



**MOTOROLA SOLUTIONS**

**Firm Priced Proposal**

**Town of Weston, CT**

# Communications System Upgrade

**CLMRN Integration**

April 21, 2023

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April 21, 2023

Mr. Larry Roberts  
Communication Center Director  
Town of Weston, CT  
56 Norfield Road  
Weston, CT 06883

Subject: Communications System Upgrade

Dear Director Roberts,

Motorola Solutions, Inc. ("Motorola Solutions") is pleased to have the opportunity to provide Town of Weston, CT with a firm proposal for a communication system upgrade. The Motorola Solutions project team has developed this firm proposal through feedback of previous budgetary proposals, customer provided site documentation and recent site visits of the proposed RF and console sites to capture current existing conditions.

Our proposal is based on connecting to and expanding the Connecticut Land Mobile Radio Network (CLMRN). To improve coverage within the Town of Weston and to enhance interoperability among Town agencies and with mutual aid partners, the solution consists of:

- Two (2) 12-channel 7/800MHz ASTRO 25 trunked simulcast remote sites
- One (1) 4-channel 700MHz or 800MHz ASTRO 25 Site Repeater (ASR) site
- Dispatch console site with two (2) dispatch positions at the Communications Center
- APX end user subscriber equipment

All equipment and services being offered in our proposal are consistent with the State's Master Contract A-99-001 for Two-Way Radio Equipment, Contract Award 967-A-23-0338C. This proposal is valid through June 30, 2023.

We thank you for the opportunity to furnish Town of Weston, CT with "best in class" solutions and we hope to strengthen our relationship by implementing this project. Our goal is to provide you with the best products and services available in the communications industry.

Sincerely,

Motorola Solutions, Inc.



Roy Kirchner  
MSSSI Vice President



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## Section 1

# System Description

## 1.1 Introduction

The Town of Weston (hereinafter The Town) has requested a proposal to replace the existing Police, Fire, EMS and Public Works Department (DPW) conventional radio systems with a Project 25, standards-based Internet Protocol (IP) expansion to the existing CT Land Mobile Radio Network (CLMRN) G ASTRO 25 simulcast subsystem to improve portable radio coverage within the Town of Weston jurisdictional area for Police, Fire, EMS and DPW users and enhance interoperability between other Local, State and Federal public safety agencies.

The Town has also requested the existing Motorola Gold Elite dispatch console system at the Communications Centre be replaced with a Project 25, standards-based Internet Protocol (IP) dispatch console that will interface directly with the existing CLMRN to provide mission critical voice communications with Weston public safety users and enhance interoperability between other Local, State and Federal public safety agencies.

The Town requested the existing Police, Fire, EMS and DPW mobile and portable subscribers be replaced with APX Project 25 mobile and portable subscribers to provide mission critical voice communications with Weston public safety users and enhance interoperability between other Local, State and Federal public safety agencies.

## 1.2 Overview – Current System

The Police Department's current radio system consists of a single UHF conventional ASTRO digital channel. The UHF channel utilizes two (2) transmit sites in a simulcast configuration and includes two (2) additional receive only sites in a receiver voting configuration.

The Fire Department and EMS's current shared radio system consists of a single UHF conventional analog channel. The UHF channel utilizes two (2) transmit sites in a manual site steering configuration and includes two (2) additional receive only sites in a receiver voting configuration.

The Fire Department currently has another single UHF conventional ASTRO digital channel. The UHF channel utilizes a single transmit/receive site at the Norfield tower.

The Public Works Department radio system is a single UHF conventional analog channel. The UHF channel utilizes two (2) transmit/receive sites in a manual site steering configuration.

A mixture of mobile and portable subscriber radios capable of operating on the present systems are used by the Police, Fire, EMS and DPW users.

The Communications Center located at lower level of the Weston Town Hall serves as the Town's 911 PSAP and dispatch point for the Police, Fire and EMS using a Motorola Gold Elite dispatch console system.

The current Town of Weston radio systems do not provide sufficient portable radio coverage for the Town of Weston public safety use and does not provide seamless interoperability between other Local, State and Federal public safety agencies.

## 1.3 Proposed Solution

Motorola Solutions, Inc. (hereinafter Motorola Solutions) has worked closely with both the Town of Weston and the State to create a design that maximizes coverage within the Town of Weston jurisdictional area while minimizing the overall cost. In these discussions, several key design elements became clear:

- Improve in-building coverage within the Town of Weston jurisdictional area.
- Provide increased user capacity and interagency interoperability.
- Eliminate recurring costs related to the existing conventional radio systems.

To provide a solution which maximizes the in-building portable radio coverage within the Town of Weston, provides increased user capacity and provides interagency interoperability, Motorola Solutions' offered solution will expand and add to the existing CLMRN.

Motorola Solutions ASTRO 25 (APCO Project 25 compliant technology) is a trunked radio system that operates on IP (Internet Protocol) packet-based architecture. The term "packet based" primarily references the capability of transporting digitized voice and data via IP packets through the system infrastructure. The Internet Protocol standard is utilized to establish a responsive connection between system components. Motorola Solutions ASTRO 25 is just one of the RF platforms that are supported in Motorola Solutions' packet switched IP backbone. This infrastructure uses the strength of IP to be able to implement any current or future RF IP-based technology, regardless of its "over-the-air" RF protocol.

A 12-channel 700/800 MHz ASTRO 25 simulcast remote site will be integrated with the existing CLMRN 16-site, 12-channel 700/800 MHz ASTRO 25 G simulcast subsystem. This ASTRO 25 simulcast remote site will be located at the Fire Headquarters site. The simulcast remote site equipment will be installed in the existing equipment room. A DC rectifier system will be installed in the existing equipment room to provide backup power for the simulcast remote site equipment. The simulcast remote site antennas will be installed on the existing communications tower. A new microwave link into the existing CLMRN microwave network will be used for network backhaul to connect the simulcast remote site to the CLMRN G ASTRO 25 simulcast subsystem.

Another 12-channel 700/800 MHz ASTRO 25 simulcast remote site will be integrated with the existing CLMRN 16-site, 12-channel 700/800 MHz ASTRO 25 G simulcast subsystem. This ASTRO 25 simulcast remote site will be located at the Transfer Station site. The simulcast remote site equipment will be installed in the existing equipment shelter. A DC rectifier system will be installed in the existing equipment shelter to provide backup power for the simulcast remote site equipment. The simulcast remote site antennas will be installed on the existing communications tower. A new microwave link into the existing CLMRN microwave network will be used for network backhaul to connect the simulcast remote site to the CLMRN G ASTRO 25 simulcast subsystem.

A 4-channel 700 MHz or 800 MHz ASTRO 25 Site Repeater (ASR) will be added to the existing CLMRN ASTRO 25 Core. This ASR will be located at Weston Fire Station #2. The ASR equipment will be installed in the attic area of the Fire Station. A DC rectifier system will be installed in the attic area to provide backup power for the ASR equipment. The ASR antenna will be installed at the roof line on an



existing building wall. A customer-provided Ethernet IP backhaul link will be used for network backhaul to connect the ASR to the CLMRN ASTRO 25 core.

A two (2) operator position MCC 7500E IP-based dispatch console subsystem will be integrated with the existing CLMRN ASTRO 25 Core. The dispatch console subsystem will be installed in the existing Weston Communications Centre, utilizing the existing dispatch furniture and the existing equipment room, providing mission critical voice communications with the Weston public safety users. The existing Public Safety Data Network (PSDN) will be used for network backhaul to connect the dispatch console subsystem to the CLMRN ASTRO 25 Core.

Mobile and portable user radios will be added to the system to provide mission critical voice communications between the Weston Police, Fire, EMS and DPW users and Weston dispatch operators.

## 1.4 Proposed Equipment

The following sections describe the equipment configurations, by site, that will be provided/upgraded as part of this proposal.

### 1.4.1 Master Site

All of the equipment at the CLMRN Master and Dynamic System Resilience sites required to support the proposed equipment has been provided as part of other procurements and is not included as part of this offering.

The following licenses will be added to the Master Site and the DSR Master Site:

- Project 25 FDMA Trunking Site.
- Project 25 Phase 2 TDMA Trunking Site.
- Project 25 Phase 2 TDMA Base Radio.
- Unified Network Configurator (UNC) Device.
- Console User.
- Radio User.
- Radio Authentication User.
- Radio Alias Update.
- Talk Group Text.
- Console Group Text.
- G-Series P25 Multisite IP Base Repeater.
- G-Series P25 Site Repeater.
- G-Series P25 Comparator Expansion.
- DSC 8000 Reference Distribution Module.
- DSC 8000 Rubidium.
- DSC 8000 Repeater Site Controller.

Advanced Power Monitor licenses will be added to the Genesis GenWatch server.

The subscriber Radio Management (RM) licenses will be added to the RM server.

The subscriber Group Management and Presence licenses will be added to the Intelligent Middleware (IMW) server.

## 1.4.2 ASTRO 25 Simulcast Subsystem

An ASTRO 25 simulcast remote site will be added at the following sites:

- Fire Headquarters.
- Transfer Station.

An ASTRO 25 Site Repeater (ASR) will be added at the following site:

- Fire Station #2.

The following sections describe the equipment that will be provided/ upgraded at the simulcast prime site and the simulcast remote sites and ASR.

### 1.4.2.1 CLMRN Wilton Simulcast Prime Site

The Simulcast Prime Site components/elements currently exist. No additional Simulcast Prime Site components/elements are required.

New Aviat Microwave links will be provided to connect the CLMRN Wilton Prime Site and the Weston Fire Headquarters simulcast remote site and the Weston Transfer Station simulcast remote site consisting of:

- Two (2) IRU600v4 indoor hot standby 11 GHz RF units.
- An INUe Intelligent Node Unit with Ethernet user interface modules.
- A 3-foot ultra-high-performance antenna at a proposed mounting height of 90-feet at an azimuth of 54.13° with a vertical angle of -0.06° and all associated mounting hardware to the Weston Fire Headquarters site.
- A 3-foot ultra-high-performance antenna at a proposed mounting height of 120-feet at an azimuth of 37.12° with a vertical angle of 0.08° and all associated mounting hardware to the Weston Transfer Station site.
- Elliptical waveguide and all associated mounting hardware.

The proposed microwave equipment will utilize the existing DESPP microwave DC plant for power and the existing DESPP dehydrator for elliptical waveguide pressurization.

### 1.4.2.2 Fire Headquarters Simulcast Remote Site

The following equipment will be provided at the proposed simulcast remote site.

- An ASTRO 25 GTR 8000 ESS containing six (6) 700 MHz GTR 8000 base radios, DSC Hubs and RFDS equipment to support receive diversity.
- An ASTRO 25 GTR 8000 ESS containing six (6) 800 MHz GTR 8000 base radios, DSC Hubs and RFDS equipment to support receive diversity.
- Two (2) DSC 8000 Reference Distribution Modules (RDM), each containing integrated GNSS Timing Reference with Rubidium modules.
- A transmit antenna network consisting of:
  - A dbSpectra DS7C09P36U-D 764-869 MHz, 8.8 dBd gain, omni-directional antenna.
  - An RFI APM7487K248 Advanced Power Monitor (APM).
- A diversity-receive antenna network consisting of:
  - Two (2) dbSpectra DS7C09P36U-D 764-869 MHz, 8.8 dBd gain, omni-directional antennas.

- A TX/RX Systems 442-035484 Dual Diversity Tower Top Amplifier (TTA).
- A TX/RX Systems 442-035491 Dual Diversity TTA Control Unit (CU).
- An RFI PF7982-1018-31-N2 Dual 18 MHz Band Pass Receive Filter panel.
- A Juniper SRX 345 Site Router and Firewall.
- An MC-Edge IoT Gateway Remote Terminal Unit (RTU).
- An Aviat Networks 11GHz microwave network between the Weston Fire Headquarters site and the DESPP Wilton site, connecting the proposed simulcast remote site to the CLMRN simulcast prime site consisting of:
  - An IRU600 indoor hot standby 11 GHz RF unit.
  - An INUe Intelligent Node Unit with Ethernet user interface modules.
  - A 3-foot ultra-high-performance antenna and all associated mounting hardware.
  - Elliptical waveguide and all associated mounting hardware.
  - Dehydrator and associated manifold and tubing.
- An Eltek Trilogy -48V DC Power System with 8 hours of full-load runtime consisting of:
  - Smartpack S Controller.
  - Six (6) Flatpack2 HE rectifiers in a N+1 redundant configuration.
  - Six (6) 48VDC 190AH Battery Sets.
  - Twenty-four (24) position DC breaker panel.

### 1.4.2.3 Transfer Station Simulcast Remote Site

The following equipment will be provided at the proposed simulcast remote site.

- An ASTRO 25 GTR 8000 ESS containing six (6) 700 MHz GTR 8000 base radios, DSC Hubs and RFDS equipment to support receive diversity.
- An ASTRO 25 GTR 8000 ESS containing six (6) 800 MHz GTR 8000 base radios, DSC Hubs and RFDS equipment to support receive diversity.
- Two (2) DSC 8000 Reference Distribution Modules (RDM), each containing integrated GNSS Timing Reference with Rubidium modules.
- A transmit antenna network consisting of:
  - A dbSpectra DS7C09P36U-D 764-869 MHz, 8.8 dBd gain, omni-directional antenna.
  - An RFI APM7487K248 Advanced Power Monitor (APM).
- A diversity-receive antenna network consisting of:
  - Two (2) dbSpectra DS7C09P36U2D 764-869 MHz, 8.8 dBd gain, omni-directional antennas.
  - A TX/RX Systems 442-035484 Dual Diversity Tower Top Amplifier (TTA).
  - A TX/RX Systems 442-035491 Dual Diversity TTA Control Unit (CU).
  - An RFI PF7982-1018-31-N2 Dual 18 MHz Band Pass Receive Filter panel.
- A Juniper SRX 345 Site Router and Firewall.
- An MC-Edge IoT Gateway Remote Terminal Unit (RTU).
- An Aviat Networks 11GHz microwave network between the Weston Transfer Station site and the DESPP Wilton site, connecting the proposed simulcast remote site to the CLMRN simulcast prime site consisting of:
  - An IRU600 indoor hot standby 11 GHz RF unit.
  - An INUe Intelligent Node Unit with Ethernet user interface modules.
  - A 3-foot ultra-high-performance antenna and all associated mounting hardware.
  - Elliptical waveguide and all associated mounting hardware.
  - Dehydrator and associated manifold and tubing.

- An Eltek Trilogy -48V DC Power System with 8 hours of full-load runtime consisting of:
  - Smartpack S Controller.
  - Six (6) Flatpack2 HE rectifiers in a N+1 redundant configuration.
  - Six (6) 48VDC 190AH Battery Sets.
  - Twenty-four (24) position DC breaker panel.

#### 1.4.2.4 Fire Station #2 ASR

The following equipment will be provided at the proposed ASR.

- An ASTRO 25 GTR 8000 ESS containing four (4) 700 MHz or 800 MHz GTR 8000 base radios and RFDS equipment.
- Two (2) DSC 8000 Site Controllers and DSC Hubs.
- A transmit antenna network consisting of:
  - The upper element of a dbSpectra DS7C06P36D-D 764-869 MHz, 6 dBd gain, dual-feed omni-directional antenna.
  - An RFI APM7487K248 Advanced Power Monitor (APM).
- A receive antenna network consisting of:
  - The lower element of the above dbSpectra DS7C06P36D-D 764-869 MHz, 6 dBd gain, dual-feed omni-directional antenna.
  - An RFI PF7982-1018-31-N 18 MHz Band Pass Receive Filter panel.
- A Juniper SRX 345 Site Router and Firewall.
- An MC-Edge IoT Gateway Remote Terminal Unit (RTU).
- An Eltek Trilogy -48V DC Power System with 8 hours of full-load runtime consisting of:
  - Smartpack S Controller.
  - Six (4) Flatpack2 HE rectifiers in a N+1 redundant configuration.
  - Three (3) 48VDC 190AH Battery Sets.
  - Twenty-four (24) position DC breaker panel.
- A customer-provided Ethernet IP backhaul link to connect the ASR to the CLMRN ASTRO 25 Core. The following outlines the network requirements for the IP backhaul between the Fire Station #2 ASR and the CLMRN ASTRO 25 Core:
  - The site link must be an Ethernet (IP) site link.
  - A 10/100/1000BaseT Ethernet physical interface is required for the backhaul link.
  - The throughput required for the backhaul link is 1 Mbps Full Duplex.
  - The latency should not exceed 40 milliseconds.
  - The backhaul is required to meet a minimum of 99.999% link availability.
  - The jitter introduced by the backhaul network should be less than 20 milliseconds.
  - The backhaul network packet loss should not exceed 0.01%.

### 1.4.3 Dispatch Console Subsystem

An MCC 7500E IP-based dispatch console subsystem will be added at the Weston Communications Center.

The following sections list the equipment that will be provided at the dispatch site.

#### 1.4.3.1 Weston Communications Center Equipment Room

The following equipment will be provided in the existing equipment room:

- One (1) 7½-foot equipment rack.
- One (1) AC Edge 120/240V Power Distribution Unit with twelve (12) 15A circuit breakers.
- One (1) Aruba 2930F 24-port Backhaul LAN Switch.
- Two (2) Juniper SRX 345 Site Router and Firewalls.
- Two (2) Aruba 2930F 24-port Dispatch Site LAN Switches.
- A DSC 8000 Conventional Site Controller (CSC).
- Two (2) MCG 8000 8 Port Conventional Channel Gateways (CCGW).
- One (1) MC-Edge Aux I/O Controller with thirty-two (32) outputs and sixty-four (64) inputs.
- One (1) Vertiv/Liebert 2000VA/1800W GXT5 rackmount UPS.
- The existing Public Safety Data Network (PSDN) will be used for network backhaul to connect this dispatch console subsystem to the CLMRN ASTRO 25 Core. The following outlines the network requirements for the IP backhaul between the Weston dispatch site and the CLMRN ASTRO 25 Cores:
  - The site link must be an Ethernet (IP) site link.
  - A 10/100/1000BaseT Ethernet physical interface is required for the backhaul link.
  - The throughput required for the backhaul link is 10 Mbps Full Duplex.
  - The latency should not exceed 40 milliseconds.
  - The backhaul is required to meet a minimum of 99.999% link availability.
  - The jitter introduced by the backhaul network should be less than 20 milliseconds.
  - The backhaul network packet loss should not exceed 0.01%.

### 1.4.3.2 Weston Communications Center

The following equipment will be provided in the dispatch center:

- Two (2) dispatch console operator positions. Each dispatch console operator position will include the following:
  - A CommandCentral Hub containing an integral workstation.
  - Windows® 10 operating system.
  - Standard keyboard.
  - Mouse.
- Each dispatch console operator position workstation will be configured for:
  - One hundred sixty (160) radio resources.
  - Basic console operation.
  - ASTRO 25 trunking operation.
  - Advanced conventional operation.
  - Secure operation.
  - AES/DES-OFB encryption.
  - Over-the-Ethernet encryption rekeying (OTEK).
  - Enhanced integrated recall recorder (IRR).
- Each dispatch console operator position will include the following accessories:
  - One (1) 22-inch LCD non-touchscreen monitor.
  - Four (4) purpose-built USB desktop speakers.
  - One (1) purpose-built USB desktop gooseneck microphone.
  - One (1) MCC series dual pedal footswitch.
  - Two (2) MCC series headset jacks.

- One (1) 6-outlet AC power strip.
- One (1) Vertiv/Liebert 750VA/750W GXT5 tower UPS.

## 1.4.4 Project 25 (P25) User Radios

The following is a brief description of the P25 user radios that will be provided for the Police, Fire, EMS and DPW users.

### 1.4.4.1 Weston Communications Center Equipment Room

Control station radios will be provided in the Weston Communications Center equipment room for backup operation to the trunking system and for UHF and VHF mutual aid. The dispatch center 7½-foot equipment rack with AC power distribution will be used to rack the proposed equipment.

Four (4) All-Band APX Consolettes will be provided for trunking system backup. The consolettes will utilize a single 7/800 MHz control station antenna through an 8-port control station combiner and control station duplexer. Each APX Consolette will include the following options/accessories:

- 7/800 MHz Operation Only.
- Full Front Panel Keypad/Clock/VU.
- AC Line Cord.
- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.
- AES Encryption.
- Over-the-air re-keying (OTAR) and Multikey.
- 5-Year Essential Service Plan.
- APX Consolette Rack Mount Kit.

Two (2) MCD 5000 Remote Desksets with Desktop Microphones will be provided. The desk sets will be connected to two (2) of the APX Consolettes, providing an additional level of backup.

### 1.4.4.2 Police Department

Fifteen (15) APX 8500 All Band remote mount mobile radios will be provided. Each mobile radio will include the following options:

- E5 Control Head.
- Standard 17-Foot Control Cable.
- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.
- AES Encryption.
- Over-the-air re-keying (OTAR) and Multikey.
- Water Resistant Hand Microphone.
- 15-Watt Water Resistant Speaker.

- 5-Year Essential Services Plan.
- Tri-Band roof mount antenna.

Fifteen (15) APX 8000 All Band Model 2.5 portable radios will be provided. Each portable radio will include the following options:

- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.
- AES Encryption.
- Over-the-Air Re-Keying (OTAR) with Multi-Key.
- Standard 3400mAh Li-Ion IMPRES 2 Battery.
- Standard XE All-Band Antenna.
- 5-Year Essential Service Plan.

The following APX 8000 portable radio accessories will be provided:

- Fifteen (15) Single-Unit IMPRES 2 Desktop Battery Chargers.
- Twenty-one (21) XVP850 Remote Speaker Microphones.
- Twenty-one (21) 3400mAh Li-Ion IMPRES 2 Batteries.

Two (2) APX 8500 mobile radio flash upgrades will be provided. Each flash upgrade will include the following features:

- Enable 7/800 MHz Operation.
- Enable VHF Operation.
- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.

Six (6) APX 8000 portable radio flash upgrades will be provided. Each flash upgrade will include the following features:

- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.

One (1) All-Band APX Console will be provided. The APX Console will include the following options/accessories:

- 7/800 MHz Operation Only.
- Full Front Panel Keypad/Clock/VU.
- AC Line Cord.
- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.



- AES Encryption.
- Over-the-Air Re-Keying (OTAR) with Multi-Key.
- 5-Year Essential Service Plan.
- APX Console Rack Mount Kit.
- 3 dB Control Station Antenna w/100-feet of ½-inch Transmission Line.

Nine (9) MCD 5000 desksets and an MCD Radio Gateway Unit (RGU) will be provided. A 24-port ethernet switch will also be provided.

The APX Console will be connected to the RGU. The MCD 5000 desksets and RGU will be connected to the ethernet switch, creating a radio dispatch deskset system.

#### 1.4.4.3 Fire Department

Twelve (12) APX 8500 All Band remote mount mobile radios will be provided. Each mobile radio will include the following options:

- E5 Control Head.
- 30-Foot Control Cable.
- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.
- DVRS Mobile Subscriber Unit Activation.
- Water Resistant Hand Microphone.
- 15-Watt Water Resistant Speaker.
- 5-Year Essential Services Plan.
- Tri-Band roof mount antenna.

Three (3) Futurecom P25 UHF, 450-470 MHz, Cross-Band Digital Vehicle Repeaters (DVR-LX) will be provided. Each DVR-LX will include the following enhancements:

- Simplex-Only Operation.
- APX 8500 Remote-Mount Mobile Integration.
- P25 Enhanced Trunking features, including Phase 1 Operation, End-to-End TDMA Operation and P25 Encryption.
- Radio Authentication.
- Radio Management - Over-The-Air-Programming (RM-OTAP).
- Dual Triplexer Relay Kit.
- ¼-Wave Roof Mount Antenna.
- 4-Year Extended Warranty.

Forty-two (42) APX 8000XE All Band Model 2.5 portable radios will be provided. Each portable radio will include the following options:

- Green Housing.
- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).



- Group Services.
- DVRS Portable Subscriber Unit Activation.
- Personnel Accountability.
- UL Div2 3400mAh Li-Ion IMPRES 2 Battery.
- Standard XE All-Band Antenna.
- 5-Year Essential Service Plan.

The following APX 8000XE portable radio accessories will be provided:

- Eight (8) Single-Unit IMPRES 2 Desktop Battery Chargers.
- Thirty-two (32) Vehicle Chargers.
- Forty-two (42) Green XVE500 Remote Speaker Microphones w/Channel Control Knob.
- Ten (10) 3400mAh Li-Ion IMPRES 2 Batteries.

One (1) All-Band APX Console will be provided. The APX Console will include the following options/accessories:

- 7/800 MHz Operation Only.
- Full Front Panel Keypad/Clock/VU.
- AC Line Cord.
- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.
- 5-Year Essential Service Plan.
- APX Console Rack Mount Kit.
- 3 dB Control Station Antenna w/100-feet of ½-inch Transmission Line.
- MCD 5000 Remote Deskset with Desktop Microphone.

#### 1.4.4.4 EMS

Three (3) APX 8500 All Band remote mount mobile radios will be provided. Each mobile radio will include the following options:

- Dual Control Head Operation.
- Two (2) E5 Control Heads.
- One (1) 17-Foot Control Cable.
- One (1) 30-Foot Control Cable.
- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.
- Two (2) Water Resistant Hand Microphones.
- Two (2) 15-Watt Water Resistant Speakers.
- 5-Year Essential Services Plan.
- Tri-Band roof mount antenna.

Sixty-one (61) APX 4000 7/800 MHz Model 2 portable radios will be provided. Each portable radio will include the following options:

- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.
- Enhancement Level 1.
- Extreme Noise Reduction.
- PMAF4040 Whip Antenna.
- Standard 2000mAh IMPRES Li-Ion Battery.
- 5-Year Essential Service Plan.

The following APX 4000 portable radio accessories will be provided:

- Sixty-one (61) Single-Unit IMPRES Desktop Battery Chargers.
- Ten (10) 2000mAh IMPRES Li-Ion Batteries.
- Ten (10) 2” Belt Clips.

Four (4) APX 8000 All Band Model 2.5 portable radios will be provided. Each portable radio will include the following options:

- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.
- Standard 3400mAh Li-Ion IMPRES 2 Battery.
- Standard XE All-Band Antenna.
- 5-Year Essential Service Plan.

The following APX 8000 portable radio accessories will be provided:

- Two (2) Single-Unit IMPRES 2 Desktop Battery Chargers.
- Two (2) Vehicle Chargers.
- Four (4) XVP850 Remote Speaker Microphones.
- Two (2) 3400mAh Li-Ion IMPRES 2 Batteries.

One (1) APX 8500 mobile radio flash upgrade will be provided. The flash upgrade will include the following features:

- Enable 7/800 MHz Operation.
- Enable VHF Operation.
- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.

#### 1.4.4.5 Department of Public Works

Twenty-four (24) APX 4500 7/800 MHz remote mount mobile radios will be provided. Each mobile radio will include the following options:

- 02 Control Head.
- Standard 17-Foot Control Cable.
- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.
- Enhancement Level 1
- Water Resistant Hand Microphone.
- 15-Watt Water Resistant Speaker.
- 5-Year Essential Service Plan.
- 3 dB Low-Profile Antenna w/low-loss cable.

Four (4) APX 4000 7/800 MHz Model 2 portable radios will be provided. Each portable radio will include the following options:

- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.
- Enhancement Level 1.
- Extreme Noise Reduction.
- PMAF4040 Whip Antenna.
- Standard 2000mAh IMPRES Li-Ion Battery.
- 5-Year Essential Service Plan.

The following APX 4000 portable radio accessories will be provided:

- Four (4) Single-Unit IMPRES Desktop Battery Chargers.
- One (1) 2000mAh IMPRES Li-Ion Battery.
- One (1) 2" Belt Clip.

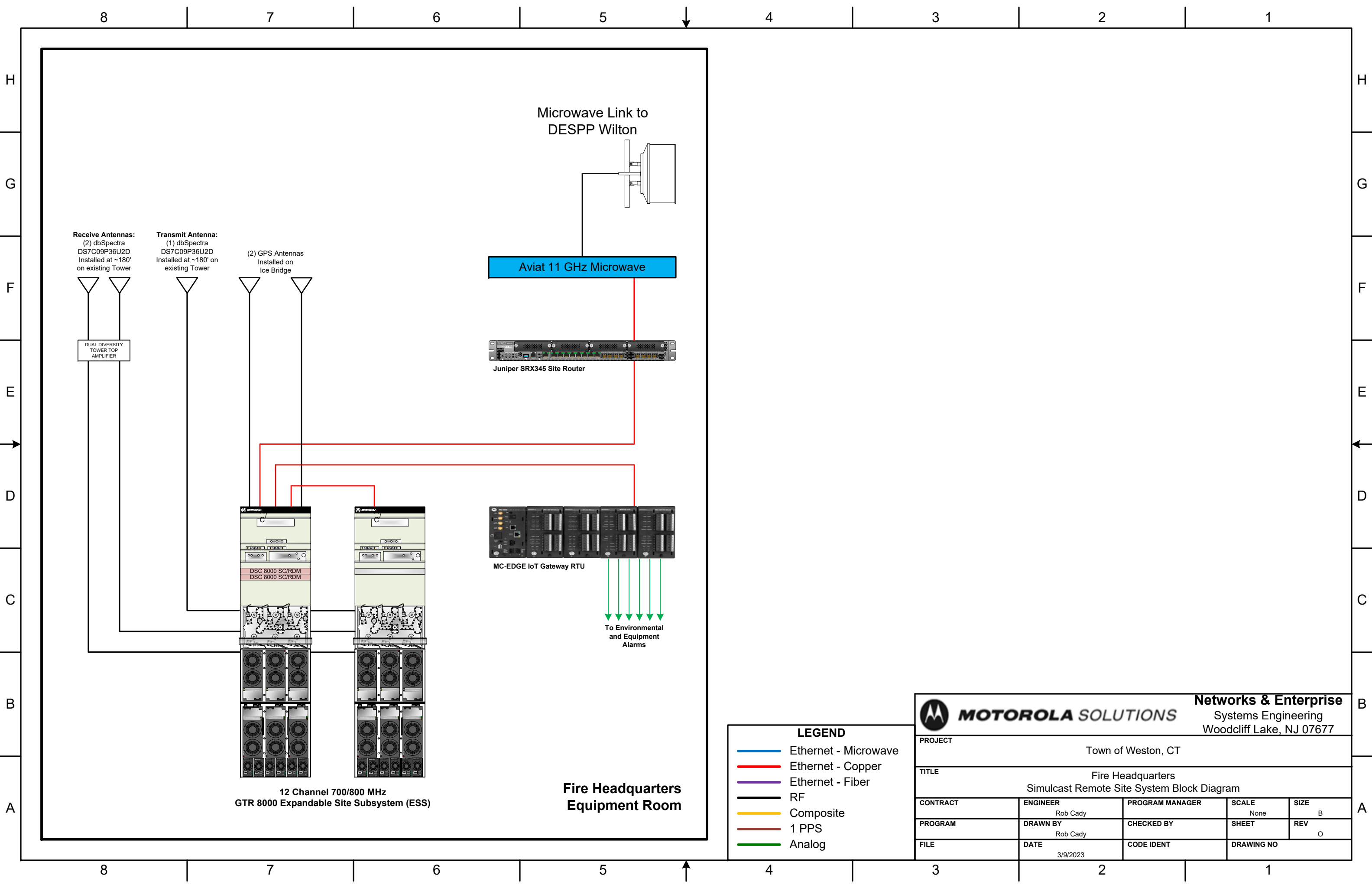
One (1) All-Band APX Consolette will be provided. The APX Consolette will include the following options/accessories:

- 7/800 MHz Operation Only.
- Full Front Panel Keypad/Clock/VU.
- AC Line Cord.
- P25 Trunking with TDMA.
- Advanced System Key – Hardware Key.
- Radio Authentication.
- Programming over P25 (OTAP).
- Group Services.
- 5-Year Essential Service Plan.
- APX Consolette Rack Mount Kit.
- 3 dB Control Station Antenna w/100-feet of 1/2-inch Transmission Line.
- MCD 5000 Remote Deskset with Desktop Microphone.

## 1.5 System Block Diagrams

The following are system block diagrams of the proposed equipment:

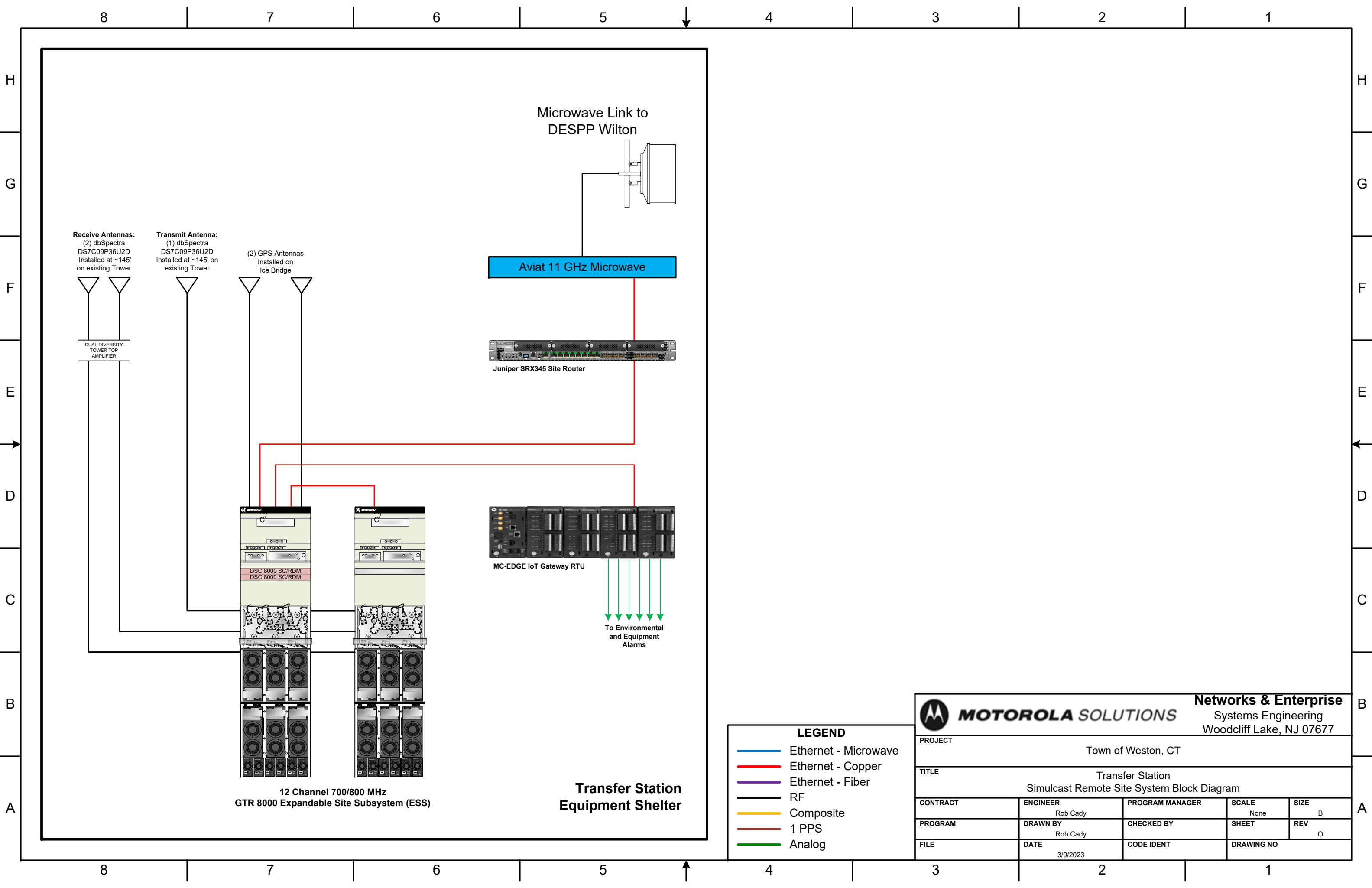
- Fire Headquarters Simulcast Remote Site
- Transfer Station Simulcast Remote Site
- Fire Station #2 ASTRO Site Repeater (ASR)
- Communications Center Dispatch Console Site
- Fire Department Backup Control Station



**LEGEND**

- Ethernet - Microwave
- Ethernet - Copper
- Ethernet - Fiber
- RF
- Composite
- 1 PPS
- Analog

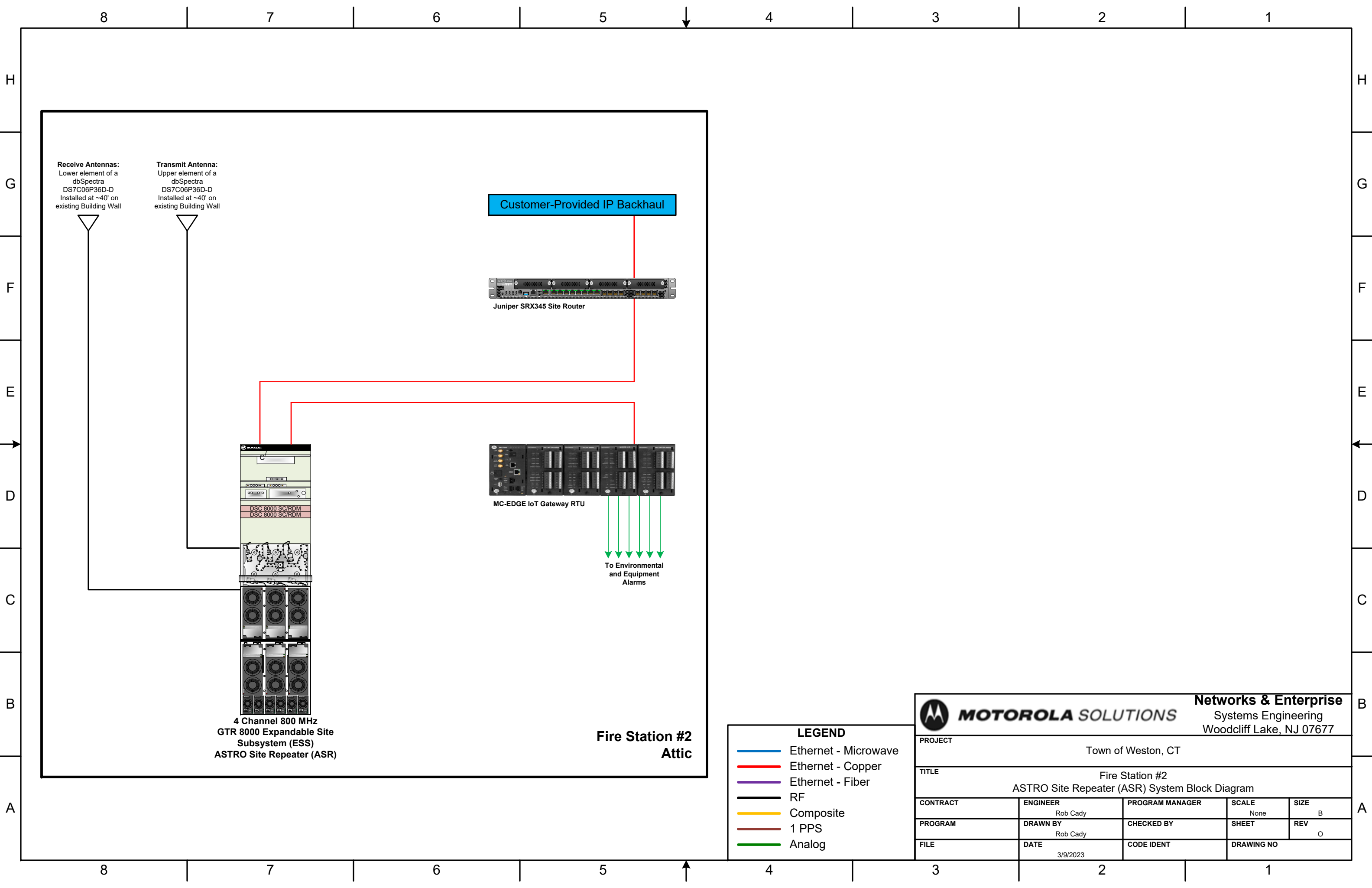
<b>MOTOROLA SOLUTIONS</b>				
<b>Networks &amp; Enterprise</b>				
Systems Engineering Woodcliff Lake, NJ 07677				
PROJECT: Town of Weston, CT				
TITLE: Fire Headquarters Simulcast Remote Site System Block Diagram				
CONTRACT	ENGINEER Rob Cady	PROGRAM MANAGER	SCALE None	SIZE B
PROGRAM	DRAWN BY Rob Cady	CHECKED BY	SHEET	REV 0
FILE	DATE 3/9/2023	CODE IDENT	DRAWING NO	



**LEGEND**

- Ethernet - Microwave
- Ethernet - Copper
- Ethernet - Fiber
- RF
- Composite
- 1 PPS
- Analog

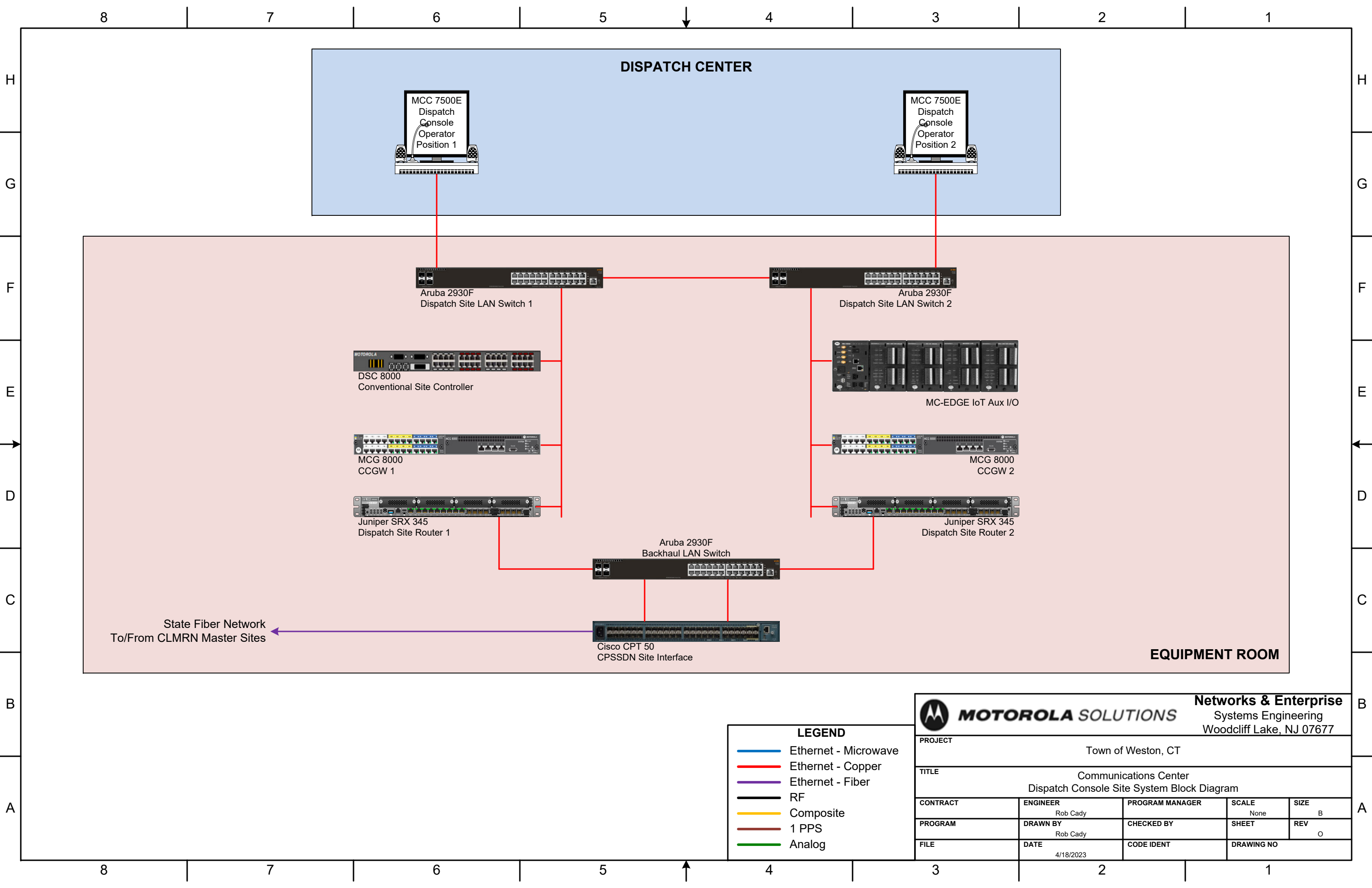
<b>MOTOROLA SOLUTIONS</b>		<b>Networks &amp; Enterprise</b> Systems Engineering Woodcliff Lake, NJ 07677		
		PROJECT: Town of Weston, CT		
TITLE: Transfer Station Simulcast Remote Site System Block Diagram				
CONTRACT	ENGINEER Rob Cady	PROGRAM MANAGER	SCALE None	SIZE B
PROGRAM	DRAWN BY Rob Cady	CHECKED BY	SHEET	REV 0
FILE	DATE 3/9/2023	CODE IDENT	DRAWING NO	



**LEGEND**

- Blue line: Ethernet - Microwave
- Red line: Ethernet - Copper
- Purple line: Ethernet - Fiber
- Black line: RF
- Yellow line: Composite
- Brown line: 1 PPS
- Green line: Analog

<b>MOTOROLA SOLUTIONS</b> Networks & Enterprise Systems Engineering Woodcliff Lake, NJ 07677				
PROJECT: Town of Weston, CT				
TITLE: Fire Station #2 ASTRO Site Repeater (ASR) System Block Diagram				
CONTRACT	ENGINEER Rob Cady	PROGRAM MANAGER	SCALE None	SIZE B
PROGRAM	DRAWN BY Rob Cady	CHECKED BY	SHEET	REV 0
FILE	DATE 3/9/2023	CODE IDENT	DRAWING NO	



**DISPATCH CENTER**

MCC 7500E  
Dispatch  
Console  
Operator  
Position 1

MCC 7500E  
Dispatch  
Console  
Operator  
Position 2

Aruba 2930F  
Dispatch Site LAN Switch 1

Aruba 2930F  
Dispatch Site LAN Switch 2

MOTOROLA  
DSC 8000  
Conventional Site Controller

MC-EDGE IoT Aux I/O

MCG 8000  
CCGW 1

MCG 8000  
CCGW 2

Juniper SRX 345  
Dispatch Site Router 1

Juniper SRX 345  
Dispatch Site Router 2

Aruba 2930F  
Backhaul LAN Switch

State Fiber Network  
To/From CLMRN Master Sites

Cisco CPT 50  
CPSSDN Site Interface

**EQUIPMENT ROOM**

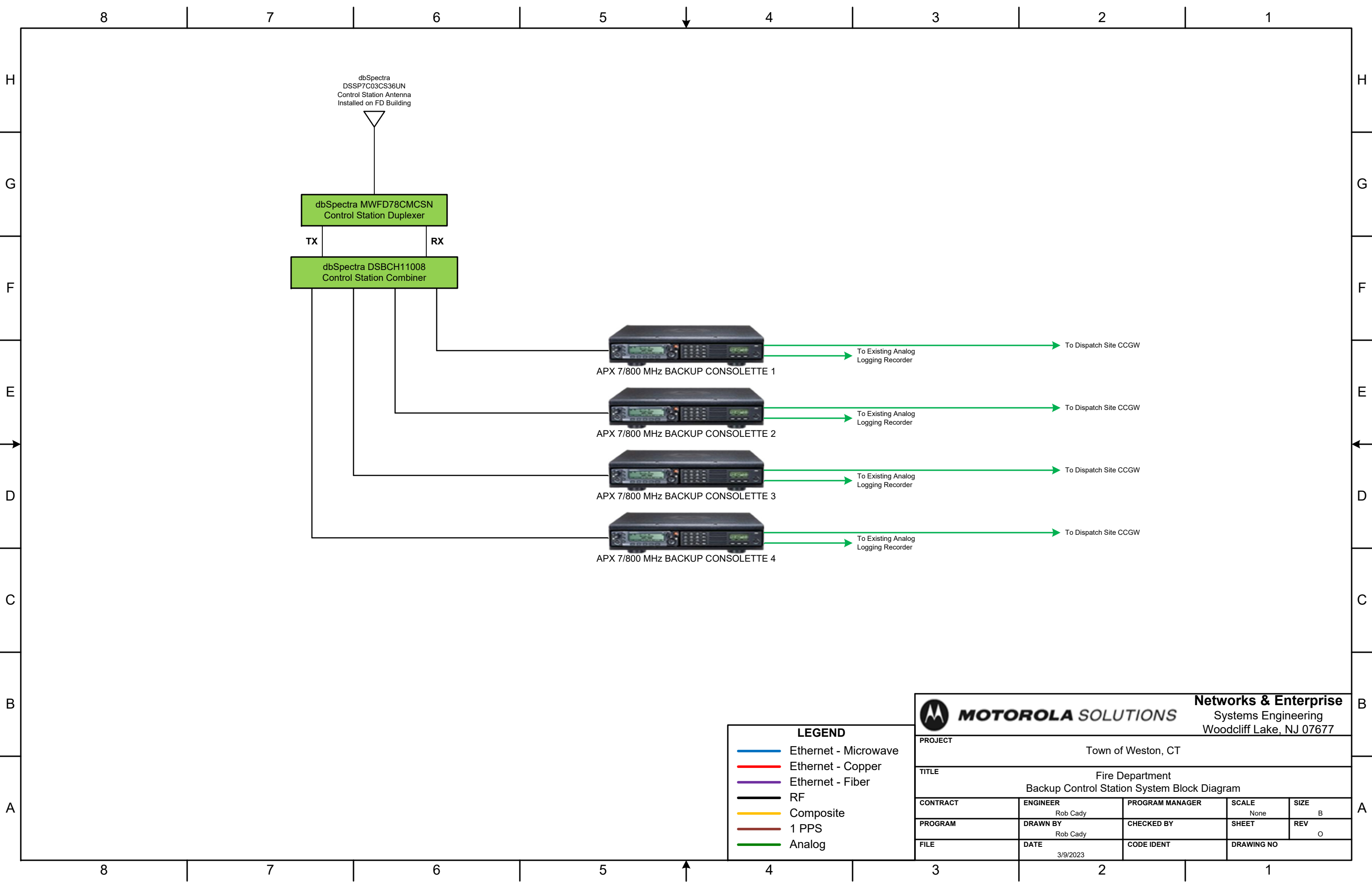
**LEGEND**

- Ethernet - Microwave
- Ethernet - Copper
- Ethernet - Fiber
- RF
- Composite
- 1 PPS
- Analog

**MOTOROLA SOLUTIONS** Networks & Enterprise  
Systems Engineering  
Woodcliff Lake, NJ 07677

PROJECT Town of Weston, CT				
TITLE Communications Center Dispatch Console Site System Block Diagram				
CONTRACT	ENGINEER Rob Cady	PROGRAM MANAGER	SCALE None	SIZE B
PROGRAM	DRAWN BY Rob Cady	CHECKED BY	SHEET	REV 0
FILE	DATE 4/18/2023	CODE IDENT	DRAWING NO	





**LEGEND**

- Ethernet - Microwave
- Ethernet - Copper
- Ethernet - Fiber
- RF
- Composite
- 1 PPS
- Analog

<b>Networks &amp; Enterprise</b> Systems Engineering Woodcliff Lake, NJ 07677				
PROJECT: Town of Weston, CT				
TITLE: Fire Department Backup Control Station System Block Diagram				
CONTRACT	ENGINEER: Rob Cady	PROGRAM MANAGER	SCALE: None	SIZE: B
PROGRAM	DRAWN BY: Rob Cady	CHECKED BY	SHEET	REV: 0
FILE	DATE: 3/9/2023	CODE IDENT	DRAWING NO	



**Section 2**

# Statement of Work

## 2.1 Overview

This Statement of Work (SOW) describes the deliverables to be furnished to the Town of Weston (the Town) and CT Department of Emergency Services and Public Protection (DESPP). The tasks described herein will be performed by Motorola Solutions, its subcontractors, DESPP, and the Town to implement the solution described in the System Description. It describes the actual work involved in installation, identifies the installation standards to be followed, and clarifies the responsibilities for Motorola Solutions, DESPP, and the Town during the project implementation. Specifically, this SOW provides:

- A description of the responsibilities for Motorola Solutions, DESPP, and the Town.
- The assumptions taken into consideration during the development of this project.

This SOW provides the most current understanding of the work required by all parties to ensure a successful project implementation. In particular, Motorola Solutions has made assumptions of the sites to be used for the new system. Should any of the sites change, a revision to the SOW and associated pricing will be required. It is understood that this SOW is a working document, and that it will be revised as needed to incorporate any changes associated with contract negotiations, and any other change orders that may occur during the execution of the project.

Motorola Solutions will install and configure the proposed equipment. Table 2-1 describes the tasks involved with installation and configuration.

**Table 2-1: Installation Tasks**

Tasks	Motorola Solutions	Town of Weston	DESPP
<b>PROJECT INITIATION</b>			
<b>Contract Finalization and Team Creation</b>			
Execute contract and distribute contract documents.	X	X	
Assign a Project Manager as a single point of contact.	X	X	X
Assign resources.	X	X	X
Schedule project kickoff meeting.	X	X	X
Deliverable: Signed contract, defined project team, and scheduled project kickoff meeting.			
<b>Project Kickoff</b>			
Introduce team, review roles, and decision authority.	X	X	X
Present project scope and objectives.	X		
Review SOW responsibilities and project schedule.	X	X	X
Schedule Design Review.	X	X	X
Deliverable: Completed project kickoff and scheduled Design Review.			
<b>Design Review</b>			

Tasks	Motorola Solutions	Town of Weston	DESPP
Present the system design and operational requirements for the solution.	X		
Present installation plan.	X		
Present preliminary cutover plan and methods to document final cutover process (as required).	X		
Present configuration and details of site required by system design.	X		
Validate that Customer site can accommodate proposed equipment.	X	X	
Provide approvals required to add equipment to proposed existing sites.		X	X
Review safety, security, and site access procedures.	X		
Present equipment layout plans and system design drawings.	X		
Provide heat load and power requirements for new equipment.	X		
Complete the required forms required for frequency coordination and licensing.		X	X
Pay for frequency coordination costs. Only APCO fees per channel are included with this proposal.	X		
Assume liability and responsibility for providing all necessary Motorola Solutions' requested information for complete installation.		X	
Assume responsibility for issues outside of Motorola Solutions' control such as but not limited to, frequency coordination and backhaul.		X	X
Ensure that frequency availability and licensing meet project requirements.	X	X	X
Review and update design documents, including System Description, Statement of Work, and Acceptance Test Plan, based on Design Review agreements.	X		
Execute Change Order in accordance with all material changes to the Contract resulting from the Design Review.	X		
Deliverable: Finalized design documentation based upon "frozen" design, along with any relevant Change Order documentation.			
<b>SYSTEM INSTALLATION</b>			
<b>Equipment Order and Manufacturing</b>			
Create equipment order and reconcile to contract.	X		
Manufacture Motorola Solutions-provided equipment necessary for system based on equipment order.	X		
Procure non-Motorola Solutions equipment necessary for the system.	X		
Deliverable: Equipment procured and ready for shipment.			
<b>System Staging</b>			
Ship equipment needed for staging (field staging).	X		
Provide information on room layouts, or other information necessary for the assembly to meet field conditions.		X	X
Set up and rack the solution equipment on a site-by-site basis, as it will be configured in the field at each of the sites.	X		
Cut and label the cables with to/from information to specify interconnection for field installation and future servicing needs.	X		

Tasks	Motorola Solutions	Town of Weston	DESPP
Complete the cabling/connecting of the subsystems to each other (“connectorization” of the subsystems).	X		
Assemble required subsystems to assure system functionality.	X		
Power up, load application parameters, program, and test all staged equipment.	X		
Confirm system configuration and software compatibility with the existing system.	X		
Inventory the equipment with serial numbers and installation references.	X		
Perform factory functional acceptance tests of system features.	X		
Conduct site and system level testing.	X		
Deliverable: System staged and ready for shipment.			
<b>Equipment Shipment and Storage</b>			
Provide secure location for solution equipment (up to 3 months).	X		
Pack and ship solution equipment to the identified, or site location(s).	X		
Receive solution equipment.	X		
Inventory solution equipment.	X		
Deliverable: Solution equipment received and ready for installation.			
<b>General Installation</b>			
Deliver solution equipment to installation location.	X		
Coordinate receipt of and inventory solution equipment with designated contact.	X		
Install all proposed fixed equipment as outlined in the System Description based upon the agreed-upon floor plans, connecting audio, control, and radio transmission cables to connect equipment to the power panels or receptacles, and audio/control line connection points. Installation performed in accordance with R56 standards and state/local codes.	X		
Provide system interconnections that are not specifically outlined in the system design, including dedicated leased ethernet circuits, microwave links, fiber or other types of connectivity. <ul style="list-style-type: none"> <li>• Motorola Solutions has included the Microwave hops between the two RF sites and the DESPP Wilton Prime site. The link from the Prime to the Master is existing which is to be reused. If any of the new or existing links are not viable (due to structural failure, path issues etc.), it is the Town’s responsibility for interconnectivity.</li> <li>• Console site to the Master site to use PSDN and requires an application for service as well as an SFP module for the circuit which are the responsibility of the Town of Weston</li> </ul>		X	
Connect installed equipment to the provided ground system.	X		
Label equipment, racks, and cables.	X		
Note any required changes to the installation for inclusion in the “as-built” system documentation.	X		

Tasks	Motorola Solutions	Town of Weston	DESPP
Remove, and transport of old equipment from existing Dispatch Center. This includes console and associated rack equipment only.	X		
Remove, transport and dispose of old fixed equipment from RF sites.	X		
Install Microwave links between: <ul style="list-style-type: none"> <li>- Fire Headquarters and DESPP Wilton Site.</li> <li>- Transfer Station and DESPP Wilton Site.</li> </ul> This includes license application, network engineering, surveys, MW dish, Waveguide and associated accessories installs for these links. <b>Note:</b> Paper path studies have been conducted, however physical path studies will need to be conducted to confirm the viability of the links.	X		
Deliverable: Equipment installed.			
<b>Remote Site Installation and Configuration</b>			
Install fixed equipment contained in the equipment list and system description.	X		
Configure DESPP ASTRO 25 system to support the new RF sites.	X		
Verify site link performance, prior to the interconnection of the solution equipment to the link equipment.	X		
Integrate the RF sites into the system to ensure proper operation.	X		
Deliverable: ASTRO 25 Remote sites equipment installation completed.			
<b>Console Installation and Configuration – Dispatch Center</b>			
Identify circuits for connection to console and a demarcation point located within 25 feet of the console interface.		X	
Configure DESPP ASTRO 25 system to support the new console site.	X		
Verify site link performance, prior to the interconnection of the solution equipment to the link equipment.	X		
Connect console to circuit demarcation points.	X		
Install non-plenum Cat-6 network cable.	X		
Install PC workstation, keyboard, mouse and monitor on existing furniture.	X		
Install Command Central Hub and purchased peripheral console equipment in accordance with R56 standards and state/local codes.	X		
Develop templates for console programming.	X	X	X
Perform console programming and configuration.	X		
Deliverable: Console equipment installation completed at existing Dispatch Center.			
<b>Logging Recorder</b>			
Provide existing logging recorder with adequate capacity for analog circuit recording		X	
Terminate backup console logging recorder output to a punchblock demarcation	X		
Terminate and test successful recording of backup console logging recorder from Motorola supplied demarcation to customer provided recorder		X	

Tasks	Motorola Solutions	Town of Weston	DESPP
Deliverable: Logging equipment installation completed.			
<b>Develop User Radio Fleetmap</b>			
Review and determine modifications to existing fleetmap.		X	X
Review fleetmapping requirements with Customer, including user ID and talkgroup structures.		X	X
Designate user group representatives for the user groups, to make timely decisions on their behalf.		X	X
Develop templates.		X	X
Participate in a meeting to finalize any changes among user groups.		X	X
Review and approve fleetmap templates.		X	X
Program approved templates into radios.	X		
Deliverable: Fleetmap plan completed and approved by Customer.			
<b>ASTRO 25 Core Configuration</b>			
Provide list of subscriber IDs for loading into the Zone Controller.		X	X
Load subscriber IDs in the Zone Controller.			X
Provide required radio ID and alias information to enable alias database setup for interface to consoles.		X	X
Deliverable: ASTRO 25 Core configuration completed.			
<b>Control Station Installation and Configuration</b>			
Provide the locations of control stations at the location.		X	
Survey mounting locations and develop control station installation plan.	X		
Provide adequate space, grounding, and power for the control station installation.		X	
Properly connectorize and ground the cabling, which will be run to the outdoor antenna location using the least obtrusive method. Note: Does not include non-standard cable runs or installations requiring special access with lift and/or special equipment	X		
Provide suitable cable path from antenna installation location to equipment installation location		X	
Install line (not greater than 75 feet in length) and antenna system (connectors, coax grounding kit, antenna, and surge protection).	X		
Install RF local control stations and desk set identified in the equipment list.	X		
Perform control station programming.	X		
Deliverable: Control station equipment installation completed.			
<b>Mobile Radio and DVR-LX Installation and Programming</b>			
Develop and approve prototypes for each type of mobile installation.		X	X

Tasks	Motorola Solutions	Town of Weston	DESPP
Test features and functionalities of the mobile templates.		X	
Program the mobile radios identified in the equipment list in accordance with the programming templates, client software, and fleetmap. A “one-time only” programming is included in the project pricing with both existing and trunked system programmed.	X		
Provide vehicle list and work with Motorola Solutions to develop mobile equipment requirements.		X	
Provide adequate number of vehicles for installations according to the project/installation schedule.		X	
Remove the existing mobiles from the vehicle at the same time of installation of the new radios.	X		
Install all the mobiles in the vehicles (in same location as existing one), as identified in the equipment list, and according to the installation schedule.	X		
Provide suitable installation location (indoor facility with electrical power).		X	
Permanently mount the antennas on each vehicle appropriate for the vehicle type. Install the antennas close to the same location as the existing antennas in vehicles that already have antennas installed. If applicable, plug the old antenna hole with an appropriate rubber plug.	X		
Install the antennas on the roof, where practical, on the new antenna installations. If mobile antenna cannot be installed on the roof, determine an alternative location.	X		
Deliverable: Mobile radios installed and accepted.			
<b>Portable Radio Programming and Distribution</b>			
Program the portable radios identified in the equipment list in accordance with the customer approved programming templates, client software, and fleetmap. A “one-time only” programming is included in the project pricing with both existing and trunked system programmed.	X		
Deliver portable radios to authorized Customer personnel and inventory upon receipt.	X	X	
Acknowledge receipt of portable radios and accessories and verify proper operation of a sampling of delivered portable radios.		X	
Distribute portable radios to end users.		X	
Deliverable: Portable radios accepted and distributed.			
<b>SYSTEM OPTIMIZATION AND TESTING</b>			
<b>R56 Site Audit</b>			
Perform R56 site-installation quality-audits, verifying proper physical installation and operational configurations.	X		



Tasks	Motorola Solutions	Town of Weston	DESPP
Create site evaluation report to verify site meets or exceeds requirements, as defined in Motorola Solutions' R56 Standards and Guidelines for Communication Sites.	X		
Deliverable: R56 Standards and Guidelines for Communication Sites audits completed successfully.			
<b>Interference</b>			
Performance degradation of the System due to on-site RFI-EMI shall be promptly investigated and corrected by Motorola Solutions during the Warranty Term and, if exercised, any Maintenance Term of this Contract (A-99-001) at Motorola Solutions' expense, if the interference is due to a defect of any Product installed by Motorola Solutions.	X		
Resolve any interference caused by equipment not supplied by Motorola Solutions.		X	
<b>Solution Optimization</b>			
Verify that all equipment is operating properly and that all electrical and signal levels are set accurately.	X		
Verify that all audio and data levels are at optimized settings.	X		
Verify communication interfaces between devices for proper operation.	X		
Ensure that functionality meets manufacturers' specifications and complies with the final configuration established during design review or system staging.	X		
Deliverable: Completion of System Optimization.			
<b>Functional Acceptance Testing</b>			
Verify the operational functionality and features of the solution supplied by Motorola Solutions, as contracted.	X		
Witness the functional testing (if desired).		X	X
Document all issues that arise during the acceptance tests.	X		
If any major task for the system as contractually described fails during the Customer acceptance testing or beneficial use, repeat that particular task after Motorola Solutions determines that corrective action has been taken.	X		
Resolve any minor task failures before Final System Acceptance.	X		
Document the results of the acceptance tests and present for review.	X		
Review and approve final acceptance test results.		X	
Deliverable: Completion of functional testing and approval by Customer.			
<b>Coverage Testing</b>			
Determine the required number of test vehicles for simultaneous testing of multiple service areas.	X	X	
Perform coverage testing according to the Coverage Acceptance Test Plan (CATP), Submit test reports within the agreed period.	X		
For any area that fails, take corrective action.	X		
Retest any areas for which corrective action has been taken.	X		
Document all issues that arise during the coverage testing.	X		

Tasks	Motorola Solutions	Town of Weston	DESPP
Submit final test reports, according to the agreed period.	X		
Provide the required number of test vehicles, drivers, and resources to witness the coverage testing.		X	
Review and approve test results.		X	X
Deliverable: Completion of coverage testing and approval by Customer.			
<b>PROJECT TRANSITION</b>			
<b>Training</b>			
Schedule console training to coincide with console staging functional acceptance testing	X	X	
Provide training facility.	X		
Train-the-Trainer Training for 4 People - 2hr of Administration/Console Configuration Training - 2hr of Operator Training	X	X	
Attend proposed training classes.		X	
Deliverable: Training coursework completed.			
<b>Cutover</b>			
Finalize Cutover Plan.	X	X	X
Input user radio information into the system database and activation, as required.			X
Conduct cutover meeting with relevant personnel to address both how to mitigate technical and communication problem impacts to the users during cutover and during the general operation of the system.	X		
Notify the personnel affected by the cutover of the date and time planned for cutover.		X	X
Provide ongoing communication with users regarding the project and schedule.	X	X	X
Cut over users and ensure that RF sites are operating on ASTRO 25 system.	X		
Resolve punchlist items, documented during the Acceptance Testing phase, in order to meet all the criteria for final system acceptance.	X		
Assist Motorola Solutions with resolution of identified punchlist items by providing support, such as access to the sites, equipment and system, and approval of the resolved punchlist items.	X	X	X
Deliverable: Migration to new system completed, and punchlist items resolved.			
<b>Transition to Warranty</b>			
Review the items necessary for transitioning the project to warranty support and service.	X		
Motorola Solutions to provide services during year 1 warranty which align with the proposed services.	X		
Provide a Customer Support Plan detailing the warranty support associated with the contract equipment.	X		

Tasks	Motorola Solutions	Town of Weston	DESPP
Participate in the Transition Service/Project Transition Certificate (PTC) process.		X	X
Deliverable: Service information delivered and approved by Customer.			
<b>Finalize Documentation and System Acceptance</b>			
Provide manufacturer’s installation material, part list and other related material to Customer upon project completion.	X		
Provide an electronic as-built system manual on CD or other Customer preferred electronic media. The documentation will include the following: <ul style="list-style-type: none"> <li>▪ Site Block Diagrams.</li> <li>▪ Site Floor Plans.</li> <li>▪ Site Equipment Rack Configurations.</li> <li>▪ Antenna Network Drawings for RF Sites (where applicable).</li> <li>▪ ATP Test Checklists.</li> <li>▪ Functional Acceptance Test Plan Test Sheets and Results.</li> <li>▪ Equipment Inventory List.</li> </ul> Documents will be delivered in Adobe PDF format.	X		
Receive and approve documentation.		X	X
Execute Final Project Acceptance.	X	X	X

## 2.2 Civil Work – Site development

### 2.2.1 Site Development at Weston PD HQ Site

The existing 190ft monopole tower and existing equipment room in the multi-tenant shelter will be utilized. Motorola Solutions is proposing to install the new radio equipment and DC power system in the existing shelter. Motorola will provide the required electrical circuits for the proposed equipment and the installation of three (3) RF antennas and associated coax. An electrical upgrade in the small equipment room required. The tower will also require removal of existing antennas and coax after site cutover.

#### Site Scope Summary

- Engineering services for site drawings and regulatory approvals – Included.
- Site acquisition services – Not included.
- Zoning Services – Included.
- Existing tower to be used for antennas – 190 ' monopole tower.

#### Motorola Responsibilities:

##### Site Engineering

- Prepare site construction drawings, limited to 2 revisions, showing the layout of various new and existing site components.
- Conduct site walks to collect pertinent information from the sites (e.g., location of Telco, power, existing facilities, etc.).

- Prepare a lease exhibit and sketch of the site to communicate to the property owner the proposed space to be used and planned development at the particular site location.
- Prepare zoning drawings that can be used to describe the proposed site installation in sufficient detail.
- Prepare record drawings of the site showing the as-built information.
- Perform National Environmental Policy Act (NEPA) Limited Threshold Screening, including limited literature and records search and brief reporting, as necessary to identify sensitive natural and cultural features referenced in 47 Code of Federal Regulations (CFR) Chapter 1, subsection 1.1307 that may be potentially impacted by the proposed construction activity. This does not include the additional field investigations to document site conditions if it is determined that the proposed communication facility “may have a significant environmental impact” and thus require additional documentation, submittals, or work.
- Provide a structural engineering analysis for the antenna support structure, if necessary, to support the proposed antenna system. If the tower structure fails the analysis, the cost of any site relocation or modifications to the tower required to support the antenna system will be the responsibility of the Town of Weston. NOTE: This task does not include materials testing, geotechnical investigation, and/or other field investigation to acquire the data. If applicable, these tasks will be noted separately in the SOW.
- Provide tower climbing and tower mapping services to collect information about structural members and existing equipment.
- Preparation, submission and tracking of application for local permit fees (zoning, electrical, building etc.) and procurement of information necessary for filing.

### Site Preparation

- Obtain the permits such as electrical, building, and construction permits, and coordinate any inspections with local authorities that may be needed to complete site development work.
- Provide one-time mobilization costs for the construction crews. Any remobilization due to interruptions/delays that are out of Motorola's control will result in additional costs.

### Site Components Installation

- Supply and install exterior grounding for new tower ground bar (TGB) and exterior ground bar (EGB) and tie to existing tower ground ring to meet current Motorola's R56 standards.
- Conduct one (1) clamp-on ground resistance test of the site and provide results to the Town of Weston. Should any improvements to grounding system be necessary after ground testing, the cost of such improvements shall be the responsibility of the Town of Weston or negotiated with MSI through the change order process.

### Antenna and Transmission Line Installation

- Supply and Install three (3) antennas for the RF system.
- Supply and install three (3) pipe mounts on existing platform for proposed antennas.
- Supply and Install two (2) GPS antennas.
- Supply and Install one (1) tower top amplifier.
- Supply and Install up to 220 linear feet of 1/2-inch transmission line.
- Supply and Install up to 660 linear feet of 1-5/8-inch transmission line.
- Perform sweep tests on transmission lines.
- Provide and install attachment hardware for supporting transmission lines on the antenna support structure every three feet.
- Supply and install three (3) ground buss bars at the top, port, and bottom of the antenna support structure for grounding RF cables before they make horizontal transition.

### Existing Facility Improvement Work

- Single phase commercial power extension from existing emergency MDP to existing main equipment room to proposed new panel. Includes required conduit and conductors.
- Supply and install one (1) 200-amp breaker panel with capacity for 30 circuits.
- Supply and install three (3) 30-amp dual pole breakers in the distribution panel and wire to DC Plant rectifiers.
- Supply and install one (1) Type 1 surge protector on proposed electrical panel.
- Supply and install 18-inch-wide cable runway (up to 30 linear feet) inside the existing room.
- Supply and one (1) entry panel with 6 ports on inside of building in order to transition through both equipment rooms.
- Ground all proposed metallic objects in the interior of the existing room, to meet current Motorola's Standards and Guidelines for Communications Sites (R56) requirements and terminate near equipment locations.
- Supply and install two (2) copper ground buss bar(s) for new master ground bar (MGB) and exterior ground bar (EGB) at existing entry port.

### Miscellaneous Work

- Furnish material and labor to remove existing 100amp main breaker and replace with a new 200amp main breaker.
- Furnish crane and basket to install proposed antennas at top of monopole tower.
- Furnish materials and labor to add new trapeze kits on existing ice bridge.
- Mobilization and labor to remove existing antennas and coax at top of monopole after system cutover.
- Furnish crane and basket for the removal of existing antennas and coax at top of monopole tower.
- Furnish labor and material to install stainless steel banding for proposed cable management every 3ft on tower.

### Customer Responsibilities:

- Arrange for space on the structure for installation of new antennas at the proposed heights on designated existing antenna-mounting structures.
- Customer to provide HVAC if required.

## 2.2.2 Site Development at Transfer Station Site

The existing 180ft self-supporting tower and 10'x12' equipment shelter will be utilized. Motorola Solutions is proposing to install new radio equipment and DC power system in the existing shelter. Motorola will provide the required electrical circuits for the proposed equipment and the installation of three (3) RF antennas and associated coax. The site will require grounding upgrades to meet R56. The site will also require the removal of existing antennas and coax after site cutover.

### Site Scope Summary

- Engineering services for site drawings and regulatory approvals – Included.
- Site acquisition services – Not included.
- Zoning Services – Included
- Existing tower to be used for antennas – 180 ' self-supporting tower.

## Motorola Responsibilities:

### Site Engineering

- Prepare site construction drawings, limited to 2 revisions, showing the layout of various new and existing site components.
- Conduct site walks to collect pertinent information from the sites (e.g., location of Telco, power, existing facilities, etc.).
- Prepare a lease exhibit and sketch of the site to communicate to the property owner the proposed lease space and planned development at the particular site location.
- Prepare zoning drawings that can be used to describe the proposed site installation in sufficient detail.
- Prepare record drawings of the site showing the as-built information.
- Perform National Environmental Policy Act (NEPA) Limited Threshold Screening, including limited literature and records search and brief reporting, as necessary to identify sensitive natural and cultural features referenced in 47 Code of Federal Regulations (CFR) Chapter 1, subsection 1.1307 that may be potentially impacted by the proposed construction activity. This does not include the additional field investigations to document site conditions if it is determined that the proposed communication facility “may have a significant environmental impact” and thus require additional documentation, submittals, or work.
- Provide a structural engineering analysis for antenna support structure, if necessary, to support the proposed antenna system. If the tower structure fails the analysis, the cost of any site relocation or modifications to the tower required to support the antenna system will be the responsibility of Town of Weston. NOTE: This task does not include materials testing, geotechnical investigation, and/or other field investigation to acquire the data. If applicable, these tasks will be noted separately in the SOW.
- Provide tower climbing and tower mapping services to collect information about structural members and existing equipment.
- Preparation, submission and tracking of application for local permit fees (zoning, electrical, building etc.) and procurement of information necessary for filing.

### Site Preparation

- Obtain the permits such as electrical, building, and construction permits, and coordinate any inspections with local authorities that may be needed to complete site development work.
- Provide one-time mobilization costs for the construction crews. Any remobilization due to interruptions/delays that are out of Motorola's control will result in additional costs.

### Site Components Installation

- Supply and install exterior grounding for existing waveguide bridge, exterior utility boxes on outside of shelter, EGB, and HVAC units to meet R56 grounding specifications.
- Conduct one (1) clamp on ground resistance test of the site and provide results to the Town of Weston. Should any improvements to grounding system be necessary after ground testing, the cost of such improvements shall be the responsibility of Weston or negotiated with MSI through the change order process.

### Antenna and Transmission Line Installation

- Supply and Install three (3) antennas for the RF system.
- Supply and install three (3) heavy duty mounts for antennas.
- Supply and Install two (2) GPS antennas.
- Supply and Install one (1) tower top amplifier.

- Supply and Install up to 215 linear feet of 1/2-inch transmission line.
- Supply and Install up to 645 linear feet of 1-5/8-inch transmission line.
- Perform sweep tests on transmission lines.
- Provide and install attachment hardware for supporting transmission lines on the antenna support structure every three feet.
- Supply and install three (3) ground buss bars at the top, middle, and bottom of the antenna support structure for grounding RF cables before they make horizontal transition.

### **Existing Facility Improvement Work**

- Supply and install three (3) 30-amp dual pole breakers in the distribution panel and wire to DC Plant rectifiers.
- Supply and install 18-inch-wide cable runway (up to 10 linear feet) inside the existing room.
- Supply and install one (1) cable entry panel with 4 ports.
- Ground all proposed metallic objects in the interior of the existing room, to meet current Motorola's Standards and Guidelines for Communications Sites (R56) requirements and terminate near equipment locations.
- Supply and install two (2) copper ground buss bar(s) for new MGB and EGB.

### **Miscellaneous Work**

- Furnish crane and basket to install proposed antennas at top of self-supporting tower.
- Mobilization and labor to remove existing antennas and coax at top of self-supporting tower after system cutover.

### **Customer Responsibilities:**

- Arrange for space on the structure for installation of new antennas at the proposed heights on designated existing antenna-mounting structures.
- Provide as-built structural and foundation drawings of the structure and site location(s) along with geotechnical report(s) for Motorola to conduct a structural analysis.
- Repair shelter roof to address current water infiltration.

## **2.2.3 Site Development at Fire station 2 Site**

Motorola Solutions is proposing to install two (2) equipment racks in the attic area of firehouse. There is an existing utility panel in the attic that will be used for required DC plant circuits. Motorola is also proposing the installation of one (1) dual feed antenna on existing firehouse building gable with a custom mount. The site will also require removal of existing antennas and coax after site cutover.

### **Site Scope Summary**

- Engineering services for site drawings and regulatory approvals – Included.
- Site acquisition services – Not included.
- Zoning Services – Included.
- Existing structure to be used for antennas – 40' Building.

### **Motorola Responsibilities:**

#### **Site Engineering**

- Prepare site construction drawings, limited to 2 revisions, showing the layout of various new and existing site components.



- Conduct site walks to collect pertinent information from the sites (e.g., location of Telco, power, existing facilities, etc.).
- Prepare a lease exhibit and sketch of the site to communicate to the property owner the proposed lease space and planned development at the particular site location.
- Prepare record drawings of the site showing the as-built information.
- Perform National Environmental Policy Act (NEPA) Limited Threshold Screening, including limited literature and records search and brief reporting, as necessary to identify sensitive natural and cultural features referenced in 47 Code of Federal Regulations (CFR) Chapter 1, subsection 1.1307 that may be potentially impacted by the proposed construction activity. This does not include the additional field investigations to document site conditions if it is determined that the proposed communication facility “may have a significant environmental impact” and thus require additional documentation, submittals, or work. Perform a cultural resource study, as needed to identify sensitive historical and archaeological monuments that might be impacted by proposed construction.
- Provide a structural engineering analysis for antenna support structure, if necessary, to support the proposed the proposed equipment loads.
- Design custom antenna mount for supporting proposed dual feed antenna.
- Preparation, submission and tracking of application for local permit fees (zoning, electrical, building etc.) and procurement of information necessary for filing.

### *Site Preparation*

- Obtain the permits such as electrical, building, and construction permits, and coordinate any inspections with local authorities that may be needed to complete site development work.
- Provide one-time mobilization costs for the construction crews. Any remobilization due to interruptions/delays that are out of Motorola's control will result in additional costs.

### *Site Components Installation*

- Conduct one (1) clamp on ground resistance test of the site and provide results to the Town of Weston. Should any improvements to grounding system be necessary after ground testing, the cost of such improvements shall be the responsibility of the Town of Weston or negotiated with MSI through the change order process.

### *Antenna and Transmission Line Installation*

- Supply and Install one (1) dual feed antenna for the RF system.
- Supply and install (1) custom mount for dual feed antenna.
- Supply and Install up to 80 linear feet of 7/8-inch transmission line.
- Perform sweep tests on transmission lines.
- Provide and install attachment hardware for supporting transmission lines on the antenna support structure every three feet.
- Supply and install two (2) ground buss bars at the antenna support structure and new entry port.

### *Existing Facility Improvement Work*

- Supply and install two (2) 30-amp dual pole breakers in the distribution panel and wire to DC Plant rectifiers.
- Supply and install one (1) Type 1 surge protector on existing electrical panel.
- Supply and install 12-inch-wide cable runway (up to 20 linear feet) inside the existing attic for supporting RF cables.
- Supply and install two (2) cable entry ports.



- Ground all proposed metallic objects in the interior of the existing room, to meet current Motorola's Standards and Guidelines for Communications Sites (R56) requirements and terminate near equipment locations.
- Supply and install two (2) copper ground buss bars for MGB and EGB.

### *Miscellaneous Work*

- Furnish materials and labor to provide two (2) small steel I beams for spanning of existing attic rafters for proposed equipment racks.
- Provide transportation to pick up proposed equipment racks and deliver to the site.
- Furnish manlift for installation of custom mount and antenna.
- Mobilization and labor to remove existing antennas and coax after system cutover.

### **Customer Responsibilities:**

- Provide HVAC in existing attic equipment area if deemed necessary.

## **2.2.4 Site Development at Wilton Tower 31 Site**

Perform required AE functions for microwave installation by others.

### **Site Scope Summary**

- Engineering services for site drawings and regulatory approvals – Included.
- Site acquisition services – Not included.
- Zoning Services – Not included.
- Existing tower to be used for antennas – 180 ' self-supported tower.

### **Motorola Responsibilities:**

#### *Site Engineering*

- Prepare site construction drawings, limited to 2 revisions, showing the layout of various new and existing site components.
- Conduct site walks to collect pertinent information from the sites (e.g., location of Telco, power, existing facilities, etc.).
- Prepare a lease exhibit and sketch of the site to communicate to the property owner the proposed lease space and planned development at the particular site location.
- Prepare record drawings of the site showing the as-built information.
- Perform National Environmental Policy Act (NEPA) Limited Threshold Screening, including limited literature and records search and brief reporting, as necessary to identify sensitive natural and cultural features referenced in 47 Code of Federal Regulations (CFR) Chapter 1, subsection 1.1307 that may be potentially impacted by the proposed construction activity. This does not include the additional field investigations to document site conditions if it is determined that the proposed communication facility "may have a significant environmental impact" and thus require additional documentation, submittals, or work.
- Provide a structural engineering analysis for antenna support structure, if necessary, to support the proposed antenna system. If the tower structure fails the analysis, the cost of any site relocation or modifications to the tower required to support the antenna system will be the responsibility of the Town of Weston. NOTE: This task does not include materials testing, geotechnical investigation, and/or other field investigation to acquire the data. If applicable, these tasks will be noted separately in the SOW.

- Provide tower climbing and tower mapping services to collect information about existing equipment.

## 2.2.5 Customer Responsibilities: (Project Wide)

- If required, prepare and submit Electromagnetic Energy (EME) plans for the site (as a licensee) to demonstrate compliance with FCC RF Exposure guidelines.
- As applicable, coordinate, prepare, submit, and pay for all required permits and inspections for the work that is the Customer's responsibility.
- Review and approve site design drawings within 14 calendar days of submission by Motorola or its subcontractor(s). Should a re-submission be required, the Customer shall review and approve the re-submitted plans within 7 calendar days from the date of submittal.
- Pay for the usage costs of power, leased lines and generator fueling, both during the construction/installation effort and on an on-going basis.
- Pay for application fees, taxes and recurring payments for lease/ownership of the property.
- As applicable (based on local jurisdictional authority), the Customer will be responsible for any installation or up-grades of the electrical system in order to comply with NFPA 70, Article 708.
- Provide existing as-built drawings of the site and site components to Motorola for conducting site engineering.
- Arrange for space on the structure for installation of new antennas at the proposed heights on designated existing antenna-mounting structures.
- Provide as-built structural and foundation drawings of the structure and site location(s) for Motorola to conduct a structural analysis.
- If required, remove or relocate any existing facilities, equipment, and utilities to create space for new site facilities and equipment.

## 2.2.6 Assumptions: (Project Wide)

- All work is assumed to be done during normal business hours as dictated by time zone (Monday thru Friday, 7:30 a.m. to 5:00 p.m.).
- Prevailing wages are included.
- All recurring and non-recurring utility costs [including, but not limited to, generator fuel, electrical and leased fiber transport, will be borne by the Customer or site owner.
- Site will have adequate electrical service for the proposed equipment. Utility transformer, transformer upgrades, line, or pole extensions have not been included.
- Hazardous materials are not present at the work location. Testing and removal of hazardous materials found during site investigations, construction or equipment installation will be the responsibility of the customer.
- A maximum of 30 days will be required for obtaining approved building permits from time of submission, and a maximum of 30 days will be required for zoning approvals from time of submittal.
- No improvements are required for crane access.
- If extremely harsh or difficult weather conditions delay the site work for more than a week, Motorola will seek excusable delays rather than risk job site safety.
- Existing facility has a grounding system with a ground resistance of 10 ohms or less.
- Existing antenna support structures are structurally capable of supporting the new antenna, cables and ancillary equipment proposed and will not need to be removed or rebuilt at the existing site. The tower or supporting structure meets all applicable EIA/TIA-222 structural,

foundation, ice, wind and twist and sway requirements. Motorola has not included any cost for structural or foundation upgrades to the antenna support structure.

- AM detuning or electromagnetic emission studies will not be required.
- Structural analyses for towers or other structures that have not been performed by Motorola will relinquish Motorola from any responsibility for the analysis report contents and/or recommendation therein.
- Structural and foundation drawings of the antenna support structure will be made available to preclude the need for ultrasonic testing, geotechnical borings or mapping of existing tower structural members.
- On the existing towers, the antenna locations for the proposed antenna system design will be available at the time of installation.
- Existing cable support facilities from the antenna to the cable entry port can be used for supporting the new antenna cables.
- Extensive documentation (balloon tests, photo simulations, expert testimony etc.) to support zoning effort for existing structures is not required.
- The existing utility service and backup power facilities (generators) have sufficient extra capacity to support the proposed new equipment load.
- At the PD/FD and Transfer Station sites, the floor can support the proposed new loading. Physical or structural improvements to the existing room will not be required.
- At the Fire Station 2 site, assumes AP utility panel is backed by existing emergency generator and the generator has sufficient capacity to support the additional load.
- Winter conditions such as snow removal, frozen ground, concrete enhancements have not been included.

## 2.2.7 Motorola Solutions Clarification

- Motorola's proposal is conditioned upon the ability of Motorola to complete the project at the prices set forth herein. Due to significant market volatility and material price fluctuations in raw materials such as steel, copper, finished wood and concrete, Motorola reserves the right to review all material pricing prior to placing any order for materials or equipment required for new towers or shelters and related civil work at each site in order to verify price validity. In the event of a cost increase in material, equipment or energy occurring during performance of the project through no fault of Motorola, the contract price, time of completion and/or contract requirements shall be equitably adjusted by Change Order in accordance with the procedures of the contract documents.
- The freight rates are estimated. Motorola reserves the right to apply a fuel surcharge to the quoted freight rates on all shipments based on the cost of diesel at the time of shipment.

## 2.2.8 Completion Criteria

- Site development completed per issued for construction (IFC) construction drawings, project requirements, contractual obligations (including any customer/Motorola approved changes) and approved by the Town of Weston.

## 2.3 Assumptions

The following assumptions were made for the fixed equipment:

## Dispatch Console

- Assumes one time installation of console dispatch positions on customer provided furniture.
- All cable extensions (for keyboard / video / mouse) etc. to be provided by customer.
- Does not include integration to intercoms or panic buttons.

## RF Sites

- ASR can be staged for acceptance.
- Customer to make ample space for equipment at sites.
- Removed equipment will be transported to NorcomCT for disposal.
- Additional alarming points outside of Motorola proposed equipment (sensors, etc.) will be Weston's responsibility to furnish and install.

The following assumptions were made for the subscriber services:

## Subscriber Flash Upgrades

- Flashing assumes existing radios are in good working condition. Radios in need of repair / replacement will be quoted outside of price shown.
- PM checks and alignment of subscribers for equipment being flash upgraded have been included to ensure optimal TDMA performance of the equipment.

## Control Station Installations

- Assumes any desktop remote interconnect (network) cabling required is provided by customer and is not included in the price shown.
- Standard antenna system installation assumes a wall mount antenna accessible with a 20' ladder connected with up to 75' of antenna cable. Antenna cable may be surface mounted.
- Assumes customer provides power and there is a ground available within 75' of equipment and antenna location.
- Unless otherwise noted, does not include the cost of structural analysis, structural engineering, review and/or inspection of towers/buildings/structures/etc. and/or upgrades of towers/buildings/structures/etc. for control station antenna installations.
- Proposal and price quoted assumes that a Federal Aviation Administration (FAA) notification, Antenna Structure Registration (ASR) and/or any other federally required studies are not required for installation of equipment and control station antennas at any site.
- Does not include the cost of permits or permit fees, planning and zoning, inspection assistance or any monies associated with the aforementioned, if required.
- R56 audit is not included.
- Work to be completed during normal business hours.

## Mobile Installations

- Mobile installation price assumes installation of new radio in the same configuration (remote mount or dash mount), location and antenna location as the radio being removed.
  - Any relocation or special mounting of radio and/or antenna will require customer/Motorola authorization and may incur additional charges.
- Assumes all vehicles have a 12VDC or existing converter and a negative ground electrical system. Vehicles with other electrical systems may require a converter (not included in price shown).
- Vehicle charger install assumes installation concurrent with radio installation.

- Standard installation assumes a vehicle under one ton (including but not limited to sedan, pickup, SUV) requiring standard equipment and antenna mounting.
  - Vehicles with consoles, partitions, speciality vehicles, hybrid vehicles, vehicles with electrical system other than 12VDC-negative ground, and other non-standard vehicles are not considered to be “standard”.
- Heavy Duty installation assumes vehicle over one ton (including but not limited to dump body, plow trucks).
- Specialty vehicle is a non-standard vehicle or machine (including but not limited to mower, tractor, sweeper, backhoe, loader).
- Radio installation does not include interface to ancillary equipment unless otherwise noted.
  - Ancillary equipment includes but is not limited to Knox Box, headset system, intercom system, additional mic and speaker, vehicle repeater, AVL system.
- Customer to provide a steady flow of vehicles for agreed upon installation days.
  - Wait time for vehicle coordination will be billed in addition to price shown.
- Assumes work is completed during normal business hours

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### Section 3

# Acceptance Test Plan

## 3.1 Preliminary Functional Acceptance Test Plan

The following is a preliminary Functional Acceptance Test Plan for the proposed Simulcast Add-On Sites, ASR Site and Console Add-On Site.

## 3.1.1 Wide Area Trunking FDMA/TDMA Mixed Sites

### 3.1.1.1 Talkgroup Call

#### 1. DESCRIPTION

The Talkgroup is the primary level of organization for communications on a trunked radio system. Radios with Talkgroup call capability will be able to communicate with other members of the same Talkgroup. This provides the effect of a private channel down to the Talkgroup level.

This test will demonstrate that a Talkgroup transmission initiated by a radio user will only be heard by system users, which have, the same Talkgroup selected. As with other types of calls, Talkgroup calls can take place from anywhere in the system.

#### SETUP

RADIO-1 - SITE 1 - TALKGROUP 1  
RADIO-2 - SITE 2 - TALKGROUP 1  
RADIO-3 - SITE 1 - TALKGROUP 2  
RADIO-4 - SITE 2 - TALKGROUP 2

#### VERSION #1.040

#### 2. TEST

- Step 1. Initiate a Wide Area Call with RADIO-1 in TALKGROUP 1.
- Step 2. Observe that only RADIO-2 will be able to monitor and respond to the call.
- Step 3. Initiate a Wide Area Call with RADIO-3 in TALKGROUP 2.
- Step 4. Observe that only RADIO-4 will be able to monitor and respond the call.

Pass\_\_\_\_ Fail\_\_\_\_



## Wide Area Trunking FDMA/TDMA Mixed Sites

### 3.1.1.2 Continuous Assignment Updating

#### 1. DESCRIPTION

When a talkgroup is assigned a voice channel, the site controller continues to transmit the channel assignment on the control channel for the duration of the talkgroup call. Radios coming into use on the system are automatically sent to voice channels with conversations in progress involving their selected talkgroups.

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-2 - TALKGROUP 1  
RADIO-3 - TALKGROUP 1

#### VERSION #1.010

#### 2. TEST

- Step 1. Turn OFF RADIO-1.
- Step 2. Initiate a Talkgroup Call using RADIO-2 and verify RADIO-3 hears the audio.
- Step 3. While the Talkgroup Call is in progress, turn ON RADIO-1.
- Step 4. Observe RADIO-1, which was just brought back into service, joins the Talkgroup Call already in progress.
- Step 5. End the talkgroup call.
- Step 6. Switch RADIO-1 to another talkgroup.
- Step 7. Initiate a Talkgroup Call from RADIO-2 to RADIO-3.
- Step 8. While the Talkgroup Call is in progress, set RADIO-1 back to TALKGROUP 1.
- Step 9. Observe that RADIO-1 joins the Talkgroup Call already in progress.

Pass \_\_\_\_ Fail \_\_\_\_

## Wide Area Trunking FDMA/TDMA Mixed Sites

### 3.1.1.3 Audio Interrupt / Interrupt Never Mode

#### 1. DESCRIPTION

A radio PTT request may be received for a group already active and currently being sourced by another radio unit. The talkgroup can be flagged to either allow or disallow the new PTT. If allowed, the latest PTT request will be granted and become the source of the call.

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-2 - TALKGROUP 1  
RADIO-3 - TALKGROUP 1

#### VERSION #1.020

#### 2. TEST

- Step 1. Verify TALKGROUP 1's template is set up as Audio Interrupt Never.
- Step 2. Using RADIO-1, initiate a call on TALKGROUP 1.
- Step 3. Verify both RADIO-2 and RADIO-3 monitor the audio.
- Step 4. Using RADIO-3, initiate a call on TALKGROUP 1.
- Step 5. Verify that RADIO-3 receives a reject and that RADIO-2 continues to listen to RADIO-1.
- Step 6. Dekey both Radios.

Pass\_\_\_\_ Fail\_\_\_\_

## 3.1.2 MCC 7500E Console Features

### 3.1.2.1 Instant Transmit

#### 1. DESCRIPTION

The instant transmit switch provides immediate operator access to a channel, independent of its select status (selected or unselected). It provides priority over other dispatcher transmit bars or optional footswitches.

#### SETUP

RADIO-1 - TALKGROUP 1  
CONSOLE-1 – TALKGROUP 1 (Selected),  
TALKGROUP 2 (Unselect mode)

#### VERSION #1.010

#### 2. TEST

- Step 1. Using CONSOLE-1, press the Instant Transmit button on TALKGROUP 1.
- Step 2. Verify that the Transmit indicator is lit.
- Step 3. Verify RADIO-1 can monitor and respond to the call on TALKGROUP 1.
- Step 4. On RADIO-1 change to TALKGROUP 2.
- Step 5. Using CONSOLE-1, press the Instant Transmit button on the TALKGROUP 2 radio resource.
- Step 6. Verify RADIO-1 can monitor and respond to the call on TALKGROUP 2.

Pass\_\_\_\_ Fail\_\_\_\_

## MCC 7500E Console Features

### 3.1.2.2 Talkgroup Selection and Call

#### 1. DESCRIPTION

The Talkgroup Call is the primary level of organization for communications on a trunked radio system. Dispatchers with Talkgroup Call capability will be able to communicate with other members of the same talkgroup. This provides the effect of an assigned channel down to the talkgroup level. When a Talkgroup Call is initiated from a subscriber unit, the call is indicated on each dispatch operator position that has a channel control resource associated with the unit's channel/talkgroup.

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-2 - TALKGROUP 2  
RADIO-3 - TALKGROUP 1  
RADIO-4 - TALKGROUP 2  
CONSOLE-1 - TALKGROUP 1  
CONSOLE-2 - TALKGROUP 2

#### VERSION #1.010

#### 2. TEST

- Step 1. Initiate a wide area call from CONSOLE-1 on TALKGROUP 1.
- Step 2. Observe that RADIO-1 and RADIO-3 will be able to monitor the call. Dekey the console and have either radio respond to the call.
- Step 3. Observe that all consoles with TALKGROUP 1 can monitor both sides of the conversation.
- Step 4. Initiate a wide area call from CONSOLE-2 on TALKGROUP 2.
- Step 5. Observe that RADIO-2 and RADIO-4 will be able to monitor the call. Dekey the console and have either radio respond to the call.
- Step 6. Observe that all consoles with TALKGROUP 2 can monitor both sides of the conversation.

Pass \_\_\_\_ Fail \_\_\_\_

## MCC 7500E Console Features

### 3.1.2.3 Emergency Alarm and Call Display Description

#### 1. DESCRIPTION

Users in life threatening situations can use the emergency button on the radio to send an audible alarm and a visual alarm signal to a console operator in order to request immediate system access to a voice channel for an emergency call.

An emergency alarm begins after the radio user presses the radio's emergency button. Pressing the emergency button places the radio in "emergency mode". To begin an emergency call, the radio user must press the radio's PTT button while in "emergency mode." The assigned voice channel will be dedicated to the emergency caller's talkgroup for an extended period of time, equal to the Message Hang Time plus the Emergency Hang Time. As with other call types, emergency calls can operate across sites as well as within the same site.

#### SETUP

RADIO-1 - TALKGROUP 1  
CONSOLE-1 - TALKGROUP 1  
CONSOLE-2 - TALKGROUP 1

#### VERSION #1.010

#### 2. TEST

- Step 1. Initiate an Emergency Alarm from RADIO-1.
- Step 2. Observe the Emergency from RADIO-1 is received at CONSOLE-1 for TALKGROUP 1.
- Step 3. Acknowledge the Emergency at the operator position. Verify CONSOLE-2 receives notification that the call has been acknowledged.
- Step 4. Initiate a call with RADIO-1 to initiate an Emergency call.
- Step 5. Observe CONSOLE-1 and CONSOLE-2 can monitor RADIO-1.
- Step 6. Clear the Emergency from CONSOLE-1 on TALKGROUP 1.
- Step 7. End the Emergency Alarm from RADIO-1.

Pass \_\_\_\_ Fail \_\_\_\_

## MCC 7500E Console Features

### 3.1.2.4 Multigroup Call

#### 1. DESCRIPTION

This trunking feature allows an equipped console operator position to transmit an announcement to several different talkgroups simultaneously. As with Talkgroup Calls, multigroup calls operate across sites as well as within the same site.

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-2 - TALKGROUP 2  
RADIO-3 - RANDOM  
CONSOLE-1 - ATG 1

Note: TALKGROUP 1 and TALKGROUP 2 are members of ATG 1. RANDOM is any talkgroup not a member of ATG 1.

#### VERSION #1.010

#### 2. TEST

- Step 1. Using CONSOLE-1, select the ATG 1 resource.
- Step 2. Initiate the Multigroup Call from CONSOLE-1.
- Step 3. Observe that RADIO-1 and RADIO-2 receive the Multigroup Call.
- Step 4. Verify that RADIO-3 does not receive the Multigroup Call because it is not a member of ATG 1.
- Step 5. Answer the Multigroup Call using RADIO-1 and observe CONSOLE-1 receives the response.
- Step 6. Verify that if the call is answered within the repeater hang time, the console will receive the call on the ATG 1 resource tile, otherwise the console will receive the call on the TALKGROUP 1 tile.
- Step 7. Verify that if the call is answered within the repeater hang time, RADIO-2 will monitor the call.

Pass\_\_\_\_ Fail\_\_\_\_

## MCC 7500E Console Features

### 3.1.2.5 Multi-Select Operation

#### 1. DESCRIPTION

Multi-Select (Msel) allows the console operator to group a number of channels/talkgroups together such that when the general transmit bar is depressed, all of the multi-selected channels/talkgroups will transmit at the same time with the same information. Multi-Select is one way communication call. If a radio user responds to a Multi-Select call the talkgroup the user is affiliated to will be the only one to hear the call. There is no super-group formed, so radio communication is still at the single talkgroup level. Multi-Select is utilized to send an APB to several channels/talkgroups. A Multi-Select has a limit of twenty (20) trunking/conventional resources

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-2 - TALKGROUP 2  
CONSOLE-1 - TALKGROUP 1, TALKGROUP 2

#### VERSION #1.010

#### 2. TEST

- Step 1. From CONSOLE-1, create an Msel group with TALKGROUP 1 and TALKGROUP 2.
- Step 2. Transmit on the Msel using the Msel instant transmit button.
- Step 3. Verify that RADIO-1 and RADIO-2 hear the call.
- Step 4. Initiate a call with RADIO-1.
- Step 5. Verify the call is heard on CONSOLE-1 but not on RADIO-2.
- Step 6. Initiate a call with RADIO-2.
- Step 7. Verify the call is heard on CONSOLE-1 but not on RADIO-1.
- Step 8. On CONSOLE-1 dissolve the Msel.

Pass \_\_\_\_ Fail \_\_\_\_

## MCC 7500E Console Features

### 3.1.2.6 Talkgroup Patch

#### 1. DESCRIPTION

Talkgroup Patch allows a dispatcher to merge several talkgroups together on one voice channel to participate in a single conversation. This can be used for situations involving two or more talkgroups that need to communicate with each other.

Using the Patch feature, the console operator can talk and listen to all of the selected talkgroups grouped; in addition, the members of the individual talkgroups can also talk or listen to members of other talkgroups. Patched talkgroups can communicate with the console dispatcher and other members of different talkgroups because of the "supergroup" nature of the Patch feature.

NOTE : If "secure" and "clear" resources are patched together, one repeater for each mode may be assigned per site.

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-2 - TALKGROUP 2  
RADIO-3 - TALKGROUP 1  
RADIO-4 - TALKGROUP 2  
CONSOLE-1 - TALKGROUP 1 and TALKGROUP 2

Note: All 4 Radios must have the same home zone.

#### VERSION #1.010

#### 2. TEST

- Step 1. Using CONSOLE-1 create a patch between TALKGROUP 1 and TALKGROUP 2.
- Step 2. Initiate a patch call from CONSOLE-1.
- Step 3. Verify RADIO-1, RADIO-2, RADIO-3, and RADIO-4 can monitor the call.
- Step 4. Initiate several calls between the radios and verify successful communication.
- Step 5. Dissolve the patch created in step 1.

Pass\_\_\_\_ Fail\_\_\_\_



## MCC 7500E Console Features

### 3.1.2.7 Alert Tones - Talkgroup

#### 1. DESCRIPTION

Pre-defined alert tones can be transmitted on the selected Radio Resource to subscribers which can alert members of a channel / talkgroup to a particular event or signify to radio users special instructions are to follow. The Console has the ability to send an Alert-Tone signal on selected conventional or talkgroup resources.

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-2 - TALKGROUP 1  
CONSOLE-1 - TALKGROUP 1

#### VERSION #1.040

#### 2. TEST

- Step 1. Select TALKGROUP 1 on CONSOLE-1.
- Step 2. Select Alert Tone 1 and depress the Alert Tone button.
- Step 3. Verify that RADIO-1 and RADIO-2 hear Alert Tone 1.
- Step 4. Repeat Steps 2-3 for Alert Tone 2 and 3.

Pass \_\_\_\_ Fail \_\_\_\_

## MCC 7500E Console Features

### 3.1.2.8 Call Alert

#### 1. DESCRIPTION

Call Alert Page allows a subscriber/dispatcher to selectively alert another radio unit. The initiating subscriber/console will receive notification as to whether or not the call alert was received. Units receiving a Call Alert will sound an alert tone and show a visual alert indication. The display will also show the individual ID of the initiating subscriber/console unit.

#### SETUP

RADIO-1 - TALKGROUP 1  
CONSOLE-1 - TALKGROUP 1

#### VERSION #1.030

#### 2. TEST

- Step 1. Using CONSOLE-1, select the call alert button in the "Private Call" resource window.
- Step 2. Enter the ID of RADIO-1 and send the call alert to RADIO-1.
- Step 3. Verify that RADIO-1 receives the alert and that the ID or alias of the console is shown.
- Step 4. Turn off RADIO-1.
- Step 5. Using CONSOLE-1, send the call alert to RADIO-1 again.
- Step 6. Verify that after trying to page RADIO-1, the console displays "Can not send call alert - target not found" in the summary/status list.

Pass\_\_\_\_ Fail\_\_\_\_

## MCC 7500E Console Features

### 3.1.2.9 Console Priority

#### 1. DESCRIPTION

Console Operator Positions have ultimate control of transmitted audio on an assigned voice channel resource. The Console Position has the capability to take control of an assigned voice channel for a talkgroup call so that the operator's audio overrides any subscriber audio. Console priority is a feature that enables dispatchers to gain immediate access to an assigned voice channel so that a central point of audio control exists.

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-2 - TALKGROUP 1  
CONSOLE-1 - TALKGROUP 1

#### VERSION #1.020

#### 2. TEST

- Step 1. Initiate a Talkgroup call from RADIO-1 on TALKGROUP 1. Keep this call in progress until the test has completed.
- Step 2. Observe that RADIO-2 receives the call.
- Step 3. While the call is in progress, key up CONSOLE-1 on TALKGROUP 1.
- Step 4. Observe that RADIO-2 is now receiving audio from CONSOLE-1 on TALKGROUP 1.
- Step 5. De-key CONSOLE-1.
- Step 6. Verify RADIO-2 now receives RADIO-1 audio.
- Step 7. End the TALKGROUP 1 call from RADIO-1.

Pass\_\_\_\_ Fail\_\_\_\_

## MCC 7500E Console Features

### 3.1.2.10 PTT Unit ID/Alias Display

#### 1. DESCRIPTION

Console operator positions contain various resources such as talkgroup, multigroup, Private Call which enables the dispatcher to communicate with the subscriber units. If activity occurs on one of these operator position resources, the unit ID or associated alias of the initiating radio appears at the console resource.

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-2 - TALKGROUP 1  
CONSOLE-1 - TALKGROUP 1  
CONSOLE-2 - TALKGROUP 1

#### VERSION #1.010

#### 2. TEST

- Step 1. Select the resource for TALKGROUP 1 on CONSOLE-1.
- Step 2. Initiate a call on TALKGROUP 1 from RADIO-2 and observe that the alias is seen at CONSOLE-1 in the resource window as well as in the Activity Log window.
- Step 3. Initiate a call from RADIO-1 and observe that the alias of RADIO-1 is seen at CONSOLE-1 in the resource window as well as in the Activity Log window.
- Step 4. Modify RADIO-2's alias. Make sure to give enough time for the alias change to propagate to the Zone Controller.
- Step 5. Initiate a call from RADIO-2 and observe the new alias of RADIO-2 is seen at CONSOLE-1 in the list in the resource window as well as in the Activity Log window.
- Step 6. Return RADIO-2's alias to its original state.

Pass \_\_\_\_ Fail \_\_\_\_

### 3.1.3 Signoff Certificate

By their signatures below, the following witnesses certify they have observed the system Acceptance Test Procedures.

#### Signatures

WITNESS: \_\_\_\_\_ Date: \_\_\_\_\_

Please Print Name: \_\_\_\_\_

Initials: \_\_\_\_\_

Please Print Title: \_\_\_\_\_

WITNESS: \_\_\_\_\_ Date: \_\_\_\_\_

Please Print Name: \_\_\_\_\_

Initials: \_\_\_\_\_

Please Print Title: \_\_\_\_\_

WITNESS: \_\_\_\_\_ Date: \_\_\_\_\_

Please Print Name: \_\_\_\_\_

Initials: \_\_\_\_\_

Please Print Title: \_\_\_\_\_

## 3.2 Coverage Acceptance Test Plan

### 3.2.1 Overview

This Coverage Acceptance Test Plan (CATP) is designed to verify that the voice radio system implemented by Motorola Solutions for the Town of Weston meets or exceeds the required reliability as shown on Motorola Solutions' map. The CATP defines the coverage testing method and procedure, the coverage acceptance criterion, the test documentation, and the responsibilities of Motorola Solutions, the Town of Weston, and DESPP.

Coverage Acceptance Testing is based upon a coverage prediction that accurately represents the implemented infrastructure and parameters that are consistent with the contract agreements. Motorola Solutions' coverage design and coverage guarantee is based on the use of Motorola Solutions APX subscribers. The Coverage Acceptance Test will be performed using Motorola Solutions APX subscribers.

Subsequent sections define the coverage acceptance test configurations and test criteria.

### 3.2.2 CATP Definitions

Several definitions are needed to accurately describe the coverage acceptance test method and criteria. Where cited, these terms or methods are defined in TIA TSB 88.1-F<sup>1</sup> or TSB-88.3-F<sup>2</sup>.

#### 3.2.2.1 Defined Test Area

The defined test area is the geographical area in which communications will be provided that meet or exceed the specified Channel Performance Criterion (CPC) at the specified reliability for the specified equipment configuration. The defined test area is listed in Table 3-2: Town of Weston Coverage Acceptance Test Summary, along with the name of the corresponding Motorola Solutions map which shows the defined test area. Please see Reference 1 in Section 3.2.7 for the APX 8000 Portable with an additional 8 dB loss applied for building penetration coverage prediction and Reference 2 in Section 3.2.7 for the APX 6500 Mobile coverage prediction.

For coverage testing, the defined test area will be divided into a grid pattern by Motorola Solutions to produce at least the number of uniformly sized test locations (or tiles) required by the Estimate of Proportions formula. {TSB-88.3-F, §5.2.1, equation 2} The minimum number of test tiles required varies, from a hundred to many thousands, depending on the size of the defined test area, desired confidence in results, type of coverage test, and the predicted versus required reliability.

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<sup>1</sup> *Wireless Communications Systems --- Performance in Noise- and Interference-Limited Situations --- Part 1: Recommended Methods for Technology Independent Performance Modeling*, Technical Service Bulletin TSB-88.1-F, Telecommunications Industry Association (TIA), Arlington VA, 2022.

<sup>2</sup> *Wireless Communications Systems --- Performance in Noise- and Interference-Limited Situations --- Part 3: Recommended Methods for Technology Independent Performance Verification*, Technical Service Bulletin TSB-88.3-F, Telecommunications Industry Association (TIA), Arlington VA, 2022.

### 3.2.2.2 Channel Performance Criterion (CPC)

The CPC is the specified minimum design performance level in a faded channel. {TSB 88.1-F, §5.2} For this system, the CPC is the Delivered Audio Quality (DAQ) as stated in Table 3-2: Town of Weston Coverage Acceptance Test Summary. The DAQ definitions are provided below in Table 3-1: DAQ Definitions. {TSB-88.1-F, §5.4.2, Table 3}

**Table 3-1: DAQ Definitions**

DAQ	Subjective Performance Description
1	Unusable, speech present but unreadable.
2	Understandable with considerable effort. Frequent repetition due to noise/distortion.
3	Speech understandable with slight effort. Occasional repetition required due to noise/distortion.
3.4	Speech understandable with repetition only rarely required. Some noise/distortion.
4	Speech easily understood. Occasional noise/distortion.
4.5	Speech easily understood. Infrequent noise/distortion.
5	Speech easily understood.

The CPC pass/fail criterion is the faded performance threshold, plus any adjustments for antenna performance, external noise, and in-building or in-vehicle losses. {TSB-88.1-F, §5.4.2, Figure 6} The faded performance threshold for the specified CPC is determined using the receiver’s static reference sensitivity adjusted by the projected CPC parameters for the applicable Modulation Type and DAQ as listed in the current version of TSB-88.1, Annex A, Table A-1. For coverage testing of digital voice radio systems, the faded performance threshold is the applicable Bit Error Rate (BER) from the projected CPC parameters.

### 3.2.2.3 Reliability

The Service Area Reliability is the percentage of locations within the defined test area that are predicted to meet or exceed the specified CPC. The Motorola Solutions’ map indicates the Service Area within which this system is predicted to provide at least the reliability of meeting or exceeding the CPC as stated in Table 3-2: Town of Weston Coverage Acceptance Test Summary.

After all accessible tiles in the defined test area have been tested, the Service Area Reliability will be determined by dividing the number of tiles tested that meet or exceed the CPC pass/fail criterion by the total number of tiles tested. {TSB-88.3-F, §5.1, equation 1} Please see Reference 1 in Section 3.2.7 for the APX 8000 Portable with an additional 8 dB loss applied for building penetration coverage prediction and Reference 2 in Section 3.2.7 for the APX 6500 Mobile service area reliability coverage prediction.

### 3.2.2.4 Direction of Test

The direction of test in Table 3-2: Town of Weston Coverage Acceptance Test Summary defines the direction which will be tested for coverage acceptance. Outbound (also called forward link, downlink, or talk-out) is the path from the fixed equipment outward to the mobile or portable radios. Inbound (also called reverse link, uplink, or talk-in) is the path from the mobile or portable radios inward to the fixed equipment. Round Trip means both Outbound and Inbound are required to pass for a test tile to pass.

### 3.2.2.5 Equipment Configurations

This section defines the equipment configurations and infrastructure design parameters upon which the coverage guarantee and the coverage acceptance test are based. The equipment configurations are defined in Table 3-2: Town of Weston Coverage Acceptance Test Summary, and includes user equipment, outdoor/in-building definition, defined test area, number of test tiles, reliability, CPC, CPC pass/fail, and direction(s) of test. The infrastructure design parameters are defined in Table 3-3: Town of Weston Infrastructure Design Parameters, and include site names, site locations, and antenna system parameters. If the implemented system equipment configuration and/or infrastructure design parameters vary from these configurations and/or parameters, a revised coverage map will be used to define the test configuration and potential areas from which test tiles will be included in the revised coverage acceptance test.

Coverage testing will be conducted with equipment installed per the configuration in Table 3-2: Town of Weston Coverage Acceptance Test Summary, and with the mobile antenna in an unobstructed location that is not adjacent to other large objects or metallic items which would distort the antenna pattern.



**Table 3-2: Town of Weston Coverage Acceptance Test Summary**

User Equipment	Outdoor / In-Building	Defined Test Area & Map Name	Number of Test Tiles	Reliability	CPC	CPC Pass/Fail	Direction(s) of Test
<b>Guaranteed Coverage</b>							
2.5 watt APX 8000 Portable with the standard XE all-band antenna in a swivel case on the hip with a remote speaker microphone for transmit and receive	8 dB loss applied for building penetration coverage. In-vehicle attenuated drive test (simulating portable antenna performance and 8 dB loss applied for building penetration)	Service Area within the Town of Weston Jurisdictional Boundary as shown in Section 3.2.7 Reference 1 - Town of Weston, CLMRN G 7/800 MHz TDMA Simulcast Subsystem, 95% Service Area Reliability, Roundtrip, DAQ 3.4, APX 8000 Portable with an additional 8 dB loss applied for building penetration	470 (0.25 x 0.25 mile tiles) with approximately 400 accessible by roads	95%	DAQ-3.4	Subjective DAQ	Round Trip
APX 6500 Mobile in a standard vehicle with a unity gain antenna mounted in the center of the roof at least 5-feet high with 17-feet or less of Larson RG-58/U low loss dual shield coax or Times Microwave Systems LMR-240 coax installed according to prescribed installation standards	Outdoor	Service Area within the DESPP Troop G Jurisdictional Boundary as shown in Section 3.2.7 Reference 2 - CLMRN G 7/800 MHz TDMA Simulcast Subsystem, 98% Service Area Reliability, Outbound, DAQ 3.0, APX 6500 Mobile	4,305 (0.3 x 0.3 mile tiles) with approximately 4,127 accessible by roads	98%	DAQ-3.0	3.1% BER Outbound with Subjective DAQ Re-Test Allowed	Outbound Only

**Table 3-3: Town of Weston Infrastructure Design Parameters**

Site Name	Latitude	Longitude	Transmit Antenna System				Receive Antenna System			
			Mount Height (Feet)	Antenna Model	Azimuth (Degrees)	ERP (Watts)	Mount Height (Feet)	Antenna Model	Azimuth (Degrees)	EFS (dBm)
<b>CLMRN G 700/800 MHz P25 Phase II TDMA Simulcast Subsystem</b>										
Weston Fire Headquarters	41°12'8.5" N	73°22'46.8" W	180	dbSpectra DS7C09P36U-D	N/A	150	180	dbSpectra DS7C09P36U-D	N/A	-120.63
Weston Transfer Station	41°14'31.3" N	73°21'51.7" W	145	dbSpectra DS7C09P36U-D	N/A	150	145	dbSpectra DS7C09P36U-D	N/A	-123.29
2 <sup>nd</sup> District Water Tank (Existing CLMRN)	41°4'25.2" N	73°25'59.2" W	110	dbSpectra DS7C09P36D-D Upper Element	N/A	100	110	dbSpectra DS7C09P36U-D	N/A	-120.63
Bayberry Lane (Existing CLMRN)	41°10'17.9" N	73°19'42.9" W	140	dbSpectra DS7C09P36U-D	N/A	150	140	dbSpectra DS7C09P36U-D	N/A	-120.56
Deer Run (Existing CLMRN)	41°14'29.1" N	73°28'12.0" W	110	RFI BPA7496-180-14	90	100	110	RFI BPA7496-180-14	90	-126.51
Fairfield PD (Existing CLMRN)	41°8'22.5" N	73°15'26.5" W	150	RFI BPA7496-180-14	335	150	150	RFI BPA7496-180-14	335	-123.78
Greenwich (Existing CLMRN)	41°5'49.3" N	73°38'19.5" W	180	Sinclair SC479-HF1LDF(D00-E5608)	N/A	105	180	Sinclair SC479-HF1LDF(D00-E5608)	N/A	-120.65
Norwalk Hospital (Existing CLMRN)	41°6'44.1" N	73°25'21.7" W	144	dbSpectra DS7C09P36D-D Upper Element	N/A	100	144	dbSpectra DS7C09P36U-D	N/A	-113.93
Redding (Existing CLMRN)	41°17'13.3" N	73°26'17.4" W	130	Sinclair SE419-SF3P4LDF	135	174	130	Sinclair SE419-SF3P4LDF	135	-121.96
Shelton (Existing CLMRN)	41°16'48.5" N	73°11'7.6" W	169	Sinclair SC479-HF1LDF(D00-E5765)	N/A	100	169	Sinclair SC479-HF1LDF(D00-E5765)	N/A	-120.70
SHU Roncalli Hall (Existing CLMRN)	41°13'13.6" N	73°14'17.0" W	120	dbSpectra DS7C09P36U-D	N/A	150	120	dbSpectra DS7C09P36U-D	N/A	-120.48

Site Name	Latitude	Longitude	Transmit Antenna System				Receive Antenna System			
			Mount Height (Feet)	Antenna Model	Azimuth (Degrees)	ERP (Watts)	Mount Height (Feet)	Antenna Model	Azimuth (Degrees)	EFS (dBm)
Stamford (Existing CLMRN)	41°3'5.6" N	73°32'35.3" W	160	RFI CC807-08-T5	N/A	59	160	RFI CC807-08-T5	N/A	-117.79
Troop G (Existing CLMRN)	41°10'20.0" N	73°11'32.0" W	180	dbSpectra DS7C09P36U-D	N/A	100	180	dbSpectra DS7C09P36U-D	N/A	-118.88
West Rock Ridge (Existing CLMRN)	41°20'43.3" N	72°58'14.4" W	115	Sinclair SC479-HF1LDF(D00-E5765)	N/A	51	114	Sinclair SC479-HF1LDF(D00-E5765)	N/A	-120.81
Westport (Existing CLMRN)	41°8'14.8" N	73°20'4.8" W	173	Amphenol WPA-700102-4CF-EDIN-9	235	102	160	Sinclair SE419-SWBPALDF(D00) A=130°	235	-124.30
Wilton (Existing CLMRN)	41°10'21.3" N	73°26'3.4" W	182	Sinclair SC479-HF1LDF(D00-E5765)	N/A	155	181	Sinclair SC479-HF1LDF(D00-E5765)	N/A	-120.64
Wilton Transfer Station (Existing CLMRN)	41°14'18.7" N	73°25'26.9" W	125	dbSpectra DS7C09P36U2D	N/A	150	125	dbSpectra DS7C09P36U2D	N/A	-123.26
Wood House Road (Existing CLMRN)	41°11'45.3" N	73°16'53.0" W	92	dbSpectra DS7C09P36U-D	N/A	150	92	dbSpectra DS7C09P36U-D	N/A	-120.48
<b>700 MHz or 800 MHz P25 Phase II TDMA ASTRO Site Repeater (ASR)</b>										
Weston Fire Station #2	41°12'52.0" N	73°20'58.1" W	40	dbSpectra DS7C06P36D-D Upper Element	N/A	50	40	dbSpectra DS7C06P36D-D Lower Element	N/A	-113.54

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### 3.2.2.6 In-Building Coverage

Motorola Solutions' coverage prediction for the portable equipment configuration includes additional loss to accommodate in-building coverage as stated in Table 3-2: Town of Weston Coverage Acceptance Test Summary.

Since building loss varies significantly depending on the construction of buildings, Motorola Solutions' coverage map does not predict coverage within any specific building. Rather, the in-building coverage map indicates the area within which this system is predicted to provide the required reliability of meeting or exceeding the required CPC within buildings that have up to the in-building loss as stated in Table 3-2: Town of Weston Coverage Acceptance Test Summary.

The in-building coverage map applies only to the above ground portions of buildings. The coverage map does not apply to in-building locations that are shielded from radio penetration, such as elevators, basements below ground level, tunnels, bank vaults, jails, x-ray rooms, nuclear facilities, and other locations shielded by metal walls or with heavy construction and with no external windows or doors.

Please see Reference 1 in Section 3.2.7 for the APX 8000 Portable with an additional 8 dB loss applied for building penetration coverage prediction.

### 3.2.2.7 Outdoor Only Mobile Coverage

Motorola Solutions' mobile coverage prediction is for outdoor locations only. Mobile coverage inside buildings, such as parking garages, or in tunnels is not a design requirement of this system and is, therefore, not guaranteed.

Please see Reference 2 in Section 3.2.7 for the APX 6500 Mobile coverage prediction.

### 3.2.2.8 CPC Pass/Fail Criterion for a Test Tile

For the defined equipment configuration, the CPC pass/fail criterion for a test tile is stated in Table 3-2: Town of Weston Coverage Acceptance Test Summary. The defined equipment configuration will have only one CPC pass/fail criterion for a test tile.

Coverage for the APX 8000 Portable with an additional 8 dB loss applied for building penetration equipment configuration will be verified for acceptance by attenuation of the test radio for Subjective DAQ tests. The attenuation will be the difference between the test radio's antenna system and the additional loss used in Motorola Solutions' coverage prediction to account for portable antenna performance and in-building penetration. The attenuator value is provided in Table 3-4: Attenuator Value to Evaluate Portable Equipment Configuration. Please see Figure 3-1: Portable CATP Test Radio Setup Diagram for the subjective DAQ roundtrip configuration.

This provides a method of verifying that the radio system provides the required Subjective DAQ for the specified CPC for the defined APX 8000 portable equipment configurations.

To obtain the informational BER and SSI values, sampling will be performed with the appropriate attenuator value installed in the test radio antenna line to establish an equivalent signal level performance for the defined equipment configuration. Please see Figure 3-1: Portable CATP Test Radio Setup Diagram for the objective BER outbound configuration.

Below is the attenuator value required to evaluate the equipment configuration. The methodology to determine the attenuator value is demonstrated in TSB-88.1-F §5.4.2, Figure 6. The attenuator value

includes the proper values for the equipment configuration requirement plus adjustments for the test equipment setup. Should the test equipment setup losses (e.g., cable length) vary, an adjustment to the attenuator value may be required to represent the required equipment configuration accurately.

**Table 3-4: Attenuator Value to Evaluate Portable Equipment Configuration**

User Equipment Configuration and Outdoor / In-Building	Attenuator Value
APX 8000 Portable with an additional 8 dB loss applied for building penetration	13.5 dB

To measure BER for the APX 6500 mobile equipment configuration, the coverage test will be performed with an APX 6500 mobile radio connected to a unity gain antenna mounted in the center of the roof at least 5 feet high with 17-foot or less of Larson RG-58/U low loss dual shield coax or Times Microwave Systems LMR-240 coax installed according to prescribed installation standards to establish an equivalent signal level performance for the defined equipment configuration. Please see Figure 3-2: Mobile CATP Test Radio Setup Diagram for the objective BER outbound configuration.

Any test tile that fails the objective BER test described above will be re-tested using a subjective DAQ test. Any test tile that fails the objective BER test, but passes a subjective DAQ re-test will be declared passed.

This provides a method of verifying that the radio system provides the required BER for the specified CPC for the defined APX 6500 mobile equipment configuration.

### 3.2.2.9 Required Number of Test Tiles in the Defined Test Area

The method used to test coverage is a statistical sampling of the defined test area to verify that the CPC is met or exceeded at the required reliability for the defined equipment configuration. It is impossible to verify every point within a defined test area, because there are infinite points; therefore, coverage reliability will be verified by sampling a statistically significant number of randomly selected locations, quasi-uniformly distributed throughout the defined test area. There is one test sample per test tile, where a sample consists of multiple sub-samples.

Coverage acceptance testing will be performed in the defined test area as indicated on Motorola Solutions-provided map (See Reference 1 and Reference 2 in Section 3.2.7). To verify that the reliability requirement is met, the defined test area indicated on Motorola Solutions' maps will be divided into uniformly sized test tiles, with at least the number of test tiles indicated in Table 3-2: Town of Weston Coverage Acceptance Test Summary. The number of test tiles indicated in Table 3-2 is at least the minimum required by the Estimate of Proportions formula as stated in section 3.2.2.1 (Defined Test Area) of this document.

Per TSB-88.3-F, the stated minimum outdoor test tile size is 100 by 100 wavelengths; however, the minimum practical test tile size is typically about 400 by 400 meters (about 0.25 by 0.25 miles). The minimum practical test tile size for any system is determined by the distance traveled at the speed of the test vehicle while sampling, GPS error margin, and availability of road access within very small test tiles. A related consideration is the time, resources, and cost involved in testing very large numbers of very small tiles. For a given defined test area, all test tiles must be of equal size. The maximum test tile size is 2 by 2 km (1.24 by 1.24 miles) {TSB 88.3 E, §5.5.1}. In some wide-area systems, this constraint on maximum tile size may dictate a greater number of test tiles than the minimum number required by the Estimate of Proportions formula.

No acceptance testing will be performed in locations outside the defined test area as indicated on the Motorola Solutions-provided maps. Motorola Solutions, the Town of Weston, and DESPP may agree to perform “information only” tests in locations outside the defined test area; however, these “information only” test results will not be used for coverage acceptance. Any “information only” test locations must be defined before starting the test. If the added locations require significant additional time and resources to test, a change order will be required and Motorola Solutions may charge the Town of Weston on a time-and-materials basis.

### 3.2.2.10 Accessibility to Test Tiles

Prior to testing, Motorola Solutions, the Town of Weston, and DESPP will plan the route for the test vehicle through the defined test area, to ensure that at least the minimum required number of tiles is tested. While planning the route (if possible) or during the test, Motorola Solutions, the Town of Weston and DESPP will identify any test tiles that are inaccessible for the coverage test (due to lack of roads, restricted land, etc.). Inaccessible tiles will be eliminated from the acceptance test calculation. {TSB-88.3-F, §5.5.4}

If elimination of inaccessible test tiles results in less than a statistically significant number of test tiles or substantially alters the defined test area, Motorola Solutions reserves the right to adjust the committed reliability based on the reduced number of accessible test tiles within the altered test area and the Estimate of Proportions formula. {TSB 88.3-F, §5.2.1, equation 2}

### 3.2.2.11 Random Selection of a Test Location in Each Tile

This CATP provides an objective method of randomly selecting and tracking test locations using Motorola Solutions’ VoyagerSM coverage testing tool. The method follows TIA TSB-88.3-F §5.0, “Performance Confirmation”, and has direct correlation with Motorola Solutions’ coverage prediction methodology.

Using Voyager, the actual test location within each test tile will be randomly selected by the test vehicle crossing into the tile at an arbitrary point, with an arbitrary speed and direction. If the selected test location is in a shielded area such as a tunnel or underground parking garage, the data from that test location must be eliminated and a replacement test location must be used.

### 3.2.2.12 CPC Measurements in Each Tile

For the APX 8000 Portable with an additional 8 dB loss applied for building penetration equipment configurations, a voice test exchange will be initiated in each test tile using predetermined text typical of a common voice exchange between the fixed location and the portable location. The person conducting the test at the portable will be moving at a typical speed for the surrounding conditions.

For the Informational Outbound BER and Outbound SSI samples in each test tile, a series of sequential measurements (subsamples) will be made while the test vehicle is moving at a typical speed for the surrounding environment. This test tile measurement, containing a number of subsamples, constitutes the test sample for this location. The test sample will establish the mean BER and median signal strength within the test tile. The BER and SSI subsamples will typically be measured for at least 1 second for BER and over a distance of 40 wavelengths for SSI. A mean of multiple BER and a median of multiple signal strength subsamples 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.



For the APX 6500 mobile equipment configuration outbound BER test, a series of sequential measurements (subsamples) will be made in each test tile while the test vehicle is moving at a typical speed for the surrounding environment. This test tile measurement, containing a number of subsamples, constitutes the test sample for this location. The test sample will establish the mean BER within the test tile. The BER subsamples will typically be measured for at least 1 second. A mean of multiple BER subsamples 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.

### 3.2.3 Responsibilities and Preparation

This section identifies the responsibilities of the Town of Weston, DESPP, and Motorola Solutions regarding requirements for equipment, personnel, and time during the coverage test.

The Town of Weston and/or DESPP will provide the following for the duration of the coverage test:

- At least one (1) test vehicle and a driver for each test vehicle.
- Exclusive use of the test channels required by Motorola Solutions during the test.
- Facility with at least one (1) console operator position for the fixed end subjective audio test.
- At least one (1) field test team with three or more representatives designated by the Town of Weston and/or DESPP per test team to evaluate and record the pass/fail result of each subjective audio transmission. The required quantity of test participants shall be available a minimum of 8 hours per day.
- One (1) fixed end test team with two or more representatives designated by the Town of Weston and/or DESPP per test team to evaluate and record the pass/fail result of each subjective audio transmission. The required quantity of test participants shall be available a minimum of 8 hours per day.
- At least two (2) APX 8000 portable user radios per test team for the test. One (1) portable user radio will be used for the Subjective DAQ voice test and one (1) portable user radio will be used for informational BER and SSI measurements.
- At least two (2) APX 6500 mobile user radios per test team for the test vehicle. One (1) mobile user radio will be used for the Objective BER test and one (1) mobile user radio will be used for the Subjective DAQ voice re-test, if needed.

Motorola Solutions will provide the following for the duration of the coverage test:

- One (1) Motorola Solutions Voyager coverage testing tool per test team.
- Two (2) 7/800 MHz mobile antennas with magnetic mounts per test team, mounted in the center of the vehicle roof at least 18-inches apart, free of obstructions and not adjacent to other large objects or metallic items which would distort the antenna pattern. One (1) antenna will be used for the APX 8000 portable user radio that will be used for the Subjective DAQ voice test or the APX 6500 mobile user radio that will be used for the Objective BER test and one (1) antenna will be used for the APX 8000 portable user radio that will be used for informational BER and SSI measurements or the APX 6500 mobile user radio that will be used for the Subjective DAQ voice re-test, if needed.
- At least one (1) field test team with one fewer Motorola Solutions representatives per test team than those designated by the Town of Weston and/or DESPP to navigate and to operate Voyager, operate the portable radio, and to evaluate and record the pass/fail result of each subjective audio transmission. One fewer Motorola Solutions representatives per test team than those designated by the Town of Weston and/or



DESPP will ensure an odd number of team members to avoid ties for the pass/fail majority vote.

- One (1) fixed end test team with one fewer Motorola Solutions representatives than those designated by the Town of Weston and/or DESPP to operate the fixed end equipment and to evaluate and record the pass/fail result of each subjective audio transmission.

As required, Motorola Solutions will provide a receiver signal strength calibration file for the test radios used with the Voyager coverage testing tool. Motorola Solutions will also provide the test data from an Aeroflex or equivalent test equipment used to auto test the test radios.

Before starting the test, the Town of Weston, DESPP, and Motorola Solutions will agree upon the time frame for Motorola Solutions' submission of a report containing the coverage test results.

### 3.2.4 CATP Procedures

A coverage acceptance test will be performed using Motorola Solutions' Voyager tool to randomly select test locations, and to manage BER and SSI data collection.

Voyager consists of the following:

- A Global Positioning System (GPS) receiver, which will provide the computer with the location and speed of the test vehicle.
- A laptop computer with Voyager software and a mapping database, which includes highways and local streets.
- A test radio connected to an external antenna mounted in the center of the test vehicle roof, free of obstructions and not adjacent to other large objects or metallic items which would distort the antenna pattern. The test radio will monitor transmissions from the fixed network radio sites.

The procedure for the APX 8000 Portable with an additional 8 dB loss applied for building penetration subjective DAQ coverage test will be as follows:

- A subjective listening test will be performed for coverage acceptance testing, to verify talk-in and talk-out DAQ performance of the system. Please see Figure 3-1: Portable CATP Test Radio Setup Diagram for the subjective DAQ roundtrip configuration.
- Talk-out and talk-in will both be required to pass for a test tile to pass.
- A fixed dispatch location will be established.
- To perform a statistically valid subjective DAQ test, a large group of people is required to ensure high confidence in the results. However, obtaining a large group of people for a subjective listening test is usually impractical; therefore, several (three to seven) people in a car or van must be used for the test. Since a group this small cannot provide statistically significant results, it is very important that the personnel participating in the subjective test be familiar with the sound of radio conversations. Before subjectively testing, all personnel who will evaluate audio quality must be "calibrated" by listening to examples of audio that pass and fail the subjective DAQ test.
- Prior to testing, the Town of Weston, DESPP, and Motorola Solutions will agree upon a procedure to allow each audio transmission, consisting of defined sentences that will be repeated for each outbound and inbound audio transmission, to be evaluated for approximately 5 seconds.
- The test participants will be divided into teams, each consisting of personnel from the Town of Weston, DESPP, and Motorola Solutions. Each team will have members that

operate a portable radio in the field, and members that are stationed at the fixed dispatch location.

- The Voyager tool will be installed in the test vehicle, which will be driven over a route planned to cover the accessible tiles within the defined test area.
- During the coverage test, the Voyager laptop computer screen will display the vehicle's location on a map of the defined test area overlaid with the grid of test tiles. As the field test team(s) drive through the defined test area, test locations within each test tile will be selected randomly by Voyager's GPS location indication. Voyager will be used to log the talk-in and talk-out pass/fail result as well as any pertinent notes for the location.
- At each test tile location, each field test team will initiate a talk-in voice call to the fixed dispatch location. Team members stationed at the fixed dispatch location will evaluate the talk-in audio quality of transmissions from each field test team, and will record his or her subjective pass/fail evaluation of the DAQ for the test tile. Team members stationed at the fixed dispatch location will respond to the field test team with a talk-out voice call. The field test team members will evaluate the talk-out audio quality of the transmission, and will record his or her subjective pass/fail evaluation of the DAQ for the test tile. Each team member will maintain a test log to record date, time, test tile reference and subjective pass/fail evaluation for each test tile location. Subjective pass/fail evaluation will be based on the DAQ descriptions in Table 3-1: DAQ Definitions. The determination of whether each test tile passes or fails the required DAQ value will be the majority vote of all team members' pass/fail subjective evaluations for that test tile. An odd number of team members is required to avoid ties for the pass/fail majority vote.
- Should any subjective DAQ test tile fail, a retry of the transmission will occur. Should the retry pass, the test tile will be considered a pass. If a retry should occur, it will be noted in the test log notes for that test tile. All failed test tiles will be eligible for one retry from a different location within that test tile. If the retry passes, then that test tile will be considered a pass.

The procedure for concurrently collecting the APX 8000 portable in 8 dB building loss informational-only outbound objective BER and SSI measurements will be as follows:

- Informational-only objective BER and SSI measurements will be collected. Please see Figure 3-1: Portable CATP Test Radio Setup Diagram for the objective BER outbound configuration.
- Outbound-only will be evaluated.
- The Voyager tool will be installed in the test vehicle, which will be driven over a route planned to cover the accessible tiles within the defined test area.
- The TDMA outbound-only BER/SSI test will use the 1031 Hz test pattern initiated on the TDMA logical channel. The outbound test pattern, once initiated, will send a continuous test pattern over the air to allow the radio in the Voyager test vehicle to gather signal statistics whenever a test is initiated.
- During the coverage test, the Voyager laptop computer screen will display the vehicle's location on a map of the defined test area overlaid with the grid of test tiles. Voyager will automatically initiate measurements when the GPS receiver indicates that a test tile has been entered. The computer will provide a visual indication that a measurement has been completed in a test tile. Voyager will manage the coverage test data collection, and will store the outbound measurements for each tested tile for later analysis.

The procedure for the mobile objective BER coverage test will be as follows:

- The Voyager tool will be installed in the test vehicle, which will be driven over a route planned to cover the accessible test tiles within the defined test area. Please see Figure 3-2: Mobile CATP Test Radio Setup Diagram for the objective BER outbound configuration.
- During the coverage test, the laptop computer screen will display the vehicle's location on a map of the defined test area overlaid with the grid of test tiles. Voyager will automatically initiate measurements when the GPS receiver indicates that a test tile has been entered. The computer will provide a visual indication that a measurement has been completed in a test tile. Voyager will manage the coverage test data collection, and will store the outbound measurements for each tested tile for later analysis.
- Any test tile that fails the objective BER test described above will be re-tested using a subjective DAQ voice test. Any test tile that fails the objective BER test, but passes the subjective DAQ voice re-test will be declared passed.

The procedure for the mobile subjective DAQ voice re-test of failed BER test tiles (if needed) will be as follows:

- A subjective listening re-test will be performed on test tiles that fail the objective BER test, to verify talk-out DAQ performance of those test tiles.
- Talk-out will be evaluated.
- The radio system will be configured to continuously play a pre-recorded audio file containing male and female sentences connected to a CCGW patched to a dedicated TDMA talkgroup.
- A subjective DAQ voice re-test mobile radio installed in a representative location in each test vehicle, connected to a mobile antenna installed per the User Equipment Configuration Table 3-2: Town of Weston Coverage Acceptance Test Summary, free of obstructions and not adjacent to other large objects or metallic items which would distort the antenna pattern, will monitor TDMA voice transmissions from the fixed network radio sites. Figure 3-2: Mobile CATP Test Radio Setup Diagram for the subjective DAQ outbound configuration.
- Each test team will consist of personnel from the Town of Weston, DESPP, and Motorola Solutions. Each test team will have a member that operates the subjective DAQ voice re-test mobile radio.
- When a test team observes that a test tile fails the objective BER test described above, the test team will increase the volume on the subjective DAQ voice re-test mobile radio and listen to the continuous talk-out audio transmission in the failed test tile for the duration of time necessary to hear the two (2) pre-recorded phrases (approximately 5-7 seconds) while moving. Depending on where the roads lie within the test tile, it may be necessary for the test team to stop or turn around before performing the subjective DAQ voice re-test in order to ensure that the test is performed while in the failed BER test tile.
- The test team will evaluate the talk-out audio transmission to a minimum of DAQ 3.0, as described in Table 3-1: DAQ Definitions. The test team will record the subjective pass/fail evaluation of the talk-out audio transmission for the failed BER test tile.
- Should any subjective DAQ voice re-test tile fail, the talk-out audio transmission will be reevaluated within the failed BER test tile. Should the reevaluation pass, the subjective DAQ voice re-test tile will be considered a pass. If a reevaluation should occur, it will be noted in the test log notes for that test tile.

### 3.2.5 CATP Documentation and Coverage Acceptance

During the coverage acceptance test, Voyager generates computer files that include the raw test data. A copy of this data will be provided to the Town of Weston and DESPP at the conclusion of the coverage test. Motorola Solutions will process this data to produce a map detailing the coverage test results, and to determine whether the coverage test was passed for the defined equipment configurations.

The coverage acceptance criterion for the defined equipment configuration will be that the voice radio system implemented by Motorola Solutions for the Town of Weston meets or exceeds the reliability stated in Table 3-2: Town of Weston Coverage Acceptance Test Summary for the defined equipment configuration. The system coverage acceptance criterion will be the successful passing of the defined equipment configurations defined in Table 3-2: Town of Weston Coverage Acceptance Test Summary.

Motorola Solutions reserves the right to review any test tiles that fail the mobile objective BER coverage test and the mobile subjective DAQ voice re-test. If a coverage test, or a portion thereof, is suspected by Motorola Solutions to have failed due to external interference, those test tiles suspected of being affected by an interferer may be re-tested using the external Bird P/N JFCB0762T0860UF 762-860.5 MHz mobile filter installed between the BER test mobile radio and associated antenna and between the DAQ re-test mobile radio and associated antenna. If the test tiles re-tested are confirmed to have failed due to interference or external noise, those test tiles will be excluded from all acceptance calculations and Motorola Solutions will work with the Town of Weston and DESPP to identify potential solutions to the interference issues.

Motorola Solutions will conduct this Coverage Acceptance Test only once. If any portion of the test is determined to be affected by proven equipment malfunctions or failures, Motorola Solutions will repeat the portion of the test affected by the equipment malfunction or failure. The Town of Weston and DESPP will have the option to accept the coverage at any time prior to completion of the coverage test or documentation process.

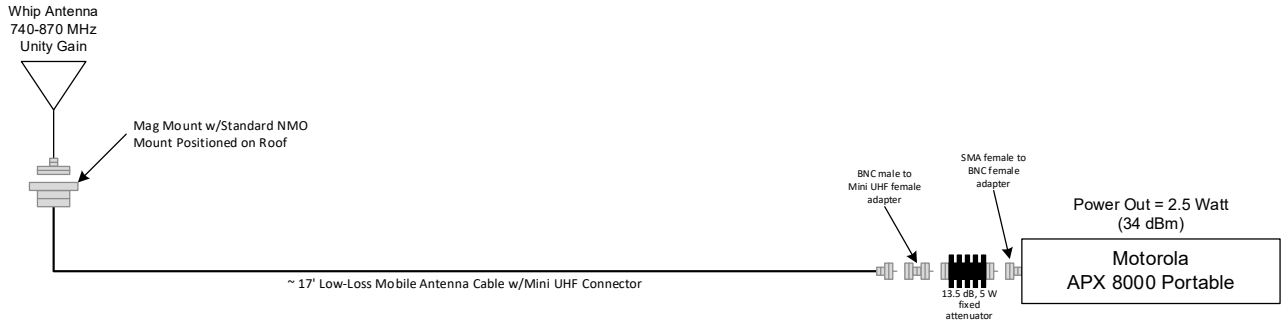
Motorola Solutions will submit to the Town of Weston and DESPP a report detailing the coverage test results. This report will include a document, which is to be signed by both the Town of Weston and Motorola Solutions, indicating the test was performed in accordance with this CATP and the results of the test indicate the acceptance or non-acceptance of the coverage portion of the system.

### 3.2.6 Test Radio Setup Diagram

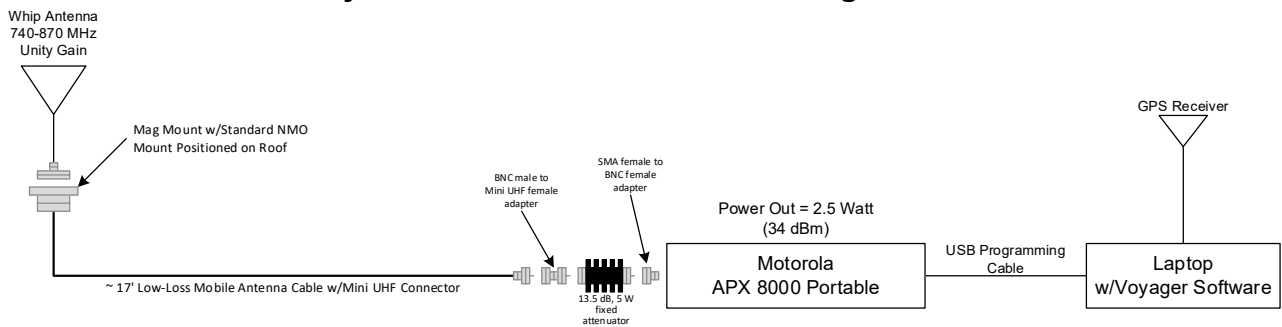
Figure 3-1: Portable CATP Test Radio Setup Diagram shows the subjective DAQ round trip and objective BER/SSI outbound configuration for the portable test radio.

Figure 3-2: Mobile CATP Test Radio Setup Diagram shows the objective BER/SSI outbound configuration for the mobile test radio and the subjective DAQ outbound configuration.

### Subjective DAQ Round Trip Configuration

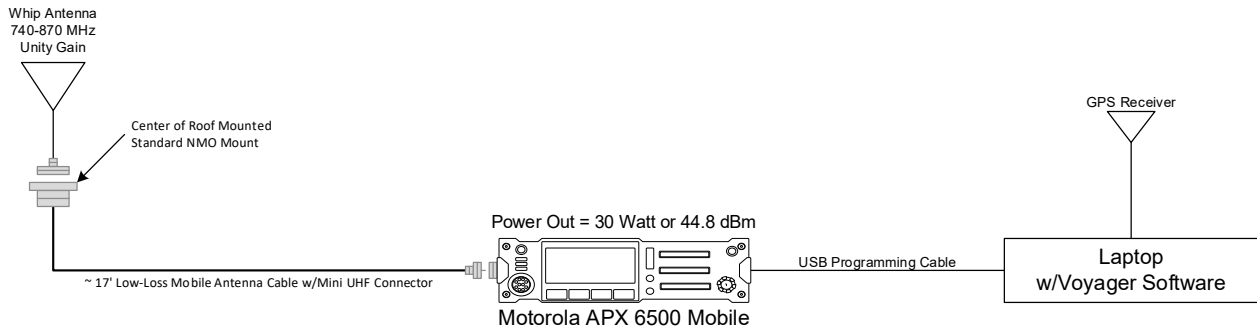


### Objective BER/SSI Outbound Configuration



**Figure 3-1: Portable CATP Test Radio Setup Diagram**

### Objective BER Outbound Configuration



### Subjective DAQ Outbound Configuration

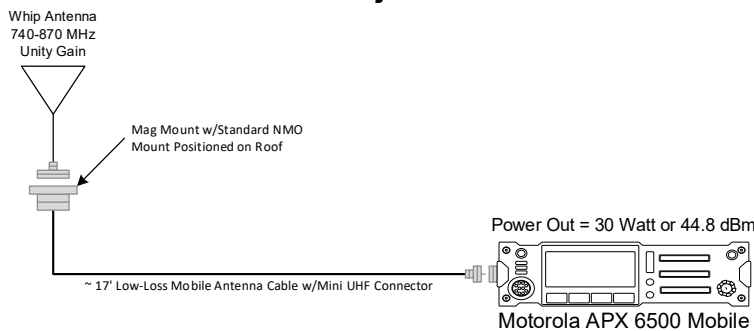


Figure 3-2: Mobile CATP Test Radio Setup Diagram

## 3.2.7 Coverage Maps

Motorola Solutions has provided coverage maps on the following pages in the order listed below:

- REFERENCE 1 – Town of Weston, CT, CLMRN G 7/800 MHz TDMA Simulcast Subsystem, 95% Service Area Reliability, Roundtrip, DAQ 3.4, APX 8000 Portable with an additional 8 dB loss applied for building penetration.
- REFERENCE 2 – CLMRN G 7/800 MHz TDMA Simulcast Subsystem, 98% Service Area Reliability, Outbound, DAQ 3.0, APX 6500 Mobile.

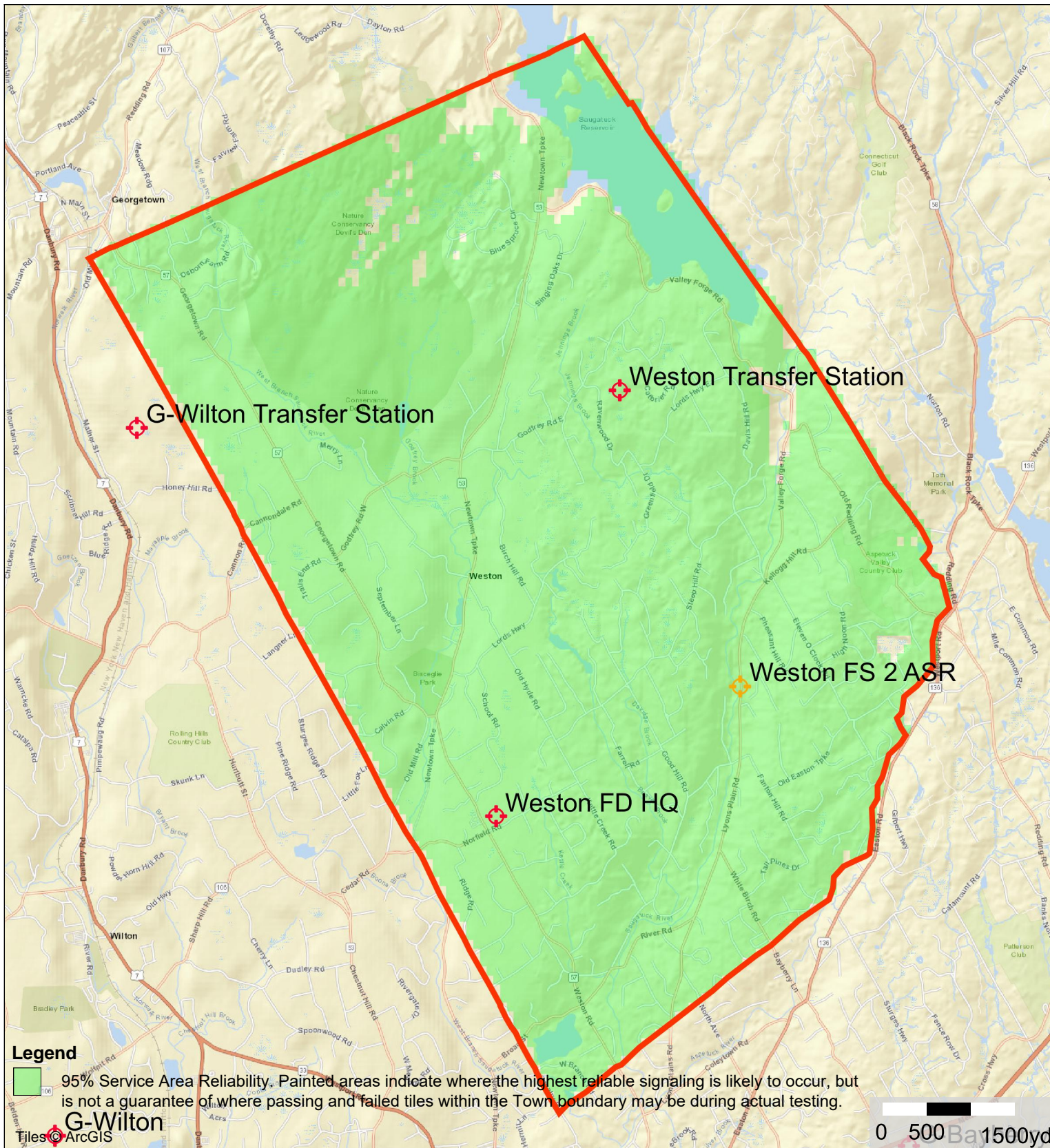




# TOWN OF WESTON, CT

**MOTOROLA SOLUTIONS**

CLMRN G 16-Site ASTRO 25 700/800 MHz TDMA Simulcast Subsystem w/Fire Headquarters and Transfer Station Add-On Simulcast Sites and Fire Station #2 Add-On ASR. Shaded Area Represents Roundtrip 95% Covered Area Reliability at DAQ 3.0.



2.5 Watt APX 8000 Portable with an Additional 8 dB Loss applied for Building Penetration with the Standard XE All-Band Antenna in a Swivel Case on the Hip with a Remote Speaker Microphone for Transmit and Receive.

Solution: Weston, CT  
 Project: CLMRN Simulcast Site Add-Ons  
 Design: Design 45  
 C13924

This map is intended solely for the equipment configuration stated above. Coverage can vary significantly if different configurations are used.

**REFERENCE 1**



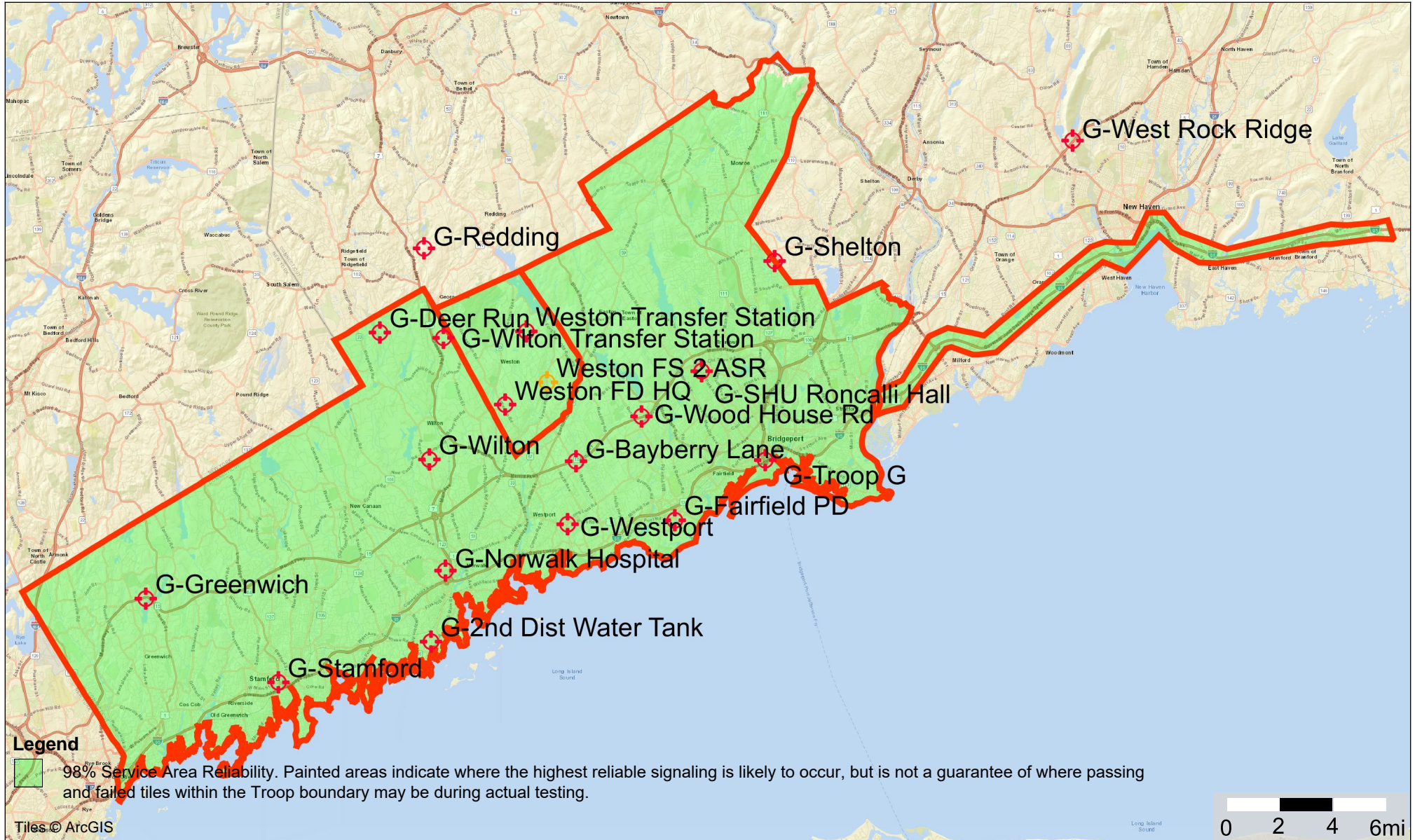




MOTOROLA SOLUTIONS

# TOWN OF WESTON, CT

CLMRN G 16-Site ASTRO 25 700/800 MHz TDMA Simulcast Subsystem w/Fire Headquarters and Transfer Station Add-On Simulcast Sites and Fire Station #2 Add-On ASR. Shaded Area Represents Outbound 95% Covered Area Reliability at DAQ 3.0



Printed: 3/10/2023  
System version: 3.0.3.0

30W APX 6500 Mobile with a Center Roof Mount Antenna installed according to prescribed installation standards.

Solution: Weston, CT  
Project: CLMRN Simulcast Site Add-Ons  
Design: Design 48  
C13924

This map is intended solely for the equipment configuration stated above.  
Coverage can vary significantly if different configurations are used.

**REFERENCE 2**



## Section 4

# Service/Warranty

Motorola Solutions has over 90 years of experience supporting mission critical communications for public safety and public service agencies. Motorola Solutions' technical and service professionals use a structured approach to lifecycle service delivery and provide comprehensive maintenance and support throughout the life of the system. The value of support is measured by system availability, which is optimized through the use of proactive processes, such as preventive maintenance, fault monitoring and active response management. System availability is a function of having in place a support plan delivered by highly skilled support professionals, backed by proven processes, tools, and continuous training.

## 4.1 Advanced Plus Services Overview

Motorola Solutions' ASTRO® 25 Advanced Plus Services ("Advanced Plus Services") provide an integrated and comprehensive sustainment program for fixed end network infrastructure equipment located at the network core, RF sites, and dispatch sites. Advanced Plus Services do not include maintenance for mobile devices, portable devices, or network backhaul equipment.

The system warranty will commence upon acceptance or beneficial use, whichever occurs first, not to exceed 18-months from date of shipment. Subscriber warranties will commence upon shipment.

Please note that the warranty services are for the equipment proposed and do not include any existing equipment. Response and repair excludes third-party equipment not shipped by Motorola Solutions or as further defined.

Please note that civil and site system components such as, but not limited to, Generators, Shelters, Equipment Enclosures and Antenna Systems are only covered by their manufacturer's warranty. Any services provided by Motorola Solutions for these items will be considered above contract and will be billed on a Time and Materials basis.

Advanced Plus Services consist of the following elements:

- Network Event Monitoring.
- Remote Technical Support.
- Network Hardware Repair.
- Remote Security Update Service.
- On-site Infrastructure Response.
- Annual Preventive Maintenance.
- Network Updates.

### 4.1.1 Network Event Monitoring

Real-time, continuous ASTRO 25 radio communications network monitoring and event management. Using sophisticated tools for remote monitoring and event characterization, Motorola Solutions will assess events, determine the appropriate response, and initiate that response. Possible responses

include remotely addressing the issue, escalation to product technical support groups, and dispatch of designated field technical resources.

### **4.1.2 Remote Technical Support**

Motorola Solutions will provide telephone consultation with specialists skilled at diagnosing and swiftly resolving infrastructure operational technical issues that require a high level of ASTRO 25 network experience and troubleshooting capabilities.

### **4.1.3 Network Hardware Repair**

Motorola Solutions will repair Motorola Solutions-manufactured infrastructure equipment and select third-party manufactured infrastructure equipment supplied by Motorola Solutions. Motorola Solutions coordinates the equipment repair logistics process.

### **4.1.4 Remote Security Update Service**

Motorola Solutions will pre-test third-party security updates to verify they are compatible with the ASTRO 25 network, and remotely push the updates to the Customer's network.

### **4.1.5 Annual Preventative Maintenance.**

Qualified field service technicians will perform regularly scheduled operational testing and alignment of infrastructure and network components to verify those components comply with the original manufacturer's specifications.

### **4.1.6 On-Site Infrastructure Response**

When needed to resolve equipment malfunctions, Motorola Solutions will dispatch qualified local technicians to the Customer's location to diagnose and restore the communications network. Technicians will perform diagnostics on impacted hardware and replace defective components. The service technician's response time will be based on pre-defined incident priority levels.

### **4.1.7 Network Updates**

Utilizing the ASTRO 25 System Upgrade Agreement ("SUA") service, the ASTRO 25 system is able to take advantage of new functionality and security features while extending the operational life of the system. Motorola Solutions continues to make advancements in on-premise and cloud technologies to bring value to our customers.

## **4.2 Motorola Solutions Service Delivery Ecosystem**

Advanced Plus Services are delivered through a tailored combination of local field service personnel, centralized teams equipped with a sophisticated service delivery platform and product repair depots. These service entities will collaborate to swiftly analyze issues, accurately diagnose root causes, and promptly resolve issues to restore the Customer's network to normal operations.



## 4.2.1 Centralized Managed Support Operations.

The cornerstone of Motorola Solutions' support process is the Centralized Managed Support Operations ("CMSO") organization, which includes the Service Desk and technical support teams. The CMSO is staffed 24x7x365 by experienced personnel, including service desk specialists, security analysts, and operations managers.

The Service Desk provides a single point of contact for all service related items, including communications between the Customer, Motorola Solutions, and third-party subcontractors. The Service Desk processes service requests, service incidents, change requests, and dispatching, and communicates with stakeholders in accordance with pre-defined response times.

All incoming transactions through the Service Desk are recorded, tracked, and updated through the Motorola Solutions Customer Relationship Management ("CRM") system. The Service Desk also documents Customer inquiries, requests, concerns, and related tickets.

The CMSO coordinates with the field service organization that will serve the Customer locally.

## 4.2.2 Field Service

Motorola Solutions authorized and qualified field service technicians perform on-site infrastructure response, field repair, and preventive maintenance tasks. These technicians are integrated with the Service Desk and with technical support teams and product engineering as required to resolve repair and maintenance requests.

## 4.2.3 Customer Support Manager

A Motorola Solutions Customer Support Manager ("CSM") will be the Customer's key point of contact for defining and administering services. The CSM's initial responsibility is to create the Customer Support Plan ("CSP") in collaboration with the Customer.

The CSP functions as an operating document that personalizes the services described in this document. The CSP contains Customer-specific information, such as site names, site access directions, key contact persons, incident handling instructions, and escalation paths for special issues. The CSP also defines the division of responsibilities between the Customer and Motorola Solutions so response protocols are pre-defined and well understood when the need arises.

The CSM and Customer will review and amend the CSP on a mutually agreed cadence so the CSP remains current and effective in governing the Advanced Plus Services.

## 4.2.4 Repair Depot

The Motorola Solutions Repair Depot provides the Customer with a central repair location, eliminating the need to send network equipment to multiple vendor locations for repair. All products sent to the Depot are tracked throughout the repair process, from inbound shipment to return, through a case management system that enables Customer representatives to see repair status.

## 4.3 Network Updates (SUAll)

### 4.3.1 Description of Service

The ASTRO 25 Network Updates periodically provides updates to system software with associated implementation services and hardware changes, to keep the overall ASTRO 25 system in a supportable state for maintenance, repair, overall network health, and security.

Network updates with post-warranty services are included for a duration of four (4) years in order to provide for system wide maintenance of all sites and components. Up to one (1) upgrade every two (2) years has been included.

### 4.3.2 Scope

As system releases become available, Motorola Solutions agrees to provide the Customer with the software, hardware and implementation services required to execute up to one system infrastructure update in each eligible update window over the term of this agreement. The term of the support agreement is listed in Table 4-1: Network Updates Term. The eligible update windows and their duration are illustrated in Table 4-2: Eligible Update Windows.

If needed to perform the software updates, Motorola Solutions will provide updated and/or replacement hardware for covered infrastructure components. System release updates, when executed, will provide an equivalent level of functionality as that originally purchased and deployed by the Customer. At Motorola Solutions' option, new system releases may introduce new features or enhancements that Motorola Solutions may offer for purchase. These new features, available separately for purchase, are not part of the Network Updates.

**Table 4-1: Network Updates Term**

<b>Duration:</b>	Four Years
------------------	------------

**Table 4-2: Eligible Update Windows**

First Eligible Upgrade Window	Second Eligible Upgrade Window
<b>Duration: 2 Years</b>	<b>Duration: 2 Years</b>
7/1/2025 – 6/30/2027	7/1/2027 – 6/30/2029

ASTRO 25 Network Updates pricing is based on the system configuration as-proposed. This configuration is to be reviewed annually from the contract effective date. Any change in system configuration may require an ASTRO 25 Network Updates price adjustment.

The ASTRO 25 Network Updates annualized price is based on the fulfillment of the system release update in each eligible update window. If the Customer terminates, except if Motorola Solutions is the defaulting party, the Customer will be required to pay for the balance of payments owed in that eligible update window if a system release update has been taken prior to the point of termination.

Any updates to hardware versions and/or replacement hardware required to support new features or those not specifically required to maintain existing functionality are not included. Platform migrations are the replacement of a product with the next generation of that product. Unless otherwise stated,

platform migrations such as, but not limited to, stations, comparators, site controllers, consoles, backhaul, and network changes are not included.

#### 4.3.2.1 Inclusions

The ASTRO 25 Network Updates only covers the applicable products that are outlined in this section and does not cover all products.

The ASTRO 25 Network Updates covers ASTRO 25 certified software releases for the following applicable products provided they were present at the time of contract execution and provided as part of the ASTRO 25 certified solution:

- Firewalls.
- Routers.
- LAN switches.
- MCC 7500E Dispatch Consoles.
- GTR 8000 Base Stations.
- DSC 8000 Site Controllers.
- MOSCAD RTU.
- Motorola Solutions logging interface equipment.

The following applicable hardware components, if originally provided by Motorola Solutions as part of the certified ASTRO 25 release, are eligible for full product replacement when necessary to support the system release update:

- Firewalls.
- Routers.
- LAN switches.
- Command Central Hub.

The following applicable hardware components, if originally provided by Motorola Solutions, are eligible for board-level replacement when necessary to support the system release update. A “board-level replacement” is defined as any Field Replaceable Unit (“FRU”) for the products listed below:

- GTR 8000 Base Stations.

## 4.4 Third Party Solution Services

Motorola has included third party solutions with its proposal to the Town of Weston. Support services differ from the Advanced Plus package of services for Motorola infrastructure and are summarized as follows.

The following third party solution(s) have been included in Motorola’s proposal to the Town of Weston:

- Aviat Microwave.

The following support services have been included with the proposed third party solution(s) during the Motorola warranty term and post-warranty term.

### Aviat Microwave

A combination of local field services and Aviat manufacturer services have been included:

- Microwave hardware monitoring.
- Local Teir 1 onsite services.
- 24x7 access to Aviat Networks online Technical Support website.
- 24x7 access to the AviatCare Online Customer Support site.
- Remote access to regional Technical Assistance Centers.
- 7x24x365 Priority Technical Support.
- Repair Logistics and Advanced Replacement.
- Expedited Repair.

Exclusions

- *Network Updates (SUAll) are not included*

## 4.5 Post Warranty Services

As Motorola Solutions’ continuing commitment to supporting your system, post-warranty services have been included for a term of four (4) years to provide maintenance and service support in future years. All of the services detailed in Section 4.1 are included for the duration of the proposed support term - the warranty year and the four (4) post-warranty years. These system support services significantly benefit the Town of Weston because the system can be effectively supported after the warranty period, thereby maximizing the operational capabilities and useful life of the system and protecting your investment in the system.

Post-warranty support is an optional cost concurrent with system purchase, however post warranty services whether contracted with system purchase, or on a year-to-year basis, are required for CLMRN connected equipment in order to provide for system wide maintenance of all sites and components.

## 4.6 Summary

Whether it’s a routine service call, or a disaster situation, Motorola Solutions understands its responsibility and takes pride in its commitment to deliver proven response service to the public safety community. Motorola Solutions has the capability to provide the technical, administrative, consultative, and maintenance repair services needed to support, enhance, and maintain the effectiveness of your communications network. Motorola Solutions’ goal is to provide the Town of Weston with the qualified resources, to maintain and improve system operation and availability, and to deliver world-class service support.

Warranty and Post Warranty Service support services to be delivered are outlined in Table 4-3.

**Table 4-3: Warranty and Post Warranty Service Overview**

Warranty and Post Warranty Service Overview	Warranty Year	Post Warranty Years 2-5
Network Event Monitoring	✓	✓
Remote Technical Support	✓	✓
Network Hardware Repair	✓	✓



Warranty and Post Warranty Service Overview	Warranty Year	Post Warranty Years 2-5
Remote Security Update Service	✓	✓
On-site Infrastructure Response	✓	✓
Annual Preventive Maintenance	✓	✓
Network Updates (SUA II)		✓

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Section 5

# Pricing Summary

## 5.1 Pricing Summary

Solution Component	Value
<b>Discounted Equipment &amp; Freight, Itemized Below:</b>	<b>\$3,815,314</b>
Fixed Network Equipment & Freight	\$2,325,337
Subscribers & Accessories	\$1,489,977
<b>Implementation Services, Itemized Below:</b>	<b>\$2,103,865</b>
Staging & Installation Services	\$229,247
UPS Battery, HVAC Install and/or Other 3rd Party Install	\$0
Civil Installation Services	\$749,712
Microwave Installation Services	\$261,528
PM, ENG & ST Services	\$438,441
CATP Test Kits & Services	\$113,739
Box Warranty to State Services Upgrade	\$65,288
Prevailing Wage Adder for Installation & Subscriber Services	\$45,937
APCO Coordination Costs	\$1,260
Subscriber Services	\$198,713
End User Training	\$0
<b>CT A-99-001 Pricing</b>	<b>\$5,919,179</b>
<b>Project Scope Incentive Discount</b>	<b>(\$1,479,795)</b>
<b>Total Investment with Discount</b>	<b>\$4,439,384</b>
<b>Years 2-5 of Maintenance &amp; Lifecycle Services</b>	<b>\$587,709</b>
<b>Total Investment with Discount &amp; Post-Warranty Services</b>	<b>\$5,027,093</b>

### 5.1.1 Post Warranty Services

Post warranty services as priced below include years 2-5 of Advanced + support and System Upgrade Agreement II (SUA II). Pricing as summarized is based on purchase of the post-warranty services at the time of system order or prior to final system acceptance. Year to year services renewal pricing will reflect current support pricing at the time of renewal.

Service	Year 1	Year 2	Year 3	Year 4	Year 5
Maintenance Services	Included	\$98,982	\$103,654	\$108,563	\$113,726
Lifecycle (SUA) Services	N/A	\$39,603	\$40,313	\$41,051	\$41,818
<b>Total Services</b>	<b>Included</b>	<b>\$138,585</b>	<b>\$143,966</b>	<b>\$149,614</b>	<b>\$155,544</b>

## 5.2 Terms and Conditions

The terms and conditions are based upon the State of Connecticut's DAS Master Contract A-99-001.

## 5.3 Price Validity

This proposal is valid for through June 30, 2023.

## 5.4 Milestone Payment Schedule

The payment schedule as shown is based on the A-99-001 Master Agreement. The total contract value is \$4,439,384 with discount, exclusive of post-warranty services and \$5,027,093 inclusive of post-warranty services years 2-5. Customer will make payment when due in the form of a check, cashier's check or wire transfer drawn on a U.S. financial institution and in accordance with the following milestone payment schedule.

**Table 5-1: Payment Milestones**

	Milestone	Milestone Details	Payment (no post warranty)	Payment (with post warranty)
1	Factory Testing, Certification and Delivery to the State	Aggregate payments upon completion of Delivery to the State shall be in an amount equal to 48% of the Contract Price of the System, payable upon delivery of equipment. The aggregate payment upon completion of this Delivery Milestone shall not exceed the amount presented.	<b>\$2,130,904</b>	<b>\$2,413,005</b>
2	System Installation	Aggregate payments upon receipt of equipment in an amount equal to 20% of the Contract Price of the System, payable on a site or troop basis. The aggregate payment upon completion of this Installation Milestone shall not exceed the amount presented.	<b>\$887,877</b>	<b>\$1,005,419</b>
3	Acceptance Testing	Aggregate payments upon completion of Equipment Testing as defined in Acceptance Test Plan Proposal Section 4 shall be in an amount equal to 18% of the Contract Price of the System, payable on a site-by-site basis. The aggregate payment upon completion of this system equipment testing Milestone shall not exceed the amount presented.	<b>\$799,089</b>	<b>\$904,877</b>
4	Final System Acceptance	Payments of all “hold back” funds upon Final System Acceptance. An amount equal to 14% of the Contract Price of the System. The payment upon completion of this system testing Milestone shall not exceed the amount presented.	<b>\$621,514</b>	<b>\$703,792</b>

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## 5.5 Detailed Pricing

The equipment, software and features for the proposed solution is as follows.

### 5.5.1 RF Infrastructure Equipment

SUB SYS	BLOCK	LIM	O	APC	QTY	NOMENCLATURE	DESCRIPTION	UNIT LIST (USD)	EXT LIST (USD)	Contract Disc	Contract Unit	Contract Extended
HQ	Site Rtr	1	-	147	1	T8547	SITE ROUTER & FIREWALL- DC	\$1,100.00	\$1,100.00	15%	\$935.00	\$935.00
HQ	Site Rtr	1	a	147	1	CA03445AA	ADD: MISSION CRITICAL HARDENING	\$3,300.00	\$3,300.00	15%	\$2,805.00	\$2,805.00
HQ	Site Rtr	1	b	147	1	CA03448AA	ADD: STATEFUL FIREWALL	\$1,000.00	\$1,000.00	15%	\$850.00	\$850.00
HQ	700 ESS	2	-	112	1	SQM01SUM7054	GTR 8000 EXPANDABLE SITE SUBSYSTEM	\$6,000.00	\$6,000.00	20%	\$4,800.00	\$4,800.00
HQ	700 ESS	2	a	595	1	CA03678AA	ADD: ASTRO SYSTEM RELEASE 2021.1	\$0.00	\$0.00	20%	\$0.00	\$0.00
HQ	700 ESS	2	b	112	1	CA00855AA	ADD: 700/800 MHZ	\$6,300.00	\$6,300.00	20%	\$5,040.00	\$5,040.00
HQ	700 ESS	2	c	112	1	X306AC	ADD: QTY (6) GTR 8000 BASE RADIOS	\$35,400.00	\$35,400.00	20%	\$28,320.00	\$28,320.00
HQ	700 ESS	2	d	595	6	CA01193AA	ADD: IP BASED MULTISITE BASE RADIO SOFTWARE	\$29,500.00	\$177,000.00	20%	\$23,600.00	\$141,600.00
HQ	700 ESS	2	e	112	1	CA02686AA	ADD: AC DC POWER DISTRIBUTION	\$0.00	\$0.00	20%	\$0.00	\$0.00
HQ	700 ESS	2	f	595	3	CA01842AA	ADD: P25 TDMA SOFTWARE	\$13,000.00	\$39,000.00	20%	\$10,400.00	\$31,200.00
HQ	700 ESS	2	g	112	1	CA01943AA	ADD:2ND BRANCH DIVERSITY	\$700.00	\$700.00	20%	\$560.00	\$560.00
HQ	700 ESS	2	h	112	1	CA00862AA	ADD: SITE & CABINET RMC W/CAPABILITY OF 7-24 BRS	\$2,100.00	\$2,100.00	20%	\$1,680.00	\$1,680.00
HQ	700 ESS	2	i	112	1	CA00879AA	ADD: PRIMARY 6 PORT CAVITY COMBINER	\$8,400.00	\$8,400.00	20%	\$6,720.00	\$6,720.00
HQ	700 ESS	2	j	112	1	CA00881AA	ADD: 700 + 800 MHZ DIPLEXER W/PMU	\$1,000.00	\$1,000.00	20%	\$800.00	\$800.00
HQ	700 ESS	2	k	677	2	CA03792AA	ADD: DSC 8000 REFERENCE DISTRIBUTION MODULE	\$6,000.00	\$12,000.00	20%	\$4,800.00	\$9,600.00
HQ	700 ESS	2	l	680	2	CA03746AA	ADD: DSC 8000 SIMULCAST RDM SW	\$8,200.00	\$16,400.00	20%	\$6,560.00	\$13,120.00
HQ	700 ESS	2	m	677	2	CA03739AA	ADD: INTEGRATED GNSS TIMING REF W/ RB	\$12,000.00	\$24,000.00	20%	\$9,600.00	\$19,200.00
HQ	700 ESS	2	n	680	2	CA03747AA	ADD: DSC 8000 RUBIDIUM SW	\$4,500.00	\$9,000.00	20%	\$3,600.00	\$7,200.00
HQ	700 ESS	2	o	112	1	X882AH	ADD: 7.5 FT OPEN RACK, 48RU	\$495.00	\$495.00	20%	\$396.00	\$396.00
HQ	700 ESS	3	-	895	2	PMUG1017B	GNSS REMOTE RECEIVER ASSY	\$900.00	\$1,800.00	10%	\$810.00	\$1,620.00
HQ	700 ESS	4	-	291	2	DSP04268	ALUMINUM 6061-T6. PIPE 1 INCH SCHED 40	\$15.25	\$30.50	25%	\$11.44	\$22.88
HQ	700 ESS	5	-	207	2	DSIX2L1M1DC48IG	SITE EQUIPMENT,PD, HPD GPS DATA LINE, 48VDC, HARD WIRE WITH ISOLATED G	\$247.00	\$494.00	10%	\$222.30	\$444.60
HQ	700 ESS	6	-	207	2	DS30C87465CO1	125' OUTDOOR UV PROTECTED CABLE 6 PR, 22AWG DB15	\$810.00	\$1,620.00	10%	\$729.00	\$1,458.00
HQ	800 ESS	7	-	112	1	SQM01SUM7054	GTR 8000 EXPANDABLE SITE SUBSYSTEM	\$6,000.00	\$6,000.00	20%	\$4,800.00	\$4,800.00
HQ	800 ESS	7	a	595	1	CA03678AA	ADD: ASTRO SYSTEM RELEASE 2021.1	\$0.00	\$0.00	20%	\$0.00	\$0.00
HQ	800 ESS	7	b	112	1	CA00855AA	ADD: 700/800 MHZ	\$6,300.00	\$6,300.00	20%	\$5,040.00	\$5,040.00
HQ	800 ESS	7	c	112	1	X306AC	ADD: QTY (6) GTR 8000 BASE RADIOS	\$35,400.00	\$35,400.00	20%	\$28,320.00	\$28,320.00
HQ	800 ESS	7	d	595	6	CA01193AA	ADD: IP BASED MULTISITE BASE RADIO SOFTWARE	\$29,500.00	\$177,000.00	20%	\$23,600.00	\$141,600.00
HQ	800 ESS	7	e	112	1	CA02686AA	ADD: AC DC POWER DISTRIBUTION	\$0.00	\$0.00	20%	\$0.00	\$0.00
HQ	800 ESS	7	f	595	6	CA01842AA	ADD: P25 TDMA SOFTWARE	\$13,000.00	\$78,000.00	20%	\$10,400.00	\$62,400.00
HQ	800 ESS	7	g	112	1	CA01943AA	ADD:2ND BRANCH DIVERSITY	\$700.00	\$700.00	20%	\$560.00	\$560.00
HQ	800 ESS	7	h	112	1	CA00877AA	ADD: CABINET RMC FOR EXPANSION RACK	\$600.00	\$600.00	20%	\$480.00	\$480.00
HQ	800 ESS	7	i	112	1	CA00880AA	ADD: EXPANSION 6 PORT CAVITY COMBINER	\$8,400.00	\$8,400.00	20%	\$6,720.00	\$6,720.00

HQ	800 ESS	7	j	112	1	CA01059AA	ADD: EXPAN RCK DIPLXR EXTEN CABLE	\$100.00	\$100.00	20%	\$80.00	\$80.00
HQ	800 ESS	7	k	677	2	CA03737AA	ADD: DSC HUB	\$3,500.00	\$7,000.00	20%	\$2,800.00	\$5,600.00
HQ	800 ESS	7	l	112	1	X882AH	ADD: 7.5 FT OPEN RACK, 48RU	\$495.00	\$495.00	20%	\$396.00	\$396.00
HQ	TXAnt	8	-	351	1	DSDS7C09P36UD	DS7C09P36U-D, 764-869MHZ SINGLE 9DB GAIN OMNI WITH DIN	\$4,013.00	\$4,013.00	10%	\$3,611.70	\$3,611.70
HQ	RXAnt1	9	-	351	1	DSDS7C09P36UD	DS7C09P36U-D, 764-869MHZ SINGLE 9DB GAIN OMNI WITH DIN	\$4,013.00	\$4,013.00	10%	\$3,611.70	\$3,611.70
HQ	RXAnt2	10	-	351	1	DSDS7C09P36UD	DS7C09P36U-D, 764-869MHZ SINGLE 9DB GAIN OMNI WITH DIN	\$4,013.00	\$4,013.00	10%	\$3,611.70	\$3,611.70
HQ	APM	11	-	351	1	DSAPM7487K248	ADVANCED POWER MONITOR, 746-870 MHZ, 36-60 VDC	\$5,870.00	\$5,870.00	10%	\$5,283.00	\$5,283.00
HQ	APM	12	-	112	1	3084921Y04	CBL,ASSY,COAX,0.65ML,7/16 PLUG	\$96.75	\$96.75	20%	\$77.40	\$77.40
HQ	TTA	13	-	457	1	DS442035484	TTA MOTOROLA TOWER TOP UNIT, 794-824 MHZ, N CONNS, DUAL DIVERSITY	\$15,270.00	\$15,270.00	10%	\$13,743.00	\$13,743.00
HQ	TTA CU	14	-	457	1	DS442035491	TTA, MOTOROLA CU (ESS), 794-824 MHZ, 1DC, DUAL DIVERSITY, N TTA CONNEC	\$9,177.00	\$9,177.00	10%	\$8,259.30	\$8,259.30
HQ	PreSelect	15	-	457	1	DSPF7982101831N2	BANDPASS FILTERS, TWO ON 1RU PANEL, RX, 18MHZ BW, RANGE 796-824MHZ	\$2,243.00	\$2,243.00	10%	\$2,018.70	\$2,018.70
HQ	TXSurge	16	-	207	1	DSTSXD FMBF	RF SPD, 698-2700MHZ DC BLOCK HIGH PWR, DIN FEM/MALE BI-DIR W/ BRACKET	\$195.00	\$195.00	10%	\$175.50	\$175.50
HQ	RXSurge	17	-	207	3	DS1090501WA	RF SPD, 700-1000MHZ BROADBAND 15 VDC PASS NM ANT, NF EQUIP PIP, ASIG	\$182.00	\$546.00	10%	\$163.80	\$491.40
HQ	1-4U Cable	18	-	351	20	DSACC014J50	1/4" ULTRA FLEXIBLE, 50 OHM, CORRUGATED, COPPER OUTER CONDUCTOR, LOW S	\$3.00	\$60.00	10%	\$2.70	\$54.00
HQ	1-4U N M	19	-	351	2	DSNMA01450	N MALE, PLENUM & ULTRA FLEXIBLE FOR 1/4" CABLE (USE WITH PST014 TOOL)	\$26.00	\$52.00	10%	\$23.40	\$46.80
HQ	1-4U B M	20	-	351	2	DSBNA01450	BNC MALE, PLENUM & ULTRA FLEXIBLE FOR 1/4" CABLE (USE WITH PST014 TOO	\$26.00	\$52.00	10%	\$23.40	\$46.80
HQ	1-4H Cable	21	-	351	70	DSEC150HF	COAXIAL CABLE, 1/4" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$2.70	\$189.00	10%	\$2.43	\$170.10
HQ	1-4H N M	22	-	351	14	DSNM50B14X	CONNECTOR, N MALE INTERFACE FOR EC1-50-HF	\$31.00	\$434.00	10%	\$27.90	\$390.60
HQ	1-2H Cable	23	-	351	75	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$3.65	\$273.75	10%	\$3.29	\$246.38
HQ	1-2H N M	24	-	351	4	DSNM50B12X	CONNECTOR, N MALE INTERFACE FOR EC4-50-HF	\$43.00	\$172.00	10%	\$38.70	\$154.80
HQ	1-2 Cable	25	-	351	315	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	\$3.15	\$992.25	10%	\$2.84	\$893.03
HQ	1-2 D M	26	-	351	6	DS716M50V12N1	CONNECTOR, 7/16 DIN MALE INTERFACE FOR EC4-50	\$25.50	\$153.00	10%	\$22.95	\$137.70
HQ	1-2 N F	27	-	351	1	DSNF50V12	CONNECTOR, N FEMALE INTERFACE FOR EC4-50	\$28.00	\$28.00	10%	\$25.20	\$25.20
HQ	1-2 N M	28	-	351	7	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50	\$24.50	\$171.50	10%	\$22.05	\$154.35
HQ	1-58 Cable	29	-	351	630	DSEC750A	COAXIAL CABLE, "A" SERIES 1-5/8" 50 OHM CORRUGATED COPPER	\$11.25	\$7,087.50	10%	\$10.13	\$6,378.75
HQ	1-58 D F	30	-	351	2	DS716F50V158N1	CONNECTOR, 7/16 DIN FEMALE INTERFACE WITH CAPTIVATED CENTER PIN	\$142.00	\$284.00	10%	\$127.80	\$255.60
HQ	1-58 N F	31	-	351	4	DSNF50V158N1	CONNECTOR, N FEMALE INTERFACE WITH CAPTIVATED CENTER PIN FOR EC7-50-A	\$151.00	\$604.00	10%	\$135.90	\$543.60
HQ	RTU	32	-	275	1	F0016A	MC IOT MAIN MODEL	\$0.00	\$0.00	10%	\$0.00	\$0.00



HQ	RTU	32	a	275	1	VA01370AA	ADD: MC-EDGE	\$1,045.00	\$1,045.00	10%	\$940.50	\$940.50
HQ	RTU	32	b	275	1	VA01946AA	ADD: MC EDGE AS NFM SDM3000	\$0.00	\$0.00	10%	\$0.00	\$0.00
HQ	RTU	32	c	275	1	VA00973AA	ADD: IOT MC-EDGE ENHANCED COMM PLUG-IN BOARD	\$165.00	\$165.00	10%	\$148.50	\$148.50
HQ	RTU	32	d	275	3	VA00989AA	ADD: 8DO EE 16DI 5-18 V /DRY	\$600.00	\$1,800.00	10%	\$540.00	\$1,620.00
HQ	RTU	32	e	275	1	VA00991AA	ADD: DC/DC - [48 >>24] PS W/O HOUSING	\$495.00	\$495.00	10%	\$445.50	\$445.50
HQ	RTU	32	f	275	1	VA00155	ADD:DC POWER CABLE	\$55.00	\$55.00	10%	\$49.50	\$49.50
HQ	RTU	33	-	499	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	\$308.00	\$308.00	10%	\$277.20	\$277.20
HQ	RTU	34	-	275	1	FHN0057	DIN RAIL STOPPER	\$17.00	\$17.00	10%	\$15.30	\$15.30
HQ	DCPowerSys	35	-	207	1	DST2S2084500007	TRILOGY POWER SYSTEM WITH SMARTPACK S, 48V, 500A	\$14,681.00	\$14,681.00	10%	\$13,212.90	\$13,212.90
HQ	DCPowerSys	36	-	207	6	DS241115105	FLATPACK 2 48/2000 HE RECTIFIER	\$949.00	\$5,694.00	10%	\$854.10	\$5,124.60
HQ	DCPowerSys	37	-	207	2	DS331E23640800	BLIND PANEL FP2 HE BLACK G1	\$27.00	\$54.00	10%	\$24.30	\$48.60
HQ	DCPowerSys	38	-	207	1	DS3672495500	ALARM CABLE 50F FOR TRILOGY S POWER SYSTEMS	\$187.00	\$187.00	10%	\$168.30	\$168.30
HQ	DCPowerSys	39	-	207	1	DS350030	23IN X 7FT BATTERY RACK, 4 BATT TRAYS, 4 200A TRAY MOUNT DISCONNECT	\$8,154.00	\$8,154.00	10%	\$7,338.60	\$7,338.60
HQ	DCPowerSys	40	-	207	6	DS264814	BATT KIT ENERSYS 12V190F 48V 1BANK	\$3,434.00	\$20,604.00	10%	\$3,090.60	\$18,543.60
HQ	DCPowerSys	41	-	207	2	DSCBB003E	CIRCUIT BREAKER, 3 AMP PLUG-IN BULLET, ELECTRO-MECHANICAL	\$44.00	\$88.00	10%	\$39.60	\$79.20
HQ	DCPowerSys	42	-	207	2	DSCBB005E	BREAKER, 5 AMP DC BULLET BREAKER	\$44.00	\$88.00	10%	\$39.60	\$79.20
HQ	DCPowerSys	43	-	207	2	DSCBB020E	CIRCUIT BREAKER, 20 AMP, E TRIP	\$44.00	\$88.00	10%	\$39.60	\$79.20
HQ	DCPowerSys	44	-	207	4	DSCBB080E	80A BATTERY BREAKER	\$44.00	\$176.00	10%	\$39.60	\$158.40
HQ	ACSurge	45	-	207	1	DSAPEXIMAX808	SPD, TYPE 2A, 120/240VAC 1-PHASE NEMA 4X ENCLOSURE, SAD/MOV	\$2,941.00	\$2,941.00	10%	\$2,646.90	\$2,646.90
Transfer	Site Rtr	46	-	147	1	T8547	SITE ROUTER & FIREWALL- DC	\$1,100.00	\$1,100.00	15%	\$935.00	\$935.00
Transfer	Site Rtr	46	a	147	1	CA03445AA	ADD: MISSION CRITICAL HARDENING	\$3,300.00	\$3,300.00	15%	\$2,805.00	\$2,805.00
Transfer	Site Rtr	46	b	147	1	CA03448AA	ADD: STATEFUL FIREWALL	\$1,000.00	\$1,000.00	15%	\$850.00	\$850.00
Transfer	700 ESS	47	-	112	1	SQM01SUM7054	GTR 8000 EXPANDABLE SITE SUBSYSTEM	\$6,000.00	\$6,000.00	20%	\$4,800.00	\$4,800.00
Transfer	700 ESS	47	a	595	1	CA03678AA	ADD: ASTRO SYSTEM RELEASE 2021.1	\$0.00	\$0.00	20%	\$0.00	\$0.00
Transfer	700 ESS	47	b	112	1	CA00855AA	ADD: 700/800 MHZ	\$6,300.00	\$6,300.00	20%	\$5,040.00	\$5,040.00
Transfer	700 ESS	47	c	112	1	X306AC	ADD: QTY (6) GTR 8000 BASE RADIOS	\$35,400.00	\$35,400.00	20%	\$28,320.00	\$28,320.00
Transfer	700 ESS	47	d	595	6	CA01193AA	ADD: IP BASED MULTISITE BASE RADIO SOFTWARE	\$29,500.00	\$177,000.00	20%	\$23,600.00	\$141,600.00
Transfer	700 ESS	47	e	112	1	CA02686AA	ADD: AC DC POWER DISTRIBUTION	\$0.00	\$0.00	20%	\$0.00	\$0.00
Transfer	700 ESS	47	f	595	3	CA01842AA	ADD: P25 TDMA SOFTWARE	\$13,000.00	\$39,000.00	20%	\$10,400.00	\$31,200.00
Transfer	700 ESS	47	g	112	1	CA01943AA	ADD:2ND BRANCH DIVERSITY	\$700.00	\$700.00	20%	\$560.00	\$560.00
Transfer	700 ESS	47	h	112	1	CA00862AA	ADD: SITE & CABINET RMC W/CAPABILITY OF 7-24 BRS	\$2,100.00	\$2,100.00	20%	\$1,680.00	\$1,680.00
Transfer	700 ESS	47	i	112	1	CA00879AA	ADD: PRIMARY 6 PORT CAVITY COMBINER	\$8,400.00	\$8,400.00	20%	\$6,720.00	\$6,720.00
Transfer	700 ESS	47	j	112	1	CA00881AA	ADD: 700 + 800 MHZ DIPLEXER W/PMU	\$1,000.00	\$1,000.00	20%	\$800.00	\$800.00
Transfer	700 ESS	47	k	677	2	CA03792AA	ADD: DSC 8000 REFERENCE DISTRIBUTION MODULE	\$6,000.00	\$12,000.00	20%	\$4,800.00	\$9,600.00
Transfer	700 ESS	47	l	680	2	CA03746AA	ADD: DSC 8000 SIMULCAST RDM SW	\$8,200.00	\$16,400.00	20%	\$6,560.00	\$13,120.00
Transfer	700 ESS	47	m	677	2	CA03739AA	ADD: INTEGRATED GNSS TIMING REF W/ RB	\$12,000.00	\$24,000.00	20%	\$9,600.00	\$19,200.00
Transfer	700 ESS	47	n	680	2	CA03747AA	ADD: DSC 8000 RUBIDIUM SW	\$4,500.00	\$9,000.00	20%	\$3,600.00	\$7,200.00
Transfer	700 ESS	47	o	112	1	X882AH	ADD: 7.5 FT OPEN RACK, 48RU	\$495.00	\$495.00	20%	\$396.00	\$396.00
Transfer	700 ESS	48	-	895	2	PMUG1017B	GNSS REMOTE RECEIVER ASSY	\$900.00	\$1,800.00	10%	\$810.00	\$1,620.00

Transfer	700 ESS	49	-	291	2	DSP04268	ALUMINUM 6061-T6. PIPE 1 INCH SCHED 40	\$15.25	\$30.50	25%	\$11.44	\$22.88
Transfer	700 ESS	50	-	207	2	DSIX2L1M1DC48IG	SITE EQUIPMENT,PD, HPD GPS DATA LINE, 48VDC, HARD WIRE WITH ISOLATED G	\$247.00	\$494.00	10%	\$222.30	\$444.60
Transfer	700 ESS	51	-	207	2	DS30C87465CO1	125' OUTDOOR UV PROTECTED CABLE 6 PR, 22AWG DB15	\$810.00	\$1,620.00	10%	\$729.00	\$1,458.00
Transfer	800 ESS	52	-	112	1	SQM01SUM7054	GTR 8000 EXPANDABLE SITE SUBSYSTEM	\$6,000.00	\$6,000.00	20%	\$4,800.00	\$4,800.00
Transfer	800 ESS	52	a	595	1	CA03678AA	ADD: ASTRO SYSTEM RELEASE 2021.1	\$0.00	\$0.00	20%	\$0.00	\$0.00
Transfer	800 ESS	52	b	112	1	CA00855AA	ADD: 700/800 MHZ	\$6,300.00	\$6,300.00	20%	\$5,040.00	\$5,040.00
Transfer	800 ESS	52	c	112	1	X306AC	ADD: QTY (6) GTR 8000 BASE RADIOS	\$35,400.00	\$35,400.00	20%	\$28,320.00	\$28,320.00
Transfer	800 ESS	52	d	595	6	CA01193AA	ADD: IP BASED MULTISITE BASE RADIO SOFTWARE	\$29,500.00	\$177,000.00	20%	\$23,600.00	\$141,600.00
Transfer	800 ESS	52	e	112	1	CA02686AA	ADD: AC DC POWER DISTRIBUTION	\$0.00	\$0.00	20%	\$0.00	\$0.00
Transfer	800 ESS	52	f	595	6	CA01842AA	ADD: P25 TDMA SOFTWARE	\$13,000.00	\$78,000.00	20%	\$10,400.00	\$62,400.00
Transfer	800 ESS	52	g	112	1	CA01943AA	ADD:2ND BRANCH DIVERSITY	\$700.00	\$700.00	20%	\$560.00	\$560.00
Transfer	800 ESS	52	h	112	1	CA00877AA	ADD: CABINET RMC FOR EXPANSION RACK	\$600.00	\$600.00	20%	\$480.00	\$480.00
Transfer	800 ESS	52	i	112	1	CA00880AA	ADD: EXPANSION 6 PORT CAVITY COMBINER	\$8,400.00	\$8,400.00	20%	\$6,720.00	\$6,720.00
Transfer	800 ESS	52	j	112	1	CA01059AA	ADD: EXPAN RCK DIPLXR EXTEN CABLE	\$100.00	\$100.00	20%	\$80.00	\$80.00
Transfer	800 ESS	52	k	677	2	CA03737AA	ADD: DSC HUB	\$3,500.00	\$7,000.00	20%	\$2,800.00	\$5,600.00
Transfer	800 ESS	52	l	112	1	X882AH	ADD: 7.5 FT OPEN RACK, 48RU	\$495.00	\$495.00	20%	\$396.00	\$396.00
Transfer	TXAnt	53	-	351	1	DS7C09P36UD	DS7C09P36U-D, 764-869MHZ SINGLE 9DB GAIN OMNI WITH DIN	\$4,013.00	\$4,013.00	10%	\$3,611.70	\$3,611.70
Transfer	RXAnt1	54	-	351	1	DS7C09P36UD	DS7C09P36U-D, 764-869MHZ SINGLE 9DB GAIN OMNI WITH DIN	\$4,013.00	\$4,013.00	10%	\$3,611.70	\$3,611.70
Transfer	RXAnt2	55	-	351	1	DS7C09P36UD	DS7C09P36U-D, 764-869MHZ SINGLE 9DB GAIN OMNI WITH DIN	\$4,013.00	\$4,013.00	10%	\$3,611.70	\$3,611.70
Transfer	APM	56	-	351	1	DSAPM7487K248	ADVANCED POWER MONITOR, 746-870 MHZ, 36-60 VDC	\$5,870.00	\$5,870.00	10%	\$5,283.00	\$5,283.00
Transfer	APM	57	-	112	1	3084921Y04	CBL,ASSY,COAX,0.65ML,7/16 PLUG	\$96.75	\$96.75	20%	\$77.40	\$77.40
Transfer	TTA	58	-	457	1	DS442035484	TTA MOTOROLA TOWER TOP UNIT, 794-824 MHZ, N CONNS, DUAL DIVERSITY	\$15,270.00	\$15,270.00	10%	\$13,743.00	\$13,743.00
Transfer	TTA CU	59	-	457	1	DS442035491	TTA, MOTOROLA CU (ESS), 794-824 MHZ, 1DC, DUAL DIVERSITY, N TTA CONNEC	\$9,177.00	\$9,177.00	10%	\$8,259.30	\$8,259.30
Transfer	PreSelect	60	-	457	1	DSPF7982101831N2	BANDPASS FILTERS, TWO ON 1RU PANEL, RX, 18MHZ BW, RANGE 796-824MHZ	\$2,243.00	\$2,243.00	10%	\$2,018.70	\$2,018.70
Transfer	TXSurge	61	-	207	1	DSTSXFMBF	RF SPD, 698-2700MHZ DC BLOCK HIGH PWR, DIN FEM/MALE BI-DIR W/ BRACKET	\$195.00	\$195.00	10%	\$175.50	\$175.50
Transfer	RXSurge	62	-	207	3	DS1090501WA	RF SPD, 700-1000MHZ BROADBAND 15 VDC PASS NM ANT, NF EQUIP PIP, ASIG	\$182.00	\$546.00	10%	\$163.80	\$491.40
Transfer	1-4U Cable	63	-	351	20	DSACC014J50	1/4" ULTRA FLEXIBLE, 50 OHM, CORRUGATED, COPPER OUTER CONDUCTOR, LOW S	\$3.00	\$60.00	10%	\$2.70	\$54.00
Transfer	1-4U N M	64	-	351	2	DSNMA01450	N MALE, PLENUM & ULTRA FLEXIBLE FOR 1/4" CABLE (USE WITH PST014 TOOL)	\$26.00	\$52.00	10%	\$23.40	\$46.80
Transfer	1-4U B M	65	-	351	2	DSBNA01450	BNC MALE, PLENUM & ULTRA FLEXIBLE FOR 1/4" CABLE (USE WITH PST014 TOO	\$26.00	\$52.00	10%	\$23.40	\$46.80
Transfer	1-4H Cable	66	-	351	50	DSEC150HF	COAXIAL CABLE, 1/4" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$2.70	\$135.00	10%	\$2.43	\$121.50
Transfer	1-4H N M	67	-	351	14	DSNM50B14X	CONNECTOR, N MALE INTERFACE FOR EC1-50-HF	\$31.00	\$434.00	10%	\$27.90	\$390.60

Transfer	1-2H Cable	68	-	351	40	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$3.65	\$146.00	10%	\$3.29	\$131.40
Transfer	1-2H N M	69	-	351	4	DSNM50B12X	CONNECTOR, N MALE INTERFACE FOR EC4-50-HF	\$43.00	\$172.00	10%	\$38.70	\$154.80
Transfer	1-2 Cable	70	-	351	260	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	\$3.15	\$819.00	10%	\$2.84	\$737.10
Transfer	1-2 D M	71	-	351	6	DS716M50V12N1	CONNECTOR, 7/16 DIN MALE INTERFACE FOR EC4-50	\$25.50	\$153.00	10%	\$22.95	\$137.70
Transfer	1-2 N F	72	-	351	1	DSNF50V12	CONNECTOR, N FEMALE INTERFACE FOR EC4-50	\$28.00	\$28.00	10%	\$25.20	\$25.20
Transfer	1-2 N M	73	-	351	7	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50	\$24.50	\$171.50	10%	\$22.05	\$154.35
Transfer	1-58 Cable	74	-	351	525	DSEC750A	COAXIAL CABLE, "A" SERIES 1-5/8" 50 OHM CORRUGATED COPPER	\$11.25	\$5,906.25	10%	\$10.13	\$5,315.63
Transfer	1-58 D F	75	-	351	2	DS716F50V158N1	CONNECTOR, 7/16 DIN FEMALE INTERFACE WITH CAPTIVATED CENTER PIN	\$142.00	\$284.00	10%	\$127.80	\$255.60
Transfer	1-58 N F	76	-	351	4	DSNF50V158N1	CONNECTOR, N FEMALE INTERFACE WITH CAPTIVATED CENTER PIN FOR EC7-50-A	\$151.00	\$604.00	10%	\$135.90	\$543.60
Transfer	RTU	77	-	275	1	F0016A	MC IOT MAIN MODEL	\$0.00	\$0.00	10%	\$0.00	\$0.00
Transfer	RTU	77	a	275	1	VA01370AA	ADD: MC-EDGE	\$1,045.00	\$1,045.00	10%	\$940.50	\$940.50
Transfer	RTU	77	b	275	1	VA01946AA	ADD: MC EDGE AS NFM SDM3000	\$0.00	\$0.00	10%	\$0.00	\$0.00
Transfer	RTU	77	c	275	1	VA00973AA	ADD: IOT MC-EDGE ENHANCED COMM PLUG-IN BOARD	\$165.00	\$165.00	10%	\$148.50	\$148.50
Transfer	RTU	77	d	275	3	VA00989AA	ADD: 8DO EE 16DI 5-18 V /DRY	\$600.00	\$1,800.00	10%	\$540.00	\$1,620.00
Transfer	RTU	77	e	275	1	VA00991AA	ADD: DC/DC - [48 >>24] PS W/O HOUSING	\$495.00	\$495.00	10%	\$445.50	\$445.50
Transfer	RTU	77	f	275	1	VA00155	ADD:DC POWER CABLE	\$55.00	\$55.00	10%	\$49.50	\$49.50
Transfer	RTU	78	-	499	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	\$308.00	\$308.00	10%	\$277.20	\$277.20
Transfer	RTU	79	-	275	1	FHN0057	DIN RAIL STOPPER	\$17.00	\$17.00	10%	\$15.30	\$15.30
Transfer	DCPowerSys	80	-	207	1	DST2S2084500007	TRILOGY POWER SYSTEM WITH SMARTPACK S, 48V, 500A	\$14,681.00	\$14,681.00	10%	\$13,212.90	\$13,212.90
Transfer	DCPowerSys	81	-	207	6	DS241115105	FLATPACK 2 48/2000 HE RECTIFIER	\$949.00	\$5,694.00	10%	\$854.10	\$5,124.60
Transfer	DCPowerSys	82	-	207	2	DS331E23640800	BLIND PANEL FP2 HE BLACK G1	\$27.00	\$54.00	10%	\$24.30	\$48.60
Transfer	DCPowerSys	83	-	207	1	DS3672495500	ALARM CABLE 50F FOR TRILOGY S POWER SYSTEMS	\$187.00	\$187.00	10%	\$168.30	\$168.30
Transfer	DCPowerSys	84	-	207	1	DS350030	23IN X 7FT BATTERY RACK, 4 BATT TRAYS, 4 200A TRAY MOUNT DISCONNECT	\$8,154.00	\$8,154.00	10%	\$7,338.60	\$7,338.60
Transfer	DCPowerSys	85	-	207	6	DS264814	BATT KIT ENERSYS 12V190F 48V 1BANK	\$3,434.00	\$20,604.00	10%	\$3,090.60	\$18,543.60
Transfer	DCPowerSys	86	-	207	2	DSCBB003E	CIRCUIT BREAKER, 3 AMP PLUG-IN BULLET, ELECTRO-MECHANICAL	\$44.00	\$88.00	10%	\$39.60	\$79.20
Transfer	DCPowerSys	87	-	207	2	DSCBB005E	BREAKER, 5 AMP DC BULLET BREAKER	\$44.00	\$88.00	10%	\$39.60	\$79.20
Transfer	DCPowerSys	88	-	207	2	DSCBB020E	CIRCUIT BREAKER, 20 AMP, E TRIP	\$44.00	\$88.00	10%	\$39.60	\$79.20
Transfer	DCPowerSys	89	-	207	4	DSCBB080E	80A BATTERY BREAKER	\$44.00	\$176.00	10%	\$39.60	\$158.40
Transfer	ACSurge	90	-	207	1	DSAPEXIMAX808	SPD, TYPE 2A, 120/240VAC 1-PHASE NEMA 4X ENCLOSURE, SAD/MOV	\$2,941.00	\$2,941.00	10%	\$2,646.90	\$2,646.90
FS2 ASR	Site Rtr	91	-	147	1	T8547	SITE ROUTER & FIREWALL- DC	\$1,100.00	\$1,100.00	15%	\$935.00	\$935.00
FS2 ASR	Site Rtr	91	a	147	1	CA03445AA	ADD: MISSION CRITICAL HARDENING	\$3,300.00	\$3,300.00	15%	\$2,805.00	\$2,805.00
FS2 ASR	Site Rtr	91	b	147	1	CA03448AA	ADD: STATEFUL FIREWALL	\$1,000.00	\$1,000.00	15%	\$850.00	\$850.00
FS2 ASR	ASR ESS	92	-	112	1	SQM01SUM7054	GTR 8000 EXPANDABLE SITE SUBSYSTEM	\$6,000.00	\$6,000.00	20%	\$4,800.00	\$4,800.00
FS2 ASR	ASR ESS	92	a	595	1	CA03678AA	ADD: ASTRO SYSTEM RELEASE 2021.1	\$0.00	\$0.00	20%	\$0.00	\$0.00
FS2 ASR	ASR ESS	92	b	112	1	CA00855AA	ADD: 700/800 MHZ	\$6,300.00	\$6,300.00	20%	\$5,040.00	\$5,040.00

FS2 ASR	ASR ESS	92	c	112	1	X304AE	ADD: QTY (4) GTR 8000 BASE RADIOS	\$23,600.00	\$23,600.00	20%	\$18,880.00	\$18,880.00
FS2 ASR	ASR ESS	92	d	595	4	X591AE	ENH: ASTRO 25 SITE REPEATER SW	\$21,760.00	\$87,040.00	20%	\$17,408.00	\$69,632.00
FS2 ASR	ASR ESS	92	e	112	1	CA02686AA	ADD: AC DC POWER DISTRIBUTION	\$0.00	\$0.00	20%	\$0.00	\$0.00
FS2 ASR	ASR ESS	92	f	595	2	CA01842AA	ADD: P25 TDMA SOFTWARE	\$13,000.00	\$26,000.00	20%	\$10,400.00	\$20,800.00
FS2 ASR	ASR ESS	92	g	112	1	CA00861AA	ADD: CABINET RMC W/ CAPABILITY OF 6 BRS	\$700.00	\$700.00	20%	\$560.00	\$560.00
FS2 ASR	ASR ESS	92	h	112	1	CA00879AA	ADD: PRIMARY 6 PORT CAVITY COMBINER	\$8,400.00	\$8,400.00	20%	\$6,720.00	\$6,720.00
FS2 ASR	ASR ESS	92	i	112	1	CA00882AA	ADD: 700 MHZ TX FILTER W/PMU	\$1,000.00	\$1,000.00	20%	\$800.00	\$800.00
FS2 ASR	ASR ESS	92	j	677	2	CA03736AA	ADD: DSC 8000 REPEATER SITE CONTROLLER	\$6,000.00	\$12,000.00	20%	\$4,800.00	\$9,600.00
FS2 ASR	ASR ESS	92	k	680	2	CA03745AA	ADD: DSC 8000 REPEATER SITE CONTROLLER SW	\$7,400.00	\$14,800.00	20%	\$5,920.00	\$11,840.00
FS2 ASR	ASR ESS	92	l	112	1	CA01402AA	ADD: 7.0 FT OPEN RACK	\$495.00	\$495.00	20%	\$396.00	\$396.00
FS2 ASR	TXRXAnt	93	-	351	1	DSDS7C06P36DD	DS7C06P36D-D, 764-869MHZ DUAL 6DB GAIN OMNI WITH DIN	\$4,020.00	\$4,020.00	10%	\$3,618.00	\$3,618.00
FS2 ASR	APM	94	-	351	1	DSAPM7487K248	ADVANCED POWER MONITOR, 746-870 MHZ, 36-60 VDC	\$5,870.00	\$5,870.00	10%	\$5,283.00	\$5,283.00
FS2 ASR	APM	95	-	112	1	3084921Y04	CBL,ASSY,COAX,0.65ML,7/16 PLUG	\$96.75	\$96.75	20%	\$77.40	\$77.40
FS2 ASR	PreSelect	96	-	457	1	DSPF7982101831N	BANDPASS FILTER, RX, 18 MHZ BW, RANGE 796-824 MHZ	\$1,139.00	\$1,139.00	10%	\$1,025.10	\$1,025.10
FS2 ASR	TXSurge	97	-	207	1	DSTSXDfMBF	RF SPD, 698-2700MHZ DC BLOCK HIGH PWR, DIN FEM/MALE BI-DIR W/ BRACKET	\$195.00	\$195.00	10%	\$175.50	\$175.50
FS2 ASR	RXSurge	98	-	207	1	DS1090501WA	RF SPD, 700-1000MHZ BROADBAND 15 VDC PASS NM ANT, NF EQUIP PIP, ASIG	\$182.00	\$182.00	10%	\$163.80	\$163.80
FS2 ASR	1-4H Cable	99	-	351	15	DSEC150HF	COAXIAL CABLE, 1/4" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$2.70	\$40.50	10%	\$2.43	\$36.45
FS2 ASR	1-4H N M	100	-	351	6	DSNM50B14X	CONNECTOR, N MALE INTERFACE FOR EC1-50-HF	\$31.00	\$186.00	10%	\$27.90	\$167.40
FS2 ASR	1-2H Cable	101	-	351	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$3.65	\$91.25	10%	\$3.29	\$82.13
FS2 ASR	1-2H N M	102	-	351	2	DSNM50B12X	CONNECTOR, N MALE INTERFACE FOR EC4-50-HF	\$43.00	\$86.00	10%	\$38.70	\$77.40
FS2 ASR	1-2 Cable	103	-	351	55	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	\$3.15	\$173.25	10%	\$2.84	\$155.93
FS2 ASR	1-2 D M	104	-	351	5	DS716M50V12N1	CONNECTOR, 7/16 DIN MALE INTERFACE FOR EC4-50	\$25.50	\$127.50	10%	\$22.95	\$114.75
FS2 ASR	1-2 N M	105	-	351	1	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50	\$24.50	\$24.50	10%	\$22.05	\$22.05
FS2 ASR	7-8 Cable	106	-	351	40	DSEC550A	COAXIAL CABLE, "A" SERIES 7/8 IN 50 OHM CORRUGATED COPPER W/ BLACK PE	\$5.60	\$224.00	10%	\$5.04	\$201.60
FS2 ASR	7-8 D F	107	-	351	2	DS716F50V78N1	CONNECTOR, 7/16 DIN FEMALE INTERFACE FOR EC5-50-A	\$36.00	\$72.00	10%	\$32.40	\$64.80
FS2 ASR	7-8 N F	108	-	351	2	DSNF50V78N1	CONNECTOR, N FEMALE INTERFACE FOR EC5-50-A	\$38.00	\$76.00	10%	\$34.20	\$68.40
FS2 ASR	RTU	109	-	275	1	F0016A	MC IOT MAIN MODEL	\$0.00	\$0.00	10%	\$0.00	\$0.00
FS2 ASR	RTU	109	a	275	1	VA01370AA	ADD: MC-EDGE	\$1,045.00	\$1,045.00	10%	\$940.50	\$940.50
FS2 ASR	RTU	109	b	275	1	VA01946AA	ADD: MC EDGE AS NFM SDM3000	\$0.00	\$0.00	10%	\$0.00	\$0.00
FS2 ASR	RTU	109	c	275	1	VA00973AA	ADD: IOT MC-EDGE ENHANCED COMM PLUG-IN BOARD	\$165.00	\$165.00	10%	\$148.50	\$148.50
FS2 ASR	RTU	109	d	275	3	VA00989AA	ADD: 8DO EE 16DI 5-18 V /DRY	\$600.00	\$1,800.00	10%	\$540.00	\$1,620.00
FS2 ASR	RTU	109	e	275	1	VA00991AA	ADD: DC/DC - [48 >>24] PS W/O HOUSING	\$495.00	\$495.00	10%	\$445.50	\$445.50
FS2 ASR	RTU	109	f	275	1	VA00155	ADD:DC POWER CABLE	\$55.00	\$55.00	10%	\$49.50	\$49.50
FS2 ASR	RTU	110	-	499	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	\$308.00	\$308.00	10%	\$277.20	\$277.20
FS2 ASR	RTU	111	-	275	1	FHN0057	DIN RAIL STOPPER	\$17.00	\$17.00	10%	\$15.30	\$15.30
FS2 ASR	DCPowerSys	112	-	207	1	DST2S2084500007	TRILOGY POWER SYSTEM WITH SMARTPACK S, 48V, 500A	\$14,681.00	\$14,681.00	10%	\$13,212.90	\$13,212.90
FS2 ASR	DCPowerSys	113	-	207	4	DS241115105	FLATPACK 2 48/2000 HE RECTIFIER	\$949.00	\$3,796.00	10%	\$854.10	\$3,416.40
FS2 ASR	DCPowerSys	114	-	207	4	DS331E23640800	BLIND PANEL FP2 HE BLACK G1	\$27.00	\$108.00	10%	\$24.30	\$97.20



FS2 ASR	DCPowerSys	115	-	207	1	DS3672495500	ALARM CABLE 50F FOR TRILOGY S POWER SYSTEMS	\$187.00	\$187.00	10%	\$168.30	\$168.30
FS2 ASR	DCPowerSys	116	-	207	3	DS264814	BATT KIT ENERSYS 12V190F 48V 1BANK	\$3,434.00	\$10,302.00	10%	\$3,090.60	\$9,271.80
FS2 ASR	DCPowerSys	117	-	207	1	DSCBB003E	CIRCUIT BREAKER, 3 AMP PLUG-IN BULLET, ELECTRO-MECHANICAL	\$44.00	\$44.00	10%	\$39.60	\$39.60
FS2 ASR	DCPowerSys	118	-	207	2	DSCBB005E	BREAKER, 5 AMP DC BULLET BREAKER	\$44.00	\$88.00	10%	\$39.60	\$79.20
FS2 ASR	DCPowerSys	119	-	207	2	DSCBB080E	80A BATTERY BREAKER	\$44.00	\$88.00	10%	\$39.60	\$79.20
FS2 ASR	ACSurge	120	-	207	1	DSAPEXIMAX808	SPD, TYPE 2A, 120/240VAC 1-PHASE NEMA 4X ENCLOSURE, SAD/MOV	\$2,941.00	\$2,941.00	10%	\$2,646.90	\$2,646.90
Common	MW	121	-	131	1	DQMWWESTONCOMPLETE	AVIAT WESTON 11 GHz MICROWAVE COMPLETE QUOTE NA230214-53373	\$339,985.80	\$339,985.80	15%	\$288,987.93	\$288,987.93
Spare	Site Rtr	122	-	147	1	T8547	SITE ROUTER & FIREWALL- DC	\$1,100.00	\$1,100.00	15%	\$935.00	\$935.00
Spare	Site Rtr	122	a	147	1	CA03445AA	ADD: MISSION CRITICAL HARDENING	\$3,300.00	\$3,300.00	15%	\$2,805.00	\$2,805.00
Spare	Site Rtr	122	b	147	1	CA03448AA	ADD: STATEFUL FIREWALL	\$1,000.00	\$1,000.00	15%	\$850.00	\$850.00
Spare	PA	123	-	112	3	DLN6895	FRU: PA 7/800 MHZ	\$3,200.00	\$9,600.00	20%	\$2,560.00	\$7,680.00
Spare	XCVR	124	-	112	3	DLN6885	FRU: XCVR 7/800 MHZ V2	\$3,500.00	\$10,500.00	20%	\$2,800.00	\$8,400.00
Spare	PS	125	-	112	3	DLN6781	FRU: POWER SUPPLY	\$2,200.00	\$6,600.00	20%	\$1,760.00	\$5,280.00
Spare	FAN	126	-	591	3	DLN6898	FRU: FAN MODULE	\$300.00	\$900.00	25%	\$225.00	\$675.00
Spare	DSC8000	127	-	677	1	DLN1444A	FRE: DSC 8000	\$10,500.00	\$10,500.00	20%	\$8,400.00	\$8,400.00
Spare	DSC8000	128	-	677	1	DLN1445B	FRE: DSC 8000, W/ RUBIDIUM 28-60V	\$22,500.00	\$22,500.00	20%	\$18,000.00	\$18,000.00
Spare	DSC HUB	129	-	677	1	DLN8035	FRU: DSC HUB	\$3,500.00	\$3,500.00	20%	\$2,800.00	\$2,800.00
Spare	GNSS ANT	130	-	895	1	PMUG1017B	GNSS REMOTE RECEIVER ASSY	\$900.00	\$900.00	10%	\$810.00	\$810.00
Spare	Ant	131	-	351	2	DSDS7C09P36UD	DS7C09P36U-D, 764-869MHZ SINGLE 9DB GAIN OMNI WITH DIN	\$4,013.00	\$8,026.00	10%	\$3,611.70	\$7,223.40
Spare	Ant	132	-	351	1	DSDS7C06P36DD	DS7C06P36D-D, 764-869MHZ DUAL 6DB GAIN OMNI WITH DIN	\$4,020.00	\$4,020.00	10%	\$3,618.00	\$3,618.00
Spare	TTA	133	-	457	1	DS442035484	TTA MOTOROLA TOWER TOP UNIT, 794-824 MHZ, N CONNS, DUAL DIVERSITY	\$15,270.00	\$15,270.00	10%	\$13,743.00	\$13,743.00
Spare	TTA CU	134	-	457	1	DS442035491	TTA, MOTOROLA CU (ESS), 794-824 MHZ, 1DC, DUAL DIVERSITY, N TTA CONNEC	\$9,177.00	\$9,177.00	10%	\$8,259.30	\$8,259.30
Spare	RTU PS	135	-	275	1	FHN9067	DC/DC - [48 >>24]	\$550.00	\$550.00	10%	\$495.00	\$495.00
Spare	RTU IO	136	-	275	1	FLN9985A	8DO EE 16DI 5-18 V /DRY	\$650.00	\$650.00	10%	\$585.00	\$585.00
License	Master	137	-	877	1	SQM01SUM0323	ASTRO MASTER SITE	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	Master	137	a	877	1	CA03517AD	ADD: CORE EXPANSION	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	Master	137	b	877	3	UA00153AB	ADD: P25 FDMA TRUNKING OPERATION SITE	\$30,000.00	\$90,000.00	20%	\$24,000.00	\$72,000.00
License	Master	137	c	877	3	UA00159AB	ADD: P25 PHASE 2 TDMA TRKNG OP SITE LIC	\$30,000.00	\$90,000.00	20%	\$24,000.00	\$72,000.00
License	Master	137	d	877	20	UA00161AA	ADD: P25 PHASE 2 TDMA SW BASE RADIO LIC	\$3,000.00	\$60,000.00	20%	\$2,400.00	\$48,000.00
License	Master	137	e	877	4	CA01316AA	ADD: UNC ADDTL DEVICE LIC (QTY 10)	\$1,500.00	\$6,000.00	20%	\$1,200.00	\$4,800.00
License	G-Series	138	-	595	1	T8343	GSERIES SOFTWARE LICENSING	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	G-Series	138	a	595	24	UA00400AA	ADD: GSERIES BR-P25 TRNK MS IP	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	G-Series	138	b	595	4	UA00401AA	ADD: GSERIES BR-P25 TRNK ST RPTR	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	G-Series	138	c	595	36	UA00420AA	ADD: CMPR EXP SITE CAP P25 TRNK	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	G-Series	138	d	680	4	UA00760AA	ADD: DSC 8000 REFERENCE DISTRIBUTION MODULE	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	G-Series	138	e	680	4	UA00758AA	ADD: DSC 8000 RUBIDIUM SW	\$0.00	\$0.00	20%	\$0.00	\$0.00

License	G-Series	138	f	680	2	UA00759AA	ADD: DSC 8000 REPEATER SITE CONTROLLER	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	GCM Exp	139	-	112	1	T7140	G-SERIES SOFTWARE UPGRADE	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	GCM Exp	139	a	595	24	CA01197AA	ADD: IP BASED MULTISITE OPERATION UPGRADE	\$3,000.00	\$72,000.00	20%	\$2,400.00	\$57,600.00
License	GCM Exp	139	b	595	24	CA01914AB	ADD: ADD: SW UPGRADE LIC SINGLE EXP	\$1,350.00	\$32,400.00	20%	\$1,080.00	\$25,920.00
License	Genesis	140	-	708	1	TT2266	GENWATCH3 ATIA ADD-ON	\$0.00	\$0.00	15%	\$0.00	\$0.00
License	Genesis	140	a	817	3	TT05722AA	GW3-TRBO ADV PWR MONITOR ADD CONN	\$304.00	\$912.00	10%	\$273.60	\$820.80

### 5.5.3 Console Infrastructure Equipment

SUB SYS	BLOCK	LIM	O	APC	QTY	NOMENCLATURE	DESCRIPTION	UNIT LIST (USD)	EXT LIST (USD)	Contract Disc	Contract Unit	Contract Extended
EquipRm	Rack	1	-	509	1	TRN7343	SEVEN AND A HALF FOOT RACK	\$495.00	\$495.00	20%	\$396.00	\$396.00
EquipRm	Rack Hrdwr	2	-	454	4	0784469Y02	BRACKET,BRKT, CBL SUPPORT	\$110.00	\$440.00	25%	\$82.50	\$330.00
EquipRm	Rack Hrdwr	3	-	547	1	3182602Y06	GROUNDING BUS BAR	\$97.50	\$97.50	10%	\$87.75	\$87.75
EquipRm	Rack Hrdwr	4	-	744	10	0309660A01	SCREW 12-24X5/8 SLTXW CRS ZINC	\$15.50	\$155.00	15%	\$13.18	\$131.75
EquipRm	AC Edge	5	-	207	1	DS11011188	PDU, 120/240 SPLIT PH OR N+1 REDUNDANT, 60A MAX PER PHASE, SIX DEDICAT	\$3,126.00	\$3,126.00	10%	\$2,813.40	\$2,813.40
EquipRm	AC Edge	6	-	207	12	DS3750297	BREAKER, 15 AMP, CB UL 489 LISTED FOR AC EDGE II (1101-1188)	\$62.00	\$744.00	10%	\$55.80	\$669.60
EquipRm	UPS	7	-	207	1	DSGXTR18001017	UPS, GXT5 RACK 2000VA/1800W, 120V, 17 MIN RUNTIME, SOFTWARED	\$4,271.00	\$4,271.00	10%	\$3,843.90	\$3,843.90
EquipRm	Bkhl LANSW	8	-	147	1	CLN1868	2930F 24-PORT SWITCH	\$2,500.00	\$2,500.00	15%	\$2,125.00	\$2,125.00
EquipRm	Site Rtr	9	-	147	2	T8492	SITE ROUTER & FIREWALL- AC	\$875.00	\$1,750.00	15%	\$743.75	\$1,487.50
EquipRm	Site Rtr	9	a	147	2	CA03445AA	ADD: MISSION CRITICAL HARDENING	\$3,300.00	\$6,600.00	15%	\$2,805.00	\$5,610.00
EquipRm	Site Rtr	9	b	147	2	CA03448AA	ADD: STATEFUL FIREWALL	\$1,000.00	\$2,000.00	15%	\$850.00	\$1,700.00
EquipRm	Site LANSW	10	-	147	2	CLN1868	2930F 24-PORT SWITCH	\$2,500.00	\$5,000.00	15%	\$2,125.00	\$4,250.00
EquipRm	Site LANSW	11	-	147	2	CLN1866	FRU: 1M DAC CABLE	\$200.00	\$400.00	15%	\$170.00	\$340.00
EquipRm	CSC	12	-	677	1	T8810	STANDALONE DSC 8000 CONTROLLER	\$0.00	\$0.00	20%	\$0.00	\$0.00
EquipRm	CSC	12	a	595	1	CA03678AA	ADD: ASTRO SYSTEM RELEASE 2021.1	\$0.00	\$0.00	20%	\$0.00	\$0.00
EquipRm	CSC	12	b	677	1	CA03801AA	ADD: DSC 8000 CONVENTIONAL SITE CONTROLLER	\$5,500.00	\$5,500.00	20%	\$4,400.00	\$4,400.00
EquipRm	CSC	12	c	680	1	UA00787AA	ADD: DSC 8000 CONVENTIONAL SITE CONTROLLER SW	\$8,000.00	\$8,000.00	20%	\$6,400.00	\$6,400.00
EquipRm	CSC	12	d	680	1	CA03832AA	ADD: NM/DISPATCH CONVENTIONAL SITE	\$0.00	\$0.00	20%	\$0.00	\$0.00
EquipRm	CSC	13	-	677	1	T8811	DSC AC POWER SUPPLY CHASSIS	\$1,700.00	\$1,700.00	20%	\$1,360.00	\$1,360.00
EquipRm	CSC	13	a	677	1	CA03800AA	ADD: SINGLE POWER SUPPLY FOR DSC	\$1,100.00	\$1,100.00	20%	\$880.00	\$880.00
EquipRm	CSC	13	b	677	1	CA03534AA	ADD: DSC AC POWER CABLE - US, 6 FT.	\$0.00	\$0.00	20%	\$0.00	\$0.00
EquipRm	CCGW1	14	-	147	1	SQM01SUM0333	MCG 8000 CONVENTIONAL GATEWAY	\$5,000.00	\$5,000.00	15%	\$4,250.00	\$4,250.00
EquipRm	CCGW1	14	a	147	1	CA03714AA	ADD: AC POWER	\$0.00	\$0.00	15%	\$0.00	\$0.00
EquipRm	CCGW1	14	b	147	8	CA03717AA	ADD: ACIM INTERFACE	\$750.00	\$6,000.00	15%	\$637.50	\$5,100.00
EquipRm	CCGW1	15	-	207	2	DS88316212	SIEMON CO M2-5T-68L 25PR BLK W/6-8WIRE JACKS	\$160.00	\$320.00	10%	\$144.00	\$288.00
EquipRm	CCGW2	16	-	147	1	SQM01SUM0333	MCG 8000 CONVENTIONAL GATEWAY	\$5,000.00	\$5,000.00	15%	\$4,250.00	\$4,250.00
EquipRm	CCGW2	16	a	147	1	CA03714AA	ADD: AC POWER	\$0.00	\$0.00	15%	\$0.00	\$0.00
EquipRm	CCGW2	16	b	147	8	CA03717AA	ADD: ACIM INTERFACE	\$750.00	\$6,000.00	15%	\$637.50	\$5,100.00
EquipRm	CCGW2	17	-	207	2	DS88316212	SIEMON CO M2-5T-68L 25PR BLK W/6-8WIRE JACKS	\$160.00	\$320.00	10%	\$144.00	\$288.00
EquipRm	Aux IO	18	-	275	1	F0016A	MC IOT MAIN MODEL	\$0.00	\$0.00	10%	\$0.00	\$0.00
EquipRm	Aux IO	18	a	275	1	VA01370AA	ADD: MC-EDGE	\$1,045.00	\$1,045.00	10%	\$940.50	\$940.50
EquipRm	Aux IO	18	b	275	1	VA01945AA	ADD: MC EDGE AS AUX I/O SERVER	\$0.00	\$0.00	10%	\$0.00	\$0.00
EquipRm	Aux IO	18	c	275	1	VA00985AA	ADD: NO PIGGY_ MC-EDGE	\$0.00	\$0.00	10%	\$0.00	\$0.00
EquipRm	Aux IO	18	d	275	4	VA00989AA	ADD: 8DO EE 16DI 5-18 V /DRY	\$600.00	\$2,400.00	10%	\$540.00	\$2,160.00
EquipRm	Aux IO	18	e	275	1	VA00009	ADD: AC POWER SUPPLY UNIT 12V / 5A DC OUTPUT	\$248.00	\$248.00	10%	\$223.20	\$223.20
EquipRm	Aux IO	18	f	275	1	VA00155	ADD:DC POWER CABLE	\$55.00	\$55.00	10%	\$49.50	\$49.50
EquipRm	Aux IO	19	-	499	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	\$308.00	\$308.00	10%	\$277.20	\$277.20

EquipRm	Aux IO	20	-	275	2	FHN0057	DIN RAIL STOPPER	\$17.00	\$34.00	10%	\$15.30	\$30.60
Dispatch	Op Sftwr	21	-	244	1	B1949	MCC 7500E SOFTWARE DVD	\$250.00	\$250.00	20%	\$200.00	\$200.00
Dispatch	Op Sftwr	22	-	877	1	T8806A	WINDOWS SUPP TRANS CONFIG, A2020.1/A2021.1	\$0.00	\$0.00	20%	\$0.00	\$0.00
Dispatch	Op Sftwr	23	-	708	3	T8742	MCAFFEE FOR WINDOWS CLIENT, A2019.2	\$165.00	\$495.00	15%	\$140.25	\$420.75
Dispatch	Op Pos	24	-	244	1	B1948	MCC 7500E DISPATCH POSITION LICENSES	\$0.00	\$0.00	20%	\$0.00	\$0.00
Dispatch	Op Pos	24	a	244	2	UA00652AA	ADD: 160 RADIO RESOURCES LICENSE	\$20,820.00	\$41,640.00	20%	\$16,656.00	\$33,312.00
Dispatch	Op Pos	24	b	244	2	UA00653AA	ADD: BASIC CONSOLE OPERATION	\$5,280.00	\$10,560.00	20%	\$4,224.00	\$8,448.00
Dispatch	Op Pos	24	c	244	2	UA00654AA	ADD: ASTRO 25 TRUNKING OPERATION	\$6,600.00	\$13,200.00	20%	\$5,280.00	\$10,560.00
Dispatch	Op Pos	24	d	244	2	UA00655AA	ADD: ADVANCED CONVENTIONAL OPERATION	\$3,960.00	\$7,920.00	20%	\$3,168.00	\$6,336.00
Dispatch	Op Pos	24	e	244	2	UA00658AA	ADD: SECURE OPERATION	\$4,290.00	\$8,580.00	20%	\$3,432.00	\$6,864.00
Dispatch	Op Pos	24	f	244	2	UA00659AA	ADD: ADP/AES/DES-OFB ENCRYPTION	\$2,376.00	\$4,752.00	20%	\$1,900.80	\$3,801.60
Dispatch	Op Pos	24	g	244	2	UA00660AA	ADD: OTEK OPERATION	\$4,422.00	\$8,844.00	20%	\$3,537.60	\$7,075.20
Dispatch	Op Pos	24	h	244	2	UA00661AA	ADD: ENHANCED IRR	\$3,000.00	\$6,000.00	20%	\$2,400.00	\$4,800.00
Dispatch	Op CC Hub	25	-	754	2	B1956	COMMANDCENTRAL HUB, W/CLIENT PC	\$5,250.00	\$10,500.00	20%	\$4,200.00	\$8,400.00
Dispatch	Op CC Hub	25	a	754	2	CA03553AA	ADD: AC LINE CORD, NORTH AMERICA	\$13.00	\$26.00	20%	\$10.40	\$20.80
Dispatch	Op CC Hub	25	b	754	2	CA03850AA	ADD: WINDOWS OS FOR MCC7500E CONSOLE	\$700.00	\$1,400.00	20%	\$560.00	\$1,120.00
Dispatch	Op CC Hub	25	c	754	2	CA03547AA	ADD: BRACKET, MOUNTING 2RU	\$30.00	\$60.00	20%	\$24.00	\$48.00
Dispatch	Op CC Hub	25	d	754	2	CA03572AA	ADD: CABLE RETENTION BRACKET	\$65.00	\$130.00	20%	\$52.00	\$104.00
Dispatch	Op CC Hub	25	e	754	2	CA03583AA	ADD: FOUR CABLES, POWER 24VDC	\$150.00	\$300.00	20%	\$120.00	\$240.00
Dispatch	Op CC Hub	26	-	708	2	L3225A	CERTIFIED KEYBOARD FOR RSD SERVERS AND WORKSTATIONS	\$42.00	\$84.00	15%	\$35.70	\$71.40
Dispatch	Op CC Hub	27	-	708	2	L3226A	CERTIFIED OPTICAL WHEEL MOUSE FOR RSD SERVERS AND WORKSTATIONS	\$30.00	\$60.00	15%	\$25.50	\$51.00
Dispatch	Op CC Hub	28	-	708	1	DSF2B56AA	USB EXTERNAL DVD DRIVE	\$172.00	\$172.00	15%	\$146.20	\$146.20
Dispatch	Op Mon	29	-	708	2	DSTG221B	TECH GLOBAL EVOLUTION SERIES 22INCH NON TOUCH	\$2,540.00	\$5,080.00	15%	\$2,159.00	\$4,318.00
Dispatch	Op Spkr	30	-	244	8	B1952	SPEAKER, DESKTOP, USB	\$585.00	\$4,680.00	20%	\$468.00	\$3,744.00
Dispatch	Op Spkr	30	a	754	8	CA03413AA	ADD: USB CABLE, TYPE A TO TYPE C, 4.5M	\$29.00	\$232.00	20%	\$23.20	\$185.60
Dispatch	Op Mic	31	-	244	2	B1951	MICROPHONE, DESKTOP, USB	\$545.00	\$1,090.00	20%	\$436.00	\$872.00
Dispatch	Op Mic	31	a	754	2	CA03413AA	ADD: USB CABLE, TYPE A TO TYPE C, 4.5M	\$29.00	\$58.00	20%	\$23.20	\$46.40
Dispatch	Op FtSw	32	-	708	2	DSTWIN6328A	PROVIDES ONE DUAL PEDAL FOOTSWITCH	\$355.00	\$710.00	15%	\$301.75	\$603.50
Dispatch	Op HdstJk	33	-	443	4	B1913	MCC SERIES HEADSET JACK	\$200.00	\$800.00	20%	\$160.00	\$640.00
Dispatch	Op ACSurge	34	-	207	2	DSACPDU6N120SN2TT	AC PDU, RACKMOUNT, 6 OUTLETS, SASD PROTECTED, UL1449/R56, 12FT CORD	\$258.00	\$516.00	10%	\$232.20	\$464.40
Dispatch	Op UPS	35	-	207	2	DSGXTT0750N008	UPS, GXT5 TOWER 750VA/750W, 120V, 8.5 MIN RUNTIME, SOFTWIRED	\$1,604.00	\$3,208.00	10%	\$1,443.60	\$2,887.20
Spare	Router	36	-	147	1	T8492	SITE ROUTER & FIREWALL- AC	\$875.00	\$875.00	15%	\$743.75	\$743.75
Spare	Router	36	a	147	1	CA03448AA	ADD: STATEFUL FIREWALL	\$1,000.00	\$1,000.00	15%	\$850.00	\$850.00
Spare	Router	36	b	147	1	CA03445AA	ADD: MISSION CRITICAL HARDENING	\$3,300.00	\$3,300.00	15%	\$2,805.00	\$2,805.00
Spare	Switch	37	-	147	1	CLN1868	2930F 24-PORT SWITCH	\$2,500.00	\$2,500.00	15%	\$2,125.00	\$2,125.00
Spare	DSC PS	38	-	677	1	DLN8001	FRU: DSC 8000 AC POWER SUPPLY	\$1,100.00	\$1,100.00	20%	\$880.00	\$880.00
Spare	CCGW	39	-	147	1	SQM01SUM0333	MCG 8000 CONVENTIONAL GATEWAY	\$5,000.00	\$5,000.00	15%	\$4,250.00	\$4,250.00
Spare	CCGW	39	a	147	1	CA03714AA	ADD: AC POWER	\$0.00	\$0.00	15%	\$0.00	\$0.00
Spare	CCGW	39	b	147	8	CA03717AA	ADD: ACIM INTERFACE	\$750.00	\$6,000.00	15%	\$637.50	\$5,100.00



Spare	Op Mon	40	-	708	1	DSTG221B	TECH GLOBAL EVOLUTION SERIES 22INCH NON TOUCH	\$2,540.00	\$2,540.00	15%	\$2,159.00	\$2,159.00
Spare	Op Spkr	41	-	754	1	BSN2000	FRU, SPEAKER, DESKTOP, USB	\$585.00	\$585.00	20%	\$468.00	\$468.00
Spare	Op Mic	42	-	754	1	BMN2000	FRU, MICROPHONE, DESKTOP, USB	\$545.00	\$545.00	20%	\$436.00	\$436.00
Spare	Op FtSw	43	-	708	1	DSTWIN6328A	PROVIDES ONE DUAL PEDAL FOOTSWITCH	\$355.00	\$355.00	15%	\$301.75	\$301.75
Spare	Op HdstJk	44	-	443	1	B1913	MCC SERIES HEADSET JACK	\$200.00	\$200.00	20%	\$160.00	\$160.00
License	Master	45	-	877	1	SQM01SUM0323	ASTRO MASTER SITE	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	Master	45	a	877	1	CA03517AD	ADD: CORE EXPANSION	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	Master	45	b	877	1	UA00156AA	ADD: MCC7500 CONSOLE LICENSES (QTY 5)	\$5,000.00	\$5,000.00	20%	\$4,000.00	\$4,000.00
License	Master	45	c	877	1	CA01316AA	ADD: UNC ADDTL DEVICE LIC (QTY 10)	\$1,500.00	\$1,500.00	20%	\$1,200.00	\$1,200.00

### 5.5.4 Subscriber Equipment

SUB SYS	BLOCK	LIM	O	APC	QTY	NOMENCLATURE	DESCRIPTION	UNIT LIST (USD)	EXT LIST (USD)	Contract Disc	Contract Unit	Contract Extended
Dispatch	BU CS	1	-	656	4	L37TSS9PW1 N	ALL BAND CONSOLETTTE	\$9,551.00	\$38,204.00	25%	\$7,163.25	\$28,653.00
Dispatch	BU CS	1	a	681	4	GA05508	DEL: DELETE VHF BAND	(\$800.00)	(\$3,200.00)	25%	(\$600.00)	(\$2,400.00)
Dispatch	BU CS	1	b	681	4	GA05509	DEL: DELETE UHF BAND	(\$800.00)	(\$3,200.00)	25%	(\$600.00)	(\$2,400.00)
Dispatch	BU CS	1	c	761	4	L999	ADD: FULL FP W/05/KEYPAD/CLOCK/VU	\$868.00	\$3,472.00	25%	\$651.00	\$2,604.00
Dispatch	BU CS	1	d	761	4	CA01598	ADD: AC LINE CORD US	\$0.00	\$0.00	25%	\$0.00	\$0.00
Dispatch	BU CS	1	e	681	4	G806	ENH: ASTRO DIGITAL CAI OP APX	\$567.00	\$2,268.00	25%	\$425.25	\$1,701.00
Dispatch	BU CS	1	f	656	4	G51	ENH: SMARTZONE OPERATION APX	\$1,650.00	\$6,600.00	25%	\$1,237.50	\$4,950.00
Dispatch	BU CS	1	g	656	4	G361	ENH: P25 TRUNKING SOFTWARE APX	\$330.00	\$1,320.00	25%	\$247.50	\$990.00
Dispatch	BU CS	1	h	655	4	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$24.00	25%	\$4.50	\$18.00
Dispatch	BU CS	1	i	656	4	GA01767	APX MOBILE RADIO AUTHENTICATION	\$110.00	\$440.00	25%	\$82.50	\$330.00
Dispatch	BU CS	1	j	656	4	GA00580	ADD: TDMA OPERATION APX	\$495.00	\$1,980.00	25%	\$371.25	\$1,485.00
Dispatch	BU CS	1	k	656	4	G996	ENH: OVER THE AIR PROVISIONING	\$110.00	\$440.00	25%	\$82.50	\$330.00
Dispatch	BU CS	1	l	656	4	GA09008	ADD: GROUP SERVICES	\$165.00	\$660.00	25%	\$123.75	\$495.00
Dispatch	BU CS	1	m	430	4	G193	ADD: ADP ONLY (NON-P25 CAP COMPLIANT) (US ONLY)	\$0.00	\$0.00	15%	\$0.00	\$0.00
Dispatch	BU CS	1	n	656	4	W382	ADD: CONTROL STATION DESK GCAI MIC	\$186.00	\$744.00	25%	\$139.50	\$558.00
Dispatch	BU CS	1	o	185	4	GA00318	ADD: 5Y ESSENTIAL SERVICE	\$480.00	\$1,920.00	0%	\$480.00	\$1,920.00
Dispatch	BU CS	2	-	761	4	HKN6233C	APX CONSOLETTTE RACK MOUNT KIT	\$200.00	\$800.00	25%	\$150.00	\$600.00
Dispatch	BU CS	3	-	509	8	0784384T03	BRACKET RACK STANDOFF 51/4IN	\$86.25	\$690.00	20%	\$69.00	\$552.00
Dispatch	CS Ant	4	-	351	1	DSSP7C03CS36UN	764-869MHZ 3DBD GAIN CONTROL STATION ANTENNA W/N-TYPE CONNECTOR.	\$1,064.00	\$1,064.00	10%	\$957.60	\$957.60
Dispatch	CS Surge	5	-	207	1	DSISB50LNC2MA	RF SPD, 125-1000MHZ DC BLOCK BROADBAND BULKHEAD MT, NM ANT, NF EQUIP	\$95.00	\$95.00	10%	\$85.50	\$85.50
Dispatch	CS Comb	6	-	457	1	DSMWFD78CMCSN	8700/800 MHZ CONTROL STATION COMBINER MILLED WINDOW FILTER DUPLEXERTX:	\$5,302.00	\$5,302.00	10%	\$4,771.80	\$4,771.80
Dispatch	CS Comb	7	-	457	1	DSBCH11008	8 CHANNEL CONTROL STATION COMBINER (PASSIVE), CSC02,764-869MHZ	\$10,005.00	\$10,005.00	10%	\$9,004.50	\$9,004.50
Dispatch	CS Ant Sys	8	-	351	40	DSEC150HF	COAXIAL CABLE, 1/4" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$2.70	\$108.00	10%	\$2.43	\$97.20
Dispatch	CS Ant Sys	9	-	351	8	DSNM50B14X	CONNECTOR, N MALE INTERFACE FOR EC1-50-HF	\$31.00	\$248.00	10%	\$27.90	\$223.20
Dispatch	CS Ant Sys	10	-	351	35	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$3.65	\$127.75	10%	\$3.29	\$114.98
Dispatch	CS Ant Sys	11	-	351	6	DSNM50B12X	CONNECTOR, N MALE INTERFACE FOR EC4-50-HF	\$43.00	\$258.00	10%	\$38.70	\$232.20
Dispatch	CS Ant Sys	12	-	351	100	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	\$3.15	\$315.00	10%	\$2.84	\$283.50
Dispatch	CS Ant Sys	13	-	351	1	DSNF50V12	CONNECTOR, N FEMALE INTERFACE FOR EC4-50	\$28.00	\$28.00	10%	\$25.20	\$25.20
Dispatch	CS Ant Sys	14	-	351	1	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50	\$24.50	\$24.50	10%	\$22.05	\$22.05
Dispatch	MCD5000	15	-	202	2	F2380	MCD 5000 DESKSET	\$2,275.00	\$4,550.00	20%	\$1,820.00	\$3,640.00
Dispatch	MCD5000	16	-	202	2	FHN7469	MCD 5000 DESKSET / RGU POWER SUPPLY WITH USA POWER CORD	\$100.00	\$200.00	20%	\$80.00	\$160.00
Dispatch	MCD5000	17	-	706	2	RMN5068A	DESKTOP MIC	\$130.00	\$260.00	25%	\$97.50	\$195.00

Dispatch	MCD5000	18	-	202	1	HKVN4861	LICENSE,MCD 5000 DESKSET SYSTEM CONFIG TOOL - SYSTEM W/OUT OMC	\$250.00	\$250.00	20%	\$200.00	\$200.00
PD	85RemE5	19	-	656	15	M37TSS9PW1 N	APX8500 ALL BAND MP MOBILE	\$5,667.00	\$85,005.00	25%	\$4,250.25	\$63,753.75
PD	85RemE5	19	a	656	15	G67EH	ADD: REMOTE MOUNT E5 MP	\$327.00	\$4,905.00	25%	\$245.25	\$3,678.75
PD	85RemE5	19	b	656	15	G444	ADD: APX CONTROL HEAD SOFTWARE	\$0.00	\$0.00	25%	\$0.00	\$0.00
PD	85RemE5	19	c	681	15	GA01670	ADD: APX E5 CONTROL HEAD	\$717.00	\$10,755.00	25%	\$537.75	\$8,066.25
PD	85RemE5	19	d	681	15	G806	ENH: ASTRO DIGITAL CAI OP APX	\$567.00	\$8,505.00	25%	\$425.25	\$6,378.75
PD	85RemE5	19	e	656	15	G51	ENH: SMARTZONE OPERATION APX	\$1,650.00	\$24,750.00	25%	\$1,237.50	\$18,562.50
PD	85RemE5	19	f	656	15	G361	ENH: P25 TRUNKING SOFTWARE APX	\$330.00	\$4,950.00	25%	\$247.50	\$3,712.50
PD	85RemE5	19	g	655	15	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$90.00	25%	\$4.50	\$67.50
PD	85RemE5	19	h	656	15	GA01767	APX MOBILE RADIO AUTHENTICATION	\$110.00	\$1,650.00	25%	\$82.50	\$1,237.50
PD	85RemE5	19	i	656	15	GA00580	ADD: TDMA OPERATION APX	\$495.00	\$7,425.00	25%	\$371.25	\$5,568.75
PD	85RemE5	19	j	656	15	G996	ENH: OVER THE AIR PROVISIONING	\$110.00	\$1,650.00	25%	\$82.50	\$1,237.50
PD	85RemE5	19	k	656	15	GA09008	ADD: GROUP SERVICES	\$165.00	\$2,475.00	25%	\$123.75	\$1,856.25
PD	85RemE5	19	l	681	15	GA01517	DEL: NO J600 ADAPTER CABLE NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
PD	85RemE5	19	m	656	15	G843	ADD: AES ENCRYPTION APX AND ADP	\$523.00	\$7,845.00	25%	\$392.25	\$5,883.75
PD	85RemE5	19	n	656	15	G298	ENH: ASTRO 25 OTAR W/ MULTIKEY	\$814.00	\$12,210.00	25%	\$610.50	\$9,157.50
PD	85RemE5	19	o	656	15	G89	ADD: NO RF ANTENNA NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
PD	85RemE5	19	p	681	15	GA01606AA	ADD: NO GPS/WI-FI ANTENNA NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
PD	85RemE5	19	q	656	15	G892	ENH: HAND MIC,GCAI WATER RESISTANT	\$79.00	\$1,185.00	25%	\$59.25	\$888.75
PD	85RemE5	19	r	656	15	G831	ADD: SPKR 15W WATER RESISTANT	\$66.00	\$990.00	25%	\$49.50	\$742.50
PD	85RemE5	19	s	185	15	GA00318	ENH: LACR SFS LITE 5 YR	\$480.00	\$7,200.00	0%	\$480.00	\$7,200.00
PD	85RemE5	20	-	291	15	DSRFMTNTVUCQMA	RFMT-NT TRIBAND ANT WITH QMA ANTENNA	\$317.00	\$4,755.00	25%	\$237.75	\$3,566.25
PD	APX8000	21	-	655	15	H91TGD9PW6 N	APX 8000 ALL BAND PORTABLE MODEL 2.5	\$7,108.00	\$106,620.00	25%	\$5,331.00	\$79,965.00
PD	APX8000	21	a	579	15	Q806	ADD: ASTRO DIGITAL CAI OPERATION	\$567.00	\$8,505.00	25%	\$425.25	\$6,378.75
PD	APX8000	21	b	655	15	H38	ADD: SMARTZONE OPERATION	\$1,650.00	\$24,750.00	25%	\$1,237.50	\$18,562.50
PD	APX8000	21	c	655	15	Q361	ADD: P25 9600 BAUD TRUNKING	\$330.00	\$4,950.00	25%	\$247.50	\$3,712.50
PD	APX8000	21	d	655	15	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$90.00	25%	\$4.50	\$67.50
PD	APX8000	21	e	655	15	QA01767	ADD: P25 LINK LAYER AUTHENTICATION	\$110.00	\$1,650.00	25%	\$82.50	\$1,237.50
PD	APX8000	21	f	655	15	QA00580	ADD: TDMA OPERATION	\$495.00	\$7,425.00	25%	\$371.25	\$5,568.75
PD	APX8000	21	g	655	15	G996	ADD: PROGRAMMING OVER P25 (OTAP)	\$110.00	\$1,650.00	25%	\$82.50	\$1,237.50
PD	APX8000	21	h	655	15	QA09008	ADD: GROUP SERVICES	\$165.00	\$2,475.00	25%	\$123.75	\$1,856.25
PD	APX8000	21	i	655	15	Q629	ENH: AES ENCRYPTION AND ADP	\$523.00	\$7,845.00	25%	\$392.25	\$5,883.75
PD	APX8000	21	j	655	15	Q498	ENH: ASTRO 25 OTAR W/ MULTIKEY	\$814.00	\$12,210.00	25%	\$610.50	\$9,157.50
PD	APX8000	21	k	185	15	Q887	ADD: 5Y ESSENTIAL SERVICE	\$306.00	\$4,590.00	0%	\$306.00	\$4,590.00
PD	8000Acc	22	-	785	15	NNTN8860A	CHARGER, SINGLE-UNIT, IMPRES 2, 3A, 115VAC, US/NA	\$170.00	\$2,550.00	25%	\$127.50	\$1,912.50
PD	8000Acc	23	-	372	21	PMMN4135B	ACCESSORY KIT,XVP850 REMOTE SPEAKER MICROPHONE, WITH CHANNEL KNOB	\$508.00	\$10,668.00	25%	\$381.00	\$8,001.00
PD	8000Acc	24	-	453	21	PMNN4486	BATT IMPRES 2 LIION R IP68 3400T	\$188.00	\$3,948.00	25%	\$141.00	\$2,961.00
PD	8500Flash	25	-	430	1	T8423	DIGITAL CONVENTIONAL	\$0.00	\$0.00	15%	\$0.00	\$0.00
PD	8500Flash	25	a	430	2	GA00244AE	ENH: ENABLE 7/800 FLP	\$1,012.00	\$2,024.00	15%	\$860.20	\$1,720.40
PD	8500Flash	25	b	430	2	GA00306AE	ENH: ENABLE VHF FLP	\$1,012.00	\$2,024.00	15%	\$860.20	\$1,720.40

PD	8500Flash	25	c	430	2	G347AP	ENH: UPGRADE TO SMARTZONE	\$1,012.00	\$2,024.00	15%	\$860.20	\$1,720.40
PD	8500Flash	25	d	430	2	G361AJ	ENH: ASTRO P25 TRUNK SOFTWARE	\$380.00	\$760.00	15%	\$323.00	\$646.00
PD	8500Flash	25	e	430	2	QA01648AC	ADD: ADVANCED SYSTEM KEY-HARWARE KEY FLP	\$6.00	\$12.00	15%	\$5.10	\$10.20
PD	8500Flash	25	f	430	2	GA01767AH	ADD: P25 LINK LAYER AUTHENTICATION	\$127.00	\$254.00	15%	\$107.95	\$215.90
PD	8500Flash	25	g	430	2	GA00580AB	ENH: UPGRADE TO TDMA	\$569.00	\$1,138.00	15%	\$483.65	\$967.30
PD	8500Flash	25	h	430	2	G996AW	ENH: OVER THE AIR PROVISIONING	\$127.00	\$254.00	15%	\$107.95	\$215.90
PD	8500Flash	25	i	430	2	GA09008AB	ADD: GROUP SERVICES FLP	\$190.00	\$380.00	15%	\$161.50	\$323.00
PD	8000Flash	26	-	430	1	T8627	TDMA	\$0.00	\$0.00	15%	\$0.00	\$0.00
PD	8000Flash	26	a	430	6	QA01767AC	ADD: P25 LINK LAYER AUTHENTICATION	\$127.00	\$762.00	15%	\$107.95	\$647.70
PD	8000Flash	26	b	430	6	G996AT	ADD: PROGRAMMING OVER P25 (OTAP)	\$127.00	\$762.00	15%	\$107.95	\$647.70
PD	8000Flash	26	c	430	6	QA09008	ADD: GROUP SERVICES FLP	\$165.00	\$990.00	15%	\$140.25	\$841.50
PD	BU CS	27	-	656	1	L37TSS9PW1 N	ALL BAND CONSOLETTTE	\$9,551.00	\$9,551.00	25%	\$7,163.25	\$7,163.25
PD	BU CS	27	a	681	1	GA05508	DEL: DELETE VHF BAND	(\$800.00)	(\$800.00)	25%	(\$600.00)	(\$600.00)
PD	BU CS	27	b	681	1	GA05509	DEL: DELETE UHF BAND	(\$800.00)	(\$800.00)	25%	(\$600.00)	(\$600.00)
PD	BU CS	27	c	761	1	L999	ADD: FULL FP W/05/KEYPAD/CLOCK/VU	\$868.00	\$868.00	25%	\$651.00	\$651.00
PD	BU CS	27	d	761	1	CA01598	ADD: AC LINE CORD US	\$0.00	\$0.00	25%	\$0.00	\$0.00
PD	BU CS	27	e	681	1	G806	ENH: ASTRO DIGITAL CAI OP APX	\$567.00	\$567.00	25%	\$425.25	\$425.25
PD	BU CS	27	f	656	1	G51	ENH: SMARTZONE OPERATION APX	\$1,650.00	\$1,650.00	25%	\$1,237.50	\$1,237.50
PD	BU CS	27	g	656	1	G361	ENH: P25 TRUNKING SOFTWARE APX	\$330.00	\$330.00	25%	\$247.50	\$247.50
PD	BU CS	27	h	655	1	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$6.00	25%	\$4.50	\$4.50
PD	BU CS	27	i	656	1	GA01767	APX MOBILE RADIO AUTHENTICATION	\$110.00	\$110.00	25%	\$82.50	\$82.50
PD	BU CS	27	j	656	1	GA00580	ADD: TDMA OPERATION APX	\$495.00	\$495.00	25%	\$371.25	\$371.25
PD	BU CS	27	k	656	1	G996	ENH: OVER THE AIR PROVISIONING	\$110.00	\$110.00	25%	\$82.50	\$82.50
PD	BU CS	27	l	656	1	GA09008	ADD: GROUP SERVICES	\$165.00	\$165.00	25%	\$123.75	\$123.75
PD	BU CS	27	m	656	1	G843	ADD: AES ENCRYPTION APX AND ADP	\$523.00	\$523.00	25%	\$392.25	\$392.25
PD	BU CS	27	n	656	1	G298	ENH: ASTRO 25 OTAR W/ MULTIKEY	\$814.00	\$814.00	25%	\$610.50	\$610.50
PD	BU CS	27	o	656	1	G90	ADD: NO MICROPHONE NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
PD	BU CS	27	p	185	1	GA00318	ADD: 5Y ESSENTIAL SERVICE	\$480.00	\$480.00	0%	\$480.00	\$480.00
PD	BU CS	28	-	761	1	HKN6233C	APX CONSOLETTTE RACK MOUNT KIT	\$200.00	\$200.00	25%	\$150.00	\$150.00
PD	BU CS	29	-	509	2	0784384T03	BRACKET RACK STANDOFF 51/4IN	\$86.25	\$172.50	20%	\$69.00	\$138.00
PD	BUCSAntSys	30	-	351	1	DSSP7C03CS36UN	764-869MHZ 3DBD GAIN CONTROL STATION ANTENNA W/N-TYPE CONNECTOR.	\$1,064.00	\$1,064.00	10%	\$957.60	\$957.60
PD	BUCSAntSys	31	-	207	1	DSISB50LNC2MA	RF SPD, 125-1000MHZ DC BLOCK BROADBAND BULKHEAD MT, NM ANT, NF EQUIP	\$95.00	\$95.00	10%	\$85.50	\$85.50
PD	BUCSAntSys	32	-	351	25	DSEC150HF	COAXIAL CABLE, 1/4" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$2.70	\$67.50	10%	\$2.43	\$60.75
PD	BUCSAntSys	33	-	351	2	DSNM50B14X	CONNECTOR, N MALE INTERFACE FOR EC1-50-HF	\$31.00	\$62.00	10%	\$27.90	\$55.80
PD	BUCSAntSys	34	-	351	100	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	\$3.15	\$315.00	10%	\$2.84	\$283.50
PD	BUCSAntSys	35	-	351	1	DSNF50V12	CONNECTOR, N FEMALE INTERFACE FOR EC4-50	\$28.00	\$28.00	10%	\$25.20	\$25.20
PD	BUCSAntSys	36	-	351	1	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50	\$24.50	\$24.50	10%	\$22.05	\$22.05
PD	RGU	37	-	202	1	F7879	SM, RADIO GATEWAY UNIT (RGU)	\$2,275.00	\$2,275.00	20%	\$1,820.00	\$1,820.00

PD	RGU	38	-	202	1	FHN7469	MCD 5000 DESKSET / RGU POWER SUPPLY WITH USA POWER CORD	\$100.00	\$100.00	20%	\$80.00	\$80.00
PD	RGU	39	-	112	1	FTN7490	MCD 5000 DESKSET RGU RACK MOUNT PANEL PLUS SCREWS	\$200.00	\$200.00	20%	\$160.00	\$160.00
PD	RGU	40	-	202	1	HKVN4861	LICENSE,MCD 5000 DESKSET SYSTEM CONFIG TOOL - SYSTEM W/OUT OMC	\$250.00	\$250.00	20%	\$200.00	\$200.00
PD	LANSW	41	-	147	1	CLN1868	2930F 24-PORT SWITCH	\$2,500.00	\$2,500.00	15%	\$2,125.00	\$2,125.00
PD	MCD5000	42	-	202	9	F2380	MCD 5000 DESKSET	\$2,275.00	\$20,475.00	20%	\$1,820.00	\$16,380.00
PD	MCD5000	43	-	202	9	FHN7469	MCD 5000 DESKSET / RGU POWER SUPPLY WITH USA POWER CORD	\$100.00	\$900.00	20%	\$80.00	\$720.00
FD	85RemE530	44	-	656	12	M37TSS9PW1 N	APX8500 ALL BAND MP MOBILE	\$5,667.00	\$68,004.00	25%	\$4,250.25	\$51,003.00
FD	85RemE530	44	a	656	12	G67EH	ADD: REMOTE MOUNT E5 MP	\$327.00	\$3,924.00	25%	\$245.25	\$2,943.00
FD	85RemE530	44	b	656	12	G444	ADD: APX CONTROL HEAD SOFTWARE	\$0.00	\$0.00	25%	\$0.00	\$0.00
FD	85RemE530	44	c	681	12	GA01670	ADD: APX E5 CONTROL HEAD	\$717.00	\$8,604.00	25%	\$537.75	\$6,453.00
FD	85RemE530	44	d	656	12	G610	ADD: REMOTE MOUNT CBL 30 FEET	\$28.00	\$336.00	25%	\$21.00	\$252.00
FD	85RemE530	44	e	681	12	G806	ENH: ASTRO DIGITAL CAI OP APX	\$567.00	\$6,804.00	25%	\$425.25	\$5,103.00
FD	85RemE530	44	f	656	12	G51	ENH: SMARTZONE OPERATION APX	\$1,650.00	\$19,800.00	25%	\$1,237.50	\$14,850.00
FD	85RemE530	44	g	656	12	G361	ENH: P25 TRUNKING SOFTWARE APX	\$330.00	\$3,960.00	25%	\$247.50	\$2,970.00
FD	85RemE530	44	h	655	12	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$72.00	25%	\$4.50	\$54.00
FD	85RemE530	44	i	656	12	GA01767	APX MOBILE RADIO AUTHENTICATION	\$110.00	\$1,320.00	25%	\$82.50	\$990.00
FD	85RemE530	44	j	656	12	GA00580	ADD: TDMA OPERATION APX	\$495.00	\$5,940.00	25%	\$371.25	\$4,455.00
FD	85RemE530	44	k	656	12	G996	ENH: OVER THE AIR PROVISIONING	\$110.00	\$1,320.00	25%	\$82.50	\$990.00
FD	85RemE530	44	l	656	12	GA09008	ADD: GROUP SERVICES	\$165.00	\$1,980.00	25%	\$123.75	\$1,485.00
FD	85RemE530	44	m	656	12	GA00631	ADD: DVRS MSU ACTIVATION	\$275.00	\$3,300.00	25%	\$206.25	\$2,475.00
FD	85RemE530	44	n	681	12	GA01515	ADD: J600 ADAPTER CABLE	\$105.00	\$1,260.00	25%	\$78.75	\$945.00
FD	85RemE530	44	o	430	12	G193	ADD: ADP ONLY (NON-P25 CAP COMPLIANT) (US ONLY)	\$0.00	\$0.00	15%	\$0.00	\$0.00
FD	85RemE530	44	p	656	12	G89	ADD: NO RF ANTENNA NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
FD	85RemE530	44	q	681	12	GA01606AA	ADD: NO GPS/WI-FI ANTENNA NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
FD	85RemE530	44	r	656	12	G892	ENH: HAND MIC,GCAI WATER RESISTANT	\$79.00	\$948.00	25%	\$59.25	\$711.00
FD	85RemE530	44	s	656	12	G831	ADD: SPKR 15W WATER RESISTANT	\$66.00	\$792.00	25%	\$49.50	\$594.00
FD	85RemE530	44	t	185	12	GA00318	ENH: LACR SFS LITE 5 YR	\$480.00	\$5,760.00	0%	\$480.00	\$5,760.00
FD	85RemE530	45	-	291	12	DSRFMTNTVUCQMA	RFMT-NT TRIBAND ANT WITH QMA ANTENNA	\$317.00	\$3,804.00	25%	\$237.75	\$2,853.00
FD	DVR-LX	46	-	571	3	TT4009A	DVR-LX 450-470 MHZ VEHICLE MOUNT CROSS BAND (SIMPLEX ONLY)	\$10,525.00	\$31,575.00	15%	\$8,946.25	\$26,838.75
FD	DVR-LX	46	a	571	3	TT06279AA	DVR/VRX FOR USE WITH ALL BAND APX8500 MOBILE	\$0.00	\$0.00	15%	\$0.00	\$0.00
FD	DVR-LX	46	b	571	3	TT06567AA	DVR-LX AUTHENTICATION	\$203.00	\$609.00	15%	\$172.55	\$517.65
FD	DVR-LX	46	c	571	3	TT06568AA	DVR-LX RM-OTAP	\$203.00	\$609.00	15%	\$172.55	\$517.65
FD	DVR-LX	47	-	554	3	HAE4003	ANTENNA, UHF (450-470 MHZ) 1/4 WAVE ROOF MOUNT	\$23.25	\$69.75	25%	\$17.44	\$52.31
FD	DVR-LX	48	-	571	3	DDN2659	DUAL TRIPLEXER RELAY KIT	\$2,451.00	\$7,353.00	15%	\$2,083.35	\$6,250.05
FD	DVR-LX	49	-	571	3	DDN2085	DVR-LX CROSS-BAND 4 YEAR EXTENDED HARDWARE WARRANTY	\$832.00	\$2,496.00	15%	\$707.20	\$2,121.60
FD	DVR-LX	50	-	571	1	DDN9025	DVR PROGRAMMING CABLE 10FT	\$202.00	\$202.00	15%	\$171.70	\$171.70
FD	8000XE2.5	51	-	655	42	H91TGD9PW6 N	APX 8000 ALL BAND PORTABLE MODEL 2.5	\$7,108.00	\$298,536.00	25%	\$5,331.00	\$223,902.00
FD	8000XE2.5	51	a	581	42	QA02006	ENH: APX8000XE RUGGED RADIO	\$880.00	\$36,960.00	25%	\$660.00	\$27,720.00



FD	8000XE2.5	51	b	579	42	QA01427	ALT:APX 8000 HOUSING GREEN	\$28.00	\$1,176.00	25%	\$21.00	\$882.00
FD	8000XE2.5	51	c	579	42	Q806	ADD: ASTRO DIGITAL CAI OPERATION	\$567.00	\$23,814.00	25%	\$425.25	\$17,860.50
FD	8000XE2.5	51	d	655	42	H38	ADD: SMARTZONE OPERATION	\$1,650.00	\$69,300.00	25%	\$1,237.50	\$51,975.00
FD	8000XE2.5	51	e	655	42	Q361	ADD: P25 9600 BAUD TRUNKING	\$330.00	\$13,860.00	25%	\$247.50	\$10,395.00
FD	8000XE2.5	51	f	655	42	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$252.00	25%	\$4.50	\$189.00
FD	8000XE2.5	51	g	655	42	QA01767	ADD: P25 LINK LAYER AUTHENTICATION	\$110.00	\$4,620.00	25%	\$82.50	\$3,465.00
FD	8000XE2.5	51	h	655	42	QA00580	ADD: TDMA OPERATION	\$495.00	\$20,790.00	25%	\$371.25	\$15,592.50
FD	8000XE2.5	51	i	655	42	G996	ADD: PROGRAMMING OVER P25 (OTAP)	\$110.00	\$4,620.00	25%	\$82.50	\$3,465.00
FD	8000XE2.5	51	j	655	42	QA09008	ADD: GROUP SERVICES	\$165.00	\$6,930.00	25%	\$123.75	\$5,197.50
FD	8000XE2.5	51	k	655	42	QA00631	ADD: DVRS PSU ACTIVATION	\$110.00	\$4,620.00	25%	\$82.50	\$3,465.00
FD	8000XE2.5	51	l	481	42	Q445	ADD: APX Personnel Accountability	\$165.00	\$6,930.00	25%	\$123.75	\$5,197.50
FD	8000XE2.5	51	m	430	42	Q667	ADD: ADP ONLY (NON-P25 CAP COMPLIANT) (US ONLY)	\$0.00	\$0.00	15%	\$0.00	\$0.00
FD	8000XE2.5	51	n	185	42	Q887	ADD: 5Y ESSENTIAL SERVICE	\$306.00	\$12,852.00	0%	\$306.00	\$12,852.00
FD	8000Acc	52	-	785	8	NNTN8860A	CHARGER, SINGLE-UNIT, IMPRES 2, 3A, 115VAC, US/NA	\$170.00	\$1,360.00	25%	\$127.50	\$1,020.00
FD	8000Acc	53	-	785	32	NNTN7624C	CHARGER,CHR IMP VEH EXT NA/EU KIT	\$510.00	\$16,320.00	25%	\$382.50	\$12,240.00
FD	8000Acc	54	-	372	42	PMMN4132A	ACCESSORY KIT,XVE500 REMOTE SPEAKER MIC, HIGH IMPACT GREEN WITH KNOB	\$680.00	\$28,560.00	25%	\$510.00	\$21,420.00
FD	8000Acc	55	-	453	10	PMNN4504	BATT IMPRES 2 LIION UL2054 DIV2 R IP68 3400T	\$223.00	\$2,230.00	25%	\$167.25	\$1,672.50
FD	BU CS	56	-	656	1	L37TSS9PW1 N	ALL BAND CONSOLETTTE	\$9,551.00	\$9,551.00	25%	\$7,163.25	\$7,163.25
FD	BU CS	56	a	681	1	GA05508	DEL: DELETE VHF BAND	(\$800.00)	(\$800.00)	25%	(\$600.00)	(\$600.00)
FD	BU CS	56	b	681	1	GA05509	DEL: DELETE UHF BAND	(\$800.00)	(\$800.00)	25%	(\$600.00)	(\$600.00)
FD	BU CS	56	c	761	1	L999	ADD: FULL FP W/05/KEYPAD/CLOCK/VU	\$868.00	\$868.00	25%	\$651.00	\$651.00
FD	BU CS	56	d	761	1	CA01598	ADD: AC LINE CORD US	\$0.00	\$0.00	25%	\$0.00	\$0.00
FD	BU CS	56	e	681	1	G806	ENH: ASTRO DIGITAL CAI OP APX	\$567.00	\$567.00	25%	\$425.25	\$425.25
FD	BU CS	56	f	656	1	G51	ENH: SMARTZONE OPERATION APX	\$1,650.00	\$1,650.00	25%	\$1,237.50	\$1,237.50
FD	BU CS	56	g	656	1	G361	ENH: P25 TRUNKING SOFTWARE APX	\$330.00	\$330.00	25%	\$247.50	\$247.50
FD	BU CS	56	h	655	1	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$6.00	25%	\$4.50	\$4.50
FD	BU CS	56	i	656	1	GA01767	APX MOBILE RADIO AUTHENTICATION	\$110.00	\$110.00	25%	\$82.50	\$82.50
FD	BU CS	56	j	656	1	GA00580	ADD: TDMA OPERATION APX	\$495.00	\$495.00	25%	\$371.25	\$371.25
FD	BU CS	56	k	656	1	G996	ENH: OVER THE AIR PROVISIONING	\$110.00	\$110.00	25%	\$82.50	\$82.50
FD	BU CS	56	l	656	1	GA09008	ADD: GROUP SERVICES	\$165.00	\$165.00	25%	\$123.75	\$123.75
FD	BU CS	56	m	430	1	G193	ADD: ADP ONLY (NON-P25 CAP COMPLIANT) (US ONLY)	\$0.00	\$0.00	15%	\$0.00	\$0.00
FD	BU CS	56	n	656	1	G90	ADD: NO MICROPHONE NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
FD	BU CS	56	o	185	1	GA00318	ADD: 5Y ESSENTIAL SERVICE	\$480.00	\$480.00	0%	\$480.00	\$480.00
FD	BU CS	57	-	761	1	HKN6233C	APX CONSOLETTTE RACK MOUNT KIT	\$200.00	\$200.00	25%	\$150.00	\$150.00
FD	BU CS	58	-	509	2	0784384T03	BRACKET RACK STANDOFF 51/4IN	\$86.25	\$172.50	20%	\$69.00	\$138.00
FD	BUCSAntSys	59	-	351	1	DSSP7C03CS36UN	764-869MHZ 3DBD GAIN CONTROL STATION ANTENNA W/N-TYPE CONNECTOR.	\$1,064.00	\$1,064.00	10%	\$957.60	\$957.60
FD	BUCSAntSys	60	-	207	1	DSISB50LNC2MA	RF SPD, 125-1000MHZ DC BLOCK BROADBAND BULKHEAD MT, NM ANT, NF EQUIP	\$95.00	\$95.00	10%	\$85.50	\$85.50
FD	BUCSAntSys	61	-	351	25	DSEC150HF	COAXIAL CABLE, 1/4" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$2.70	\$67.50	10%	\$2.43	\$60.75
FD	BUCSAntSys	62	-	351	1	DSNF50B14X	CONNECTOR, N FEMALE INTERFACE FOR EC1-50-HF	\$28.00	\$28.00	10%	\$25.20	\$25.20

FD	BUCSAntSys	63	-	351	100	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	\$3.15	\$315.00	10%	\$2.84	\$283.50
FD	BUCSAntSys	64	-	351	1	DSNF50V12	CONNECTOR, N FEMALE INTERFACE FOR EC4-50	\$28.00	\$28.00	10%	\$25.20	\$25.20
FD	BUCSAntSys	65	-	351	1	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50	\$24.50	\$24.50	10%	\$22.05	\$22.05
FD	MCD5000	66	-	202	1	F2380	MCD 5000 DESKSET	\$2,275.00	\$2,275.00	20%	\$1,820.00	\$1,820.00
FD	MCD5000	67	-	202	1	FHN7469	MCD 5000 DESKSET / RGU POWER SUPPLY WITH USA POWER CORD	\$100.00	\$100.00	20%	\$80.00	\$80.00
FD	MCD5000	68	-	706	1	RMN5068A	DESKTOP MIC	\$130.00	\$130.00	25%	\$97.50	\$97.50
FD	MCD5000	69	-	202	1	HKVN4861	LICENSE,MCD 5000 DESKSET SYSTEM CONFIG TOOL - SYSTEM W/OUT OMC	\$250.00	\$250.00	20%	\$200.00	\$200.00
EMS	85DualE5	70	-	656	3	M37TSS9PW1 N	APX8500 ALL BAND MP MOBILE	\$5,667.00	\$17,001.00	25%	\$4,250.25	\$12,750.75
EMS	85DualE5	70	a	656	3	G67EH	ADD: REMOTE MOUNT E5 MP	\$327.00	\$981.00	25%	\$245.25	\$735.75
EMS	85DualE5	70	b	656	3	G444	ADD: APX CONTROL HEAD SOFTWARE	\$0.00	\$0.00	25%	\$0.00	\$0.00
EMS	85DualE5	70	c	681	3	GA01670	ADD: APX E5 CONTROL HEAD	\$717.00	\$2,151.00	25%	\$537.75	\$1,613.25
EMS	85DualE5	70	d	656	3	GA00092AU	ADD: APXM DUAL E5 CH	\$627.00	\$1,881.00	25%	\$470.25	\$1,410.75
EMS	85DualE5	70	e	656	3	G628	ADD: REMOTE MOUNT CBL 17 FEET	\$17.00	\$51.00	25%	\$12.75	\$38.25
EMS	85DualE5	70	f	656	3	G610	ADD: REMOTE MOUNT CBL 30 FEET	\$28.00	\$84.00	25%	\$21.00	\$63.00
EMS	85DualE5	70	g	681	3	G806	ENH: ASTRO DIGITAL CAI OP APX	\$567.00	\$1,701.00	25%	\$425.25	\$1,275.75
EMS	85DualE5	70	h	656	3	G51	ENH: SMARTZONE OPERATION APX	\$1,650.00	\$4,950.00	25%	\$1,237.50	\$3,712.50
EMS	85DualE5	70	i	656	3	G361	ENH: P25 TRUNKING SOFTWARE APX	\$330.00	\$990.00	25%	\$247.50	\$742.50
EMS	85DualE5	70	j	655	3	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$18.00	25%	\$4.50	\$13.50
EMS	85DualE5	70	k	656	3	GA01767	APX MOBILE RADIO AUTHENTICATION	\$110.00	\$330.00	25%	\$82.50	\$247.50
EMS	85DualE5	70	l	656	3	GA00580	ADD: TDMA OPERATION APX	\$495.00	\$1,485.00	25%	\$371.25	\$1,113.75
EMS	85DualE5	70	m	656	3	G996	ENH: OVER THE AIR PROVISIONING	\$110.00	\$330.00	25%	\$82.50	\$247.50
EMS	85DualE5	70	n	656	3	GA09008	ADD: GROUP SERVICES	\$165.00	\$495.00	25%	\$123.75	\$371.25
EMS	85DualE5	70	o	681	3	GA01517	DEL: NO J600 ADAPTER CABLE NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
EMS	85DualE5	70	p	430	3	G193	ADD: ADP ONLY (NON-P25 CAP COMPLIANT) (US ONLY)	\$0.00	\$0.00	15%	\$0.00	\$0.00
EMS	85DualE5	70	q	656	3	G89	ADD: NO RF ANTENNA NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
EMS	85DualE5	70	r	681	3	GA01606AA	ADD: NO GPS/WI-FI ANTENNA NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
EMS	85DualE5	70	s	656	6	G892	ENH: HAND MIC,GCAI WATER RESISTANT	\$79.00	\$474.00	25%	\$59.25	\$355.50
EMS	85DualE5	70	t	656	6	G831	ADD: SPKR 15W WATER RESISTANT	\$66.00	\$396.00	25%	\$49.50	\$297.00
EMS	85DualE5	70	u	185	3	GA00318	ENH: LACR SFS LITE 5 YR	\$480.00	\$1,440.00	0%	\$480.00	\$1,440.00
EMS	85DualE5	71	-	291	3	DSRFMTNTVUCQMA	RFMT-NT TRIBAND ANT WITH QMA ANTENNA	\$317.00	\$951.00	25%	\$237.75	\$713.25
EMS	APX4000	72	-	426	61	H51UCF9PW6 N	APX 4000 7/800 MHZ MODEL 2 PORTABLE	\$2,332.00	\$142,252.00	25%	\$1,749.00	\$106,689.00
EMS	APX4000	72	a	426	61	QA02756	ENH: 3600 OR 9600 TRUNKING BAUD SIN	\$1,727.00	\$105,347.00	25%	\$1,295.25	\$79,010.25
EMS	APX4000	72	b	655	61	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$366.00	25%	\$4.50	\$274.50
EMS	APX4000	72	c	426	61	QA01767	ADD: P25 LINK LAYER AUTHENTICATION	\$110.00	\$6,710.00	25%	\$82.50	\$5,032.50
EMS	APX4000	72	d	426	61	QA00580	ADD: TDMA OPERATION	\$495.00	\$30,195.00	25%	\$371.25	\$22,646.25
EMS	APX4000	72	e	426	61	G996	ADD: PROGRAMMING OVER P25 (OTAP)	\$110.00	\$6,710.00	25%	\$82.50	\$5,032.50
EMS	APX4000	72	f	655	61	QA09008	ADD: GROUP SERVICES	\$165.00	\$10,065.00	25%	\$123.75	\$7,548.75
EMS	APX4000	72	g	426	61	QA01770	ENHANCEMENT LEVEL 1	\$220.00	\$13,420.00	25%	\$165.00	\$10,065.00
EMS	APX4000	72	h	426	61	QA01833	EXTREME NOISE REDUCTION	\$28.00	\$1,708.00	25%	\$21.00	\$1,281.00

EMS	APX4000	72	i	426	61	QA07978	ALT: ANTENNA, WHIP, 700-800MHZ	\$35.00	\$2,135.00	25%	\$26.25	\$1,601.25
EMS	APX4000	72	j	430	61	Q667	ADD: ADP ONLY (NON-P25 CAP COMPLIANT) (US ONLY)	\$0.00	\$0.00	15%	\$0.00	\$0.00
EMS	APX4000	72	k	185	61	Q887	ADD: 5Y ESSENTIAL SERVICE	\$306.00	\$18,666.00	0%	\$306.00	\$18,666.00
EMS	4000Acc	73	-	785	61	PMPN4576A	CHARGER,CHGR DESKTOP SINGLE UNIT IMPRES EXT PS US/NA/TW	\$82.00	\$5,002.00	25%	\$61.50	\$3,751.50
EMS	4000Acc	74	-	453	10	NNTN8128C	BATT IMPRES LIION IP67 2000T	\$129.00	\$1,290.00	25%	\$96.75	\$967.50
EMS	4000Acc	75	-	271	10	PMLN4651A	2 INCH BELT CLIP	\$13.00	\$130.00	25%	\$9.75	\$97.50
EMS	APX8000	76	-	655	4	H91TGD9PW6 N	APX 8000 ALL BAND PORTABLE MODEL 2.5	\$7,108.00	\$28,432.00	25%	\$5,331.00	\$21,324.00
EMS	APX8000	76	a	579	4	Q806	ADD: ASTRO DIGITAL CAI OPERATION	\$567.00	\$2,268.00	25%	\$425.25	\$1,701.00
EMS	APX8000	76	b	655	4	H38	ADD: SMARTZONE OPERATION	\$1,650.00	\$6,600.00	25%	\$1,237.50	\$4,950.00
EMS	APX8000	76	c	655	4	Q361	ADD: P25 9600 BAUD TRUNKING	\$330.00	\$1,320.00	25%	\$247.50	\$990.00
EMS	APX8000	76	d	655	4	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$24.00	25%	\$4.50	\$18.00
EMS	APX8000	76	e	655	4	QA01767	ADD: P25 LINK LAYER AUTHENTICATION	\$110.00	\$440.00	25%	\$82.50	\$330.00
EMS	APX8000	76	f	655	4	QA00580	ADD: TDMA OPERATION	\$495.00	\$1,980.00	25%	\$371.25	\$1,485.00
EMS	APX8000	76	g	655	4	G996	ADD: PROGRAMMING OVER P25 (OTAP)	\$110.00	\$440.00	25%	\$82.50	\$330.00
EMS	APX8000	76	h	655	4	QA09008	ADD: GROUP SERVICES	\$165.00	\$660.00	25%	\$123.75	\$495.00
EMS	APX8000	76	i	430	4	Q667	ADD: ADP ONLY (NON-P25 CAP COMPLIANT) (US ONLY)	\$0.00	\$0.00	15%	\$0.00	\$0.00
EMS	APX8000	76	j	185	4	Q887	ADD: 5Y ESSENTIAL SERVICE	\$306.00	\$1,224.00	0%	\$306.00	\$1,224.00
EMS	8000Acc	77	-	785	2	NNTN8860A	CHARGER, SINGLE-UNIT, IMPRES 2, 3A, 115VAC, US/NA	\$170.00	\$340.00	25%	\$127.50	\$255.00
EMS	8000Acc	78	-	785	2	NNTN7624C	CHARGER,CHR IMP VEH EXT NA/EU KIT	\$510.00	\$1,020.00	25%	\$382.50	\$765.00
EMS	8000Acc	79	-	372	4	PMMN4135B	ACCESSORY KIT,XVP850 REMOTE SPEAKER MICROPHONE, WITH CHANNEL KNOB	\$508.00	\$2,032.00	25%	\$381.00	\$1,524.00
EMS	8000Acc	80	-	453	2	PMNN4486	BATT IMPRES 2 LIION R IP68 3400T	\$188.00	\$376.00	25%	\$141.00	\$282.00
EMS	8500Flash	81	-	430	1	T8423	DIGITAL CONVENTIONAL	\$0.00	\$0.00	15%	\$0.00	\$0.00
EMS	8500Flash	81	a	430	1	GA00244AE	ENH: ENABLE 7/800 FLP	\$1,012.00	\$1,012.00	15%	\$860.20	\$860.20
EMS	8500Flash	81	b	430	1	GA00306AE	ENH: ENABLE VHF FLP	\$1,012.00	\$1,012.00	15%	\$860.20	\$860.20
EMS	8500Flash	81	c	430	1	G347AP	ENH: UPGRADE TO SMARTZONE	\$1,012.00	\$1,012.00	15%	\$860.20	\$860.20
EMS	8500Flash	81	d	430	1	G361AJ	ENH: ASTRO P25 TRUNK SOFTWARE	\$380.00	\$380.00	15%	\$323.00	\$323.00
EMS	8500Flash	81	e	430	1	QA01648AC	ADD: ADVANCED SYSTEM KEY-HARWARE KEY FLP	\$6.00	\$6.00	15%	\$5.10	\$5.10
EMS	8500Flash	81	f	430	1	GA01767AH	ADD: P25 LINK LAYER AUTHENTICATION	\$127.00	\$127.00	15%	\$107.95	\$107.95
EMS	8500Flash	81	g	430	1	GA00580AB	ENH: UPGRADE TO TDMA	\$569.00	\$569.00	15%	\$483.65	\$483.65
EMS	8500Flash	81	h	430	1	G996AW	ENH: OVER THE AIR PROVISIONING	\$127.00	\$127.00	15%	\$107.95	\$107.95
EMS	8500Flash	81	i	430	1	GA09008AB	ADD: GROUP SERVICES FLP	\$190.00	\$190.00	15%	\$161.50	\$161.50
DPW	45Rem	82	-	471	24	M22URS9PW1BN	APX4500 ENHANCED 7/800 MHZ	\$2,036.00	\$48,864.00	25%	\$1,527.00	\$36,648.00
DPW	45Rem	82	a	527	24	G67	ADD: REMOTE MOUNT APXM	\$327.00	\$7,848.00	25%	\$245.25	\$5,886.00
DPW	45Rem	82	b	656	24	G444	ADD: APX CONTROL HEAD SOFTWARE	\$0.00	\$0.00	25%	\$0.00	\$0.00
DPW	45Rem	82	c	656	24	GA00804	ADD: APX O2 CONTROL HEAD	\$541.00	\$12,984.00	25%	\$405.75	\$9,738.00
DPW	45Rem	82	d	471	24	QA02756	ADD: 3600 OR 9600 TRUNKING BAUD SINGLE SYSTEM	\$1,727.00	\$41,448.00	25%	\$1,295.25	\$31,086.00
DPW	45Rem	82	e	655	24	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$144.00	25%	\$4.50	\$108.00
DPW	45Rem	82	f	656	24	GA01767	APX MOBILE RADIO AUTHENTICATION	\$110.00	\$2,640.00	25%	\$82.50	\$1,980.00
DPW	45Rem	82	g	656	24	GA00580	ADD: TDMA OPERATION APX	\$495.00	\$11,880.00	25%	\$371.25	\$8,910.00
DPW	45Rem	82	h	656	24	G996	ENH: OVER THE AIR PROVISIONING	\$110.00	\$2,640.00	25%	\$82.50	\$1,980.00



DPW	45Rem	82	i	656	24	GA09008	ADD: GROUP SERVICES	\$165.00	\$3,960.00	25%	\$123.75	\$2,970.00
DPW	45Rem	82	j	471	24	GA01770	ENH: ENHANCEMENT LEVEL 1	\$220.00	\$5,280.00	25%	\$165.00	\$3,960.00
DPW	45Rem	82	k	430	24	G193	ADD: ADP ONLY (NON-P25 CAP COMPLIANT) (US ONLY)	\$0.00	\$0.00	15%	\$0.00	\$0.00
DPW	45Rem	82	l	656	24	G89	ADD: NO RF ANTENNA NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
DPW	45Rem	82	m	681	24	GA01606AA	ADD: NO GPS/WI-FI ANTENNA NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
DPW	45Rem	82	n	656	24	G892	ENH: HAND MIC,GCAI WATER RESISTANT	\$79.00	\$1,896.00	25%	\$59.25	\$1,422.00
DPW	45Rem	82	o	656	24	G831	ADD: SPKR 15W WATER RESISTANT	\$66.00	\$1,584.00	25%	\$49.50	\$1,188.00
DPW	45Rem	82	p	185	24	GA00318	ADD: 5Y ESSENTIAL SERVICE	\$480.00	\$11,520.00	0%	\$480.00	\$11,520.00
DPW	45Rem	83	-	554	24	RAF4226A	762-870 MHZ 3DB LOW PROFILE MOBILE ANTENNA W/ 17' LOW LOSS CABLE	\$82.00	\$1,968.00	25%	\$61.50	\$1,476.00
DPW	APX4000	84	-	426	4	H51UCF9PW6 N	APX 4000 7/800 MHZ MODEL 2 PORTABLE	\$2,332.00	\$9,328.00	25%	\$1,749.00	\$6,996.00
DPW	APX4000	84	a	426	4	QA02756	ENH: 3600 OR 9600 TRUNKING BAUD SIN	\$1,727.00	\$6,908.00	25%	\$1,295.25	\$5,181.00
DPW	APX4000	84	b	655	4	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$24.00	25%	\$4.50	\$18.00
DPW	APX4000	84	c	426	4	QA01767	ADD: P25 LINK LAYER AUTHENTICATION	\$110.00	\$440.00	25%	\$82.50	\$330.00
DPW	APX4000	84	d	426	4	QA00580	ADD: TDMA OPERATION	\$495.00	\$1,980.00	25%	\$371.25	\$1,485.00
DPW	APX4000	84	e	426	4	G996	ADD: PROGRAMMING OVER P25 (OTAP)	\$110.00	\$440.00	25%	\$82.50	\$330.00
DPW	APX4000	84	f	655	4	QA09008	ADD: GROUP SERVICES	\$165.00	\$660.00	25%	\$123.75	\$495.00
DPW	APX4000	84	g	426	4	QA01770	ENHANCEMENT LEVEL 1	\$220.00	\$880.00	25%	\$165.00	\$660.00
DPW	APX4000	84	h	426	4	QA01833	EXTREME NOISE REDUCTION	\$28.00	\$112.00	25%	\$21.00	\$84.00
DPW	APX4000	84	i	426	4	QA07978	ALT: ANTENNA, WHIP, 700-800MHZ	\$35.00	\$140.00	25%	\$26.25	\$105.00
DPW	APX4000	84	j	430	4	Q667	ADD: ADP ONLY (NON-P25 CAP COMPLIANT) (US ONLY)	\$0.00	\$0.00	15%	\$0.00	\$0.00
DPW	APX4000	84	k	185	4	Q887	ADD: 5Y ESSENTIAL SERVICE	\$306.00	\$1,224.00	0%	\$306.00	\$1,224.00
DPW	4000Acc	85	-	785	4	PMPN4576A	CHARGER,CHGR DESKTOP SINGLE UNIT IMPRES EXT PS US/NA/TW	\$82.00	\$328.00	25%	\$61.50	\$246.00
DPW	4000Acc	86	-	453	1	NNTN8128C	BATT IMPRES LIION IP67 2000T	\$129.00	\$129.00	25%	\$96.75	\$96.75
DPW	4000Acc	87	-	271	1	PMLN4651A	2 INCH BELT CLIP	\$13.00	\$13.00	25%	\$9.75	\$9.75
DPW	BU CS	88	-	656	1	L37TSS9PW1 N	ALL BAND CONSOLETTTE	\$9,551.00	\$9,551.00	25%	\$7,163.25	\$7,163.25
DPW	BU CS	88	a	681	1	GA05508	DEL: DELETE VHF BAND	(\$800.00)	(\$800.00)	25%	(\$600.00)	(\$600.00)
DPW	BU CS	88	b	681	1	GA05509	DEL: DELETE UHF BAND	(\$800.00)	(\$800.00)	25%	(\$600.00)	(\$600.00)
DPW	BU CS	88	c	761	1	L999	ADD: FULL FP W/05/KEYPAD/CLOCK/VU	\$868.00	\$868.00	25%	\$651.00	\$651.00
DPW	BU CS	88	d	761	1	CA01598	ADD: AC LINE CORD US	\$0.00	\$0.00	25%	\$0.00	\$0.00
DPW	BU CS	88	e	681	1	G806	ENH: ASTRO DIGITAL CAI OP APX	\$567.00	\$567.00	25%	\$425.25	\$425.25
DPW	BU CS	88	f	656	1	G51	ENH: SMARTZONE OPERATION APX	\$1,650.00	\$1,650.00	25%	\$1,237.50	\$1,237.50
DPW	BU CS	88	g	656	1	G361	ENH: P25 TRUNKING SOFTWARE APX	\$330.00	\$330.00	25%	\$247.50	\$247.50
DPW	BU CS	88	h	655	1	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY	\$6.00	\$6.00	25%	\$4.50	\$4.50
DPW	BU CS	88	i	656	1	GA01767	APX MOBILE RADIO AUTHENTICATION	\$110.00	\$110.00	25%	\$82.50	\$82.50
DPW	BU CS	88	j	656	1	GA00580	ADD: TDMA OPERATION APX	\$495.00	\$495.00	25%	\$371.25	\$371.25
DPW	BU CS	88	k	656	1	G996	ENH: OVER THE AIR PROVISIONING	\$110.00	\$110.00	25%	\$82.50	\$82.50
DPW	BU CS	88	l	656	1	GA09008	ADD: GROUP SERVICES	\$165.00	\$165.00	25%	\$123.75	\$123.75
DPW	BU CS	88	m	430	1	G193	ADD: ADP ONLY (NON-P25 CAP COMPLIANT) (US ONLY)	\$0.00	\$0.00	15%	\$0.00	\$0.00
DPW	BU CS	88	n	656	1	G90	ADD: NO MICROPHONE NEEDED	\$0.00	\$0.00	25%	\$0.00	\$0.00
DPW	BU CS	88	o	185	1	GA00318	ADD: 5Y ESSENTIAL SERVICE	\$480.00	\$480.00	0%	\$480.00	\$480.00

DPW	BU CS	89	-	761	1	HKN6233C	APX CONSOLETTA RACK MOUNT KIT	\$200.00	\$200.00	25%	\$150.00	\$150.00
DPW	BU CS	90	-	509	2	0784384T03	BRACKET RACK STANDOFF 51/4IN	\$86.25	\$172.50	20%	\$69.00	\$138.00
DPW	BUCSAntSys	91	-	351	1	DSSP7C03CS36UN	764-869MHZ 3DBD GAIN CONTROL STATION ANTENNA W/N-TYPE CONNECTOR.	\$1,064.00	\$1,064.00	10%	\$957.60	\$957.60
DPW	BUCSAntSys	92	-	207	1	DSISB50LNC2MA	RF SPD, 125-1000MHZ DC BLOCK BROADBAND BULKHEAD MT, NM ANT, NF EQUIP	\$95.00	\$95.00	10%	\$85.50	\$85.50
DPW	BUCSAntSys	93	-	351	25	DSEC150HF	COAXIAL CABLE, 1/4" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$2.70	\$67.50	10%	\$2.43	\$60.75
DPW	BUCSAntSys	94	-	351	1	DSNF50B14X	CONNECTOR, N FEMALE INTERFACE FOR EC1-50-HF	\$28.00	\$28.00	10%	\$25.20	\$25.20
DPW	BUCSAntSys	95	-	351	100	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	\$3.15	\$315.00	10%	\$2.84	\$283.50
DPW	BUCSAntSys	96	-	351	1	DSNF50V12	CONNECTOR, N FEMALE INTERFACE FOR EC4-50	\$28.00	\$28.00	10%	\$25.20	\$25.20
DPW	BUCSAntSys	97	-	351	1	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50	\$24.50	\$24.50	10%	\$22.05	\$22.05
DPW	MCD5000	98	-	202	1	F2380	MCD 5000 DESKSET	\$2,275.00	\$2,275.00	20%	\$1,820.00	\$1,820.00
DPW	MCD5000	99	-	202	1	FHN7469	MCD 5000 DESKSET / RGU POWER SUPPLY WITH USA POWER CORD	\$100.00	\$100.00	20%	\$80.00	\$80.00
DPW	MCD5000	100	-	706	1	RMN5068A	DESKTOP MIC	\$130.00	\$130.00	25%	\$97.50	\$97.50
DPW	MCD5000	101	-	202	1	HKVN4861	LICENSE,MCD 5000 DESKSET SYSTEM CONFIG TOOL - SYSTEM W/OUT OMC	\$250.00	\$250.00	20%	\$200.00	\$200.00
License	Master	102	-	877	1	SQM01SUM0323	ASTRO MASTER SITE	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	Master	102	a	877	1	CA03517AD	ADD: CORE EXPANSION	\$0.00	\$0.00	20%	\$0.00	\$0.00
License	Master	102	b	877	1	UA00152AA	ADD:500 RADIO USER LICENSES	\$7,500.00	\$7,500.00	20%	\$6,000.00	\$6,000.00
License	Master	102	c	877	1	UA00165AA	ADD: RADIO AUTH 500 USER LIC	\$5,500.00	\$5,500.00	20%	\$4,400.00	\$4,400.00
License	Master	102	d	877	1	UA00236AA	ADD: 500 RADIO ALIAS UPDATE LICENSES	\$5,000.00	\$5,000.00	20%	\$4,000.00	\$4,000.00
License	RM	103	-	430	1	T7914	RADIO MANAGEMENT ONLINE	\$0.00	\$0.00	15%	\$0.00	\$0.00
License	RM	103	a	430	196	UA00049AA	ADD: RADIO MANAGEMENT LICENSES ONLINE	\$110.00	\$21,560.00	15%	\$93.50	\$18,326.00
License	UNS	104	-	232	1	T8108	UNS RESOURCE EXPANSIONS	\$0.00	\$0.00	10%	\$0.00	\$0.00
License	UNS	104	a	232	1	CA03096AA	ADD: ADDITIONAL RESOURCES TO AN EXISTING SERVICE	\$0.00	\$0.00	10%	\$0.00	\$0.00
License	UNS	104	b	232	196	UA00788AA	IMW PRESENCE (PER USER)	\$22.00	\$4,312.00	10%	\$19.80	\$3,880.80
License	UNS	105	-	232	1	T8108	UNS RESOURCE EXPANSIONS	\$0.00	\$0.00	10%	\$0.00	\$0.00
License	UNS	105	a	232	1	CA03096AA	ADD: ADDITIONAL RESOURCES TO AN EXISTING SERVICE	\$0.00	\$0.00	10%	\$0.00	\$0.00
License	UNS	105	b	232	196	UA00762AA	DD RESOURCES FOR GROUP MANAGEMENT FOR MSI APPS	\$24.00	\$4,704.00	10%	\$21.60	\$4,233.60

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