ4023	Field Interview	1					$ 750.00	$750.00			$2,995.00
281	RWQ4024 $2995	Package including all above software modules	1					$ 2,995.00	$2,995.00			$1,995.00
282	RWQ4025	Package including Incident and Accident Modules only	1					$ 1,995.00	$1,995.00			

Note: Additional equipment not found on this list is contained in the "R01 domestic price book," "RD-PP-7/97 radius price book," and "R81R Domestic Parts Pricing Book and Database" dated July 30, 1997, attached herein and made a part of this contract by reference.

CITY AND COUNTY OF SAN FRANCISCO
PURCHASING DEPARTMENT

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 22nd 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 for Department

Printed Name

Director EED
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:

Steven D. Nelson
Director of Administrative Services

CONTRACTOR

MOTOROLA, INC.

By

Title Vice President

APPROVED AS TO FORM 9/25/98
RICHARD F. RYAN DATE
MOTOROLA

CITY AND COUNTY OF SAN FRANCISCO
PURCHASING DEPARTMENT

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 22nd 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:

(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.

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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 it's 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 it's 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

Recommended by:

Signature for Department

Printed Name

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:

Steven D. Nelson
Director of Administrative Services

CONTRACTOR

MOTOROLA, INC.

By Mark A. Moon

Title V.P., SYSTEMS INTEGRATION

APPROVED AS TO FORM 8/25/99
RICHARD F. RYAN DATE
MOTOROLA

CITY AND COUNTY OF SAN FRANCISCO

PURCHASING DEPARTMENT

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.

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 22nd 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:

Signature for Department

Printed Name

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
			Total Change Orders:	**$ 2,060,873.21**	**$ 401,915.98**	**$ 2,462,789.19**
			Project Price at Contract Signing:	**$ 24,356,345.55**	**$ 12,191,019.45**	**$ 36,547,365.00**
			Adjusted Total:	**$ 26,417,218.76**	**$ 12,592,935.43**	**$ 39,010,154.19**

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 assessd 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
Total:		$ 121,764		$ 608,334

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 minumum 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 minumum 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 Technologst	$ 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 22nd 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 12O 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 it's 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. Fraiju

Printed Name

Chief of Staff ECD

Title and Department

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

CONTRACTOR

MOTOROLA, INC.

By

Title LARRY OLSON ~~VICE PRESIDENT, SALES~~

DATE: NOV 30, 2000

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 Novemer 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**

FILE COPY

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.

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 dare 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, dates 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 (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' 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. To the extent the City requires the assistance of any service technician in connection with any installation, maintenance or repair service 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 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.

l. 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 athttp://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 quantity; 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

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.

u. **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 JN 28 PM 12:25
PURCHASING DEPARTMENT

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 CONSOLETTE	27.00%	
Mobile	374	ASTRO CONSOLETTE	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%	

ystem or bulk equipment below and services purchases (for smaller orders of $1,000,000 or less in value)
ɐ eligible to receive additional discount considerations.
ɹ large orders (i.e. exceeding $1,000,000 in value), greater discounts are available and will be negotiated with Motorola.
ıese 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		198.5		198.6	194.9	5.18%
2000		201.3		202.6		204.1		207.9		210.4		211.8	205.8	5.59%
2001		218.5		219.4		222.6		224.6		225.7		226.4	222.2	7.97%
2002		226.6		227.9		230		230.5		230.6		230.2	229.1	3.11%
2003		233.9		233.3		234.4		234.4		234.7		233.4	233.9	2.10%
2004		234.9		233.9		234.9		235.9		236.9		237.1	235.4	0.64%
2005		238.8		238.2		239		240.1		243.4		243.1	240.2	2.04%
2006		247.9		248.8		248.4		249.9		252.2		252.2	249.5	3.87%
2007		255.614												39.55%

SF MPA Analysis on Exhibit H

	MPA Hourly Rate	Equivalent Per Day Rate	CPI 1999 % Change	CPI 2000 % Change	CPI 2001 % Change	CPI 2002 % Change	CPI 2003 % Change	CPI 2004 % Change	CPI 2005 % Change	CPI 2006 % 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	$ 1,281.83
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 Specfication 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	$ 925.20	$ 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	$ 925.20	$ 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-VERFIY/ 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 B Y 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	GENERAL LIABILITY	TB2-641-005169-076	7/01/2006	7/01/2007	GENERAL AGGREGATE	$ 1,000,000
	[X] COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG	$ INCLUDED
	[ ] CLAIMS MADE [X] OCCUR				PERSONAL & ADV INJURY	$ 1,000,000
	OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE	$ 1,000,000
					FIRE DAMAGE (Any one fire)	$ 250,000
					MED EXP (Any one person)	$ 10,000
B	AUTOMOBILE LIABILITY	AS2-641-005169-016	7/01/2006	7/01/2007	COMBINED SINGLE LIMIT	$ 1,000,000
	[X] ANY AUTO				BODILY INJURY (Per person)	$
	ALL OWNED AUTOS				BODILY INJURY (Per accident)	$
	SCHEDULED AUTOS				PROPERTY DAMAGE	$
	HIRED AUTOS					
	NON-OWNED AUTOS					
	GARAGEKEEPERS LIABILITY					
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
	ANY AUTO				OTHER THAN AUTO ONLY:	
					EACH ACCIDENT	$
					AGGREGATE	$
	EXCESS LIABILITY				EACH OCCURRENCE	$
	UMBRELLA FORM				AGGREGATE	$
	OTHER THAN UMBRELLA FORM					$
C	WORKER'S COMPENSATION AND EMPLOYERS' LIABILITY	WA7-64D-005169-086 (ALL OTHER STATES)	7/01/2006	7/01/2007	[X] WC STATU-TORY LIMITS [ ] OTH-ER	
C	THE PROPRIETOR/ PARTNERS/EXECUTIVE OFFICERS ARE: [ ] INCL [ ] EXCL	WC7-641-005169-096 (OR & WI)			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

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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

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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

SECRETARY PRESIDENT

Countersigned by

Authorized Representative

Issued Sales Office and No. End. Serial No. 28

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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):

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The City and County of San Francisco, and its officers
and employees

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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

Name of Person(s) or Organization(s):	The City and County of San Francisco, and its officers and employees

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 To Motorola, Inc.
And as per Endorsement 1
1303 East Algonquin Road
Schaumburg, IL 60196-4041

Countersigned by.....
Authorized Representative

End. Serial No.

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