MOARK Communications
Blytheville – Jonesboro – Poplar Bluff

"Wireless Solutions Since 1954"
800-763-9441

We appreciate the opportunity to provide Jonesboro with the enclosed proposals for outdoor warning sirens. We have proposed two siren systems for the City: WHELEN WPS2908 and WHELEN VORTEXR3. Maps showing the respective coverage areas of these sirens are enclosed and show that either will provide the City of Jonesboro with more than adequate warning capability for its residents.

Whelen Engineering Company's WPS 2900 series sirens are omnidirectional in that sound and voice announcements are broadcast throughout a 360° pattern. There are no moving parts in this siren used in the production of sound and the speaker assembly is stationary—non-rotational. WPS 2900 series sirens are capable of broadcasting either live or pre-recorded voice messages. Whelen WPS2900 series sirens are standard with RDVM960—digital voice modules that can have up to 16 messages with for a total of 960 seconds of pre-recorded voice messages. Whelen sirens can be activated either by one-way activation or two-way status activation and reporting. These sirens operate on batteries—the WPS2908 models has four (4) Delco S-2000 which are kept charged either by a 120VAC temperature compensated battery charger or a battery charger/solar regulator powered by two (2) 80-watt solar panels. Solar sirens give the City the ability to place the sirens in any location. Additionally, we find that solar sirens are less susceptible to lighting/power surge damage and the batteries have a longer life span. Based upon prices for electricity, we find that the solar power option pays for itself in approximately five years. Using renewable energy to power the sirens makes a statement to your community that you are looking for the most economic and eco-friendly method of providing power to the warning system. Also, if the utilities are underground in your area; solar may be less expensive than having underground power brought to the siren site.

The Whelen WPS2908 is a 124 dBc omnidirectional siren with an effective 70 dBc warning perimeter of approximately 4400'. This siren is expandable to a WPS2910—10 cell siren with a warning perimeter of approximately 5200'. This siren is installed on a Class 1 60' pole.

The VORTEXR3 is a 127dBc rotating siren with an effective 70 dBc warning perimeter of approximately 5400'. This siren has tone only and is not capable of broadcasting live or prerecorded voice. This siren has been very popular with communities that want to provide warning tones but not public address capabilities. Installation of this siren is on a Class 2 60' pole. The VORTEXR3 operates on two (2) batteries charged by either 120AC battery charger or solar regulator/charger powered by 2-80 watt solar panels.

CITY OF JONESBORO

RFP 2008:30

TORNADO SIREN SYSTEM

DUE 2:00PM CDT AUGUST 27, 2008

ORIGINAL

SECTION 1

INTRODUCTION

1.1 Description of the City of Jonesboro

The City of Jonesboro is located on the hills of Crowley's Ridge in Eastern Arkansas, 65 miles northwest of Memphis, TN. The city limits is 82 square miles with a population of approximately 62,000 and is one of two county seats in Craighead County. Arkansas State University main campus resides within the borders of Jonesboro.

1.2 Background and Special Circumstances

Currently there is a warning system in place at The City of Jonesboro. Said warning system consists of 26 warning sirens. At present 22 are in working condition The city's goal in securing these services is to replace the system for notifying the community in the event of a manmade or natural disaster.

1.3 Objective of this Request for Proposal

The City of Jonesboro, Arkansas is soliciting proposals in response to this Request for Proposal for Selection of a Vendor to Provide outdoor warning siren system Services related to outdoor warning emergency notification system, RFP No. 2008:30 (this "**RFP**"), from qualified vendors to provide outdoor warning systems services (the "**Services**") related to the City of Jonesboro, Arkansas. The Services, which are more specifically described in **Section 5.4** (Scope of Work)

SECTION 2

NOTICE TO VENDOR

2.1 Submittal Deadline

City of Jonesboro will accept proposals submitted in response to this RFP until Thursday August 27, 2008 @ 2:00 pm Central Prevailing Time CST (the "**Submittal Deadline**").

2.2 City of Jonesboro Contact Person

Vendors will direct all questions or concerns regarding this RFP to the following City of Jonesboro contact (the "**City of Jonesboro Contact**"):

Steve Kent
Purchasing Agent
City of Jonesboro
P.O. Box 1845
Jonesboro, AR 72403-1845
(515 West Washington Ave 72401)
Phone - 870-336-7200
Email- **skent@jonesboro.org**

City of Jonesboro specifically instructs all interested parties to restrict all contact and questions regarding this RFP to written communications forwarded to the City of Jonesboro Contact. The City of Jonesboro Contact must receive all questions or concerns no later than Friday August 20, 2008 at 5:00 pm. The City of Jonesboro will have a reasonable amount of time to respond to questions or concerns. It is City of Jonesboro's intent to respond to all appropriate questions and concerns; however, City of Jonesboro reserves the right to decline to respond to any question or concern.

2.3 Criteria for Selection

The successful Vendor, if any, selected by City of Jonesboro in accordance with the requirements and specifications set forth in this RFP will be the Vendor that submits a proposal in response to this RFP on or before the Submittal Deadline that is the most advantageous to City of Jonesboro. The successful Vendor is referred to as the "**Contractor**." Vendor is encouraged to propose terms and conditions offering the maximum benefit to City of Jonesboro in terms of (1) services to City of Jonesboro, (2) total overall cost to City of Jonesboro, and (3) project management expertise. Vendors should describe all educational, state and local government discounts, as well as any other applicable discounts that may be available to City of Jonesboro in a contract for the Services.

2.4 Key Events Schedule

Issuance of RFP August 07, 2008

Deadline for Questions/Concerns August 20, 2008 5:00 pm CST (ref. **Section 2.2** of this RFP)

Submittal Deadline August 27, 2008 2:00 p.m Central Prevailing Time (ref. **Section 2.1** of this RFP)

SUBMISSION OF PROPOSAL

3.1 Number of Copies

Vendor must submit a total of 16 complete and identical copies of its *entire* proposal. An *original* signature by an authorized officer of Vendor must appear on at least one (1) copy of the submitted proposal. The copy of the Vendor's proposal bearing an original signature should contain the mark "original" on the front cover of the proposal.

3.2 Submission

Proposals (16 copies) must be received by City of Jonesboro on or before the Submittal Deadline (ref. **Section 2.1** of this RFP) and should be delivered to:

Steve Kent
Purchasing Agent
City of Jonesboro
P.O. Box 1845
Jonesboro, AR 72403-1845
(515 West Washington Ave 72401)
Phone 870-336-7200
Email- **skent@jonesboro.org**

3.3 Proposal Validity Period

Each proposal must state that it will remain valid for City of Jonesboro's acceptance for a minimum of sixty days (60) after the Submittal Deadline, to allow time for evaluation, selection, and any unforeseen delays.

3.4 Terms and Conditions

3.4.1 Vendor must comply with the requirements and specifications contained in this RFP, the Terms and Conditions (ref. **Section 4** of this RFP), the Notice to Vendor (ref. **Section 2** of this RFP), Proposal Requirements (ref. **APPENDIX ONE**) and the Specifications and Additional Questions (ref. **Section 5** of this RFP). If there is a conflict among the provisions in this RFP, the provision requiring Vendor to supply the better quality or greater quantity of services will prevail, or if such conflict does not involve quality or quantity, then interpretation will be in the following order of precedence:

3.4.1.1. Specifications and Additional Questions (ref. **Section 5** of this RFP);

3.4.1.2. Terms and Conditions (ref. **Section 4** of this RFP);

3.4.1.3. Proposal Requirements (ref. **APPENDIX ONE**);

3.4.1.4. Notice to Vendors (ref. **Section 2** of this RFP).

3.5 Submittal Checklist

Vendor is instructed to complete, sign, and return the following documents as a part of its proposal. If Vendor fails to return each of the following items with its proposal, then City of Jonesboro may reject the proposal:

3.5.1 Signed and Completed Execution of Offer (ref. **Section 2 of APPENDIX ONE**)

3.5.2 Signed and Completed Pricing and Delivery Schedule (ref. **Section 6** of this RFP)

3.5.3 Responses to Vendor's General Questionnaire (ref. **Section 3** of **APPENDIX ONE**)

3.5.4 Responses to questions and requests for information in the Specifications and Additional Questions Section (ref. **Section 5** of this RFP)

SECTION 4

4.1 Venue; Governing Law

City of Jonesboro, Craighead County, Arkansas shall be the proper place of venue for suit on or in respect of this Agreement. This Agreement and all of the rights and obligations of the parties hereto and all of the terms and conditions hereof shall be construed, interpreted and applied in accordance with and governed by and enforced under the laws of the State of Arkansas.

4.2 Compliance with Law

Contractor is aware of, is fully informed about, and in full compliance with its obligations under existing applicable law and regulations, including but not limited to Title VI of the Civil Rights Act of 1964, as amended (42 USC 2000(D)), Executive Order 11246, as amended (41 CFR 60-1 and 60-2), Vietnam Era Veterans Readjustment Act of 1974, as amended (41 CFR 60-250), Rehabilitation Act of 1973, as amended (41 CFR 60-741), Age Discrimination Act of 1975 (42 USC 6101 et seq.), Fair Labor Standards Act of 1938, Sections 6, 7, and 12, as amended, Immigration Reform and Control Act of 1986, and Utilization of Small Business Concerns and Small Business Concerns Owned and Controlled by Socially and Economically Disadvantaged Individuals (PL 96-507), the Americans with Disabilities Act of 1990 (42 USC 12101 et seq.), the Civil Rights Act of 1991 and all laws and regulations and executive orders as are applicable.

4.3 City of Jonesboro's Right to Audit

At any time during the term of this Agreement and for a period of three (3) years thereafter City of Jonesboro or a duly authorized audit representative of City of Jonesboro, at reasonable times, reserves the right to audit Contractor's records and books relevant to all services provided under this Agreement. In the event such an audit by City of Jonesboro reveals any errors/overpayments by City of Jonesboro, Contractor shall refund City of Jonesboro the full amount of such overpayments within thirty (30) days of such audit findings, or City of Jonesboro, at its option, reserves the right to deduct such amounts owing City of Jonesboro from any payments due Contractor.

4.4 Access to Documents

To the extent applicable to this Agreement, in accordance with Section 1861(v)(I)(i) of the Social Security Act (42 U.S.C. 1395x) as amended, and the provisions of 42 CFR Section 420.300, et seq., Contractor agrees to allow, during and for a period of not less than three (3) years after the Agreement term, access to this Agreement and its books, documents, and records; and contracts between Contractor and its subcontractors or related organizations, including books, documents and records relating to same, by the Comptroller General of the United States, the U.S. Department of Health and Human Services and their duly authorized representatives.

4.5 Insurance

4.5.1 Contractor, consistent with its status as an independent contractor, will carry at least the following insurance in the form, with the companies and in the amounts (unless otherwise specified) as City of Jonesboro may require:

4.5.1.1 Workers' Compensation Insurance with statutory limits, and Employer's Liability Insurance with limit of not less than One Million Dollars ($1,000,000) per accident or disease. Policies must include All States Endorsement and a waiver of all rights of subrogation and other rights against the City of Jonesboro;

4.5.1.2 Commercial General Liability insurance, including Blanket Contractual Liability, Broad Form Property Damage, Personal and Advertising Injury, Completed Operations/Products Liability, Medical Expenses, Interest of Employees as additional insured's and Broad Form General Liability Endorsements, for at least One Million Dollars ($1,000,000) per occurrence on an occurrence basis;

4.5.1.3 Commercial Automobile Liability insurance covering all owned, non-owned or hired automobiles to be used by Contractor, with coverage for at least One Million Dollars ($1,000,000) Combined Single Limit Bodily Injury and Property Damage;]

4.5.2 Contractor will deliver to City of Jonesboro:

4.5.2.1 Evidence satisfactory to City of Jonesboro in its sole discretion, evidencing the existence of all the insurance promptly after the execution and delivery hereof and prior to the performance or

continued performance of any services to be performed by Contractor hereunder from or after the date of this Agreement; and

4.5.2.2 Additional evidence, satisfactory to City of Jonesboro in its sole discretion, of the continued existence of all required insurance not less than thirty (30) days prior to the expiration of any required insurance. If, however, Contractor fails to pay any of the renewal premiums for the expiring policies, City of Jonesboro will have the right to make the payments and set-off the amount thereof against the next payment coming due to Contractor under this Agreement. Such insurance policies, with the exception of Workers' Compensation and Employer's Liability, will name and the evidence will reflect City of Jonesboro as an Additional Insured and will provide that the policies will not be canceled until after thirty (30) days' unconditional written notice to City of Jonesboro.

4.5.3 The insurance policies required in this Agreement will be kept in force for the periods specified below:

4.5.3.1 Commercial General Liability Insurance, Commercial Automobile Liability Insurance will be kept in force until receipt of Final Payment by Contractor; and

4.5.3.2 Workers' Compensation Insurance and Employer's Liability Insurance will be kept in force until the Services have been fully performed and accepted by City of Jonesboro in writing.

4.6 Indemnification

4.6.1 TO THE FULLEST EXTENT PERMITTED BY LAW, CONTRACTOR WILL AND DOES HEREBY AGREE TO INDEMNIFY, PROTECT, DEFEND WITH COUNSEL APPROVED BY CITY OF JONESBORO AND HOLD HARMLESS CITY OF JONESBORO, AND THEIR RESPECTIVE AFFILIATED ENTERPRISES, REGENTS, OFFICERS, DIRECTORS, ATTORNEYS, EMPLOYEES, REPRESENTATIVES AND AGENTS (COLLECTIVELY "**INDEMNITEES**") FROM AND AGAINST ALL DAMAGES, LOSSES, LIENS, CAUSES OF ACTION, SUITS, JUDGMENTS, EXPENSES, AND OTHER CLAIMS OF ANY NATURE, KIND, OR DESCRIPTION, INCLUDING REASONABLE ATTORNEYS' FEES INCURRED IN INVESTIGATING, DEFENDING OR SETTLING ANY OF THE FOREGOING (COLLECTIVELY "**CLAIMS**") BY ANY PERSON OR ENTITY, ARISING OUT OF, CAUSED BY, OR RESULTING FROM CONTRACTOR'S PERFORMANCE UNDER OR BREACH OF THIS AGREEMENT AND THAT ARE CAUSED IN WHOLE OR IN PART BY ANY NEGLIGENT ACT, NEGLIGENT OMISSION OR WILLFUL MISCONDUCT OF CONTRACTOR, ANYONE DIRECTLY EMPLOYED BY CONTRACTOR OR ANYONE FOR WHOSE ACTS CONTRACTOR MAY BE LIABLE. THE PROVISIONS OF THIS SECTION WILL NOT BE CONSTRUED TO ELIMINATE OR REDUCE ANY OTHER INDEMNIFICATION OR RIGHT WHICH ANY INDEMNITEE HAS BY LAW OR EQUITY.

4.6.2 IN ADDITION, CONTRACTOR WILL AND DOES HEREBY AGREE TO INDEMNIFY, PROTECT, DEFEND WITH COUNSEL APPROVED BY CITY OF JONESBORO, AND HOLD HARMLESS INDEMNITEES FROM AND AGAINST ALL CLAIMS ARISING FROM INFRINGEMENT OR ALLEGED INFRINGEMENT OF ANY PATENT, COPYRIGHT,

TRADEMARK OR OTHER PROPRIETARY INTEREST ARISING BY OR OUT OF THE PERFORMANCE OF SERVICES OR THE PROVISION OF GOODS BY CONTRACTOR, OR THE USE BY INDEMNITEES, AT THE DIRECTION OF CONTRACTOR, OF ANY ARTICLE OR MATERIAL; PROVIDED, THAT, UPON BECOMING AWARE OF A SUIT OR THREAT OF SUIT FOR INFRINGEMENT, CITY OF JONESBORO WILL PROMPTLY NOTIFY CONTRACTOR AND CONTRACTOR WILL BE GIVEN THE OPPORTUNITY TO NEGOTIATE A SETTLEMENT. IN THE EVENT OF LITIGATION, CITY OF JONESBORO AGREES TO REASONABLY COOPERATE WITH CONTRACTOR. ALL PARTIES WILL BE ENTITLED TO BE REPRESENTED BY COUNSEL AT THEIR OWN EXPENSE.

4.7 Publicity

Contractor agrees that it shall not publicize this Agreement or disclose, confirm or deny any details thereof to third parties or use any photographs or video recordings of City of Jonesboro 's employees or use City of Jonesboro's name in connection with any sales promotion or publicity event without the prior express written approval of City of Jonesboro.

4.8 Assignment of Overcharge Claims

Contractor hereby assigns to City of Jonesboro any and all claims for overcharges associated with the Contract arising under the antitrust laws of the United States, 15 U.S.C.A., Sec. 1 et seq.

4.9 Observance of City of Jonesboro Rules and Regulations

Contractor agrees that at all times its employees, agents and permitted subcontractors (if any) will observe and comply with all regulations of the facilities, including but not limited to, no smoking, parking and security regulations.

4.9.1 Payment

City of Jonesboro pays bills on the 10th and 25th of the month. Bills submitted at least five days before said dates will be paid if all appropriate approvals and documentation are attached. Contractor is responsible for obtaining correct approvals and documentation needed to suffice City of Jonesboro accounts payable systems.

4.9.2 Limitations

The parties to this Agreement are aware that there are constitutional and statutory limitations on the authority of the City of Jonesboro to enter into certain terms and conditions of this Agreement, including, but not limited to, those terms and conditions relating to disclaimers and limitations of warranties; disclaimers and limitations of liability for damages; waivers, disclaimers and limitations of legal rights, remedies, requirements and processes; limitations of periods to bring legal action; granting control of litigation or settlement to another party; liability for acts or omissions of third

parties; payment of attorneys' fees; dispute resolution; indemnities; and confidentiality (collectively, the "**Limitations**"), and terms and conditions related to the Limitations shall not be binding on City of Jonesboro except to the extent authorized by the laws and Constitution of the State of Arkansas.

4.9.3 Debarment

Contractor confirms that neither Contractor nor its Principals are suspended, debarred, proposed for debarment, declared ineligible, or voluntarily excluded from the award of contracts from United States ("**U.S.**") federal government procurement or nonprocurement programs, or are listed in the List of Parties Excluded from Federal Procurement or Nonprocurement Programs issued by the U.S. General Services Administration. "**Principals**" means officers, directors, owners, partners, and persons having primary management or supervisory responsibilities within a business entity (e.g. general manager, plant manager, head of a subsidiary, division or business segment, and similar positions). Contractor shall provide immediate written notification to City of Jonesboro if, at any time prior to award, Contractor learns that this certification was erroneous when submitted or has become erroneous by reason of changed circumstances. This certification is a material representation of fact upon which reliance will be placed when City of Jonesboro executes this Agreement. If it is later determined Contractor knowingly rendered an erroneous certification, in addition to the other remedies available to City of Jonesboro, City of Jonesboro may terminate this Agreement for default by Contractor.

4.9.4 Survival of Provisions

No expiration or termination of this Agreement will relieve either party of any obligations under this Agreement that by their nature survive such expiration or termination.

SECTION 5

SPECIFICATIONS AND ADDITIONAL QUESTIONS

5.1 General

The minimum requirements and the specifications for the Services, as well as certain requests for information to be provided by Vendor as part of its proposal, are set forth below. As indicated in **Section 2.3** of this RFP, the successful Vendor is referred to as the "**Contractor.**"

5.2 Minimum Requirements

Each Proposal must include information that clearly indicates that Vendor meets each of the following minimum qualification requirements:

5.2.1 Vendor shall be a firm with at least 5 years experience in system planning, integration and installation of Outdoor Warning Systems of similar size and scope.

5.2.2 Vendor will have similar contracts with at least 5 municipalities or their equivalent.

5.2.3 Installer must be certified by manufacturer to perform installation

5.2.4 Vendor is aware of, is fully informed about, and is in full compliance with all applicable federal, state and local laws, rules, regulations applicable to the installation of an outdoor warning system including the applicable guidelines and/or standards referenced in the following documents

5.2.4.1 United Facilities Criteria (UFC) Standard. Department of Defense Document UFC 4-2021-01 .UFC 4-021-01 Design and O&M: Mass Notification Systems which outlines mass notification to be in compliance with the requirements of UFC 4-010-01, DOD Minimum Anti-terrorism Standards for Buildings.

5.2.4.2 NFPA — 72, Annex E Mass Notification Systems Standard. National Fire Protection Association (NFPA) 72, Appendix E, which names standards on providing information and instructions to people, in a building, area, site or other space using intelligible voice communications methods and possibly including visible signals, text, graphics, tactile or other communication methods.

5.2.4.3 FEMA document Ref. CPG1-17 entitled Outdoor Warning Systems Guide

5.3 Additional Questions Specific to this RFP

Vendor must submit the following information as part of Vendor's proposal:

5.3.1 If Vendor takes exception to any terms or conditions set forth in **Section 4** of this RFP, Vendor will submit a list of the exceptions.

5.3.2 In its proposal, Vendor must indicate whether it will consent to include in the Agreement the "Accessibility by Persons with Disabilities" provision that is set forth in **APPENDIX FOUR**. If Vendor objects to the inclusion of the "Accessibility by Persons with Disabilities" provision in the Agreement, Vendor must, as part of its proposal, specifically identify and describe in detail all of the reasons for Vendor's objection. NOTE THAT A GENERAL OBJECTION IS NOT AN ACCEPTABLE RESPONSE TO THIS QUESTION.

5.4 Scope of Work

Contractor will provide the following services to City of Jonesboro:

5.4.1 The system will provide for an outdoor siren warning system to include a minimum of three unique tones, controllers to provide continuous monitoring, and fixed site activation.

5.4.2 The VENDOR will provide a turn-key system, to include the design, equipment specifications, installation, service, monitoring, maintenance, training and technical support for outdoor warning system.

5.4.2.1 The VENDOR will incorporate the guidance outlined in FEMA publication CPG-1-17 entitled Outdoor Warning Systems Guide to insure to ensure effective and efficient coverage plan of the City of Jonesboro

5.4.2.2 Surveys, referenced in FEMA publication CPG-1-17 entitled Outdoor Warning Systems Guide used to determine placement of outdoor sirens. The submittal should also include a map of the City of Jonesboro that references the recommended locations of the speakers/sirens and the coverage area to include decibel contours.

5.4.2.3 Vendor is to make recommendations for the most efficient and cost effective placement of siren system to include pole mounted units for effective coverage of the City of Jonesboro

5.4.2.4 The system will provide multiple activation and control methods. A Fixed control panel is to be standard.

5.4.2.5 In addition to the 3 fixed control panels, the Vendor will provide optional cost for a laptop based mobile backup system as an alternative to the fixed based system.

5.4.2.6 The system must provide enough power for 30 minutes of continuous operation. With charge, the batteries must be able to back up the siren for at least 10 days with enough reserve for five (5) minute activation at the end of the 10 days.

5.4.2.7 The system A. If applicable, the City of Jonesboro has an existing UHF frequency license that can be immediately used until the license of new frequency can be obtained. The City of Jonesboro requires acceptance of this clause with proposal.

5.4.2.8 B. The 2.4GHz (2.400-2.500GHz) and 5.0GHz (5.725-5.875GHz), unlicensed frequency bands for implementation of this project are NOT acceptable to the City of Jonesboro as they will interfere with the current (and future) installation and deployment of the city wide wireless network.

5.4.3 The VENDOR will coordinate with the City of Jonesboro's Maintenance and Operations Department for electrical circuit availability and external mounting locations.

5.4.3.1 All electrical power requirements for all equipment locations are to be provided by the contractor and included with proposal price.

5.4.3.2 This RFP requires installation of all new conduit, Vendors are NOT to use existing conduit for this project instead Vendor must include in their pricing cost of any conduit required for this request.

5.4.3.3 If required as part of installation any cutting, patching and painting to be included in the cost

of the proposal price.

5.4.4 As part of submittal documents, the VENDOR is to include the following

5.4.4.1 Shop Drawings and Submittals – A complete equipment list, with manufactures' names, model numbers, and quantities of each item.

5.4.4.2 Manufactures' data sheets on all equipment items manufacturer name, model number/part number and complete specifications for the siren/tone warning

5.4.3.1 A map of the City of Jonesboro to include the location of the recommended speakers/sirens and the coverage area to include decibel contours.

5.4.3.2 Pole mounting specifications.

5.4.3.3 Sirens are to be mechanically sound with the ability to withstand up to 100 mph winds, include pole mounting brackets for pole and/or wall mounting.

5.4.4 The system should have the option for solar power charging.

5.4.5 The system will have the capability to incorporate future requirements and technology advances for future growth.

5.4.6 Final Test and Demonstration – The final testing and demonstration shall be performed after all installation and initial testing has been completed by the installer, but prior to any use of the system.

5.4.7 Owner Training and Familiarization – The Vendor will provide for onsite training for City personnel necessary to operate the system:

5.4.7.1 To include but not limited to training by factory certified personnel, training on system operation, training on trouble shooting of potential system problems, all training manuals, hands on experience, industry's best practices and all incidental expenses.

5.4.8 Guarantee and Warranty – Guarantee all parts, labor and installation furnished under this contract for a period of twelve months from the date of final system acceptance. Where warranties on individual pieces of equipment exceed twelve months, the guarantee period shall be extended to the warranty period of the particular items.

5.4.8.1 Warranty to include an annual maintenance agreement after warranty expires.

SECTION 6

PRICING AND DELIVERY SCHEDULE

Proposal of: Mo - Ark Communications
(Proposer Company Name)

To: The City of Jonesboro

Ref.: Outdoor Warning Siren System

RFP No. 2008:30

Ladies and Gentlemen:

Having carefully examined all the specifications and requirements of this RFP and any attachments thereto, the undersigned proposes to furnish the outdoor warning siren system services required pursuant to the above-referenced Request for Proposal upon the terms quoted below.

6.1 Pricing for Services Offered

6.1.2. Outdoor Warning Siren System

6.1.2.1 Cost / Specifications

a.) Number of Sirens	38
b.) Price per unit	$272.15
c.) Number of Controllers	38
d.) Price per Controller	Included In B
e.) Location, Attach map	Attached
f.) % of Coverage Area	98
g.) Price per pole	1200
h.) Installation price	3950

NOTE: INCLUDE MANUFACTURER, PART NUMBER AND COMPLETE SPECIFICATIONS FOR EQUIPMENT IN THIS TABLE WITH RESPONSE.

6.1.2.2 Training	$ 650
6.1.2.3 Annual Maintenance (after initial expiration)	$ 6000
6.1.2.4 Fixed Control panels for siren system (3)	$ 2000
6.1.2.5 Consultation/ Support Services	$ 20 Hrs Included $65 Hr After
6.1.3. Price the following options for the city's consideration:	
6.1.4. OPTION A: Mobile control panel option in addition to fixed control panel option	$ 5025
6.1.5. OPTION B: Solar panel option	$ 1420.65 per siren
GRAND TOTAL:	$ 523,716.70

6.2 Delivery Schedule of Events and Time Periods

10-14 Weeks - See Attached details

Respectfully submitted,

Proposer: O Mo - Ark Communications

By: _____
(Authorized Signature for Proposer)

Name: Curt Majors

Title: Sales Consultant

Date: 7/27/08

APPENDIX ONE

PROPOSAL REQUIREMENTS
TABLE OF CONTENTS

SECTION 1

GENERAL INFORMATION

Purpose

City of Jonesboro is soliciting competitive sealed proposals from Proposers having suitable qualifications and experience providing services in accordance with the terms, conditions and requirements set forth in this RFP. This RFP provides sufficient information for interested parties to prepare and submit proposals for consideration by City of Jonesboro. By submitting a proposal, Proposer certifies that it understands this RFP and has full knowledge of the scope, nature, quality, and quantity of the services to be performed, the detailed requirements of the services to be provided, and the conditions under which such services are to be performed. Proposer also certifies that it understands that all costs relating to preparing a response to this RFP will be the sole responsibility of the Proposer.

PROPOSER IS CAUTIONED TO READ THE INFORMATION CONTAINED IN THIS RFP CAREFULLY AND TO SUBMIT A COMPLETE RESPONSE TO ALL REQUIREMENTS AND QUESTIONS AS DIRECTED.

1.2 Inquiries and Interpretations

City of Jonesboro may in its sole discretion respond in writing to written inquiries concerning this RFP and mail its response as an Addendum to all parties recorded by City of Jonesboro as having

received a copy of this RFP. Only City of Jonesboro's responses that are made by formal written Addenda will be binding on City of Jonesboro. Any verbal responses, written interpretations or clarifications other than Addenda to this RFP will be without legal effect. All Addenda issued by City of Jonesboro prior to the Submittal Deadline will be and are hereby incorporated as a part of this RFP for all purposes.

Proposers are required to acknowledge receipt of each Addendum as specified in this Section. The Proposer must acknowledge all Addenda by completing, signing and returning the Addenda Checklist (ref. **Section 4** of **APPENDIX ONE**). The Addenda Checklist must be received by City of Jonesboro prior to the Submittal Deadline and should accompany the Proposer's proposal. Any interested party that receives this RFP by means other than directly from City of Jonesboro is responsible for notifying City of Jonesboro that it has received an RFP package, and should provide its name, address, telephone number and FAX number to City of Jonesboro, so that if City of Jonesboro issues Addenda to this RFP or provides written answers to questions, that information can be provided to such party.

1.3 Public Information

Proposer is hereby notified that City of Jonesboro strictly adheres to all statutes, court decisions and the opinions of the Arkansas Attorney General with respect to disclosure of public information. City of Jonesboro may seek to protect from disclosure all information submitted in response to this RFP until such time as a final agreement is executed. Upon execution of a final agreement, City of Jonesboro will consider all information, documentation, and other materials requested to be submitted in response to this RFP, to be of a non-confidential and non-proprietary nature and, therefore, subject to public disclosure under the Arkansas Freedom of Information Act. Proposer will be advised of a request for public information that implicates their materials and will have the opportunity to raise any objections to disclosure to the Arkansas Attorney General. Certain information may be protected from release.

1.4 Type of Agreement

The Contractor, if any, will be required to enter into a contract with City of Jonesboro in a form that (i) includes terms and conditions substantially similar to the terms and conditions set forth in **Section 4** of this RFP, and (ii) is otherwise acceptable to City of Jonesboro in all respects (the "**Agreement**").

1.5 Proposal Evaluation Process

City of Jonesboro will select the Contractor by using the competitive sealed proposal process described in this Section. City of Jonesboro will open the Bid Envelope submitted by a Proposer in order to ensure that the Proposer has submitted the number of completed and signed originals. All proposals submitted by the Submittal Deadline accompanied by the number of completed and signed originals that are required by this RFP will be opened publicly to identify the name of each Proposer submitting a proposal. Any proposals that are not submitted by the Submittal Date or that are not accompanied by the number of completed and signed originals that are required by this RFP will be rejected by the City of Jonesboro as non-responsive due to material failure to comply with advertised specifications. After the opening of the proposals and upon completion of the initial review and

evaluation of the proposals, City of Jonesboro may invite one or more selected Proposers to participate in oral presentations. City of Jonesboro may make the selection of the Contractor on the basis of the proposals initially submitted, without discussion, clarification or modification. In the alternative, City of Jonesboro may make the selection of the Contractor on the basis of negotiation with any of the Proposers.

At City of Jonesboro's sole option and discretion, City of Jonesboro may discuss and negotiate all elements of the proposals submitted by selected Proposers within a specified competitive range. For purposes of negotiation, City of Jonesboro may establish, after an initial review of the proposals, a competitive range of acceptable or potentially acceptable proposals composed of the highest rated proposal(s). In that event, City of Jonesboro will defer further action on proposals not included within the competitive range pending the selection of the Contractor; provided, however, City of Jonesboro reserves the right to include additional proposals in the competitive range if deemed to be in the best interests of City of Jonesboro.

After submission of a proposal but before final selection of the Contractor is made, City of Jonesboro may permit a Proposer to revise its proposal in order to obtain the Proposer's best and final offer. In that event, representations made by Proposer in its revised proposal, including price and fee quotes, will be binding on Proposer. City of Jonesboro will provide each Proposer within the competitive range with an equal opportunity for discussion and revision of its proposal. City of Jonesboro is not obligated to select the Proposer offering the most attractive economic terms if that Proposer is not the most advantageous to City of Jonesboro overall, as determined by City of Jonesboro.

City of Jonesboro reserves the right to (a) enter into an agreement for all or any portion of the requirements and specifications set forth in this RFP with one or more Proposers, (b) reject any and all proposals and re-solicit proposals, or (c) reject any and all proposals and temporarily or permanently abandon this selection process, if deemed to be in the best interests of City of Jonesboro. Proposer is hereby notified that City of Jonesboro will maintain in its files concerning this RFP a written record of the basis upon which a selection, if any, is made by City of Jonesboro.

1.6 Proposer's Acceptance of Evaluation Methodology

By submitting a proposal, Proposer acknowledges (1) Proposer's acceptance of [a] the Proposal Evaluation Process (ref. **Section 1.5 of APPENDIX ONE**), [b] the Criteria for Selection (ref. **2.3** of this RFP), [c] the Specifications and Additional Questions (ref. **Section 5** of this RFP), [d] the terms and conditions set forth in **Section 4** of this RFP, and [e] all other requirements and specifications set forth in this RFP; and (2) Proposer's recognition that some subjective judgments must be made by City of Jonesboro during this RFP process.

1.7 Solicitation for Proposal and Proposal Preparation Costs

Proposer understands and agrees that (1) this RFP is a solicitation for proposals and City of Jonesboro has made no representation written or oral that one or more agreements with City of Jonesboro will be awarded under this RFP; (2) City of Jonesboro issues this RFP predicated on City

of Jonesboro's anticipated requirements for the Services, and City of Jonesboro has made no representation, written or oral, that any particular scope of services will actually be required by City of Jonesboro; and (3) Proposer will bear, as its sole risk and responsibility, any cost that arises from Proposer's preparation of a proposal in response to this RFP.

1.8 Proposal Requirements and General Instructions

1.8.1 Proposer should carefully read the information contained herein and submit a complete proposal in response to all requirements and questions as directed.

1.8.2 Proposals and any other information submitted by Proposer in response to this RFP will become the property of City of Jonesboro.

1.8.3 City of Jonesboro will not provide compensation to Proposer for any expenses incurred by the Proposer for proposal preparation or for demonstrations or oral presentations that may be made by Proposer, unless otherwise expressly agreed in writing. Proposer submits its proposal at its own risk and expense.

1.8.4 Proposals that (i) are qualified with conditional clauses; (ii) alter, modify, or revise this RFP in any way; or (iii) contain irregularities of any kind, are subject to disqualification by City of Jonesboro, at City of Jonesboro's sole discretion.

1.8.5 Proposals should be prepared simply and economically, providing a straightforward, concise description of Proposer's ability to meet the requirements and specifications of this RFP. Emphasis should be on completeness, clarity of content, and responsiveness to the requirements and specifications of this RFP.

1.8.6 City of Jonesboro makes no warranty or guarantee that an award will be made as a result of this RFP. City of Jonesboro reserves the right to accept or reject any or all proposals, waive any formalities, procedural requirements, or minor technical inconsistencies, and delete any requirement or specification from this RFP when deemed to be in City of Jonesboro's best interest. City of Jonesboro reserves the right to seek clarification from any Proposer concerning any item contained in its proposal prior to final selection. Such clarification may be provided by telephone conference or personal meeting with or writing to City of Jonesboro, at City of Jonesboro's sole discretion. Representations made by Proposer within its proposal will be binding on Proposer.

1.8.7 Any proposal that fails to comply with the requirements contained in this RFP may be rejected by City of Jonesboro, in City of Jonesboro's sole discretion.

1.9 Preparation and Submittal Instructions

1.9.1 Specifications and Additional Questions

Proposals must include responses to the questions in Specifications and Additional Questions (ref. **Section 5** of this RFP). Proposer should reference the item number and repeat the question in its response. In cases where a question does not apply or if unable to respond, Proposer should refer to the item number, repeat the question, and indicate N/A (Not Applicable) or N/R (No Response), as appropriate. Proposer should explain the reason when responding N/A or N/R.

1.9.2 Execution of Offer

Proposer must complete, sign and return the attached Execution of Offer (ref. **Section 2** of **APPENDIX ONE**) as part of its proposal. The Execution of Offer must be signed by a representative of Proposer duly authorized to bind the Proposer to its proposal. Any proposal received without a completed and signed Execution of Offer may be rejected by City of Jonesboro, in its sole discretion.

1.9.3 Pricing and Delivery Schedule

Proposer must complete and return the Pricing and Delivery Schedule (ref. **Section 6** of this RFP), as part of its proposal. In the Pricing and Delivery Schedule, the Proposer should describe in detail (a) the total fees for the entire scope of the Services; and (b) the method by which the fees are calculated. The fees must inclusive of all associated costs for delivery, labor, insurance, taxes, overhead, and profit.

City of Jonesboro will not recognize or accept any charges or fees to perform the Services that are not specifically stated in the Pricing and Delivery Schedule.

In the Pricing and Delivery Schedule, Proposer should describe each significant phase in the process of providing the Services to City of Jonesboro, and the time period within which Proposer proposes to be able to complete each such phase.

1.9.4 Proposer's General Questionnaire

Proposals must include responses to the questions in Proposer's General Questionnaire (ref. **Section 3** of **APPENDIX ONE**). Proposer should reference the item number and repeat the question in its response. In cases where a question does not apply or if unable to respond, Proposer should refer to the item number, repeat the question, and indicate N/A (Not Applicable) or N/R (No Response), as appropriate. Proposer should explain the reason when responding N/A or N/R.

1.9.5 Addenda Checklist

Proposer should acknowledge all Addenda to this RFP (if any) by completing, signing and returning the Addenda Checklist (ref. **Section 4** of **APPENDIX ONE**) as part of its proposal. Any proposal received without a completed and signed Addenda Checklist may be rejected by City of Jonesboro, in its sole discretion.

1.9.6 Submission

Proposer should submit all proposal materials enclosed in a sealed envelope, box, or container. The RFP No. (ref. **Section 1.3** of this RFP) and the Submittal Deadline (ref. **Section 2.1** of this RFP) should be clearly shown in the lower left-hand corner on the top surface of the container. In addition, the name and the return address of the Proposer should be clearly visible.

Upon Proposer's request and at Proposer's expense, City of Jonesboro will return to a Proposer its proposal received after the Submittal Deadline if the proposal is properly identified. City of Jonesboro will not under any circumstances consider a proposal that is received after the Submittal Deadline or which is not accompanied by the number of completed and signed originals that are required by this RFP. City of Jonesboro will not accept proposals submitted by telephone or proposals submitted by Facsimile ("**FAX**") transmission, in response to this RFP. Except as otherwise provided in this RFP, no proposal may be changed, amended, or modified after it has been submitted to City of Jonesboro. However, a proposal may be withdrawn and resubmitted at any time prior to the Submittal Deadline. No proposal may be withdrawn after the Submittal Deadline without City of Jonesboro's consent, which will be based on Proposer's submittal of a written explanation and documentation evidencing a reason acceptable to City of Jonesboro, in City of Jonesboro's sole discretion. By signing the Execution of Offer (ref. **Section 2** of **APPENDIX ONE**) and submitting a proposal, Proposer certifies that any terms, conditions, or documents attached to or referenced in its proposal are applicable to this procurement only to the extent that they (a) do not conflict with the laws of the State of Arkansas or this RFP and (b) do not place any requirements on City of Jonesboro that are not set forth in this RFP or in the Appendices to this RFP. Proposer further certifies that the submission of a proposal is Proposer's good faith intent to enter into an agreement with City of Jonesboro as specified herein and that such intent is not contingent upon City of Jonesboro's acceptance or execution of any terms, conditions, or other documents attached to or referenced in Proposer's proposal.

1.9.7 Page Size, Binders, and Dividers

Proposals must be typed on letter-size (8-1/2" x 11") paper, and must be submitted in a binder. Preprinted material should be referenced in the proposal and included as labeled attachments. Sections within a proposal should be divided by tabs for ease of reference.

1.9.8 Table of Contents

Proposals must include a Table of Contents with page number references. The Table of Contents must contain sufficient detail and be organized according to the same format as presented in this RFP, to allow easy reference to the sections of the proposal as well as to any separate attachments (which should be identified in the main Table of Contents). If a Proposer includes supplemental information or non-required attachments with its proposal, this material should be clearly identified in the Table of Contents and organized as a separate section of the proposal.

1.9.9 Pagination

All pages of the proposal should be numbered sequentially in Arabic numerals (1, 2, 3, etc.). Attachments should be numbered or referenced separately.]

SECTION 2

EXECUTION OF OFFER

THIS EXECUTION OF OFFER MUST BE COMPLETED, SIGNED AND RETURNED WITH PROPOSER'S PROPOSAL. FAILURE TO COMPLETE, SIGN AND RETURN THIS EXECUTION OF OFFER WITH THE PROPOSER'S PROPOSAL MAY RESULT IN THE REJECTION OF THE PROPOSAL.

2.1 By signature hereon, Proposer represents and warrants the following:

2.1.1 Proposer acknowledges and agrees that (1) this RFP is a solicitation for a proposal and is not a contract or an offer to contract; (2) the submission of a proposal by Proposer in response to this RFP will not create a contract between City of Jonesboro and Proposer; (3) City of Jonesboro has made no representation or warranty, written or oral, that one or more contracts with City of Jonesboro will be awarded under this RFP; and (4) Proposer will bear, as its sole risk and responsibility, any cost arising from Proposer's preparation of a response to this RFP.

2.1.2 Proposer is a reputable company that is lawfully and regularly engaged in providing the Services.

2.1.3 Proposer has the necessary experience, knowledge, abilities, skills, and resources to perform the Services.

2.1.4 Proposer is aware of, is fully informed about, and is in full compliance with all applicable federal, state and local laws, rules, regulations and ordinances.

2.1.5 Proposer understands (i) the requirements and specifications set forth in this RFP and (ii) the terms and conditions set forth in Section 4 of this RFP, under which Proposer will be required to operate.

2.1.6 If selected by City of Jonesboro, Proposer will not delegate any of its duties or responsibilities under this RFP or the Agreement to any sub-contractor, except as expressly provided in the Agreement.

2.1.7 If selected by City of Jonesboro, Proposer will maintain any insurance coverage as required by the Agreement during the term thereof.

2.1.8 All statements, information and representations prepared and submitted in response to this RFP

are current, complete, true and accurate. Proposer acknowledges that City of Jonesboro will rely on such statements, information and representations in selecting the Contractor. If selected by City of Jonesboro, Proposer will notify City of Jonesboro immediately of any material change in any matters with regard to which Proposer has made a statement or representation or provided information.

2.1.9 PROPOSER WILL DEFEND WITH COUNSEL APPROVED BY CITY OF JONESBORO, INDEMNIFY, AND HOLD HARMLESS CITY OF JONESBORO, THE STATE OF ARKANSAS, AND ALL OF THEIR REGENTS, OFFICERS, AGENTS AND EMPLOYEES, FROM AND AGAINST ALL ACTIONS, SUITS, DEMANDS, COSTS, DAMAGES, LIABILITIES AND OTHER CLAIMS OF ANY NATURE, KIND OR DESCRIPTION, INCLUDING REASONABLE ATTORNEYS' FEES INCURRED IN INVESTIGATING, DEFENDING OR SETTLING ANY OF THE FOREGOING, ARISING OUT OF, CONNECTED WITH, OR RESULTING FROM ANY NEGLIGENT ACTS OR OMISSIONS OR WILLFUL MISCONDUCT OF PROPOSER OR ANY AGENT, EMPLOYEE, SUBCONTRACTOR, OR SUPPLIER OF PROPOSER IN THE EXECUTION OR PERFORMANCE OF ANY CONTRACT OR AGREEMENT RESULTING FROM THIS RFP.

2.1.10 Ay payments owing to Proposer under any contract or agreement resulting from this RFP may be applied directly to any debt or delinquency that Proposer owes the State of Arkansas or any agency of the State of Arkansas regardless of when it arises, until such debt or delinquency is paid in full.

2.2 By signature hereon, Proposer offers and agrees to furnish the Services to City of Jonesboro and comply with all terms, conditions, requirements and specifications set forth in this RFP.

2.3 By signature hereon, Proposer affirms that it has not given or offered to give, nor does Proposer intend to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor or service to a public servant in connection with its submitted proposal. Failure to sign this Execution of Offer, or signing with a false statement, may void the submitted proposal or any resulting contracts, and the Proposer may be removed from all proposal lists at City of Jonesboro.

2.4 By signature hereon, Proposer certifies that it is not currently delinquent in the payment of any taxes due or that Proposer is exempt from the payment of those taxes, or that Proposer is an out-of-state taxable entity that is not subject to those taxes, whichever is applicable. A false certification will be deemed a material breach of any resulting contract or agreement and, at City of Jonesboro's option, may result in termination of any resulting contract or agreement.

2.5 By signature hereon, Proposer hereby certifies that neither Proposer nor any firm, corporation, partnership or institution represented by Proposer, or anyone acting for such firm, corporation or institution, has violated the antitrust laws of the State of Arkansas, or the Federal antitrust laws, nor communicated directly or indirectly the proposal made to any competitor or any other person engaged in such line of business.

2.6 By signature hereon, Proposer certifies that the individual signing this document and the documents made a part of this RFP, is authorized to sign such documents on behalf of Proposer and to bind Proposer under any agreements and other contractual arrangements that may result from the submission of Proposer's proposal.

2.7 By signature hereon, Proposer certifies as follows: Proposer certifies that the individual or business entity named in the Proposer's proposal is not ineligible to receive the specified contract award and acknowledges that any agreements or other contractual arrangements resulting from this RFP may be terminated if this certification is inaccurate.

2.8 By signature hereon, Proposer certifies that (i) no relationship, whether by blood, marriage, business association, capital funding agreement or by any other such kinship or connection exists between the owner of any Proposer that is a sole proprietorship, the officers or directors of any Proposer that is a corporation, the partners of any Proposer that is a partnership, the joint ventures of any Proposer that is a joint venture or the members or managers of any Proposer that is a limited liability company, on one hand, and an employee of any component of The City of Jonesboro of Arkansas System, on the
other hand, other than the relationships which have been previously disclosed to City of Jonesboro in writing and (ii) Proposer has not been an employee of any component institution of The City of Jonesboro within the immediate twelve (12) months prior to the Submittal Deadline. All disclosures by Proposer in connection with this certification will be subject to administrative review and approval before City of Jonesboro enters into a contract or agreement with Proposer.

2.9 By signature hereon, Proposer certifies its compliance with all federal laws and regulations pertaining to Equal Employment Opportunities and Affirmative Action.

2.10 By signature hereon, Proposer represents and warrants that all products and services offered to City of Jonesboro in response to this RFP meet or exceed the safety standards established and promulgated under the Federal Occupational Safety and Health Law and all related regulations in effect or proposed as of the date of this RFP.

2.11 Proposer will and has disclosed, as part of its proposal, any exceptions to the certifications stated in this Execution of Offer. All such disclosures will be subject to administrative review and approval prior to the time City of Jonesboro makes an award or enters into any contract or agreement with Proposer.

2.12 Proposer should complete the following information:

If Proposer is a Corporation, then State of Incorporation: Arkansas

If Proposer is a Corporation then Proposer's Corporate Charter Number: _____

RFP No.: 2008:30

Submitted and Certified By:

(Proposer Institution's Name) Mo - Ark Communications

(Signature of Duly Authorized Representative)

(Printed Name/Title) Curt Majors. Sales Associate

(Date Signed) 8/27/08

(Proposer's Street Address) 1809 E Parker Rd

(City, State, Zip Code) Doniphan, MO 63935

(Telephone Number) 870-275-5053

(FAX Number) 870-266-5442

SECTION 3

PROPOSER'S GENERAL QUESTIONNAIRE

Proposals must include responses to the questions contained in this Proposer's General Questionnaire. Proposer should reference the item number and repeat the question in its response. In cases where a question does not apply or if unable to respond, Proposer should refer to the item number, repeat the question, and indicate N/A (Not Applicable) or N/R (No Response), as appropriate. Proposer will explain the reason when responding N/A or N/R.

3.1 Proposer Profile

3.1.1 Legal name of Proposer company: SEE Attached

Address of principal place of business:

Address of office that would be providing service under the Agreement:

Number of years in Business:

State of incorporation:

Number of Employees:

Annual Revenues Volume:

Name of Parent Corporation, if any _____

NOTE: If Proposer is a subsidiary, City of Jonesboro prefers to enter into a contract or agreement with the Parent Corporation or to receive assurances of performance from the Parent Corporation. SEE Attached

3.1.2 State whether Proposer will provide a copy of its financial statements for the past two (2) years, **if requested** by City of Jonesboro.

3.1.3 Proposer will provide a financial rating of the Proposer entity and any related documentation (such as a Dunn and Bradstreet analysis) that indicates the financial stability of Proposer.

3.1.4 Is Proposer currently for sale or involved in any transaction to expand or to become acquired by another business entity? If yes, Proposer will explain the expected impact, both in organizational and directional terms.

3.1.5 Proposer will provide any details of all past or pending litigation or claims filed against Proposer that would affect its performance under the Agreement with City of Jonesboro (if any).

3.1.6 Is Proposer currently in default on any loan agreement or financing agreement with any bank, financial institution, or other entity? If yes, Proposer will specify the pertinent date(s), details, circumstances, and describe the current prospects for resolution.

3.1.7 Proposer will provide a customer reference list of no less than three (3) organizations with which Proposer currently has contracts and/or to which Proposer has previously provided services (within the past five (5) years) of a type and scope similar to those required by City of Jonesboro's RFP. Proposer will include in its customer reference list the customer's company name, contact person, telephone number, project description, length of business relationship, and background of services provided by Proposer.

3.1.8 Does any relationship exist (whether by family kinship, business association, capital funding agreement, or any other such relationship) between Proposer and any employee of City of Jonesboro? If yes, Proposer will explain.

3.2 Approaches to Project Services

3.2.1 Proposer will provide a statement of the Proposer's service approach and will describe any unique benefits to City of Jonesboro from doing business with Proposer. Proposer will briefly describe its approach for each of the required services identified in **Section 5.4** Scope of Work of this RFP.

3.2.2 Proposer will provide an estimate of the earliest starting date for services following execution of the Agreement.

3.2.3 Proposer will submit a work plan with key dates and milestones. The work plan should include:

3.2.3.1 Identification of tasks to be performed;

3.2.3.2 Time frames to perform the identified tasks;

3.2.3.3 Project management methodology;

3.2.3.4 Implementation strategy; and

3.2.3.5 The expected time frame in which the services would be implemented.

3.2.4 Proposer will describe the types of reports or other written documents Proposer will provide (if any) and the frequency of reporting, if more frequent than required in the RFP. Proposer will include samples of reports and documents if appropriate.

3.3 General Requirements

3.3.1 Proposer will provide summary resumes for its proposed key personnel who will be providing

services under the Agreement with City of Jonesboro, including their specific experiences with similar service projects, and number of years of employment with Proposer.

3.3.2 Proposer will describe any difficulties it anticipates in performing its duties under the Agreement with City of Jonesboro and how Proposer plans to manage these difficulties. Proposer will describe the assistance it will require from City of Jonesboro.

3.4 Service Support

Proposer will describe its service support philosophy, how is it implemented, and how Proposer measures its success in maintaining this philosophy.

3.5 Quality Assurance

Proposer will describe its quality assurance program, its quality requirements, and how they are measured.

3.6 Miscellaneous

3.6.1 Proposer will provide a list of any additional services or benefits not otherwise identified in this RFP that Proposer would propose to provide to City of Jonesboro. Additional services or benefits must be directly related to the goods and services solicited under this RFP.

3.6.2 Proposer will provide details describing any unique or special services or benefits offered or advantages to be gained by City of Jonesboro from doing business with Proposer. Additional services or benefits must be directly related to the goods and services solicited under this RFP.

3.6.3 Does Proposer have a contingency plan or disaster recovery plan in the event of a disaster? If so, then Proposer will provide a copy of the plan.

SECTION 4

ADDENDA CHECKLIST

Proposal of: Mo-Ark Communications
(Proposer Company Name)

To: The City of Jonesboro of Arkansas

Ref.: Outdoor Warning Siren System Services

RFP No. 2008:30

Ladies and Gentlemen:

The undersigned Proposer hereby acknowledges receipt of the following Addenda to the captioned RFP (initial if applicable). Any addendum will be on the Purchasing web site at **www.jonesboro.org** no later than 1 (one) week before bid opening.

No. 1 _____ No. 2 _____ No. 3 _____ No. 4 _____ No. 5 _____

Respectfully submitted,

Proposer: Mo-Ark Communications

By: _____
(Authorized Signature for Proposer)

Name: Curt Majors

Title: Sales Consultant

Date: 8/27/08

The VORTEXR3 is expandable to a VOTREXR4 with the addition of a speaker driver and power amplifier. This will extend the 70 dBc coverage range to 6000'

We have also included the E2010/E2010P encoder/decoder for two way status radio activation. With this equipment, the sirens can be tested silently and a printed status report for each siren will be available so you will always have the status of your siren system and be alerted to any issues that may arise. Additionally, we have included the E747 encoder that can be installed in a vehicle for mobile activation.

We are very pleased to provide the CentrAlert EOS™ (Emergency Operating System) as the computer activation and reporting equipment for this proposal request. CentrAlert™ is the world's first "plug and play" alert and notification system and is manufactured exclusively for Whelen Engineering Company public warning products. The price for the EOS™ includes software as well as specifically designed DELL® hardware for reliable operation. Installation costs are included in this pricing. Supporting literature and information on this product is provided in this proposal.

We would be happy to provide contact names if you would like to contact several communities as to the reliability of the Whelen siren models that they have installed.

We appreciate the invitation to provide this information to you. If we can provide any additional information or can answer any questions, please feel free to contact our office.

Thank you for your continued interest in Whelen Engineering Company, Inc. public warning sirens.

Curt Majors
Wireless Systems Consultant
Mo-Ark Communications

VORTEXR3

WHELEN®

All Hazard High-Power Siren System

Whelen's VORTEXR3 Series All Hazard High Power Sirens provide an economical alternative for powerful siren communication without compromising quality.

SYSTEM FEATURES

- **VORTEXR3 -** Speaker with Three Speaker Cells Active
- Two-Compartment (Type I) Natural Finish Aluminum Cabinet
- 127dBC @ 100'
- VORTEXR3 Speaker Includes Three High Efficiency 400 Watt Speaker Drivers
- 50' Cable Included
- Battery Powered, Minimum of 15 Minutes of Full Power Output With Batteries of Our Recommendation
- AC Temperature Compensated 5 Amp Battery Charger
- Local Controls or Remote Controls
- Three Tone Only Power Amplifiers
- Gear Driven Rotor
- Electronic Siren Controller
- Tone Generator
- Timer
- Local Control Push Buttons
- Rotor Relay Control
- SI TEST
- Low Battery Alarm
- Battery Tray
- Lightning Arrestor
- Six Standard Public Warning Tones - Wail, Whoop, Attack, Hi-Lo, Alert, Airhorn

SYSTEM OPTIONS

- [illegible] - Solar Power [illegible]
- [illegible] - 2ea. Whelen Approved Batteries
- [illegible] - Speaker Pole Top Bracket
- Alternate Tone Set [illegible]

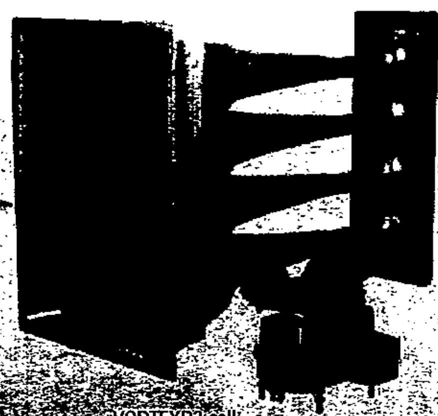
[illegible] mounting bracket [illegible]

SIREN ACTIVATION CONTROLS

Our VHF high and UHF siren activation control packages include the following:

- Radio
- Radio Interface
- Tone Squelch
- 2-3dB Gain Omni-Directional Antenna with Bracket
- 35' of RG58 Antenna Cable
- Polyphaser
- SI TEST*

Other features are dependant upon one or two-way controls. Whelen equipment can be interfaced with many different types of two-way radio communications products and systems including 800Mhz trunking, Motorola's MOSCAD, FSK, narrow-band and VHF low band. The following is available as standard options. Contact factory for special applications.



VORTEXR3 cell speaker housing mounted on rotor

ONE-WAY CONTROLS

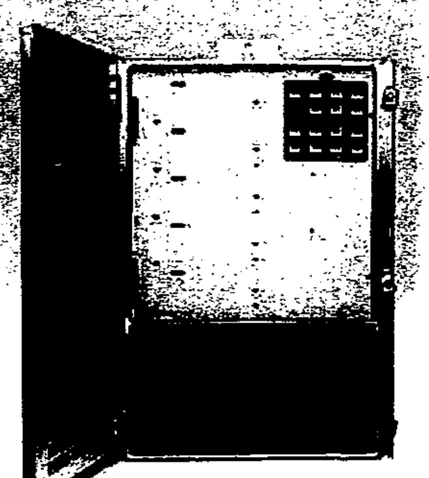
- **VAUXIN -** Auxiliary Board for Contact Closure Activation
- **VD2020LL-** 10 Digit DTMF Landline Activation
- **VD2020H -** 10 Digit DTMF VHF High Band / 150-170 Mhz
- **VD2020U -** 10 Digit DTMF UHF / 450-470 Mhz
- **VORTT -** Two-Tone Sequential

TWO-WAY CONTROLS

- **VAUXCS -** Two-Way Contact Closure Activation and Status Board
- **VC2020LL -** Two-Way Landline Activation
- **VC2020H -** 10 Digit DTMF VHF High Band / 150-170 Mhz
- **VC2020U -** 10 Digit DTMF UHF / 450-470 Mhz
- **VC2020NH -** 10 Digit DTMF VHF High Band Narrow-Band
- **VC2020NU -** 10 Digit DTMF UHF Narrow-Band

Options:

- **VFSKXMOD -** Converts the Siren Activation Controls to FSK Format
- **VSTATUS -** Cabinet Window LED Status Indicator
- **VPGINT -** Paging Interface to Interface Whelen Tones with Existing Paging Systems
- **VINTRU -** Intrusion Alarm (available with two-way only)



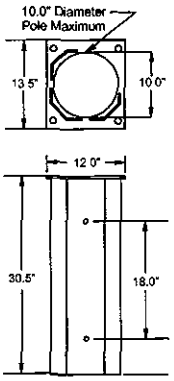
TYPE I ELECTRONIC CABINET (with service door open shows control panel and battery tray with optional batteries).

VORTEXR3

Specification Data

Component	Height Inches (CM)	Width Inches (CM)	Depth Inches (CM)	Weight Lbs. (kg)
VORTEXR3 Speaker & Rotor	49.0 (124.5)	28.5 (72.4)	56.0 (142.2)	212 (96.2)
Electronics Cabinet - Type I	32.5 (82.6)	22.5 (57.2)	10.5 (26.7)	76 (34.5)*
Pole Top Bracket (Optional)	30.0 (76.2)	12.0 (30.5)	10.0 (25.4)	71 (32.3)

*Less batteries. Two batteries, Delco DC74, add 90 Lbs (40.9kg)



Pole Top Bracket
(Optional VPTB)

ELECTRICAL

- **Battery Charger Input:** 120VAC, 60Hz, 7A Fuse
- **Battery Charger Output:** 28VDC, 5A#
- **Batteries:** 2-12V, 60AH Lead Calcium (user supplied)
- **Standby Current:** 40mA,
- **Rotor Motor:** <1A, 24VDC
- **Operating Current:** 66A, 24VDC
- **Power Amplifier Output Power:** 1200 Watts

 # UL recognized component

ENVIRONMENTAL

- **Operating Temperature:** -35C to +60C
- **Storage Temperature:** -65C to +125C
- **Humidity, Non Condensing:** 0 to 95%

ORDERING INFORMATION

BASIC SYSTEM INCLUDES ALL OF THE FOLLOWING:

- **VORTEXR3** - Speaker Assembly & Electronics Cabinet

OPTIONS:

- **VAUXIN** - Auxiliary Board for Contact Closure Activation
- **VAUXCS** - Auxiliary / Status Control Board for Contact Closure Activation and Status
- **VD2020LL - VD2020H, VD2020U** - One-Way Radio Control❶
- **VC2020LL, VC2020H, VC2020U** - Two-Way Radio Control / Status Monitoring, COMM/STAT™ ❶
- **VC2020NH, VC2020NU** - Two-Way Narrow-Band Radio Control / Status Monitoring, COMM/STAT™ ❷
- **VORTT** - Two-Tone Sequential
- **VFSKXMOD** - FSK Format
- **VSTATUS** - Cabinet Window LED Status Indicator
- **VPGINT** - Paging Interface to Interface Whelen Tones with Existing Paging Systems
- **VINTRU** - Intrusion Alarm
- **VSBC80** - Solar Power ❷
- **VTXKIT** - Uprade Kit to Upgrade VORTEXR3 into a VORTEXR4
- ***VPTB*** - *Speaker Pole Top Bracket*
- **BSETVOR** - One Pair of Batteries

NOTES

❶ 10 digit DTMF Controls • Landline • VHF High Band/150-170 Mhz • UHF/450-470 Mhz Our VHF High and UHF siren activation control packages include tone squelch, radio, radio interface, 2-3dB gain omni-directional antenna with bracket, 35' of RG58 antenna *cable and polyphaser.*

❷ Solar power option includes 2 - 80 watt panels, mounting bracket and regulator

❸ Contact Factory

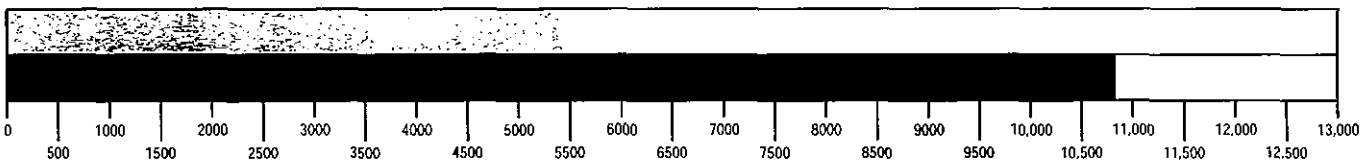
Acoustic Performance

SPL @ 100': 127dBC

Estimated 70dB range: 5,400'

Estimated 60dB range: 10,800'

Note: 100' performance levels listed represent repeatable results within +/-2dB to stated levels.
Estimated 70dB perimeter is based on the Federal Emergency Management Agency's (FEMA) -10dB per distance doubled path model.



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PUBLIC WARNING PRODUCTS
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041806-11359C

E2010
CENTRAL STATION CONTROL

WHELEN®

Encoder/Decoder

Control and monitor your siren warning system from a central location. The E2010 allows the user to issue system activations and collect remote siren status via RF link or landline.

Features Whelen's field proven COMM/STAT™ Command and Status Monitoring protocol, for fast, secure, and reliable communication.

The E2010 supports all of the features that are available in Whelen's High-Power Voice and Siren product line, from individual Command selection to user programmed command scenarios or Call Keys. With the selection of one Call Key, an operator may prompt the encoder to issue multiple commands.

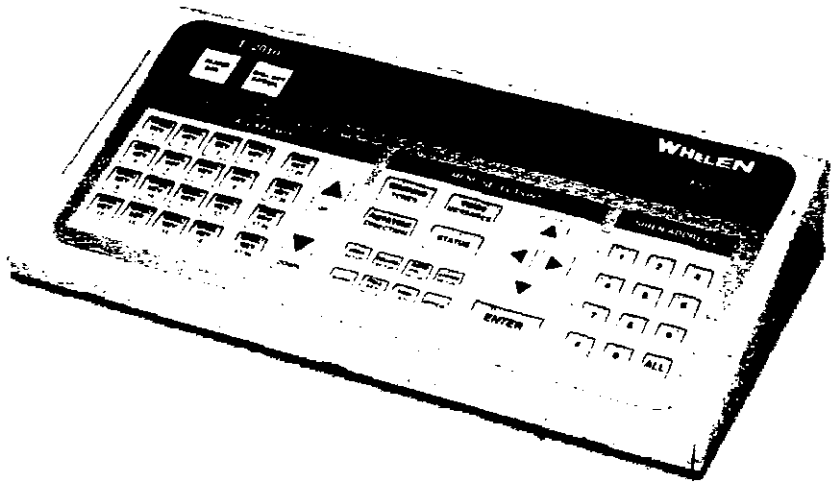
With the included computer accessory software, you can connect the E2010 to a PC for Windows® based programming and data archiving. Data is available through an ACCESS® data base.

E2010 FEATURES

- 4 line by 40 character backlit, LCD display
- 16 "HOT" Call Keys
- 40 Auxiliary Call Keys
- 2 Time-Of-Day Call Key Activations
- 4 Remote Input Call Keys
- Automatic System Polling
- Internal Alarm Tone
- 2 Contact Closure Outputs for Alarms
- Base Radio Interface
- Channel Grant Input for Trunking Radio Systems
- Optional FSK Signaling
- Security Keylock
- Printer Port
- Battery Backup for Time and Date
- Rugged, Membrane Keyboard
- Microphone for Public Address E2010

COMPUTER INTERFACE FEATURES

- CD-ROM and 9 Pin "D" Cable included
- "Windows®" Based Call Key Programming
- Add Call Key Descriptions
- Hard Drive Archive of All Siren Activity
- Selective Printouts for Status by Siren Location or Date



E2010
CENTRAL STATION CONTROL

Specification Data

GENERAL

The E2010 Central Station Control is configured to make maximum use of Call Keys or preprogrammed scenarios. In addition, commands are grouped into easy to follow categories for Warning Tones, Digital Voice Messages, Direction (if applicable) and Status. A numeric keypad section allows for individual remote siren addressing.

A 4 line by 40 character LCD display shows all Keyboard and Status activity. Command and Status information are also sent to a printer port and a serial communication port for a PC.

All preprogrammed functions are stored in non-volatile memory. Time and date are protected by internal, rechargeable batteries.

A keylock is available to disable the keyboard, but all status information is still active.

COMPUTER REQUIREMENTS

PC with 486DX or Higher CPU

WINDOWS® 95 or 98

CD-ROM Drive

Comm. Port

Hard Disk Space Required:
8 MB

PRINTER OPTION

Optional. 9 pin, dot matrix, 120 CPS, tractor feed, with parallel cable. Designed to be used with an Okidata #184 printer.

COMMUNICATIONS

Transmitter Connection:
(Typical 1 of 2 transmitters)

Squelch

Push to Talk
(N.O., N.C. Contacts)

Transmit Audio

Receive Audio

Channel Grant Active (for Trunking)

Signaling:
DTMF 2 of 8 Format. 10 Digit Transmit.14-18 Digit Receive.

Tone Level:
Audio Level Adjustable.

Transmitter Delay:
User Selectable Delay Times.

DIMENSIONS

Height: 3"

Width: 17"

Depth: 9"

Weight: 4.5 lbs.

ELECTRICAL

120 VAC, UL Listed, Wall Mount Transformer.

ORDERING INFORMATION

E2010
Central Station Control Unit.

E2010R
Central Station Control Unit (Rack Mount).

E2010P
Printer Option for Okidata #184 Printer and Cable.

E2010FSK
FSK Internal Option.

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070105-10884C

E969
ENCODER

WHELEN®

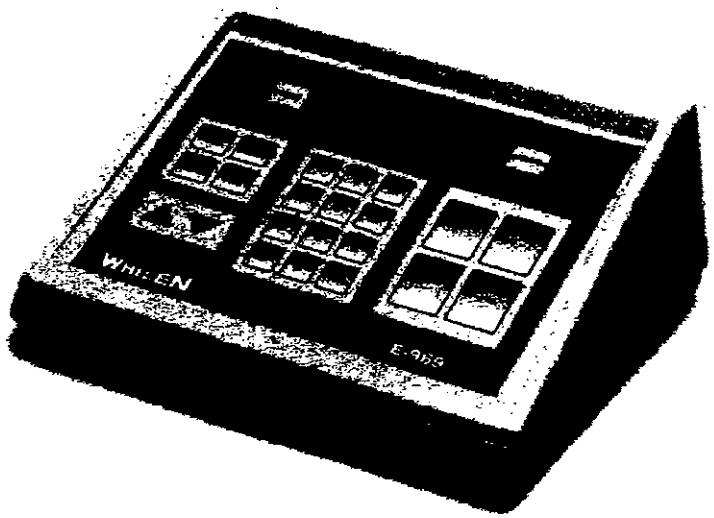
Activation Control

Ideal for medium sized warning systems.

The E969 encoder's four "Hot Keys" reduce complicated warning command scenarios to a simple two button procedure. A built-in time clock provides for "time of day" and "noon test" activation.

FEATURES

- Provides the state-of-the-art features and capabilities of more expensive encoding devices at an affordable price
- Easy to operate sealed 26 key membrane switch panel
- Battery back-up 24 hour clock, day of the week and stand-by message displayed when encoder is not in use
- Audio output, PTT (push to talk), squelch monitor input and channel grant input (for trunking radio environment)
- Microphone input and microphone level adjustment
- May be used for mobile applications
- Whelen ten digit DTMF signaling code provides extensive system configuration and security from false activation
- Durable and attractive ABS housing
- Includes two inputs for encoder "Call Keys" activation by a remote device with the use of a dry contact closure or equivalent
- Four "Call Keys" on the front panel for manual activation of user programmed command scenarios (multiple commands). Additional four "Call Keys" can be used by the remote inputs and time of day transmits
- Individual commands are simply selected by:
  1. Pressing a "Command Group" key
  2. SCROLL (with either the UP or DOWN scroll key) to select a command
  3. Enter the siren address by pressing the number keys or the "ALL" key
  4. Press the "SEND" key



E969
ENCODER

Specification Data

SPECIFICATION DATA

E969: 35 function encoder permitting individual selection of 1-9999 warning sirens or system "All Call." Compact desktop design with inclined sealed membrane keyboard.

Encoder can be set-up with a user friendly menu by using the display and keyboard, or with a personal computer with an RS-232 port. 12VDC nominal operation, furnished with U.L. listed wall mount transformer.

PHYSICAL DATA

Height: 4.3" (109mm)

Width: 10.0" (254mm)

Length: 8.0" (203mm)

Weight: 1.1 lb. (.50kg)

ELECTRICAL DATA

Power: 12VDC, nominal. The E969 is furnished with a UL listed 120VAC/12VDC wall mount transformer.

Current: 85 mA @12VDC typical, 300mA maximum.

Microphone: Ground, signal, PTT.

Connections: 2 part screw terminal.

Audio: 2 wire, 600 ohm transformer balanced, output adjustable 0-4vpp.

Control: 2 wire, transmitter PTT.

SIGNALLING

1 N.O. relay contact.

Contact Rating: 1/2a @ 120VAC, 1a @ 24VDC.

DTMF 2 of 8 format, Whelen *10 digit protocol.*

REAR PANEL CONTROLS

DTMF tone level: variable, 0-4vpp.

Microphone level: variable, 0-6vpp.

ENVIRONMENTAL DATA

Operating temperature: 0°C to +60°C.

Storage temperature: -20°C to +60°C.

Humidity: 0-95% non-condensing.

ORDERING INFORMATION

E969: 35 function

FSKCEO: Option to convert to FSK format

Optional: WPSNCMIC microphone

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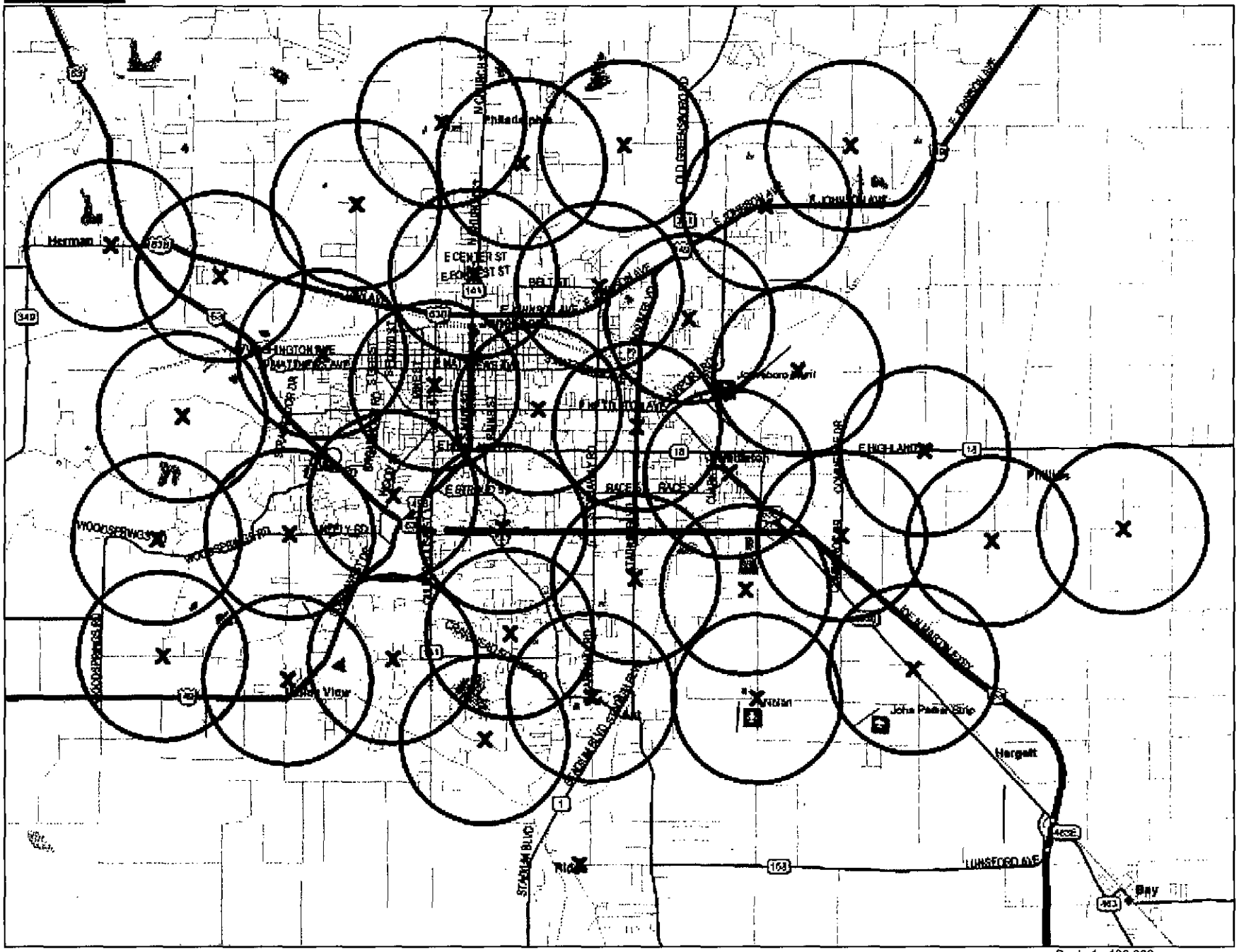


TN
MN (0.0°E)

Scale 1 : 100,000
1" = 1.58 mi
Data Zoom 11-0

SECTION 3

PROPOSER'S GENERAL QUESTIONNAIRE

Proposals must include responses to the questions contained in this Proposer's General Questionnaire. Proposer should reference the item number and repeat the question in its response. In cases where a question does not apply or if unable to respond, Proposer should refer to the item number, repeat the question, and indicate N/A (Not Applicable) or N/R (No Response), as appropriate. Proposer will explain the reason when responding N/A or N/R.

3.1 Proposer Profile

3.1.1 Legal name of Proposer company: Mo-Ark Communications & Electronics, Inc.

Address of principal place of business:2825 S. Division Blytheville, AR 72315
Address of office that would be providing service under the Agreement: 1809 E Parker Rd Jonesboro, AR 72404
Number of years in Business: 55
State of incorporation: Arkansas
Number of Employees: 15

Annual Revenues Volume: N/R Mo-Ark Communications is a privately held company and considers this information as confidential and proprietary.

Name of Parent Corporation, if any _____N/A_____

NOTE: If Proposer is a subsidiary, City of Jonesboro prefers to enter into a contract or agreement with the Parent Corporation or to receive assurances of performance from the Parent Corporation.

3.1.2 State whether Proposer will provide a copy of its financial statements for the past two (2) years, **if requested** by City of Jonesboro.

N/R Mo-Ark Communications is a privately held company and considers this information as confidential and proprietary.

3.1.3 Proposer will provide a financial rating of the Proposer entity and any related documentation (such as a Dunn and Bradstreet analysis) that indicates the financial stability of Proposer.

See attached Dunn & Bradstreet Report

3.1.4 The Proposer is NOT currently for sale or involved in any transaction to expand or to become acquired by another business entity?

3.1.5 Proposer will provide any details of all past or pending litigation or claims filed against Proposer that would affect its performance under the Agreement with City of

Jonesboro (if any). No Past or Present Litigation or Claims exist that would affect the performance received by the City of Jonesboro from Mo-Ark Communications.

3.1.6 Is Proposer not in default on any loan agreement or financing agreement with any bank, financial institution, or other entity?

3.1.7 Proposer will provide a customer reference list of no less than three (3) organizations with which Proposer currently has contracts and/or to which Proposer has previously provided services (within the past five (5) years) of a type and scope similar to those required by City of Jonesboro's RFP. Proposer will include in its customer reference list the customer's company name, contact person, telephone number, project description, length of business relationship, and background of services provided by *Proposer. The following are clients*

St. Charles County, MO

Rod Zerr-Director
St. Charles County Emergency Management
200 N. Second Street
St. Charles, MO 63301
636-949-3023
WPS 2806/2807/2907/2910

70 sirens 1994-present

Siren system design consulting

St. Louis County, MO

Mike Emken

St. Louis County Emergency Management

14847 Ladue Bluffs Crossing

Chesterfield, MO 63017

314-628-5406

12 WPS2908 installed since 2006

(St. Louis County has over 150 Whelen WPS 3000/4000 models)

Siren system upgrade consulting

Butler County, MO

Butler County Emergency Management/Homeland Security Agency

1617B North Main Street

Poplar Bluff, MO 63901

11-WPS 2800/2900 series sirens installed 2005/2006

System design and implementation

Note: WPS2900 series is the direct replacement for WPS 2800 series sirens. The difference between the two sirens is that the WPS 2900 series has an E-Z Pull™ assembly for the speaker driver on the siren speaker assembly

3.1.8 No relationship exist (whether by family kinship, business association, capital funding agreement, or any other such relationship) between Proposer and any employee of City of Jonesboro.

3.2 Approaches to Project Services

3.2.1 Proposer will provide a statement of the Proposer's service approach and will describe any unique benefits to City of Jonesboro from doing business with Proposer.

Mo-Ark Communications will provide a hands-on service approach to the City of Jonesboro. While contractors will be involved in some aspects of the installation of the City of Jonesboro's siren project Mo-Ark Communications will maintain staff on site to supervise and provide guidance for any issues that might arise during the project. The City of Jonesboro will find many benefits in doing business with a company located inside Jonesboro such as Mo-Ark Communications is. These benefits include faster response times to service issues, easier access to technical staff and a sense of greater concern for the project since Mo-Ark has employees, friends and family members that are directly impacted by the functionality and dependability of the City's tornado siren system.

Section 5.4 Scope of Work of this RFP.

3.2.2 Proposer will provide an estimate of the earliest starting date for services following execution of the Agreement.

Mo-Ark Communications estimates work to be started within 90 Days of an executed order.

3.2.3 Proposer will submit a work plan with key dates and milestones. The work plan should include:

3.2.3.1 Identification of tasks to be performed;

3.2.3.2 Time frames to perform the identified tasks;

3.2.3.3 Project management methodology;

3.2.3.4 Implementation strategy; and

3.2.3.5 The expected time frame in which the services would be implemented.

In response to 3.2.3 Mo-Ark Communications will, upon execution of an order, begin the planning and execution of the installation of tornado sirens within the City of Jonesboro. Contact will be made with appropriate agencies and City organizations to get clearance to "set poles" as needed, establish electrical drops and ensure proper placement is followed as specified by the City of Jonesboro. Planning meetings will need to take place between Mo-Ark Communications and the City of Jonesboro to ensure all aspects of the installation are completed as expected by the City. Mo-Ark Communications is dedicated to provide "Hand's On" project management throughout the project. Until all factors such as exact siren location selection and equipment is selection by the City of Jonesboro, Mo-Ark is unable to provide an exact implementation time frame.

3.2.4 Proposer will describe the types of reports or other written documents Proposer will provide (if any) and the frequency of reporting, if more frequent than required in the RFP. Proposer will include samples of reports and documents if appropriate.

3.3 General Requirements

3.3.1 Proposer will provide summary resumes for its proposed key personnel who will be providing services under the Agreement with City of Jonesboro, including their specific experiences with similar service projects, and number of years of employment with Proposer

See attached company Bio.

3.3.2 Proposer will describe any difficulties it anticipates in performing its duties under the Agreement with City of Jonesboro and how Proposer plans to manage these difficulties. Proposer will describe the assistance it will require from City of Jonesboro.

Mo-Ark Communications does not anticipate any difficulties performing duties under this agreement. Mo-Ark will require direct assistance from the City of Jonesboro in Coordinating Electrical Service to the Tornado Sirens, Selecting Exact Placement of Tornado Sirens and any other aspects of installation the city would like to be included in.

3.4 Service Support

Proposer will describe its service support philosophy, how is it implemented, and how Proposer
measures its success in maintaining this philosophy.

3.5 Quality Assurance

Proposer will describe its quality assurance program, its quality requirements, and how they are
measured.

3.6 Miscellaneous

3.6.1 Proposer will provide a list of any additional services or benefits not otherwise identified in this RFP that Proposer would propose to provide to City of Jonesboro. Additional services or benefits must be directly related to the goods and services solicited under this RFP.

3.6.2 Proposer will provide details describing any unique or special services or benefits offered or advantages to be gained by City of Jonesboro from doing business with Proposer. Additional services
or benefits must be directly related to the goods and services solicited under this RFP.

Mo-Ark Communications is located within the City of Jonesboro and has technical staff on hand for issues that may arise with the installation, service and troubleshooting of Tornado Siren Equipment, Encoders, Decoders and Two-Way Radio Activation equipment in Jonesboro.

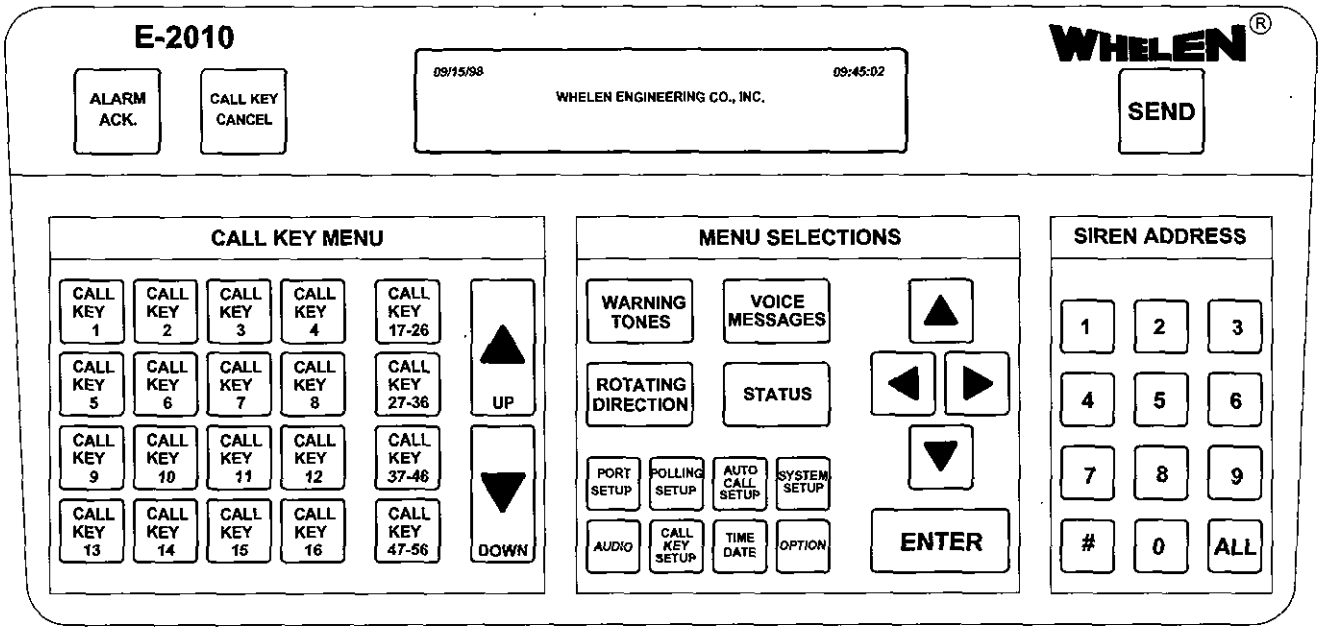
3.6.3 Does Proposer have a contingency plan or disaster recovery plan in the event of a disaster? If so, then Proposer will provide a copy of the plan.

Mo-Ark Communications is currently in the process of developing a Disaster Recovery plan that will include the efficient and timely recovery of their Tornado Siren and Two-Way Radio system clients. While this plan is not currently completed it is important to know that Mo-Ark Communications is an active Member of USMSS, the Association of Motorola Service Station and has the ability to request technical, emergency communications and project management staff from over 100 other Motorola Two-Way Radio Service shops as well as other Whelen Distributors.

OPERATION & INSTALLATION MANUAL

Basic description and operation
of the

E-2010 CENTRAL CONTROL STATION



PIONEERS IN WARNING SIGNALS

WHELEN®

ENGINEERING COMPANY, INC

Route 145, Winthrop Rd., Chester, CT 06412-0684
Tel.: (800) 63SIREN • Fax: (860) 526-4784

WHELEN ENGINEERING CO., INC.

E-2010 CENTRAL CONTROL STATION

OPERATION & INSTALLATION MANUAL

The purpose of this manual is to provide operation and installation information about the use of a Whelen Engineering Company, Inc. Model E-2010 Central Control Station.

Prior to reading this manual or using this product you should be familiar with Whelen Engineering Company's family of High Power Voice and Siren Systems.

Document # 04-0113382-00C
13382C

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Table of Contents

Introduction

The E-2010 Central Control Station is a full function, easy to use, activation and status display unit for Whelen's family of High Power Voice and Siren System products. The E-2010 uses Whelen's standard, reliable **10 digit DTMF communication protocol**.

The E-2010 is an attractive, desktop unit designed for simple connection to a base station transmitter. The E-2010 has a sealed membrane keyboard and a low power liquid crystal display. The typical warning activation sequence consists of selecting a **Call Key** or following a four step process.

There are 62 **Call Keys**, which allow the user to program and execute pre-defined scenarios. Sixteen of the Call Keys are "Hot Keys", while 40 of the Call Keys are auxiliary or low use functions. In addition, there are two Call Keys activated by Time-of-Day and four Call Keys Activated by Remote Activation inputs (as described in a later section).

Individual selection and activation may be done as follows:

1. Make a **Menu Selection**
2. Enter the four digit **Address**.
3. Select the **Channel**.
4. Press the **Send** button.

The user may select from different command, control, status or test functions. The E-2010 supports up to 10,000 unique addresses.

The liquid crystal display (LCD) is a 4 line by 40 character configuration. The display is backlit for easy reading in low ambient light. When the E-2010 is not in use, a running 24 hour clock, day of the week and a stand by message are displayed.

Internal batteries are continuously "trickle" charged, to provide long life. The E-2010 will maintain its internal clock for up to 3 months after being unplugged. The E-2010 comes with a UL listed, plug in, AC wall mount power supply.

Two rear panel, two-piece, screw terminal connectors are available for field wiring to two base station transceivers. Each connector supports transformer coupled audio, a Push To Talk closure, Squelch monitor input (active high or low), and Channel Grant input for trunking systems.

A software interface with a PC stores all communication activity to the hard drive. In addition, this software supports advanced data base handling for printing and manipulation of data.

Communication Protocol

The standard communication protocol for Whelen's High Power Voice and Siren System products is a 10 digit DTMF (Dual Tone Multi-Frequency) format. This means that the activation command consists of ten DTMF digits. The status feedback from a remote siren may have from 10 to 18 digits, depending on the type of feedback status.

The activation command structure is as follows:

Digits 1-3 = System Area Code
Digits 4-7 = Remote Siren Address Code
Digit 8 = Identification Number
Digit 9,10 = Command

Area Code

Each warning system receives a factory assigned area code. Consideration is given to frequency allocations to minimize the chance of false activation from a neighboring system.

Remote Siren Address Code

Each remote siren within a system is assigned a unique address. In order to accept a command string, the remote siren must receive the proper area code and address in the proper order, in a certain time span. A remote siren will reject any command string that does not meet these requirements.

System "all calls" are permitted through the use of the # symbol (or wildcard). The # may be used in all four address digits to communicate with all remote siren within the area code or the # may be used in specific positions to communicate with a group of remote sirens. The # may not be used in the area code.

Identification

The eighth digit identifies which Control Center transmitted the command. There may be up to eight centers within a system.

Command

These digits define the command. This information is provided for reference only, since in the E-2010 all commands are selected by name and all response strings are decoded into specific names.

(Do not confuse this with the Command Table used in Call Key programming.)

Getting Started

These are some general definitions which must be understood before using the E-2010.

KEYBOARD ENTRIES

SEND - Pressing the Send button will transmit a function. There is no second chance or "are you sure" warning.

CALL KEY - CANCEL This is a dual function button. Pressing this button, while a Call Key is in progress, will Cancel the Call Key. In addition, this button is used during Menu Selection operations to escape or restart an operation.

ALARM - ACK Pressing the Alarm Acknowledge button silences the internal alarm buzzer, if it is enabled. An Alarm Acknowledge message is printed. Output relays are turned off.

UP - (large Up arrow) Located in the Call Key Menu section. Used to scroll up through groups of Call Keys 17-26, 27-36, 37-46 or 47-56.

DOWN - (large Down arrow) Located in the Call Key Menu section. Used to scroll down through groups of Call Keys 17-26, 27-36, 37-46 or 47-56.

ENTER - Used to make selections in the Menu Selection portion of the keyboard.

 # - The "wildcard" address entry, it equals numerical entries 0 through-9.

ALL - A one button method for entering four # signs, for selecting all remote siren addresses in the system. This is sometimes referred to as "all call".

FUNCTION DEFINITIONS

CHANNELS - There are two communication channels, referred to as Channel 1 and Channel 2. This allows for operating with two radio frequencies or one RF link and one landline. Transmissions may be sent via either channel. Channel 1 is the default. Channel selection is part of every transmission.

POLLING - For feedback functions, the E-2010 automatically accesses each remote siren, one at a time, based on the addresses entered in Polling Setup. This saves the user a considerable amount of time in collecting information about an entire system. To initiate a Polling function, select a Status feedback Command. Use an address of ####, press ENTER, select the Channel and ENTER, and SEND. The following functions are supported by Polling:

Status Request
Active Status
Counter
Battery/AC
Battery/Temperature
Instant Status
Rotor Position
S/N Status

Menu Selections

This section describes the function of each button in the Menu Selection portion of the keyboard. In general, the Down arrow (within the Menu Selections portion of the keyboard) is used to scroll through the functions as listed below. The Up arrow (within the Menu Selections portion of the keyboard) may also be used to scroll up through the list. The four large buttons contain actual remote siren functions, such as Warning Tones or Status Requests.

WARNING TONES

CANCEL	Terminates all siren activity.
WAIL	Activates the Wail Tone.
ATTACK	Activates the Attack Tone.
ALERT	Activates the Alert Tone.
PUBLIC ADDRESS	Enables the Public Address mode.
AIR HORN	Activates the Air Horn Tone.
HI-LO	Activates the Hi-Lo Tone.
WHOOP	Activates the Whoop Tone.
NOON TEST	Activates the Noon Test function.

VOICE MESSAGES

MSG 1	Activates Digital Voice Message 1.
MSG 2	Activates Digital Voice Message 2.
MSG 3	Activates Digital Voice Message 3.
MSG 4	Activates Digital Voice Message 4.
MSG 5	Activates Digital Voice Message 5.
MSG 6	Activates Digital Voice Message 6.
MSG 7	Activates Digital Voice Message 7.
MSG 8	Activates Digital Voice Message 8.
MSG 9	Activates Digital Voice Message 9.
MSG 10	Activates Digital Voice Message 10.
MSG 11	Activates Digital Voice Message 11.
MSG 12	Activates Digital Voice Message 12.
MSG 13	Activates Digital Voice Message 13.
MSG 14	Activates Digital Voice Message 14.
MSG 15	Activates Digital Voice Message 15.
MSG 16	Activates Digital Voice Message 16.

ROTATING DIRECTION

NORTH	Positions a 4000 Series Siren to North.
EAST	Positions a 4000 Series Siren to East.
SOUTH	Positions a 4000 Series Siren to South.
WEST	Positions a 4000 Series Siren to West.
CLOCKWISE	Increments a 4000 Series Siren 45° CW.
COUNTER CLOCKWISE	Increments a 4000 Series Siren 45° CCW.
ROTOR POSITION	Rotor/speaker position request.

STATUS

SILENT TEST	Initiates the Silent Test function.
INST STAT	Get real time (instant) status of Remote Siren.
BATT/TEMP	Request battery voltage and cabinet temperature.

BATTERY/AC	Request battery voltage and AC line voltage.
STATUS REQ	Request the Status byte.
S/N STAT	Request signal to noise measurement.
S/N REQ	Executes the signal to noise check in the Remote Siren.
SIREN OFF	Disable the Tone Generator, digital voice is active.
SIREN ON	Enable the Tone Generator.
DIS-ARM	Disable the Instant Status response.
ARM	Enable the Instant Status response.
COUNT CLR	Clear the software tone activation counter to zero.
COUNTER	Request the software tone activation count.
STROBE TEST	EAS only. Strobevisor test.
STROBE OFF	De-activate a strobe through the Strobe Control Board.
STROBE ON	Activate a strobe through the Strobe Control Board.
TEST CLEAR	Clear LEDs and status.
ACTIVE STATUS	Request multiple system status parameters.

The eight small buttons are used to configure the control system. The programmable choices are presented on the display. In general, the Up and Down arrows scroll between the choices, and the Left or Right arrows toggle between the available choices, such as On or Off.

Note that in Auto Call Setup the Left and Right arrows scroll between the choices and the Up or Down arrows toggles between YES or NO.

PORT SETUP

Setup for the RS-232 communication port and the Printer port. The RS-232 port is dedicated to a PC operating Whelen supplied software. The parameters are:

PRINTER	ON or OFF	Use the Left or Right arrow to toggle.
SERIAL PORT	ON or OFF	Use the Left or Right arrow to toggle.

Printing and serial interface are discussed in other sections. Set to OFF if not used.

POLLING SETUP

Setup for Status polling routine. This is a list of all of the remote siren address in the system. Unused entries display as "EMPTY". To delete an entry, select "ALL".

AUTO CALL SETUP

Setup for automatic Time-of-Day Call Keys. A Call Key may be programmed to activate by day of the week and by the time of day. Time is entered as military time (24 hour time). The Call Key must still be programmed in the CALL KEY SETUP section. The Time-of-Day Call Keys are referred to as Call Keys #61 and #62.

Use the Left or Right arrows to scroll through the days of the week. Use the Up or Down arrows to toggle between Y to select the day or N to not select the day. The days are Sunday through Saturday. To get to the time, scroll right past the last S, for Saturday. Enter the activation time, in military (24 hour time), from the numeric keypad. Use the Left or Right arrows to move from time to the other Call Key. Do not use the scroll arrows in the time section, unless moving to the other Call Key. Press ENTER to save the setup.

SYSTEM SETUP

Setup for system variables. Use the Up or Down arrows to move through the choices. The following parameters are set in this section:

Area Code	3 digits. A value other than 000 must be entered.
Xmitter Up	Radio transmitter warm up time, in seconds or tenths of seconds. A value other than 0 must be entered.
Base ID	Base Station identification number, 0-7, for systems with more than one E-2010.
Ch Grant Wait	Channel grant waiting time, in seconds. For trunking radios only. The time that the E-2010 waits until aborting a transmission, if Channel grant is not received.
Ch Grant Delay	Channel grant delay time, in seconds. The time that the E-2010 holds off the transmission following the receipt of Channel Grant.

AUDIO

Audio output control. Use the Up or Down arrows to move through the choices. The following functions are set in this section:

Speaker	The speaker may be Off or set to Radio Channel 1 or 2. The speaker monitors any audio on the selected Channel.
Microphone	The Public Address microphone may be Off or set to Radio Channel 1 or 2.
Buzzer	The Low Battery or Intrusion Alarm Buzzer may be On or Off.

CALL KEY SETUP

Setup for all Call Keys. Refer to the Call Key Section of the Manual.

TIME DATE

Routines for entering current time and date. Use to set the day of the week, the time and the date. Day of week must be set for Auto Call Keys. Use the Up or Down arrows to select the day. Use the numeric keypad to set time and date. Time is military time (24 hour time).

OPTION

Reserved for future use.

NOTE:

While in the Menu Selections portion of the keyboard, pressing CALL KEY CANCEL will return the E-2010 to the standby screen.

Call Keys

Call Keys are the easiest way to manage a siren system, for typical day-to-day situations. In general, a Call Key is a preprogrammed scenario or sequence of commands, where each command is separated by a time period. For example, a Wail command is issued to all addresses, followed by a one minute run period, then a Cancel is sent, followed by a five second period, next a Digital Voice command is sent, followed by a 30 second period, then a Cancel, followed by a five second period, and so on. The Call Key may contain any of the commands listed in the Command Table. Each entry is referred to as a sequence. A single Call Key may have up to 99 sequences (01-99), however, the total number of Call Key sequences must be less than 2500. When a Call Key is selected and sent, it starts with sequence 01 and continues until the last programmed sequence, it does not repeat. A Call Key can not activate another Call Key.

There are a total of 62 Call Keys in the E-2010. Sixteen of the Call Keys are "hot" Call Keys, that is, they are available at the press of a single button, followed by SEND. These are labeled Call Key 1 through Call Key 16. Four additional buttons provide 40 auxiliary Call Keys, in groups of ten. To use an auxiliary Call Key, press the group button, use the large Up or Down arrows to scroll to the desired Call Key and press SEND. Four more Call Keys, numbers 57-60, are activated by remote inputs. These are described in another section. Call Key 61 and Call Key 62 are available as Time-of-Day functions. These are described in another section.

A Call Key in progress may be canceled by pressing the CALL KEY CANCEL button

CALL KEY PROGRAMMING

Call Keys are programmed one sequence at a time. Each sequence consists of a sequence number, a command (entered by command number from the Command Number Table), a time (the time period before the next sequence) and finally the selection of an Edit function. Normally the function will be Insert, when creating a new Call Key. However, it may be Modify, Finish or Delete. These will be discussed later.

The small Down arrow is used to scroll through the Call Key programming routine. Upon entering the Call Key Setup, a screen will appear as shown.

```
CALL KEY SETUP MENU

CALL KEY = >#
EDIT MODE = OFF      PRINT MODE = OFF
```

The cursor is the small arrow pointing to the right. With the cursor at the Call Key # entry, use the numeric keypad to type the number of the Call Key which is to be programmed.

Use the small Down arrow (in the Menu Selection portion of the keyboard) to move the cursor to Edit Mode. Use the Left or Right arrow to toggle the Edit Mode to ON. Press ENTER. A new programming screen will appear as shown.

```
SEQ #01   CHAN 1       >S#1
CMD=>                   S#2
ADDR=                   S#3
TIME=              EDIT=  Insert
```

The cursor is at the command prompt. Referring to the Command Number Table, type a command number, from the numeric keypad. Use the small Down arrow to move the cursor to the Address prompt. Type the address from the numeric keypad. Use the small Down arrow to move the cursor to the time

prompt. Type the time, in seconds, between this sequence and the next sequence. Use leading zeroes for values less than 100 seconds. Use the small Down arrow to move the cursor to the EDIT= prompt. Press ENTER. S#1 now displays the first sequence. Program sequence 2, starting with the command and continue as above.

After inserting the last sequence, scroll Down to Edit, then use the Left or Right arrow to select Finish and press ENTER.

MODIFY A CALL KEY

A Call Key may be modified one Sequence at a time. Enter Call Key Setup, a screen will appear as shown.

```
            CALL KEY SETUP MENU

CALL KEY = >#
EDIT MODE = OFF      PRINT MODE = OFF
```

The cursor is the small arrow pointing to the right. With the cursor at the Call Key # entry, use the numeric keypad to type the number of the Call Key which is to be modified.

Use the small Down arrow (in the Menu Selection portion of the keyboard) to move the cursor to Edit Mode. Use the Left or Right arrow to toggle the Edit Mode to ON. Press ENTER. A new programming screen will appear as shown.

```
SEQ #01  CHAN 1       >S#1
CMD=>                  S#2
ADDR=                  S#3
TIME=              EDIT=  Modify
```

The cursor is at the command prompt. Use the Down arrow to scroll the cursor around to the Sequence #. Use the Left or Right arrow to move through to the desired Sequence #. Use the Down arrow to scroll to the parameter that is to be modified. Type in the modification. Use the Down arrow to scroll to EDIT=, use the Left or Right arrow to select Modify, press ENTER.

After completing any modifications, scroll Down to Edit, then use the Left or Right arrow to select Finish and press ENTER.

DELETE A CALL KEY

A Call Key may be deleted one Sequence at a time. Enter Call Key Setup, a screen will appear as shown.

```
            CALL KEY SETUP MENU

CALL KEY = >#
EDIT MODE = OFF      PRINT MODE = OFF
```

The cursor is the small arrow pointing to the right. With the cursor at the Call Key # entry, use the numeric keypad to type the number of the Call Key which is to be deleted.

Use the small Down arrow (in the Menu Selection portion of the keyboard) to move the cursor to Edit Mode. Use the Left or Right arrow to toggle the Edit Mode to ON. Press ENTER. A new programming screen will appear as shown.

```
SEQ #01  CHAN 1       >S#1
CMD=>                  S#2
ADDR=                  S#3
TIME=              EDIT=  Delete
```

The cursor is at the command prompt. Use the Down arrow to scroll the cursor around to the Sequence #. Use the Left or Right arrow to move through to the desired Sequence #. Use the Down arrow to scroll to the parameter that is to be deleted. Use the Down arrow to scroll to EDIT=, use the Left or Right arrow to select Delete, press ENTER.

After completing any deletions, scroll Down to Edit, then use the Left or Right arrow to select Finish and press ENTER.

FINISHING A CALL KEY

All operations, such as, inserting, modifying or deleting, must be completed before finishing with a Call Key. To Finish, use the Down arrow to scroll through to the EDIT= option. Use the Left or Right arrow to select Finish and press ENTER.

PRINTING AN INDIVIDUAL CALL KEY

Call Keys may be printed individually or in entirety. To print a single Call Key, press Call Key Setup, a screen will appear as shown.

```
CALL KEY SETUP MENU

CALL KEY = >#
EDIT MODE = OFF      PRINT MODE = OFF
```

The cursor is the small arrow pointing to the right. With the cursor at the Call Key # entry, use the numeric keypad to type the number of the Call Key which is to be printed. Use the Down arrow to scroll to PRINT MODE =. Use the Left or Right arrow to toggle to On. Press ENTER to print.

PRINTING ALL CALL KEYS

To print all Call Key, press Call Key Setup, a screen will appear as shown.

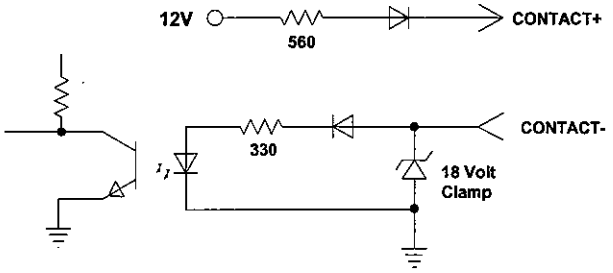
```
CALL KEY SETUP MENU

CALL KEY = >#
EDIT MODE = OFF      PRINT MODE = ALL
```

Use the Down arrow to move the cursor to PRINT MODE =. Use the Left or Right arrow to toggle to All. Press ENTER to print all of the Call Keys.

REMOTE INPUT CALL KEYS

The E-2010 may be activated from four remote inputs. The typical remote input circuit is shown. A contact closure, capable of sinking at least 10 mA, will activate the E-2010. The closure must remain active for a minimum of 1/2 a second.



The remote input activates Call Keys #57, #58, #59 or #60. These Call Keys are programmed just like Call Keys 1-56, as previously described.

TIME-OF-DAY (Automatic) CALL KEYS

There are two Call Keys that will automatically activate based on the day of the week and the time of the day. Refer to Auto Call Setup for more information.

These Call Keys are #61 and #62. These Call Keys are programmed just like Call Keys 1-56, as previously described.

NOTE:

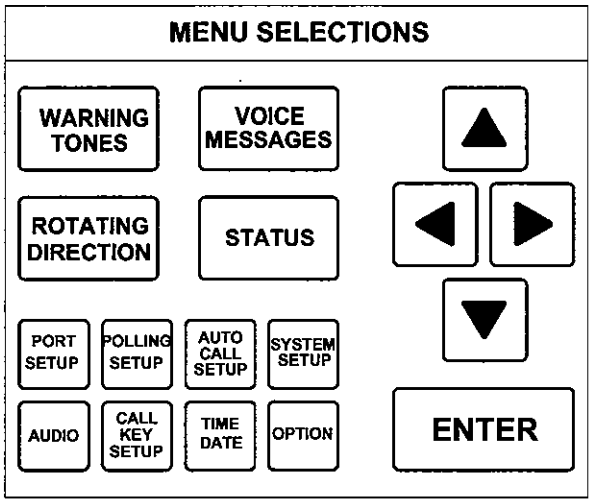
Any active Call Key may be terminated by pressing CALL KEY CANCEL. The E-2010 will return to the standby screen.

COMMAND NUMBER TABLE

00 = Cancel	49 = Voice Message 1	09 = North	15 = Silent Test
01 = Wail	50 = Voice Message 2	10 = East	63 = Active Status
02 = Attack	51 = Voice Message 3	11 = South	30 = Test Clear
03 = Alert	52 = Voice Message 4	12 = West	57 = Strobe On
04 = Public Address	53 = Voice Message 5	13 = Clockwise	58 = Strobe Off
05 = Air Horn	54 = Voice Message 6	14 = Counter Clockwise	37 = Strobe Test
06 = Hi-Lo	55 = Voice Message 7	21 = Rotor Position	22 = Counter
07 = Whoop	56 = Voice Message 8		23 = Counter Clear
08 = Noon Test	59 = Voice Message 9		24 = Arm
	60 = Voice Message 10		25 = Dis-Arm
	61 = Voice Message 11		26 = Siren On
	62 = Voice Message 12		27 = Siren Off
	17 = Voice Message 13		28 = S/N Request
	18 = Voice Message 14		29 = S/N Status
	19 = Voice Message 15		31 = Status Request
	20 = Voice Message 16		33 = Battery/AC
			34 = Battery/Temperature
			35 = Instant Status

Menu Activation

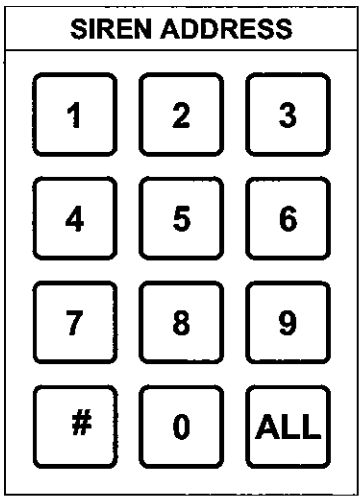
As an alternative to Call Keys, a second way of operating the E-2010 is to use a 4 step procedure of selecting individual functions and addresses through the Menu Selections and Siren Address sections of the Keyboard.



Step 1 involves the center portion of the keypad, as shown. Choose from the Menu Selections by pressing one of the four large buttons, as previously described. The display will show the first entry in the selected group. Use the Up or Down arrows to scroll through the functions, within the selected group, stopping at the desired function. Typically, scrolling starts with the Down arrow.

The four large buttons are directly related to Remote Siren activation and status. The eight smaller buttons are Setup and Configuration controls. Do not access one of the eight smaller buttons during activation.

Step 2 involves the right-hand portion of the keypad, as shown. Enter the four digit address of the target remote siren. The address is entered with the most significant bit first. The # sign represents a "wildcard" or all values 0 to 9. ALL is a quick way to enter four # signs, to select all sirens in the system. Press "ENTER" to accept the screen and to continue.



Example: To enter the address 1234, the press 1 first, then 2, then 3, and 4 is last. The display will change as shown below.

ADDR = 1???
ADDR = 12??
ADDR = 123?
ADDR = 1234

Note that entering more than four values will "bump" the address to the left. For instance, assume the user presses the 5 key, at the end of the previous example. The address will change to 2345.

Step 3 consists of selecting communication channel 1 or 2. The default is 1. Press "ENTER" to accept the screen and to continue.

Step 4, press "SEND" to make the transmission. **This sends the command. There is no second chance!!**

Printing

The E-2010 supports an OKIDATA 184, 9 pin, dot matrix printer. All communication activity, information that is transmitted or received, is printed. A typical printout consists of: Time, Type (transmit or receive), Channel #, Raw Message (DTMF string), and the Decoded Message as shown.

```
TIME          T/R    CHAN#        RAW MESSAGE                DECODED MESSAGE
=============================================================================
09:25:56      TMX    CHAN#1       123-4502-101               ENCODER#1     WAIL

09:26:14      TMX    CHAN#1       123-4502-13F               ENCODER#1     ACTIVE STATUS

09:26:16      REC    CHAN#1       123-4502-8FF-0100AD00                    ACTIVE STATUS

                                                             ACTIVE CMD-   WAIL
                                                             DRIVER/AMPS-  FAIL
                                                             BIAS          OFF
                                                             INTRUSION     OK
                                                             STROBE        OK
                                                             SUPERVISION   OK
                                                             BATTERY VOLTAGE - 23.7VDC
                                                             AC VOLTAGE      - 0VAC
```

In addition to the typical printout, the E-2010 prints the results of a polling function for quick reference, as shown.

```
                    POLLING RESULTS
SIRENS POLLED - 4
NO RESPONSE   - 1
       4503
STATUS ERRORS - 1
       4506
LOW BATTERY   - 0
LOW AC PWR    - 1
       4506
```

The E-2010 will store a small amount of print information if the printer is disconnected or turned off. Typically, this is from 6 to 8 lines of data. This buffer is printed when the printer is reconnected or turned back on.

The proper way to prevent printing is to select printer Off, through the Port Setup function, in Menu Selections.

The printer is an option. Refer to the Okidata manual for more information regarding printer operation.

Alarms

There are two remote siren conditions which will cause an alarm in the E-2010. They are Low Battery and Intrusion.

Upon receipt of either alarm, the E-2010 sounds the internal buzzer (assuming it is enabled, see AUDIO in the Menu Selections section) and activates the appropriate output relay. There are two relay closures. One is for Low Battery and one is for Intrusion. Each closure is rated at 1/2 amp @ 120 VAC or 1 amp @ 24 VDC. The connections are described in the Installation section.

Pressing ALARM ACK silences the buzzer and turns off the relay.

PC Interface

If desired, the E-2010 can interface with a personal computer (IBM compatible running Windows 95) through an RS-232 Serial Communication port. Software is included to allow for the following:

Storing data to the hard drive.
Selectable printing, based on site or date.
Call Key programming (instead of using the E-2010 keyboard).
Call Key descriptions.
Storing data in a format compatible with Microsoft Access.

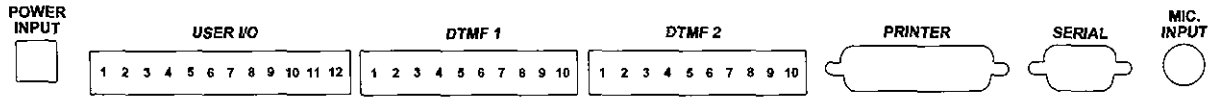
Follow the installation instructions on the CD-ROM to install and operate the interface software. Use the 9 position D connector cable to connect the Serial port of the E-2010 to a Serial communication port on the PC.

> Note:
>
> The E-2010 operates independent of the PC. Therefore, even if the PC is doing something else or is **off**, the E-2010 continues to operate normally.

Installation

This step-by-step procedure for installing the E-2010 is intended for use by a qualified radio technician. A Phillips screwdriver and a very small flat blade screwdriver will be required for setup.

1. Inspect the E-2010 for any physical damage.



2. Look at the rear panel. From left to right are the following:

   AC/DC wall mount power input plug.
   User I/O connections.
   DTMF Channel 1 connections.
   DTMF Channel 2 connections.
   Printer connector to Okidata.
   Serial connector to PC.
   Microphone input jack.

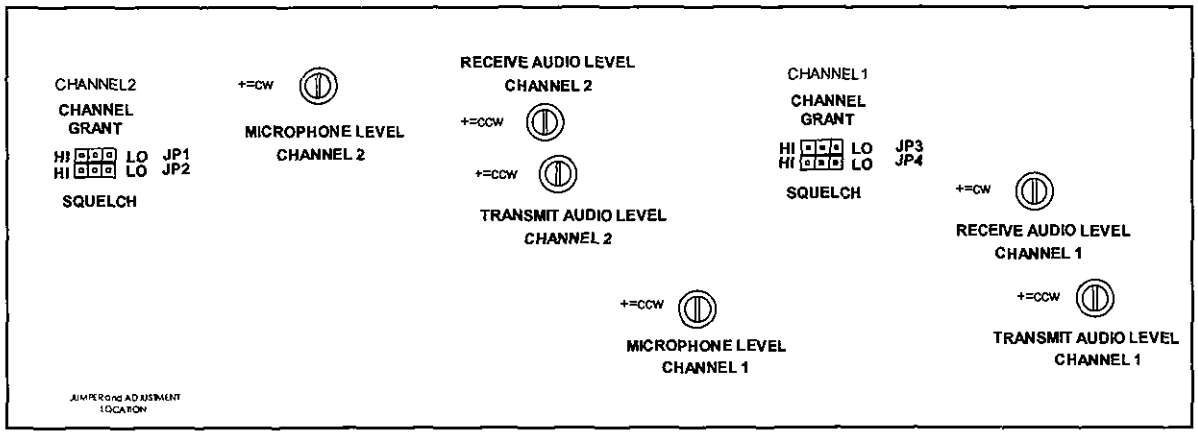
3. Make the Channel 1 DTMF transceiver (and Channel 2, if used) connections at pins 1 through 10. Channel Grant applies to trunking systems only.

Pin	Signal	
1	Push To Talk	Output
2	Push To Talk	Output
3	Audio Out	Output
4	Audio Out	Output
5	Squelch In	Input
6	Ground	
7	Channel Grant	Input
8	Audio In	Input
9	Audio In	Input
10	Ground	

4. Make any User I/O connections at the 12 position connector as follows:

Pin	Signal		
1	Remote Closure 2	Output	(Intrusion)
2	Remote Closure 2	Output	
3	Remote Closure 1	Output	(Low Battery)
4	Remote Closure 1	Output	
5	Remote Call Key 1	Input	(Call Key 57)
6	Remote Call Key 1	Input	(Call Key 57)
7	Remote Call Key 2	Input	(Call Key 58)
8	Remote Call Key 2	Input	(Call Key 58)
9	Remote Call Key 3	Input	(Call Key 59)
10	Remote Call Key 3	Input	(Call Key 59)
11	Remote Call Key 4	Input	(Call Key 60)
12	Remote Call Key 4	Input	(Call Key 60)

5. Remove the two upper Phillips Head screws from each side and three from the back of the unit to access the circuit board. **Slowly** lift the cover off, trying not to pull any of the connections apart. Locate the jumpers and adjustment potentiometers in the center section of the circuit board.



6. The **Squelch** signal and the **Channel Grant** signal (Channel Grant is for trunking radio transceiver only) may be active high or active low. The active state must be set by two jumpers, *inside of the E-2010. The settings must be made for both channels, if both are in use. Determine* the active state of the radio transceiver Squelch signal, and the Channel Grant signal (if applicable) and set the jumpers, as shown to the right. Place the jumper in the "H" position for active high or "L" for active low. Factory settings are active high.

7. *Plug the AC wall mount into a 115 volt AC source.*

8. Set the DTMF **Transmit Audio Level**, for **Channel 1**. With the E-2010 on, Send the CANCEL Command to siren address 0001. While the tone is transmitting, adjust the level potentiometer for 2.5 KHz deviation. Repeat this step as needed to adjust the level. Repeat for Channel 2, if required.

9. Set the **Microphone Level**, for **Channel 1**. Plug the microphone into the MIC jack. Key up the microphone and adjust the Microphone Level potentiometer for 4 KHz deviation, while speaking into the microphone.

   Note: The microphone is <u>not</u> included. Refer to Model WPSNCMIC, part # 01-0245719-00.

10. **Receive Audio Level** is factory set for an input signal of 0 to -10dB.

11. The speaker volume potentiometer is located through the small access hole on the right side of the E-2010.

Located at the left rear of the E-2010 is a **security keylock**. Turning the key off will disable all keyboard entries.

TROUBLESHOOTING

PROBLEM	SOLUTION
Display and backlight are blank.	Check AC power and DC power pack connection.
Time clock is active, keyboard does not function.	Security switch is off.
Command is sent, but display still reads "transmitting".	Area code is still at 000, must be set. Transmitter warm-up is still 0.0, must be set to a value other than 0.
No PC interaction.	Cable is not connected or the serial port is "off" in Port Setup.
No printer interaction.	Cable is not connected or the printer port is "off" in Port Setup.
Polling function does not work.	Remote siren addresses were not entered in Polling Setup.
Time clock does not maintain time.	Check internal battery voltage. Replace if less than 2.5 volts DC.

SPECIFICATIONS

GENERAL -

Input Power:	12 volt DC nominal, 185 mA typ., 300 mA max. UL listed wall mounted transformer.
Physical:	Desktop design, almond color. 3" H x 17" W x 9" D. 4.5 pounds.
Environmental:	Operating temperature, 0°C to +60°C. Storage temperature, -20°C to +60°C. Humidity, 0-95%, non-condensing.
Audio:	2 wire, 600 Ω transformer balanced, adjustable.
Control:	Normally open relay for Push To Talk. Contact rating, 1/2 A @ 120 VAC, 1 A @ 24 VDC.
Signaling:	DTMF format, 2 of 8, Whelen 10 digit protocol.

REAR PANEL -

DTMF Tone Level:	Variable, 0-4 Vpp.
Microphone Volume:	Variable, 0-6 Vpp.
Microphone Jack:	Ground, Signal, PTT.
Relay Closure Outputs:	(2) Rated at 1/2Amp @ 120 VAC, 1 Amp @ 24 VDC.
Connectors:	Two part, screw terminal, Phoenix brand or equivalent.

D&B Business Solutions

Credit eValuator Plus Report

Mo-Ark Communications And Electronics, Inc.
2825 S Division St
Blytheville, AR 72315
Phone: 870 763-9441
D-U-N-S Number: 03-544-6244

Report as of : August 26, 2008 **

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Credit Information | **Payment Trend**

**Included with this Credit eValuator Report are continuous tracking of key business changes and free Alert messages in the View My Reports/Alerts page. You can also choose to receive e-mail notifications of the important changes. IMPORTANT NOTE: You will not receive e-mail alerts if you have opted out of receiving communications from D&B.

Risk Summary

Lower Risk Higher Risk

Risk of Late Payment

Risk of late payment is based on the following prioritized factors in addition to other information in D&B's files:

- *No factors available*

Indications of slowness can be the result of disputes over merchandise, skipped invoices, etc.

Unchanged

Payment Performance Trend

The payment performance trend for this company is Unchanged. The most recent payment information in D&B's files is:

- *Payments currently: on terms.*
- Payments 3 months ago: on terms.
- Industry average: 5 days beyond terms.

*Note: Payments to suppliers are averaged weighted by dollar amounts.

Credit Limit Recommendation

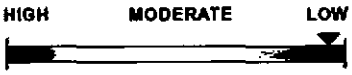
Recommendation Date: **AUG 26 2008**

D&B's Recommendations:

Conservative Credit Limit: **$25,000**

Aggressive Credit Limit: **$50,000**

Risk category for this business: ***LOW***



Risk is assessed using D&B's scoring methodology and is one factor used to create the recommended limits. See Help for details.

Company Profile

Chief Executive:	Stephen W Hubbard, Pres	**Line of business:**
Type of business:	Corporation	Radio, Television, And Electronic Stores
Years in business:	54	Radio And Television Repair
Employees total:	18	

Legal Filings and Other Important Information

Bankruptcies:	None
Judgments:	None
Liens:	None
Suits:	None
Negative Payment Experiences:	None
Payments Placed for Collection:	None

SPECIAL EVENT : 04/28/08

D&B has made multiple requests for an updated financial statement from this business. The business has yet to provide this information. If an updated financial statement is received, it will be promptly made available in the Finance and/or Statement Update section.

Need more in-depth information and analysis? *Upgrade to the Comprehensive Insight Plus Report* and receive the credit for the amount of your evaluator purchase

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Sales e-mail: iowsales@whelen.com
Customer Service e-mail: iowserv@whelen.com

VORTEX™ SERIES SIREN SYSTEM

INSTALLATION, OPERATING & TROUBLESHOOTING MANUAL

Form No.13168H (022406)

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Chapter 1: Installation

Chapter 2: Operation

Chapter 3: Troubleshooting

Illustrations

Fig. 1: Sample Station Drawing (AC Powered Battery Charger)

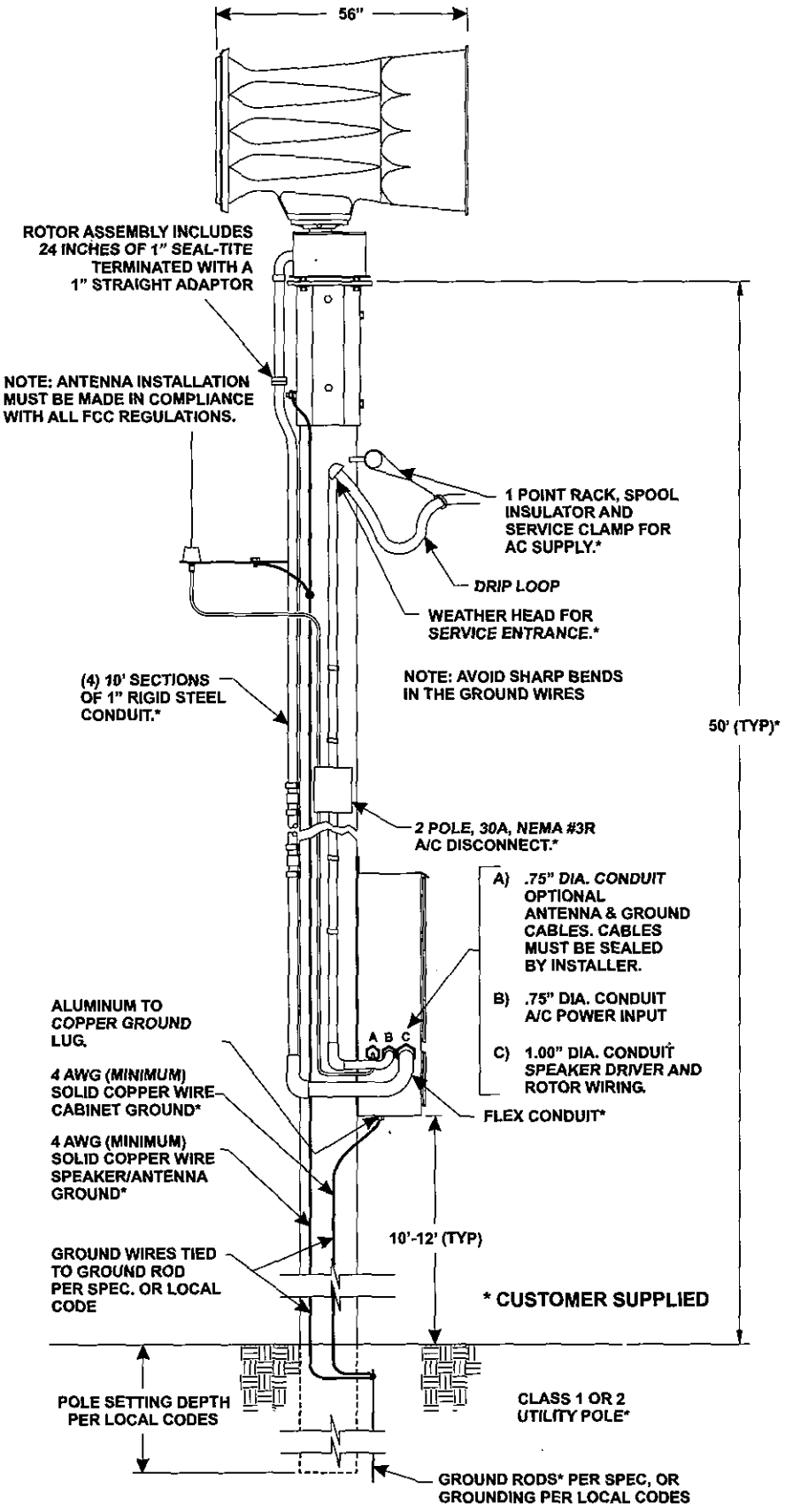
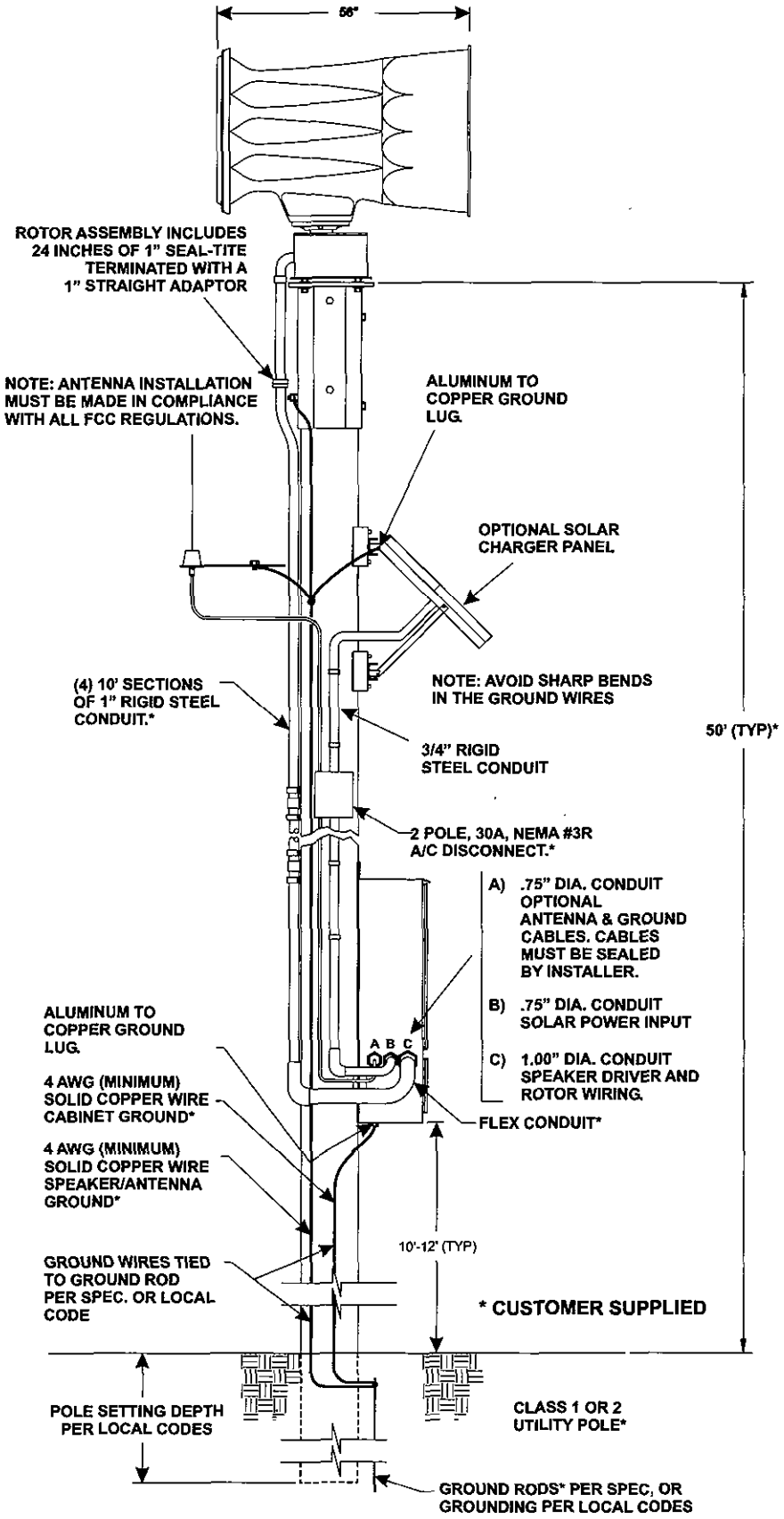


Fig. 2: Sample Station Drawing (Optional Solar Powered Battery Charger)



CHAPTER 1: INSTALLATION

An Important Note to the Installation Technicians...

The installation of this product requires careful planning and attention to detail! The installation of this system should NOT be attempted by individuals without experience in the disciplines necessary to this procedure (i.e. High-voltage electrical wiring, utility pole installation, etc.).

IMPORTANT! Installation of the NEGATIVE battery cable onto the NEGATIVE (-) battery terminal should ALWAYS be the LAST electrical connection made!

IMPORTANT! ALWAYS remove the NEGATIVE battery cable from the NEGATIVE (-) battery terminal BEFORE begining ANY electrical service/repair within the cabinet!

The installation of the Vortex station provided in this manual follows a logical progression. This process is not arbitrary and was developed using information gathered from both the manufacturer and experienced field technicians. Deviations from any of these procedures are not recommended unless they are in contradiction with local codes. IN ALL INSTANCES, LOCAL CODES TAKE PRECEDENT OVER PROCEDURES OUTLINED HEREIN.

It is the responsibility of the installation technicians to read this entire manual. The installation procedure should not begin until all personnel are familiar with the entire process. The overall process includes the following:

Installation sequence

1. Site Selection
2. Utility Pole Preparation
3. Mount Pole Top Bracket and Ground Wire
4. Mount Electronic Cabinet to Pole
5. Mount Siren Assembly to Pole Top Bracket and Conduit to Pole
6. Set Utility Pole
7. Prepare and Mount Antenna Assembly (if present)
8. Prepare and Mount Solar Panels and Conduit (if present)
9. Installation of AC or Solar Service and Batteries
10. Confirm Proper System Operation

Introduction

The Vortex™ is an outdoor, public warning siren, ideally suited for firehouse and community warning applications. A standard Vortex™ consists of a rugged speaker array, mounted on a rotor assembly and a self contained electronics control cabinet.

The Vortex™ is designed for easy installation and easy operation. The speaker array is factory mounted on to the rotor. The speaker drivers and rotor motor are factory wired, with the cable exiting through a piece of flexible conduit.

The electronics cabinet contains all of the control electronics and an isolated battery compartment. This means that there is only one cabinet to install, which simplifies the installation.

Operation is further simplified by the presence of LED indicators on all of the key components of the Vortex™. In addition to the status LED's the Vortex™ is equipped Whelen Engineering's patented SI-TEST® as a standard item.

Complete details about installation, operation, and service will be covered in this manual. A complete review of the manual is recommended to ensure the best possible siren results.

Section I: Site Selection

The site selection for the Vortex requires careful consideration in order to achieve the optimum coverage of the siren station. For a guideline to system planning, sound propagation and site selection we direct the user to the Federal Emergency Management Agency's "Outdoor Warning Systems Guide, CPG 1-17."

The Location of the siren site should be reviewed for its compatibility with its surroundings such as private homes, schools and hospitals. The user is cautioned to consider the use of hearing protection devices for service personnel working in close proximity to the speaker cluster.

Access to the siren site is important from the standpoint of service, maintenance inspection and access to a utility service connect.

Site locations for radio controlled units should be reviewed for radio reception.

Section II: Utility Pole Preparation...

a) Pole Selection

Note: **This installation manual will address the procedures applicable to wooden utility poles of specific size and dimensions. Procedures for poles consisting of other materials (steel, concrete, etc.) are not addressed within this document. The information presented, however, provides the necessary data and guidelines for a successful installation regardless of pole material.**

A Vortex system may use a Class 1 or Class 2 utility pole. The total length of the pole referenced within this document is 60 feet. The pole depth of the set pole is 10 feet, leaving a 50 foot pole as measured from the top of the pole to the ground. The utility pole should be set in accordance with local codes.

The inside area of the pole top mounting bracket will accept a pole that is no greater than 10.00" in diameter. On large scale projects, it is beneficial to order the pole to be "gained" to a top diameter of 9.5" +/- .50" for the top 30" section of the utility pole.

b) Component Dimensions

The utility pole may be pre-drilled prior to installation. The dimensions for all potentially mounted equipment are as follows:

Fig. 3: Pole Top Mounting Bracket Dimensions

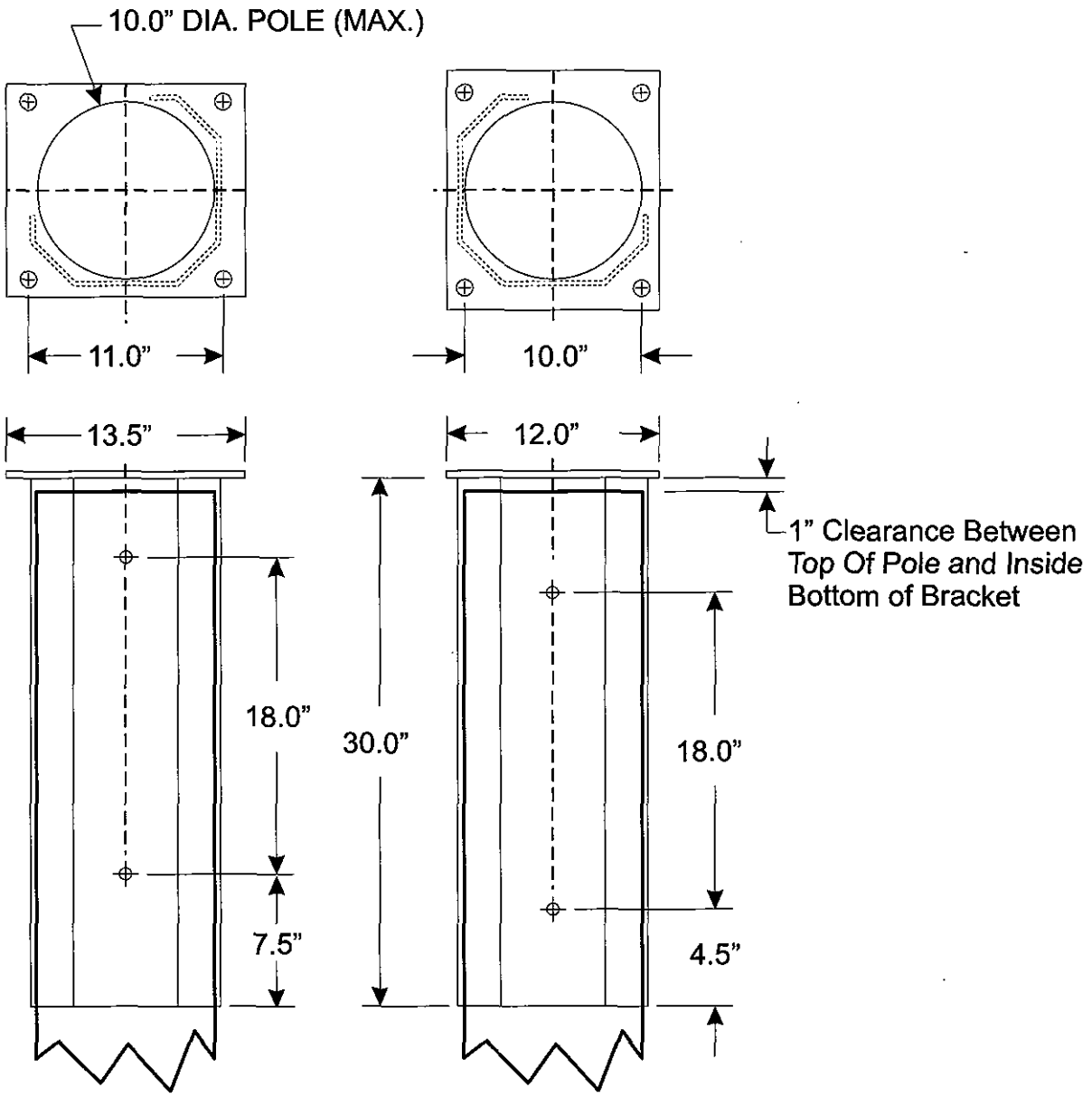


Fig. 4: Electronic Cabinet Dimensions

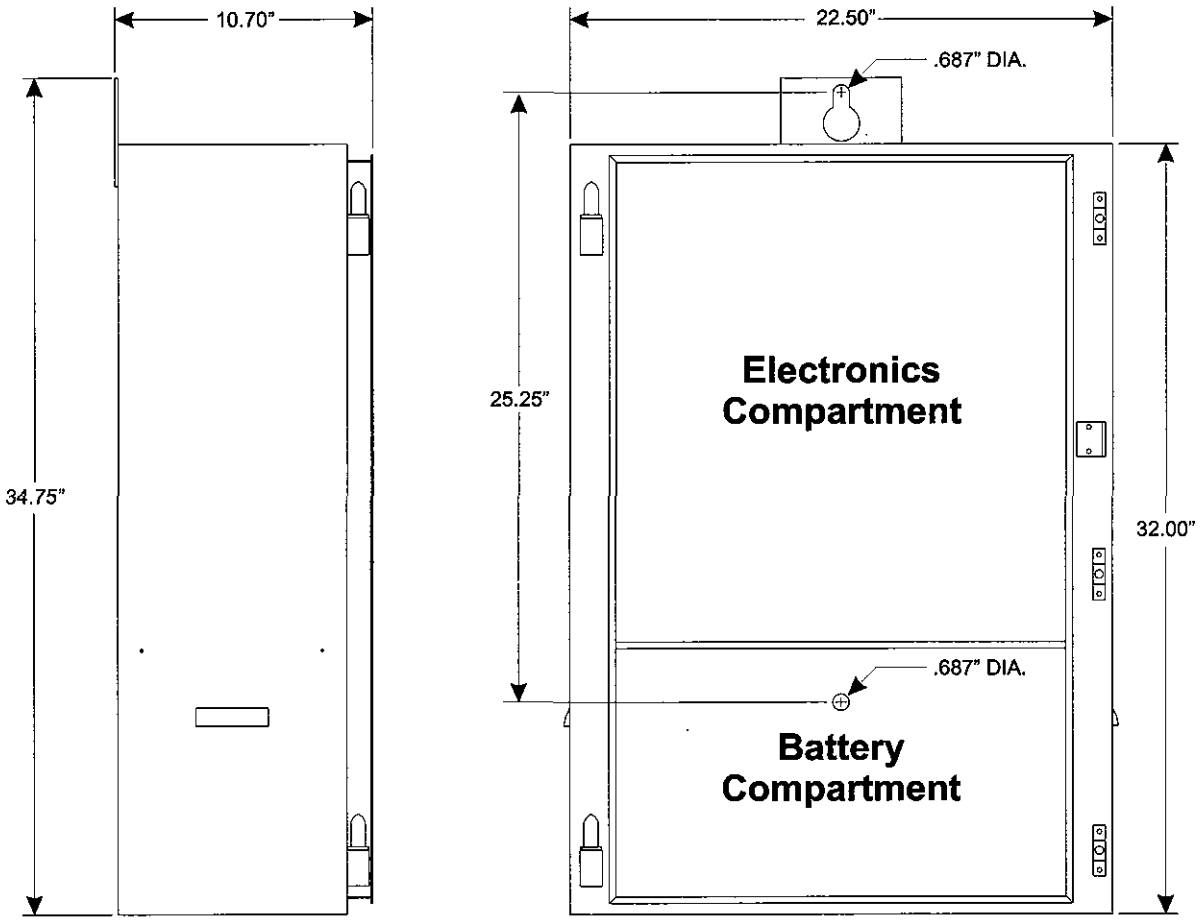
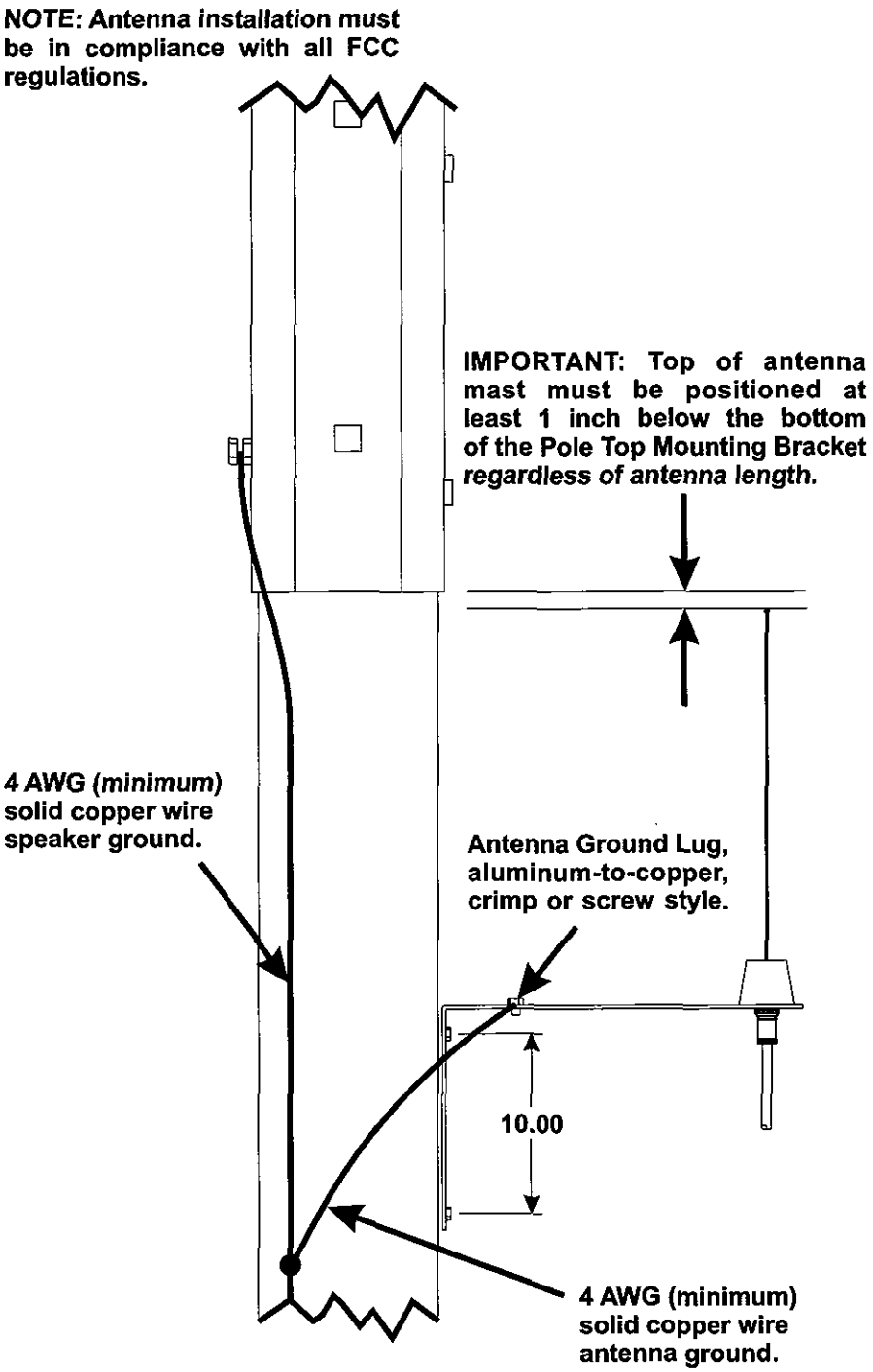


Fig. 5: Antenna Mounting Bracket Dimensions



Section III: Equipment Mounting

a) Pole Top Bracket Installation...

Items required for installation (not included)....

- **(4) 5/8" x 14" Hex or Square head mounting bolts**
- **(4) 5/8" Hex or Square head nuts**
- **(8) 5/8" Flat Washer sized for the above referenced mounting bolt**
- **(4) 5/8" Lock Washer**

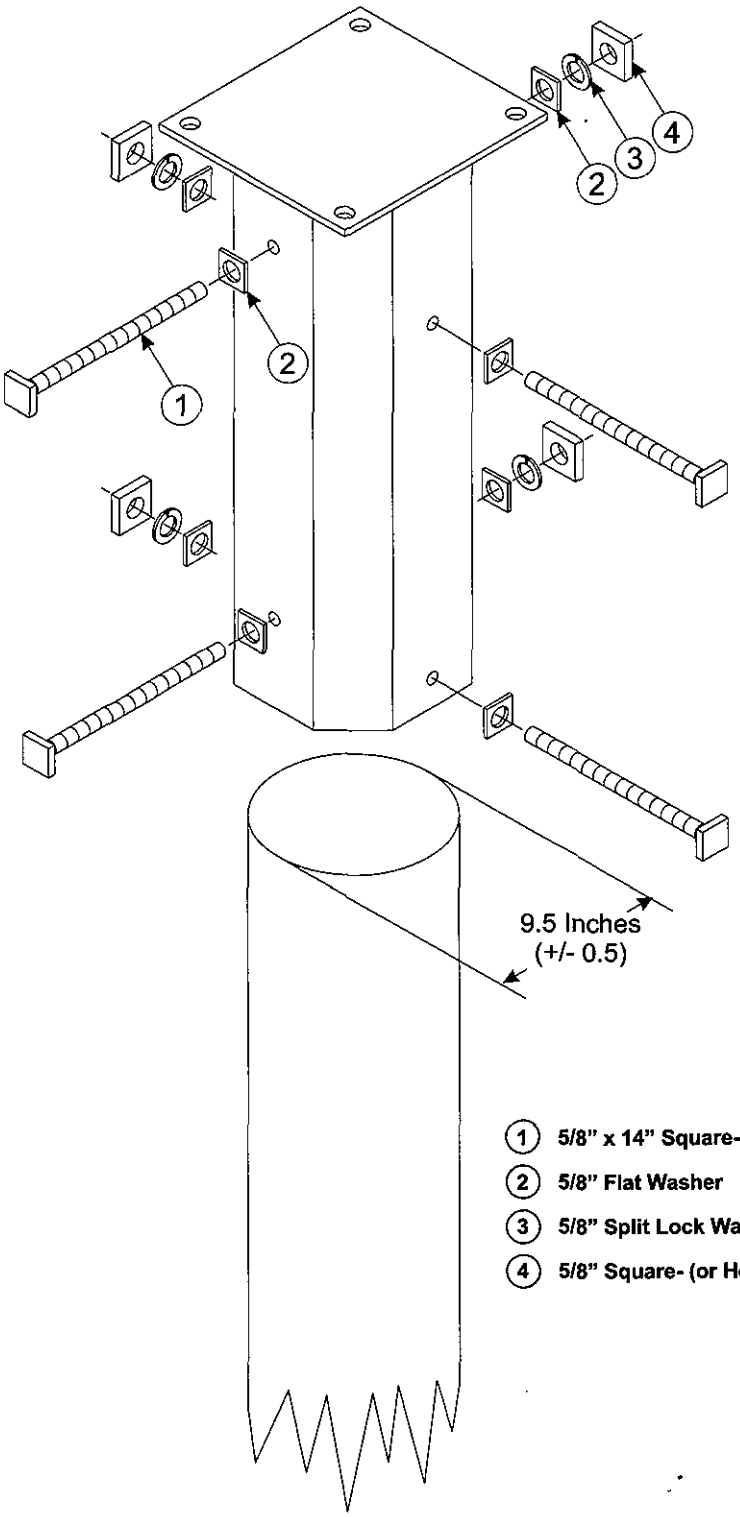
1. Position the Vortex pole top mounting bracket onto the top of the pole (see "Fig. 6: Pole Top Mounting Bracket" on page 15). Make sure there is a 1 inch space between the top of the pole and the pole top mounting bracket (see "Fig. 7: Electronic Cabinet Mounting (Side View)" on page 16).

Note: **The inside area of the pole top mounting bracket will accept a pole that is no greater than 10.00" in diameter. On large scale projects, it is beneficial to order the pole to be "gained" to a top diameter of 9.5" +/- .50" for the top 30" section of the utility pole.**

2. Using the pole top mounting bracket as a guide, drill four mounting holes through the pole at the bracket mounting hole locations. These holes should be sized to accommodate the above referenced hardware.
3. Secure the bracket to the pole using the prescribed hardware (see "Fig. 6: Pole Top Mounting Bracket" on page 15). Be sure to position all the associated hardware items in their proper order.
4. Secure a length of #4 solid copper wire to the pole top bracket grounding lug using the supplied nut. Make sure that this wire is of sufficient length to reach the ground when the pole has been set.

Note: **All Hardware used for connecting equipment to the utility pole should be inspected for tightness between 12 to 18 months after installation. Some shrinkage of the newly treated utility pole may occur, loosening connections.**

Fig. 6: Pole Top Mounting Bracket



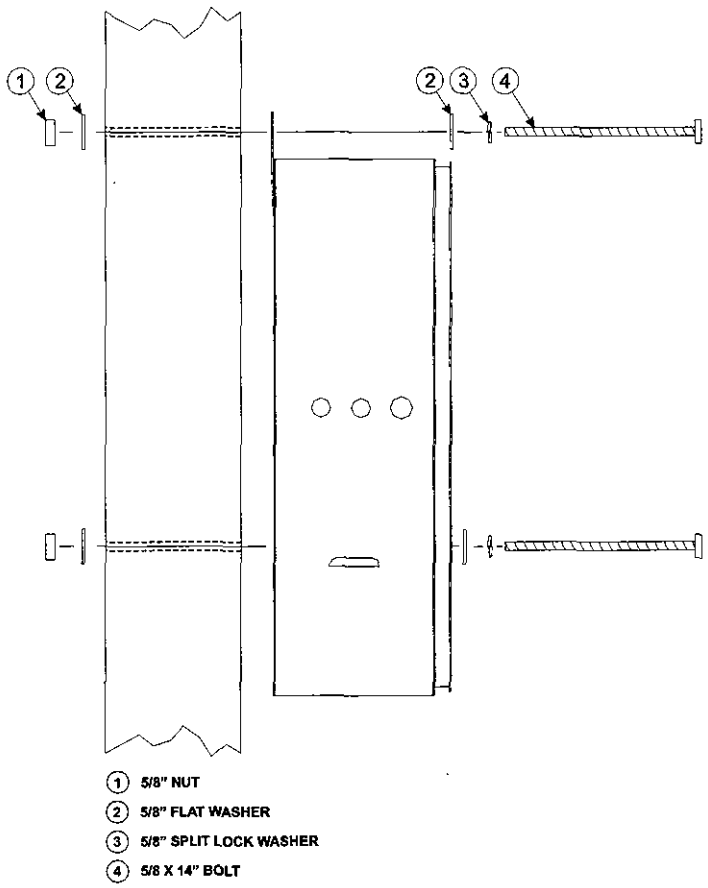
1. 5/8" x 14" Square- (or Hex-) Head Bolt
2. 5/8" Flat Washer
3. 5/8" Split Lock Washer
4. 5/8" Square- (or Hex-) Head Nut

b) Electronic Cabinet Mounting...

Items Required for installation (not included)....

Qty.	Description
(2)	**5/8" x 14" Hex or Square head mounting bolts**
(4)	**5/8" Flat Washer sized for the above mounting bolt**
(2)	**5/8" Split-Lock Washer**
(2)	**5/8" Hex or Square head nuts**
(1)	**Aluminum-to-Copper lug sized for #4 ground wire (crimp or screw style)**
(1)	**Stainless Steel 1/4-20 x 2" bolt with appropriately sized flat washer, split-lock washer and nut**
(1)	***10' Copper ground rod***

Fig. 7: Electronic Cabinet Mounting (Side View)



The Vortex siren case assembly may be installed onto the pole and wired before setting the pole.

1. It is necessary for the installer to remember that two factors should determine the optimum mounting location; the desired distance of the mounted cabinet to the ground (typically 10 to 12 feet as measured from the bottom of the cabinet) and available speaker wire length (speaker assemblies are provided with a minimum of 50 feet of speaker wire as measured from the bottom of the speaker assembly).
2. After the mounting location has been determined, drill an appropriately sized thru-hole into the pole at the top cabinet mounting hole. Install a bolt loosely into the hole and hang the cabinet onto the bolt.
3. With the cabinet fitted snugly to the pole, mark the surface of the pole at the lower mounting hole location inside the battery storage compartment. Remove the cabinet from the pole and drill an appropriately sized thru-hole into the pole at the location(s) marked. Return the cabinet to its mounting location and secure to the pole using the specified hardware.
4. Install an aluminum-to-copper lug (crimp or screw style) onto the #4 solid copper wire. Secure this to the cabinet mounting channel in hole supplied using stainless steel 1/4-20 hardware.
5. Install the ground rod as specified by local codes and connect both copper wires (from pole top mounting bracket and electronic cabinet) to this rod.
6. Install rigid steel conduit and necessary couplings from the speaker's 1" conduit adapter to the 1" speaker conduit protruding from the base of the siren case assembly. The first section of conduit may be installed onto the speaker's base casting prior to mounting the speaker to the pole top bracket. At the option of the user, conduit unions may be used between the first section of conduit and the speaker base casting and at the speaker cable conduit entrance to the siren case assembly.

Note: **If the location of the conduit on the pole requires difficult conduit bends or couplings, a section of metal bonded seal tight conduit NOT TO EXCEED 24 INCHES may be used at the top of the pole and/or at the bottom of the pole as needed for the speaker cable installation.**

Batteries for the system should not be installed until the siren station is set in place, otherwise some leakage of the battery fluid may occur. Batteries should not be connected to the system until AC power (or solar power if equipped) is available to the system to operate the system's battery charger.

c) Siren Assembly Mounting

Hardware required for installation (factory included)....

(8) 20mm hex head nuts

(8) 7/8" Flat Washers

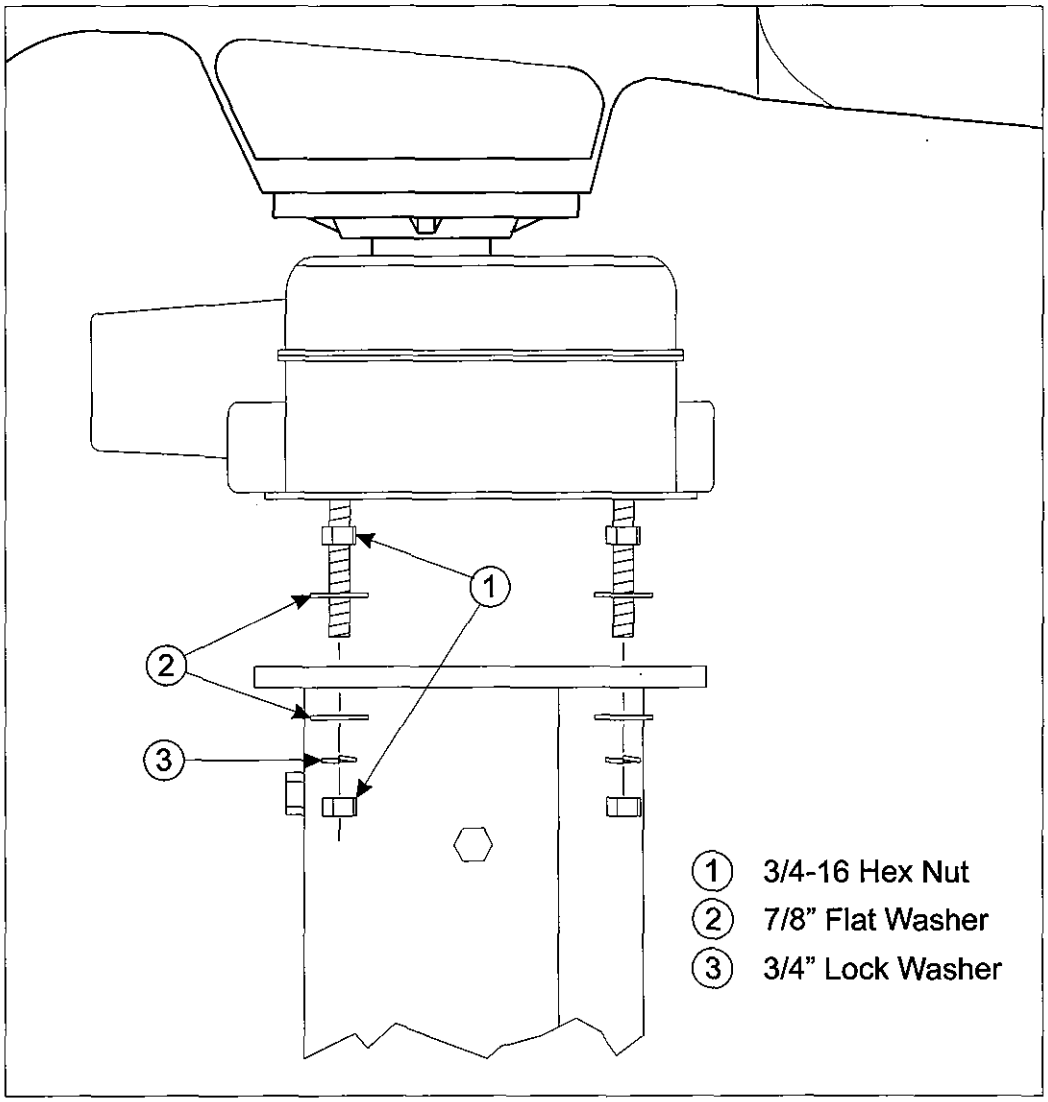
(4) 3/4" Split Lock Washers

1. Sling or cradle the utility pole in a safe manner so that the pole top is 3 to 4 feet off the ground. This will allow the speaker assembly to clear the ground when installed.
2. Locate the 4 mounting studs on the bottom of the speaker assembly (see "Fig. 8: Siren to Pole Top Mounting Bracket (Side View)" on page 19).
3. Thread a 20mm hex nut onto each of the mounting studs until there is approximately 1" of space between the top of the nuts and the bottom of the siren assembly. This space will allow the speaker assembly to be leveled once the pole has been set.
4. Install a 7/8" flat washer onto each of the mounting studs.
5. Insert the four mounting studs through the mounting holes on the top of the pole top bracket. The bottom of the siren assembly should lie flat against the pole top bracket.
6. Install a 7/8" flat washer onto each of the mounting studs.
7. Install a 3/4" split lock-washer onto each of the mounting studs.
8. Thread a 20mm hex nut onto each of the mounting studs. Tighten this nut firmly to secure the siren assembly to the pole top bracket.

At this point the pole should now be set. However, the installer may use their own discretion as to whether to mount the electronic cabinet onto the utility pole before the pole is set.

When the pole has been set, use the adjustment nuts (indicated in step 3) to adjust the siren assembly until it is level.

Fig. 8: Siren to Pole Top Mounting Bracket (Side View)



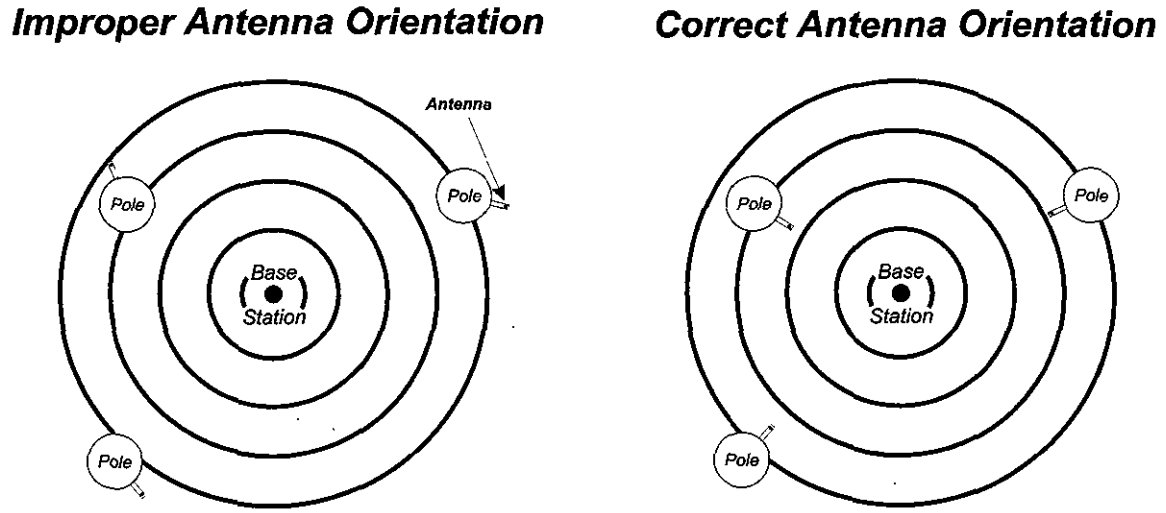
d) Antenna Mounting (optional)...

Note: **Antenna installation must be in compliance with all FCC regulations.**

The proper antenna bracket mounting location is determined by several considerations. The antenna bracket should be positioned as high on the utility pole as is possible. However, under no circumstances should the top of the installed antenna mast be any closer than one inch from the bottom of the Pole Top Mounting Bracket (see "Fig. 6: Pole Top Mounting Bracket" on page 15). Be sure to ground the antenna bracket as shown using 4 AWG solid copper wire. The antenna cable provided by the factory is 35 feet in length.

It is also important to remember that the antenna MUST be mounted on the side of the utility pole that faces the transmitter (see below)

Fig. 9: Antenna Mounting Orientation



Refer to the installation sheet included with your antenna kit for further information regarding cable connections and antenna trimming.

e) Solar Panel Mounting (optional)...

The solar panel must be installed so that it is directly facing the earth's equator with an unobstructed view. Failure to orient the solar panel in this way will result in significantly reduced charging effectiveness.

The most critical aspect of properly mounting the solar panel involves achieving the optimum tilt angle. The tilt angle is determined by the distance between the upper and lower mounting brackets, as shown.

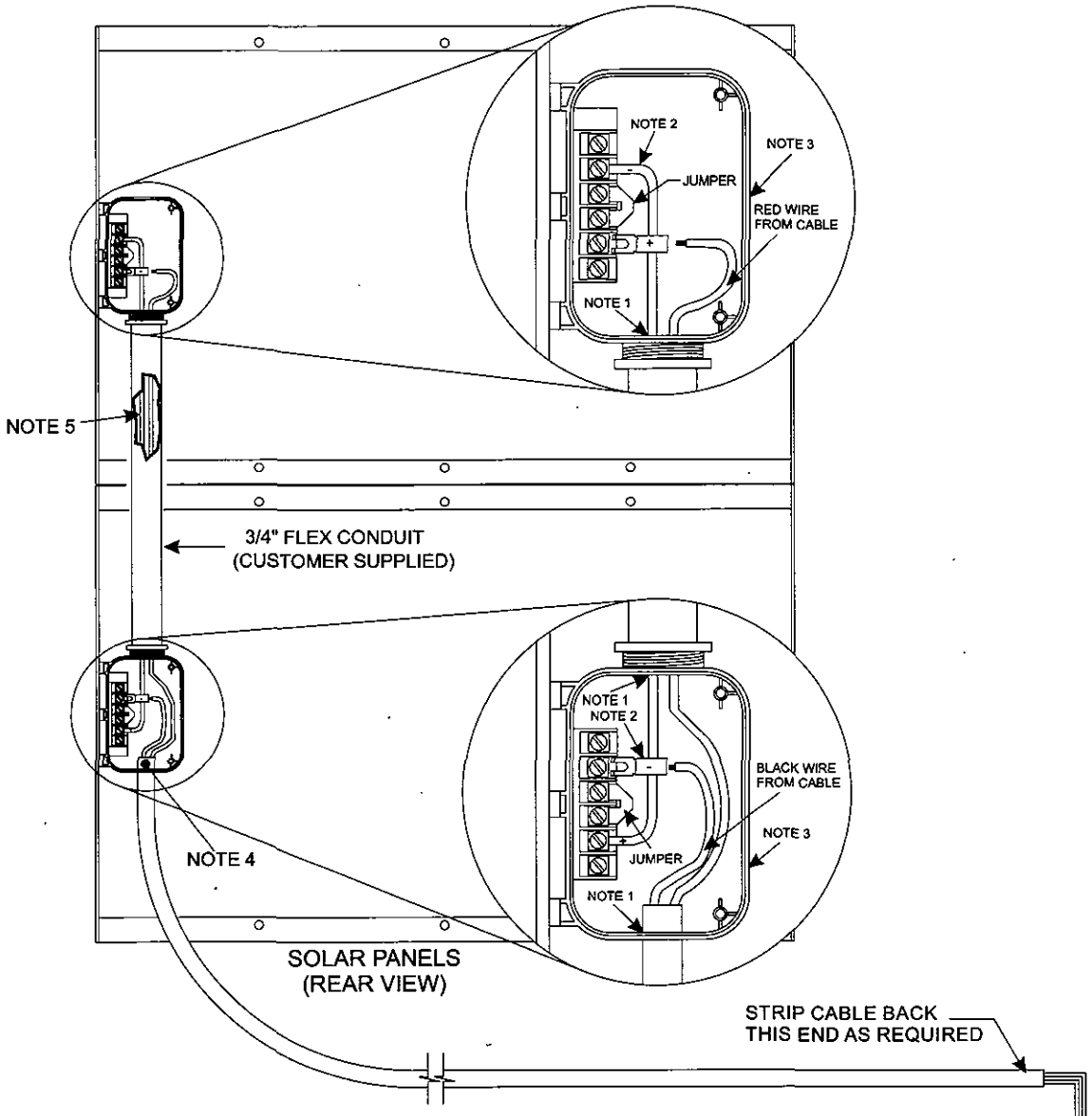
Refer to page 22 for electrical connection information.

Refer to page 23 for general solar panel mounting.

Refer to page 24 for information on determining your specific mounting angle.

Run rigid steel conduit from the solar panel to the 3/4" AC knockout located at the bottom of the siren case assembly. A section of up to 24 inches of metal bonded seal tight conduit may be utilized where conduit connections to the solar panel or electronic cabinet are not conveniently accomplished with rigid steel conduit and fittings. This conduit should be sealed to prevent insects and pests from entering the siren case assembly.

Fig. 10: Solar Panel Wiring Connections



NOTES:

1 - Wire entrance hardware per local codes, water tight as required (3 places).

2 - Fork terminals & fast-ons included with installation kit.

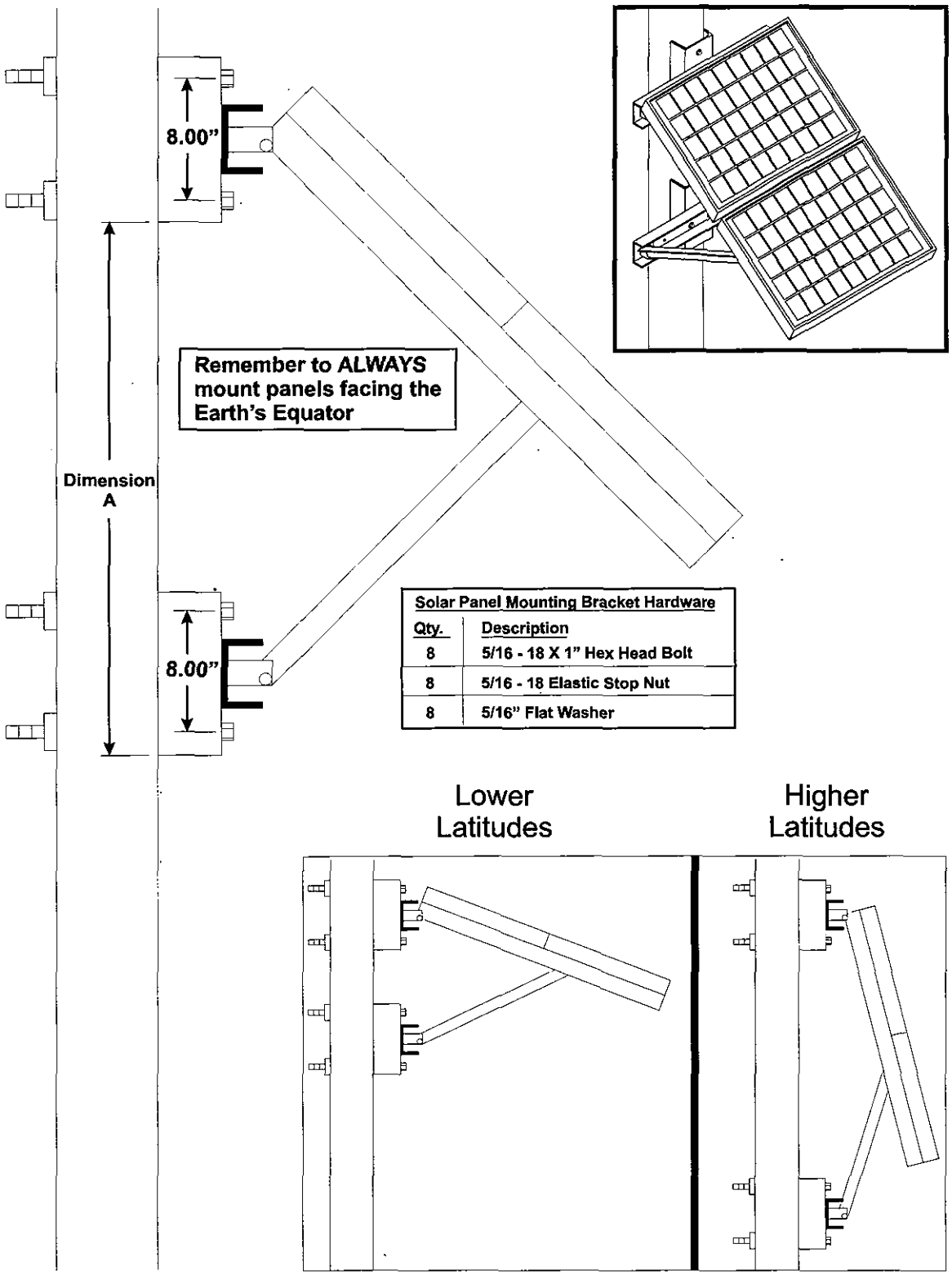
3 - Electrical boxes shown with covers removed.

4 - Cable to be stripped back 26" at solar panel end.

5 - Supplied by Whelen, included with installation kit.

6 - Install fast-ons to the solar regulator end of the cable only after the proper length of cable has been achieved, leaving at least a 6' service loop.

Fig. 11: Solar Panel Mounting Views



Solar Panel Mounting Bracket Hardware	
Qty.	Description
8	5/16 - 18 X 1" Hex Head Bolt
8	5/16 - 18 Elastic Stop Nut
8	5/16" Flat Washer

f) Determining Solar Panel Mounting Angle

1. Determine the *LATITUDE* of your location.
2. Find your *Latitude* on the table below and note the corresponding *Tilt Angle.*

LATITUDE	TILT ANGLE
0° to 9°	**75° = Tilt Angle**
10° to 20°	**85° minus LATITUDE = Tilt Angle**
21° to 45°	**80° minus LATITUDE = Tilt Angle**
46° to 65°	**75° minus LATITUDE = Tilt Angle**
66° to 75°	**10° minus LATITUDE = Tilt Angle**

3. Locate your TILT ANGLE in the list below. For every TILT ANGLE, there is a corresponding "Dimension A". "Dimension A" represents the distance from the bottom of the upper mounting bracket to the bottom of the lower mounting bracket.

example 1:
Location LATITUDE is 30°
80° - 30° = 50° Tilt Angle
50° Tilt Angle = 33.60" Dimension A

example 2:
Location LATITUDE is 7°
7° = 75° Tilt Angle
75° Tilt Angle =15.54" Dimension A

Tilt Angle	Dimension A (inches)
10	50.49
11	50.34
12	50.16
13	49.97
14	49.77
15	49.55
16	49.32
17	49.08
18	48.82
19	48.54
20	48.25
21	47.95
22	47.63
23	47.30
24	46.95
25	46.59
26	46.22
27	45.83
28	45.43
29	45.02
30	44.60
31	44.16

Tilt Angle	Dimension A (inches)
32	43.71
33	43.24
34	42.77
35	42.28
36	41.78
37	41.26
38	40.74
39	40.20
40	39.65
41	39.10
42	38.53
43	37.95
44	37.36
45	36.75
46	36.14
47	35.52
48	34.89
49	34.25
50	33.60
51	32.95
52	32.28
53	31.61

Tilt Angle	Dimension A (inches)
54	30.93
55	30.24
56	29.54
57	28.84
58	28.13
59	27.41
60	26.69
61	25.96
62	25.23
63	24.50
64	23.76
65	23.01
66	22.27
67	21.52
68	20.77
69	20.02
70	19.27
71	18.52
72	17.77
73	17.02
74	16.28
75	15.54

Section IV: Wiring

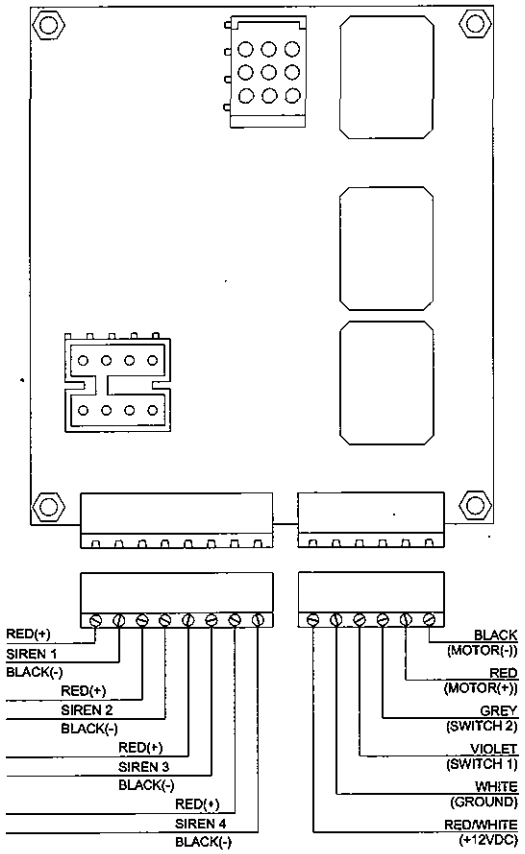
This section covers field wiring for the Speaker/Rotor Assembly and the AC service.

a) Speaker/Rotor Wiring

The 14 conductor Speaker/Rotor cable has five red wires, five black wires, one gray, one violet, one white and a red wire with a white strip. Each of the red and black wires has a white ink identifier on it. The wires are grouped in red and black pairs, with labels 1, 2, 3, 4 and M. **The red and black wires are polarity sensitive.** Pair 1 is wired to speaker driver 1, which is the bottom driver of the speaker, pair 2 is wired to speaker driver 2, which is the next driver up the speaker and so on. Pair M is connected to the rotor motor. The other four wires are connected to limit switches in the rotor.

The speaker driver wires (red & black 1-4) connect to the 8-position Phoenix connector on the oscillator board. The rotor wires connect to the 6-position Phoenix connector. This board is mounted to the inner, left, vertical wall of the upper cabinet compartment. Refer to Fig. 12 for the specific designations and destinations for both the speaker and rotor wires.

Fig. 12: Oscillator Board Connections



b) AC Wiring

An AC Service (Single Phase only) with an acceptable disconnect is required. A 15 amp (minimum) 120 VAC circuit is recommended.

Locate the service on the pole according to local codes, taking care that the service entrance will meet height requirements once the pole is set into place.

The Vortex includes a 15 amp, 120 VAC outlet. The cabinet's battery charger plugs into one of the receptacles. The remaining receptacle is available for use by service personnel (see "Fig. 13: AC Outlet Installation" on page 27).

Note: **A section of up to 24 inches of metal bonded seal tight conduit may be utilized where conduit connections to the siren case assembly are not conveniently accomplished with rigid steel conduit and fittings.**

Each Vortex siren system is supplied with a Lightning arrestor which is to be installed on the AC service. Local codes should be reviewed and followed to establish the connection of this device on the primary or secondary side of the disconnect.

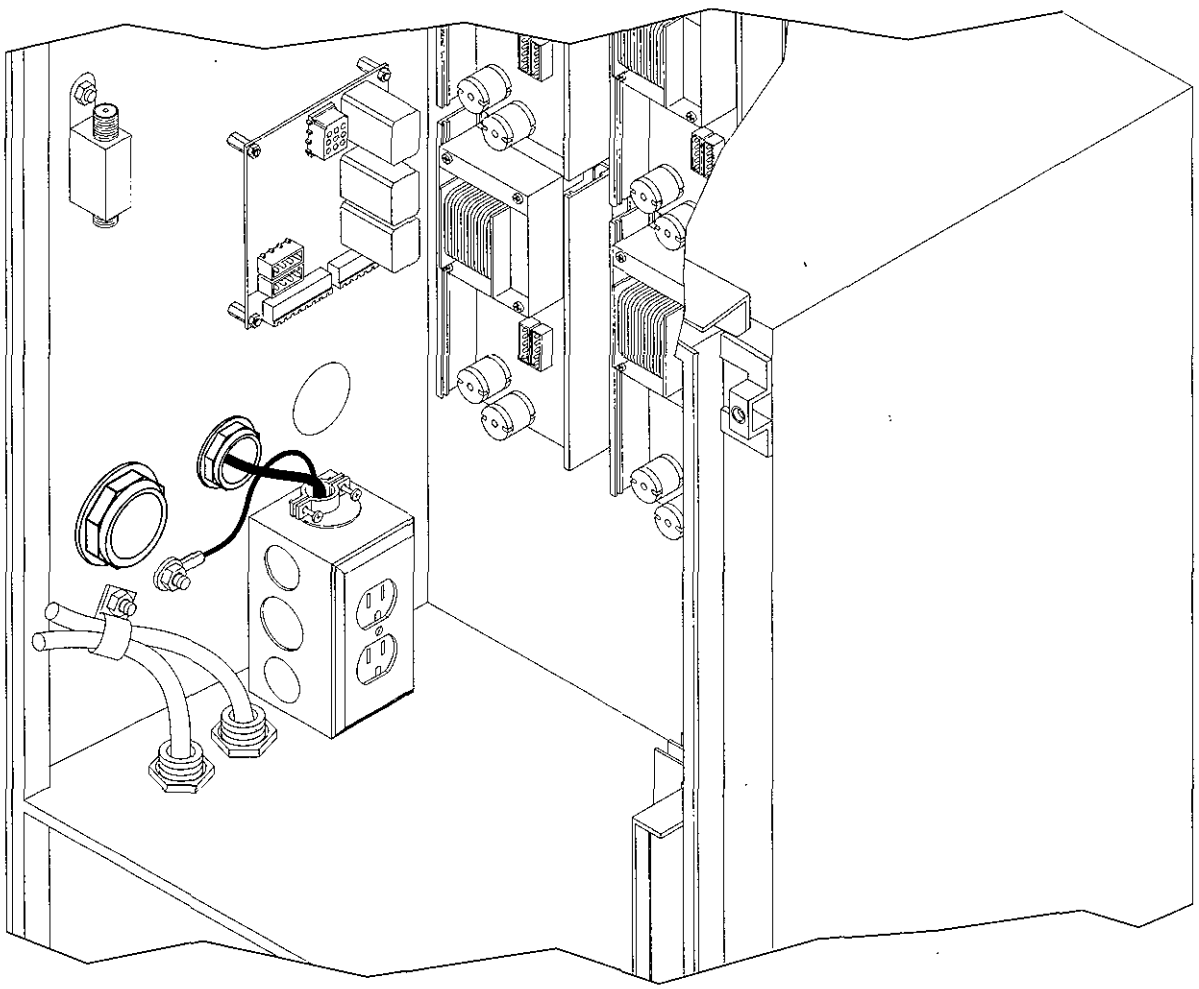
Note: **The location of the siren site should be reviewed for the quality of the AC service. AC power sources that are subject to excessive power surges or transients are not acceptable.**

Make sure the battery charger is unplugged from the AC outlet in the left rear corner of the control cabinet. Route the AC service wire through the cable clamp on top of the box. Make the AC connections to the outlet, according to local electrical codes.

Locate the green wire in the outlet box. This is the cabinet chassis ground. Connect the green wire to the ground wire of the electrical service, within the outlet box. Make a ground connection from one of the lower mounting tabs to earth ground using minimum of 4 AWG copper wire. An Aluminum-to-Copper (ALCO) connector must be used for ground connection to the cabinet. Always follow local codes.

Leave the battery charger unplugged.

Fig. 13: AC Outlet Installation



c) Batteries

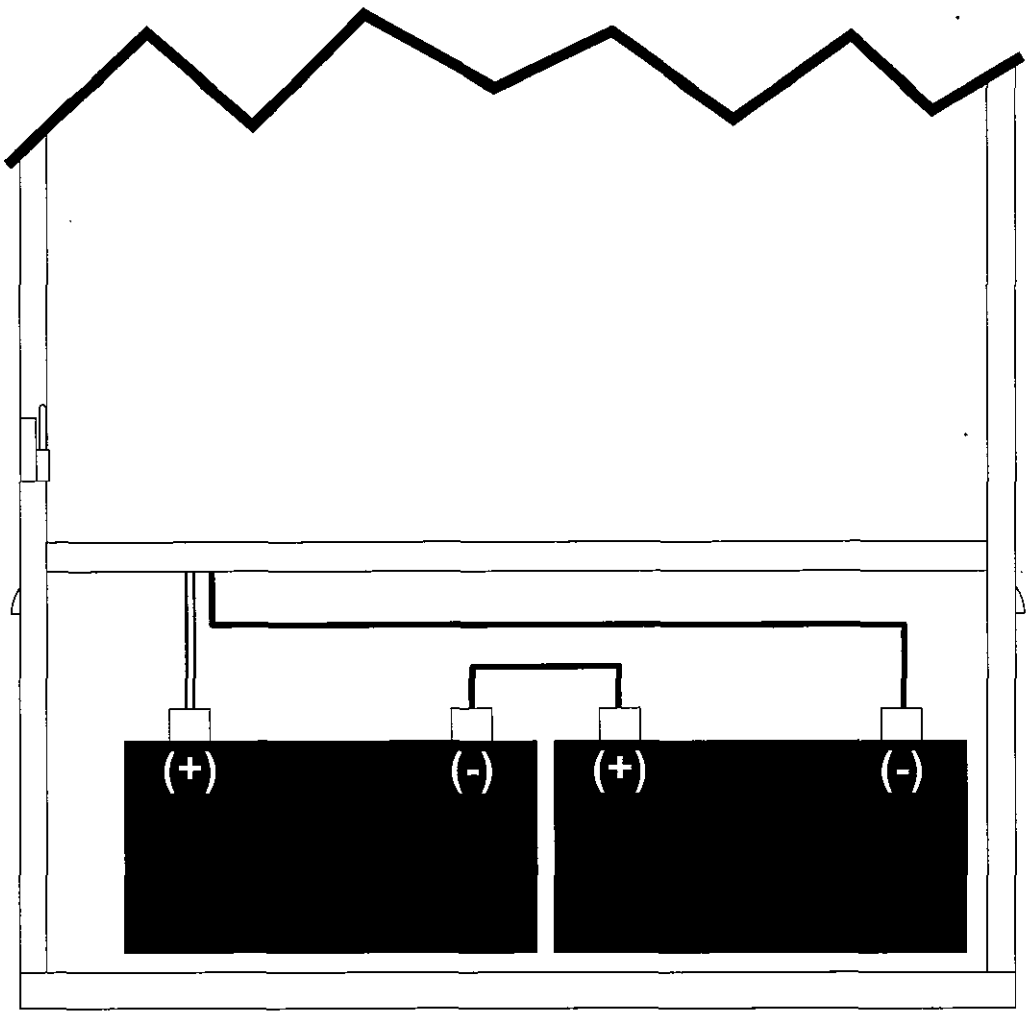
1. Install the batteries and connect them as shown in the illustration below. MAKE SURE TO OBSERVE THE POLARITY OF THE TERMINALS BEFORE MAKING ANY CONNECTIONS.

Note: For battery wiring, DC wiring conventions are used (BLACK is ground (-)).

IMPORTANT! Installation of the NEGATIVE battery cable onto the NEGATIVE (-) battery terminal should ALWAYS be the LAST electrical connection made!

2. Plug the battery charger into the AC outlet.
3. Verify system operation as outlined in the system maintenance check list.

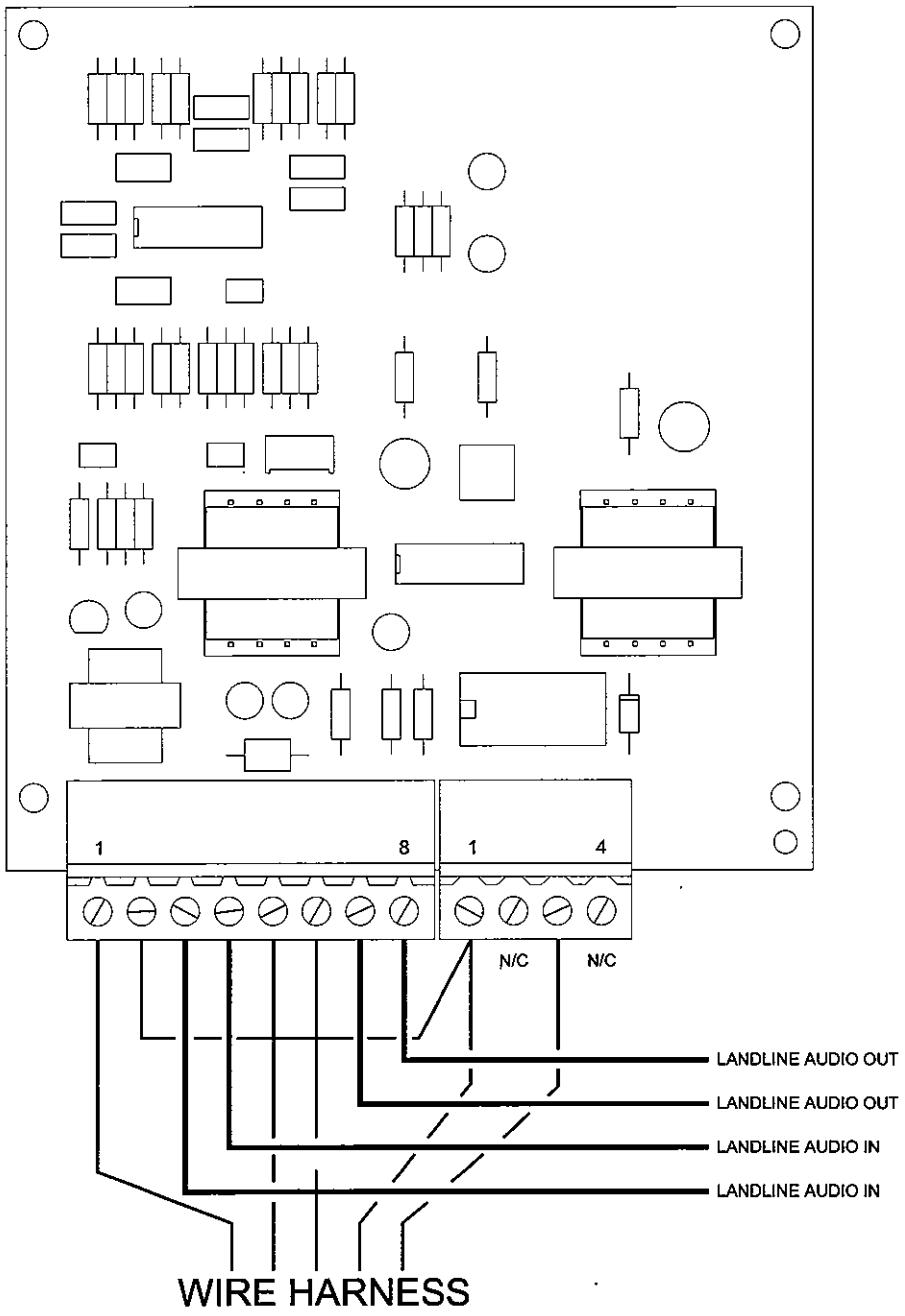
Fig. 14: Battery Connections



d) Landline (optional)

As an option. the Vortex may be remotely controlled by either landline or RF link. Either method communicates via a DTMF protocol. Remote control may be one-way or two-way. The one-way option simply controls the Vortex, while the two-way option controls the Vortex and reports Vortex status back to a central control point.

Fig. 15: Landline Wiring

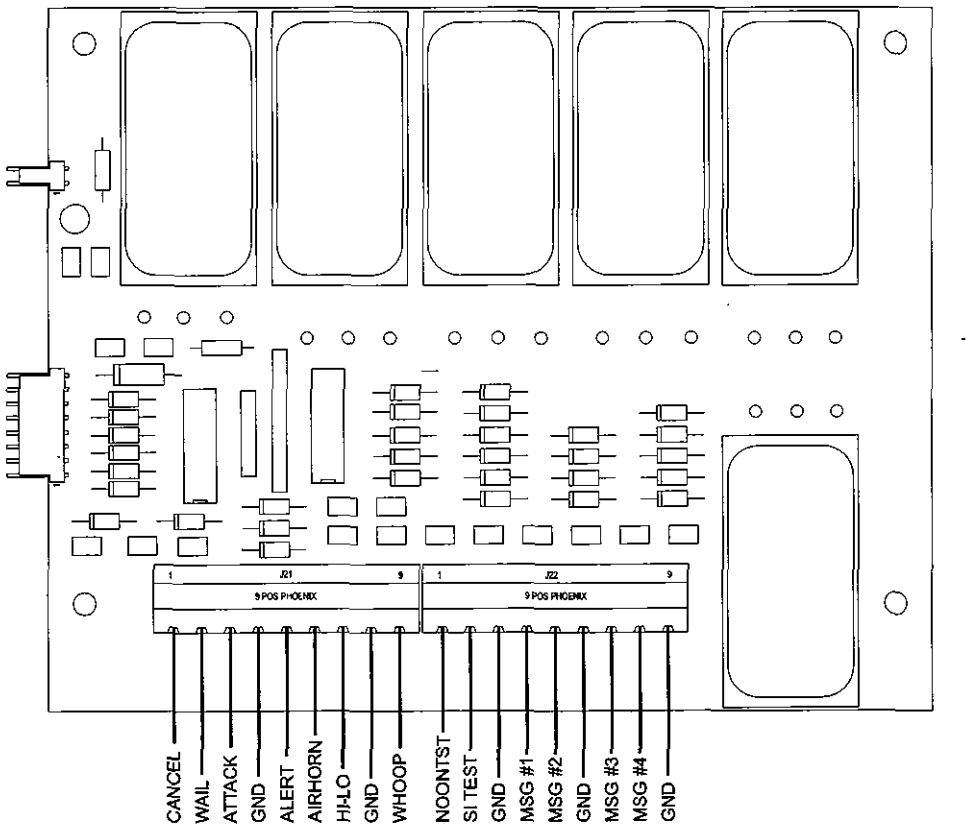


e) Two-Tone (optional)

The Two Tone Decoder may be equipped with up to six decode modules, for Motorola Quick-Call frequencies. The appropriate decode module is factory wired to the appropriate Vortex command, provided the information is supplied to the factory.

The tables on page 31 list the timing sequences and tones that are supported by the two tone decoder for a Vortex siren. Up to six modules may be used on one decoder board. Any one timing sequence may be used for each module, with the first and second tones always being from the same tone table.

Fig. 16: Two-Tone Board



Frequency Tables

Table 1: Timing Sequence

Format	Call Sequence	1st Tone	Gap	2nd Tone
Motorola Quick Call 2	Individual Call Tone & Voice	1 Second	0	3 Seconds
	Group Call	8 Seconds	0	0

Table 2: Motorola Tone Tables 1,2,3 Frequencies - Whelen Model "2TTMA"

288.5Hz	330.5Hz	410.8Hz	510.5Hz	624.5Hz	788.5Hz	953.7Hz	1063.2Hz
296.5Hz	349.0Hz	433.7Hz	539.0Hz	669.9Hz	832.5Hz	979.9Hz	1092.4Hz
304.7Hz	368.5Hz	457.9Hz	569.1Hz	707.3Hz	879.0Hz	1006.9Hz	
313.0Hz	389.0Hz	483.5Hz	600.9Hz	746.8Hz	928.1Hz	1034.7Hz	

Table 3: Motorola Tone Tables 4,5,6 Frequencies - Whelen Model "2TTMB"

321.7Hz	399.8Hz	496.8Hz	584.8Hz	726.8Hz	903.2Hz	1185.2Hz	1321.2Hz
339.6Hz	422.1Hz	524.6Hz	617.4Hz	767.4Hz	979.9Hz	1217.8Hz	1357.6Hz
358.6Hz	445.7Hz	553.9Hz	651.9Hz	810.2Hz	1122.5Hz	1251.4Hz	1395.0Hz
378.6Hz	470.5Hz	569.1Hz	688.3Hz	855.5Hz	1153.4Hz	1285.8Hz	1433.4Hz

Table 4: Motorola Tone Tables A,B,Z Frequencies - Whelen Model "2TTMC"

346.7Hz	398.1Hz	457.1Hz	524.8Hz	582.1Hz	668.3Hz	767.4Hz	881.0Hz
358.9Hz	412.1Hz	473.2Hz	543.3Hz	602.6Hz	691.8Hz	794.3Hz	912.0Hz
371.5Hz	426.6Hz	489.8Hz	562.3Hz	623.7Hz	716.1Hz	822.2Hz	944.1Hz
384.6Hz	441.6Hz	507.0Hz	569.1Hz	645.7Hz	741.3Hz	851.1Hz	979.9Hz

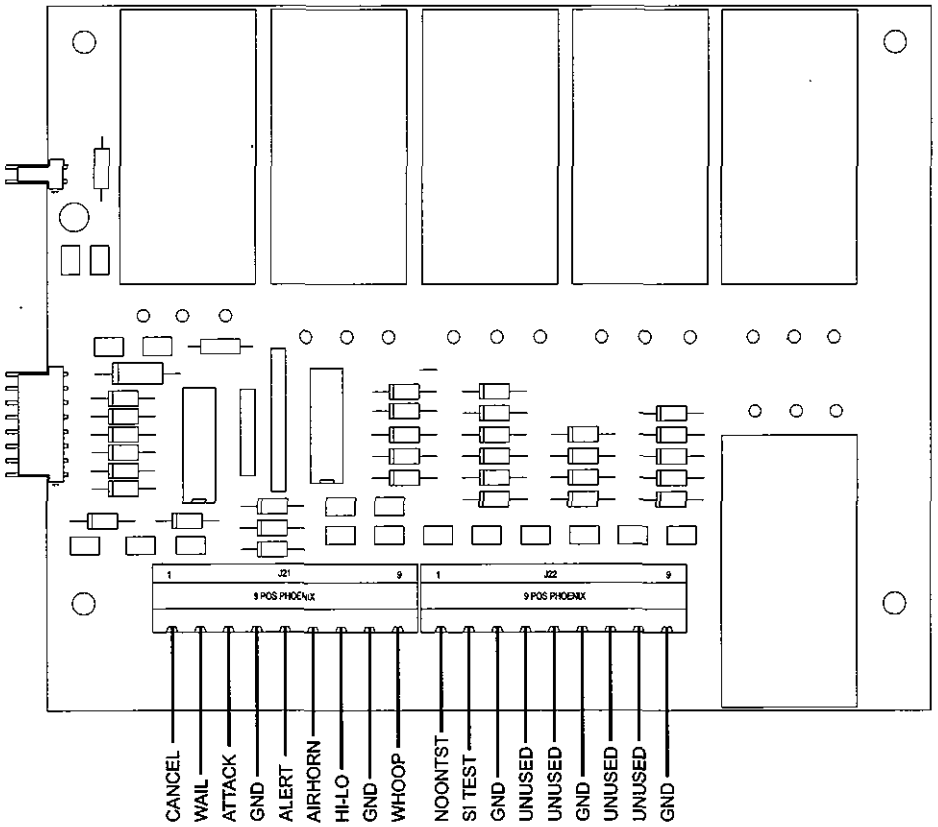
Table 5: Motorola Tone Tables A,B,C Frequencies - Whelen Model "2TTMD"

517.5Hz	577.5Hz	637.5Hz	697.5Hz	757.7Hz	817.5Hz	877.5Hz	937.5Hz
532.5Hz	592.5Hz	652.5Hz	712.5Hz	772.5Hz	832.5Hz	892.5Hz	952.5Hz
547.5Hz	607.5Hz	667.5Hz	727.5Hz	787.5Hz	847.5Hz	907.5Hz	967.5Hz
562.5Hz	622.5Hz	682.5Hz	742.5Hz	802.5Hz	862.5Hz	922.5Hz	

f) Aux-In (optional)

Vortex siren functions can be activated via external auxiliary input contact closure. For external controls, the "closure" must be at least 1/2 a second in duration. The "closure" must be made to ground. A ground contact is supplied at the terminal strip for this reason.

Fig. 17: Aux-In Board



Section V: System Test...

After the installation of the Vortex station has been completed, a basic system check is recommended to confirm that the system is functioning properly. Before initiating these tests, locate the system LED's on the control board mounted to the cabinet door (see "Fig. 18: System LED Diagnostic Indicators" on page 34).

1. Confirm that the ACTIVE light on the control board is flashing at a rate of a 1/2 second on and a 1/2 second off.
2. Press the SI TEST® button on the siren front panel and check to make sure that all the siren amplifier diagnostic LED's illuminate for 5 seconds. These LED's are located on each amplifiers circuit board.
3. Confirm that the speaker has turned one complete rotation.
4. After the amplifier LED's turn off, check to see if the AC, DC, PARTIAL, FULL and ROTOR LED's are on.

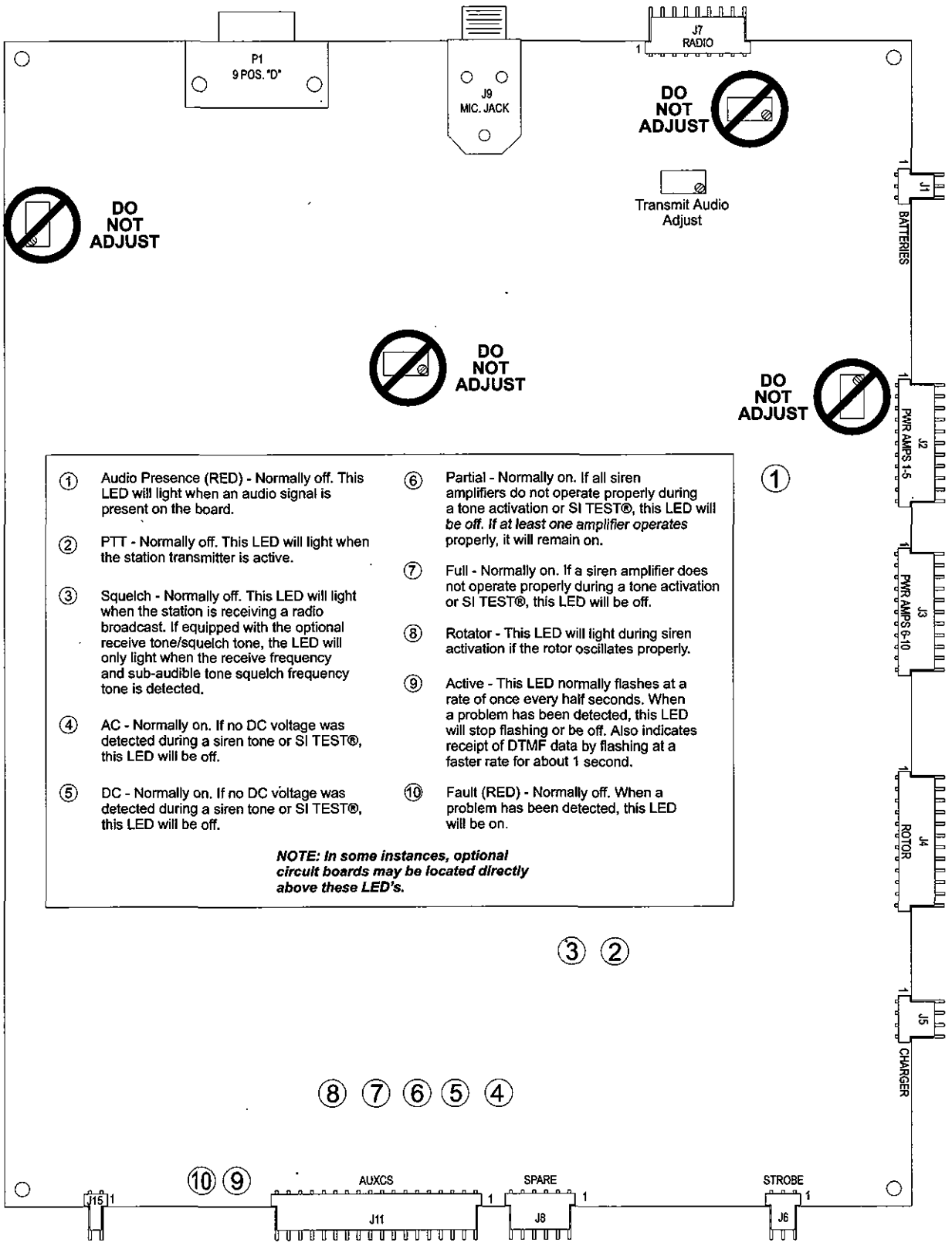
If one of your amplifier lights did not illuminate during this test then refer to the procedure below to troubleshoot the problem.

This procedure may be used when the Partial or Full LED's indicate a failure.

Note: **In order for a "Full" indication to be valid, the "Partial" LED must also be on.**

1. Press the SI TEST® button located on the front panel of the electronic cabinet. Each amplifier has a red LED on its circuit board.
2. A SI TEST® will cause each amplifier's diagnostic indicator to turn on. If one or more do not turn on, proceed to step 3. If all indicators turn on, the siren amplifiers are functioning properly.
3. Open the front panel and remove the speaker driver from the amplifier that did not light and install it onto an amplifier that did light. For example: If amplifier 1 did not light but amplifier 2 did, install speaker 1 on amplifier 2 and speaker 2 on amplifier 1. This will indicate if the failure was with the speaker or the amplifier.

Fig. 18: System LED Diagnostic Indicators



① Audio Presence (RED) - Normally off. This LED will light when an audio signal is present on the board.

② PTT - Normally off. This LED will light when the station transmitter is active.

③ Squelch - Normally off. This LED will light when the station is receiving a radio broadcast. If equipped with the optional receive tone/squelch tone, the LED will only light when the receive frequency and sub-audible tone squelch frequency tone is detected.

④ AC - Normally on. If no DC voltage was detected during a siren tone or SI TEST®, this LED will be off.

⑤ DC - Normally on. If no DC voltage was detected during a siren tone or SI TEST®, this LED will be off.

⑥ Partial - Normally on. If all siren amplifiers do not operate properly during a tone activation or SI TEST®, this LED will *be off. If at least one amplifier operates* properly, it will remain on.

⑦ Full - Normally on. If a siren amplifier does not operate properly during a tone activation or SI TEST®, this LED will be off.

⑧ Rotator - This LED will light during siren activation if the rotor oscillates properly.

⑨ Active - This LED normally flashes at a rate of once every half seconds. When a problem has been detected, this LED will stop flashing or be off. Also indicates receipt of DTMF data by flashing at a faster rate for about 1 second.

⑩ Fault (RED) - Normally off. When a problem has been detected, this LED will be on.

NOTE: In some instances, optional circuit boards may be located directly above these LED's.

CHAPTER 2: OPERATION

Section VI: Overview of System Components

a) *Station Component Locations*

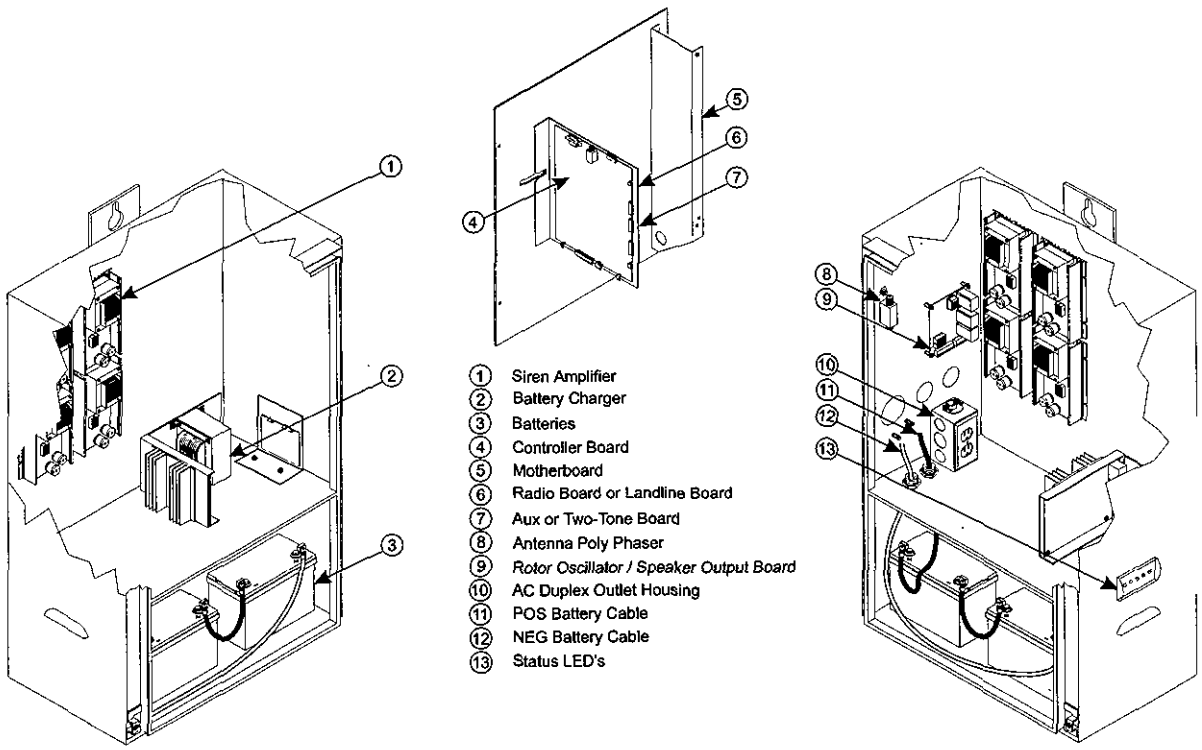
The Vortex System is comprised of two basic models:

Model	Driver Info
Vortex3	**Three siren drivers**
Vortex4	**Four siren drivers**

Both systems essentially function in the same manner. This manual will provide the necessary information to properly operate, program and diagnose this system regardless of specific model.

The Vortex systems is comprised of several major components common to both models, although quantities of some components will vary from model to model.

Fig. 19: Siren Cabinet Components



b) Station Components Defined

Siren Amplifier - These components (located on the rear wall of the upper cabinet compartment) receive the desired tone generated by the control board, amplify it and deliver it to the siren driver. Vortex3 systems use 3 amplifiers;Vortex4 systems use 4. **NOTE: At no time should the siren be activated when the speaker is not connected!**

Aux-in Board (Optional) - This component (located on the inside of the upper cabinet door) can be wired to provide remote activation of all siren functions *via* momentary contact closure.

Two-Tone Board (Optional) - This component (located on the inside of the upper cabinet door) receives two-tone signals from either the antenna or landline and delivers them to the control board for processing.

AC Battery Charger - This component (located on the rear wall of the upper cabinet compartment) uses 110 VAC (or 220 VAC) single-phase service to maintain the station batteries at their proper voltages.

Solar Regulator (optional) - This component (located on the rear wall of the upper cabinet compartment) uses electrical energy collected by a pole-mounted solar panel to maintain the station batteries at their proper voltages.

Batteries - These components (located on the inside of the lower cabinet) provide the 28VDC necessary for the system to operate.

Control Board - This component (located on the inside of the upper cabinet door) controls the key functions of the Vortex system including:

Tone Generation	Remote Activation
Remote Station Status Reporting* (encoding)	Event Timing
System Diagnostics (incl. SI TEST®)*	Local Control

* optional equipment

The control board contains a serial port to allow connection of a palm computer (hereafter referred to as a PalmPC) to the remote station. The control board is also the location of the diagnostic LED's.

Radio Board or Landline Board (Optional) - This component (located on the inside of the upper cabinet door) receives signals from either the antenna or landline and delivers them to the control board for processing. Through the use of the included radio, the station is also capable of transmitting status information back to the control center.

Motherboard - This component (located on the inside of the upper cabinet door) distributes Battery Voltage and signals to all system components that require this voltage. The motherboard is fused @10 Amps to protect all connected components EXCEPT for the siren amplifiers and the rotor (they contain their own fuse).

Antenna Poly Phaser (optional) - This component suppresses high-voltage (static) charges that could be present on the antenna.

Rotor Oscillator/Speaker Output Board - This component (located on the inside of the upper cabinet wall) activates the rotor motor after receiving commands from the control board. This board also provides speaker output signals for the siren amplifiers.

This component is fused @20Amps.

AC Duplex Outlet Housing - This component (located against the inside left vertical cabinet wall), as wired by the customer, provides a 110 VAC source.

Siren Driver - This component (located in the speaker assembly) produces the desired audible tone. Vortex3 systems use 3 drivers;Vortex4 systems use 4.

Status LED's - This component (visible through the right-side cabinet wall) duplicates the 5 status LED's (AC, DC, Partial, Full & Rotor) located on the controller board. This allows for visual confirmation of station status without having to open the cabinet doors (see "Fig. 18: System LED Diagnostic Indicators" on page 34)

Antenna (optional) - This component (located on the utility pole) is capable of either receiving signals broadcast from the control center (one-way) or can both transmit and receive signals to and from the control center (two-way), depending how the system was ordered.

Solar Panel (optional) - This component (located on the utility pole) collects solar energy, converts it to electrical energy and delivers it to the Solar Regulator to maintain the station batteries at their proper voltage.

Intrusion Alarm (optional) - This sensor (located on the door jam of the upper cabinet door) detects the opening of the cabinet door. If the station is equipped with this option, the alarm is configured to transmit a signal back to the control center.

Section VII: System Operations

a) Remote Operations

Remote operation of a Vortex series siren involves transmitting signals from the control center to the desired station. This is accomplished by using either an encoder and transmitter or, if the station is so equipped, using an aux-in board that has been wired to switches/controls at the control center. Remote operation is beyond the scope of this document and will therefore not be addressed. If your system is equipped with an encoder, please refer to the encoder operating manual for information regarding remote operation. If your station has been wired to use the auxiliary control status board, refer to the reference materials provided by the electrical engineer or installer.

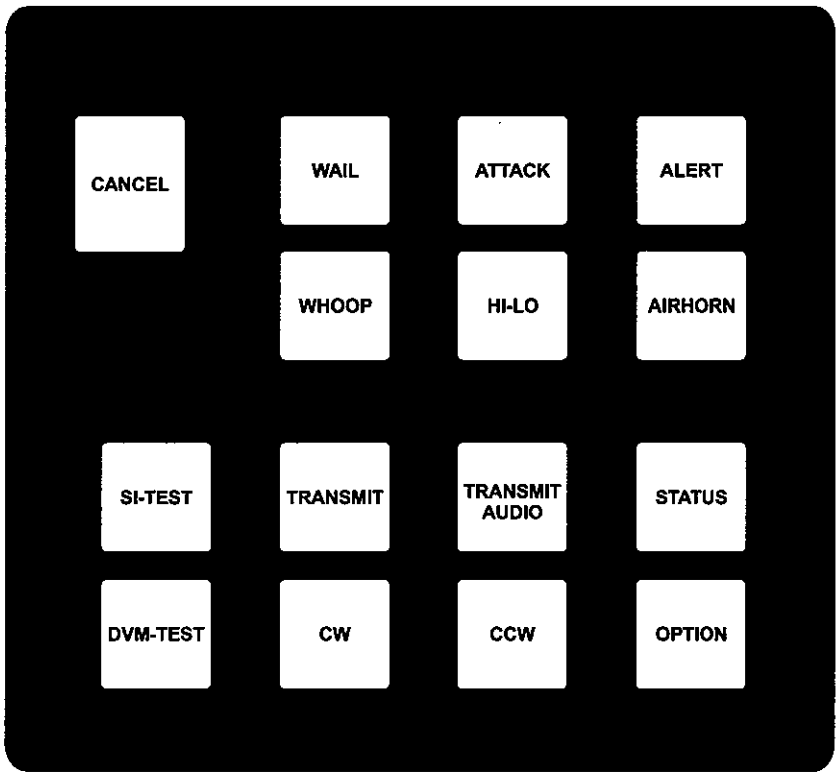
b) Local Operations

Local operation is accomplished through the control panel on the front of the station cabinet. The functions of these controls are as follows:

Cancel	Abruptly stops siren tones without the normal "ramp down" found in several tones. Helpful in the event of an accidental tone activation.
Wail	Produces a slow rise and fall tone.
Attack	Produces a faster rise and fall tone (used for designated Civil Defense National Attack tone).
Alert	A steady tone (Civil Defense alert).
Whoop	A repetitive rise-only tone.
Hi-Low	An alternating two-tone sound.
Air Horn	A pulsing air horn sound.
SI TEST®	Initiates SI TEST® tone and the optional diagnostic SI TEST® routine.
X-mit Carrier	Actuates remote station radio transmitter PTT circuit. When tone squelch is used with the transmitter, the transmit carrier function is used when adjusting tone squelch modulation.

X-mit Audio	For use with remote station radio transceiver, causes transmission of DTMF tone via RF link for tone modulation adjustment. The transmit tone level is adjusted with the transmit audio potentiometer located on the controller board (see "Fig. 18: System LED Diagnostic Indicators" on page 34).
X-mit Status	Transmits station status information and battery voltage to the control center
DVM Test	This function is not available in Vortex systems.
Rotor CW	This function is not available in Vortex systems.
Rotor CCW	This function is not available in Vortex systems.
Option	As of this printing, the "Option" control has not yet been defined.

Fig. 20: Station Control Panel



Section VIII: Understanding Station Addressing

Every Siren Station in a given area code has its own, unique "Station Address". This address allows the user to select an individual or a group of stations. As stated elsewhere in this manual, a valid station address can be any number from 0000 to 9999. This allows for 10,000 unique addresses; a staggering number of stations to keep track of. Although it is logistically impossible to have that many stations in a single area code, it does illustrate the importance of a sensible, intuitive numbering convention for station addresses. This section will outline two types of conventions

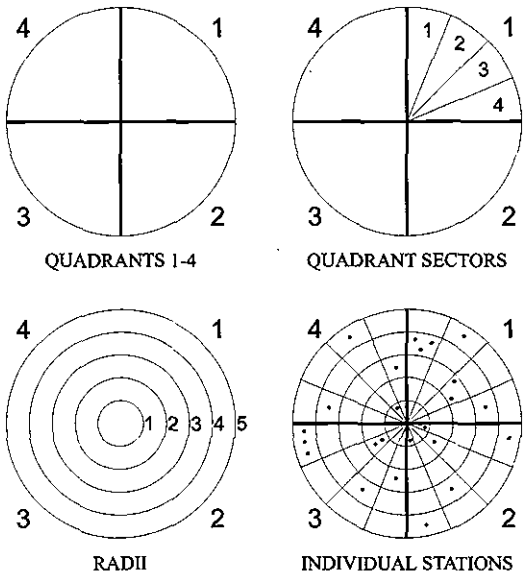
a) Central Point Source: Quadrant, Sector, Radial & Station

Frequently, warning systems are used to notify the public of emergency situations that may occur from a single, centralized location. Typically, siren stations would be located throughout a 360° area surrounding this location for a specified distance from the source. In this scenario, the Central Point Source convention would be well suited.

For illustration purposes, assume the siren stations are installed within a 5 mile radius of the Central Point. As such, a Quadrant, Sector, Radial & Station numbering convention would allow the selection of any of the following:

- **any siren station**
- **all siren stations**
- **any one of four sectors**
- **any one of 5 radii within the sectors**

The area of coverage in this system, a circle, is divided into 4 quadrants. Each quadrant is then divided into 4 sectors. Each sector is further divided into 5 segments or radii emanating from the center of this siren system.



In this system, a stations address is structured as follows:

Digit	Allocation
1	**Quadrant (1 to 4)**
2	**Sector (1 to 4)**
3	**Radii (1 to 5)**
4	**Individual station within a radian**

Here are some sample activations to further illustrate this concept.

Sample 1:

A station with address 1354 would be located in:

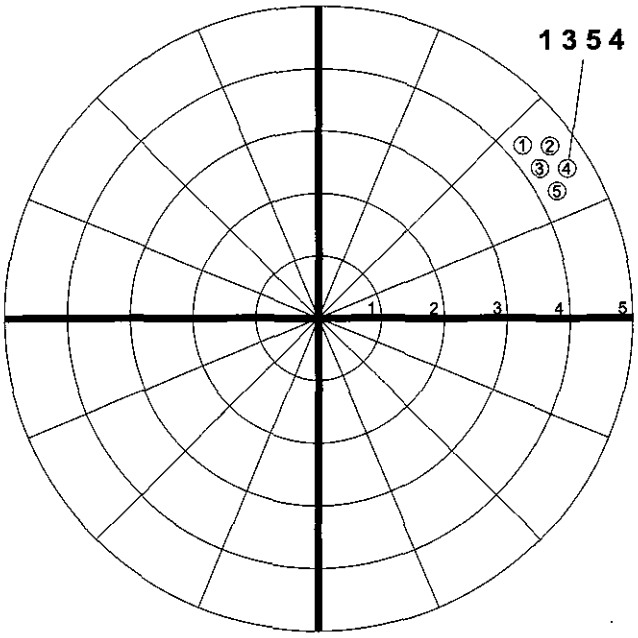
Quadrant: **1**

Sector: **3 of Quadrant 1**

Radial: **5**

Station: **4**

If an operator selects station 1-3-5-4, only that station will be selected, as shown.



SINGLE STATION SELECTION
STATION 1354

Sample 2:

If the activation of a group of remote stations within a whole segment of a radius within a quadrant and sector is desired, the fourth digit address is substituted with a "Wild Card", the "#" pound sign.

An address selection of 1 - 3 - 4 - # would activate the system as follows:

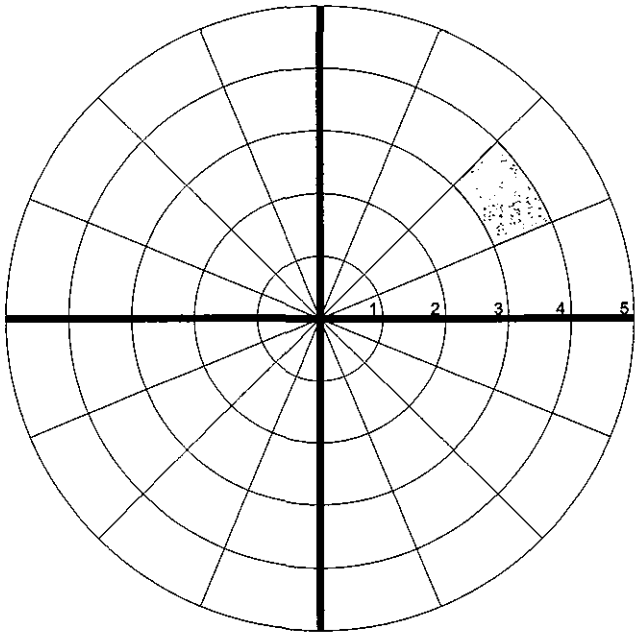
Quadrant: 1

Sector: 3 of Quadrant 1

Radial: 4

Station: # All stations defined by above

This selection is shown below.



GROUP SELECTION-RADIAL SECTOR
GROUP 134#

Sample 3:

Selection of an entire sector can be accomplished by using the following address:

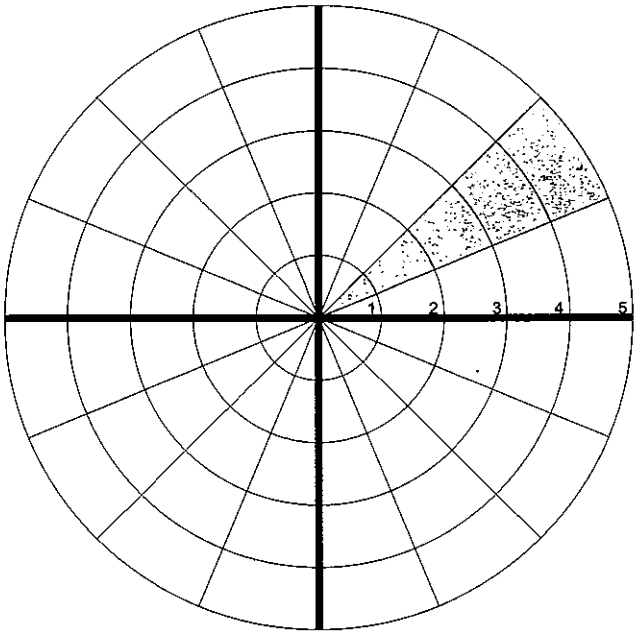
Quadrant: 1

Sector: 3 of Quadrant 1

Radial: # All radial 1 - 3

Station: # All stations defined by above

In selecting a sector, the first two digits of the address are set for the sector address, for example 1 - 3 (Quadrant 1 - Sector 3). The third and fourth digits are substituted with a # (Wild Card). Therefore, the address to select all stations in sector 1-3 is 1 - 3 - # - #. This selection is represented below.



GROUP SELECTION-SUB-SECTOR
GROUP13##

Sample 4:

The selection of a complete quadrant can be achieved by using the following address:

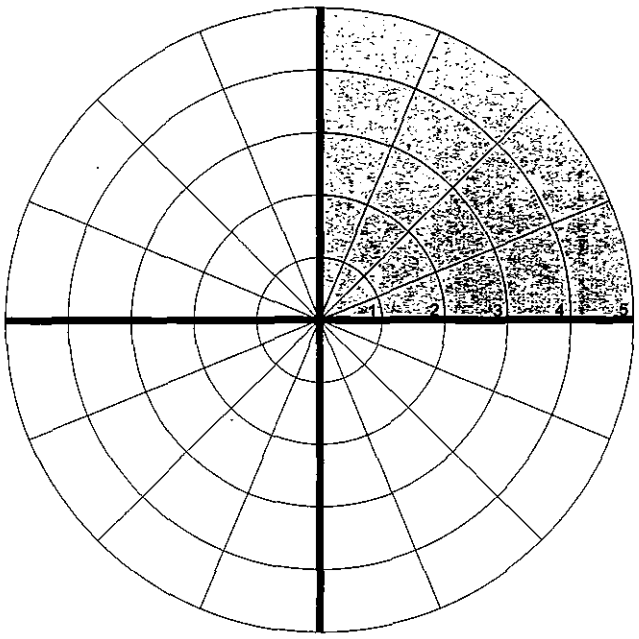
Quadrant: 1

Sector: # All sectors of Quadrant 1

Radial: # All radials in 1 - 3

Station: # All stations defined by above

When selecting a quadrant, the first digit designates the Quadrant (1). the second, third and fourth digits are replaced with Wild Cards (#,#,#). Therefore, the address for selecting all stations in quadrant 1 is 1 - # - # - # as illustrated below.



GROUP SELECTION-QUADRANT
GROUP###

Sample 5:

All stations in a system may be accessed by using the Wild Card (#) for all address numbers. The address would be # - # - # - #.

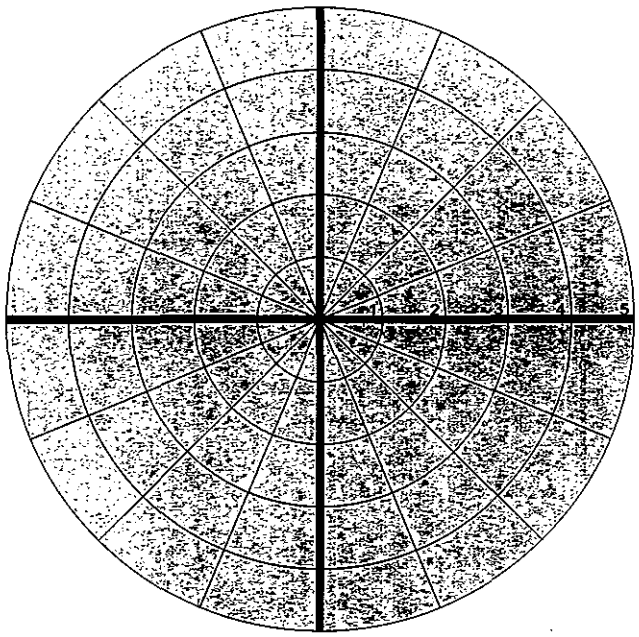
Quadrant: **# All Quadrants**

Sector: **# All sectors of all Quadrant**

Radial: **# All radials**

Station: **# All stations defined by above**

This "All Call" is illustrated as shown.



GROUP SELECTION-"ALL-CALL"
GROUP ####

b) Governmental: County, City & Station

For this next type of address structure, assume that the siren system in question is used primarily for tornado warnings throughout a major population center. This center encompasses three counties with each county having no more than ten cities. Two cities contain more than 50 high-power voice and siren stations.

The following represents a Governmental System 4-digit address configuration, allowing activation by "All Call", county group activations, city group activations and individual station activations:

```
X          X          X          X
:          :          :          :..... Individual Siren Station (0 - 9)
:          :
:          :..................................... City (0 - 9)*
:
:.............................................. County (0 - 9)
```

***One digit could also be reserved for unincorporated areas.**

An address of 2 - 5 - 4 - 5 would indicate the following individual station:

Siren Station 45, in City 5, in County 2.

The WIld Card (#) permits the use of several different types of group activations. Three samples follow:

Sample 1: County Activation (1 - # - # - #)
All Siren Stations in all Cities in County 1 will be activated by this transmission.

Sample 2: City Activation (1 - 5 - # - #)
All Siren Stations in City 5 of County 1 will be activated by this transmission.

Sample 3: System All Call (# - # - # - #)
All Siren Stations in all Cities in all Counties will be activated by this transmission.

CHAPTER 3: TROUBLESHOOTING

Section IX: Troubleshooting

a) Audio Loss

If after activating the siren there is no audio output, perform the following procedure step by step. This procedure will require a digital multimeter.

1. Locate the Audio Presence LED on the controller board (see "Fig. 18: System LED Diagnostic Indicators" on page 34). When audio is present on the board, this LED will be on.

2. Activate the WAIL siren tone from the control panel on the siren cabinet. Confirm that the Audio Presence LED is on. If this LED is not on *or* if it turns off quickly, measure the battery voltage. The siren will not activate if battery voltage drops below 19 VDC. Be sure to measure the battery voltage at the same time you activate the siren. The batteries may show a good float voltage while they are not under load, but upon activation, the battery voltage may drop below 19 VDC if their capacity is low. Note that when the siren shuts down and the load is removed from the batteries, the voltage may rapidly return to 25 VDC or more. If this condition is occurring, the batteries will need to be replaced. If the voltages are in the normal range, proceed to step 3.

3. Locate connector J2 on the control board. With your multimeter set to AC volts, measure across pins 6 and 7 (White with Orange stripe and White with Brown stripe). With the siren tone running, 5 VAC should be present. *If no voltage is present, the controller board is probably at fault.*
   NOTE: Confirm that the audio presence LED is on while performing these measurements. It indicates that the siren controller is still activated. If the specified voltages are present, proceed to step 4.

4. With the siren tone still active, measure across pin 1 (Blue wire) and pin 2 (Black w/White trace) on each of the siren amplifiers. 5 VAC should be present at each amplifier. If so, proceed to step 5. If no voltage is measured, this is indicitive of a wiring problem between the controller board and the siren amplifiers. Check the wiring between these components

5. Set your meter to measure resistance at its lowest scale. Disconnect the speaker drivers from their amplifiers. Measure across each of the speaker drivers, making sure that at least one wire of each driver is removed from the power amplifier (or else the transformer in the amp is being measured as well). Each driver should have a DC resistance of approximately 3 Ohms +/- .3 Ohms. If a resistance value outside of this range is found, contact factory.

6. Set your meter to measure DC Volts. Connect the negative lead of your meter to ground (one of the solid black wires in the multi-position connector on the amplifier is a good ground source). With a siren tone activated, measure the following wires for the following voltages (approximately):

Wire	Proper Voltage	If not...
Grey	**6 VDC**	**Controller Board is suspect**
Brown	**5 VDC**	**Controller Board is suspect**
Solid White (all)	**24 VDC**	**Contact Factory**

b) AC Battery Charger

The Vortex is basically a 24 volt DC battery powered device. An internal battery charger maintains the batteries at an optimum charge level. The charger incorporates a temperature compensation circuit to insure proper charging regardless of outside temperature.

There are two (2) serviceable fuses on the battery charger. The AC fuse is a 7 amp, SLO-BLO, 3AG type, located at the back of the printed circuit board. The fuse for battery charge voltage is a 7 amp, 3AG type, located along the right rear of the printed circuit board.

c) Solar Regulator

The following procedure can be performed to confirm proper operation of the solar regulator:

1. Disconnect the solar panel from the charger. With a DC voltmeter, measure the voltage across the wires coming from the solar panel. The voltage should be greater than 32 VDC (NOTE: The solar panel must be in direct sunlight).
2. Reconnect the solar panel to the charger. Monitor the battery voltage with the cabinet voltmeter. The float voltage will vary between 25 to 30 VDC, depending on battery temperature. When the solar regulator is charging, the DC LED on the circuit board will be on. During normal operation the charger will cycle on and off.

d) Partial or Full Diagnostic Failure

This procedure is to be used if the Partial or Full diagnostic LED (located on the controller board) indicates that a problem has been detected. A Partial indication means that at least one speaker and/or amplifier is operational. A Full indication means that all speakers and amplifiers are operational.

Note: **In order for a good Full indicator to be valid, a good Partial indicator must also be present).**

1. Connect the PalmPC to the siren station *via* the com port on the front of the siren cabinet control panel.
2. Display the "Status" screen on the PalmPC.
3. Press the SI TEST® control on the front control panel.
4. Each amplifier contains a red LED that is visible on the front of the control panel. Note if all the LED's are on. Tap the "Update Status" button on the PalmPC and note which amp is displaying an error.
5. Open the front panel and swap the speaker driver wires from the amplifier that indicated a failure, with an amplifier with a lit LED. For example: if the LED for amplifier 1 is the only LED not on, install amplifier 1 speaker wires onto amplifier 2 and install amplifier 2 speaker wires onto amplifier 1. This will diagnose if it is the speaker or the amplifier that has failed. You may also measure the DC resistance of the speaker driver with your ohm meter. Be sure that the speaker driver wires are disconnected from the amp prior to measuring. A good driver will read 3 ohms +/- .3 ohms.

Section X: Maintenance

Although The Vortex is of a dependable, solid-state design, periodic activation, field inspection and preventive maintenance is recommended to insure the maximum performance of each station.

a) Frequency of Testing and Activation

A system of twice-monthly activation and confirmation, combined with a quarterly service and preventive maintenance is recommended to help insure the successful performance of a station. Increasing the frequency of testing will support and improve a station's test record.

Stations located in environmentally adverse locations will require inspection and preventive maintenance at more frequent intervals than just discussed. Stations should always be inspected following severe storms.

If a station is activated by remote control (landline or radio), the twice-monthly activation should be performed using the remote control link.

The twice-monthly activation of a station can be confirmed by several different methods, depending upon the options selected with each Whelen System.

b) Local Site Confirmation

For a basic station activated at the cabinet, or by landline or radio, have an observer confirm that the station activated audibly. The observer should report successful as well as failed station tests. Station Performance Logs should be maintained. It is important to understand that audible confirmation alone is not assurance that the station is operating at 100% power. This requires inspecting the station in greater detail.

Stations may be optionally equipped with counters that advance upon radio or tone generator activation. These counters do not confirm total operation or the final expected output of an outdoor warning device.

The station's activation may be confirmed using SI TEST® or full power siren mode. Following an activation, SI TEST® displays its information on control board mounted LED's or through a LED display board visible on the right side of the cabinet. Fig. 15 (page 34) shows the location and function of the LED's on the control board. The cabinet mounted display board LED's will confirm the following (from Left to Right):

Red	**AC Power**
Yellow	**DC Power at minimum proper operating level**
Red	**Partial Amplifier and Speaker Driver Operation**
Green	**Full Amplifier and Speaker Driver Operation**
Red	**Rotor Operation**

Following activation and observation the results should be noted in the performance log. Any indication of incomplete operation presented by the LED indicators should prompt IMMEDIATE service attention.

The SI TEST® system retains information until cleared by a specific command.

The SI TEST® information stored at the station, if not cleared, will update itself automatically with subsequent SI TEST® activations.

c) Remote Monitoring and Confirmation

Stations equipped with the optional Whelen COMM/STAT™ Command and Status Monitoring control, allow remote monitoring of status as well as confirmation of system activation. COMM/ STAT™ returns the results of a remote station activation (both SI TEST® and siren warning mode) in a DTMF encoded format via radio link.

Remote monitoring by RF link eliminates the necessity of physically visiting a station to confirm an activation.

Following the activation of a station, a "Status Request" may be sent to that station by DTMF encoded radio command. Diagnostic SI TEST® information is then presented to the status encoder at the station, converted into DTMF code and transmitted back to the control center, where one of several COMM/STAT™ base station products will convert the DTMF code into meaningful information.

d) Quarterly Maintenance

Developing a quarterly inspection and preventive maintenance program for an outdoor warning station requires a thorough understanding of all the elements and expectations of the system. The following section provides an overview and basic guideline for quarterly station inspection and preventive maintenance program for the sample station.

e) Visual Siren Station Physical Inspection

- **Observe the speaker cluster, siren cabinet and AC Service for any signs of damage or loose mounting hardware (Some shrinkage of a newly treated utility pole may occur in the first several years following installation, requiring the tightening of mounting hardware.**

- **Check all conduit for watertight connection and entrance into the siren cabinet.**

- **Inspect the AC Service for damage, blown fuses, degraded (corroded) power connections and integrity of the lightning arrestor.**

- **Inspect the grounding system for AC Service, Siren Cabinet and pole top equipment. Verify connections and acceptability of earth ground.**

- **Observe the pole for any shifting and/or leaning. Poles that are not plumb will not properly direct alerting sounds.**

- **Examine entire station for any signs of vandalism or forced entry.**

f) Siren Cabinet and Components

- **Inspect AC Outlet, fuse and surge suppression equipment. Examine system for infiltration of foreign material(s), rodents or other pests.**

- **Inspect and, if necessary, clean all drain holes and vent screens.**

- **Inspect battery terminal connections and clean if necessary. Re-apply silicone coating to battery terminals if necessary. Observe battery voltage with siren in inactive state (AC power must be on to station, otherwise station must be powered up to observe meter).**

- **Examine all wiring harnesses for chafing. Verify wiring terminations for tightness and wiring connections for proper electrical connections. Replace and correct any corroded or marginal connections. Inspect antenna for proper connection.**

g) Speaker Assembly and Pole Top Equipment

Note: **Any examination of Pole Top equipment should be performed with the station audibly disabled.**

- **Inspect speaker for blockage by rodents, pests or other foreign material. Clean if necessary. Inspect any wiring cables or harnesses for chafing. Inspect the siren driver compartment for infiltration of foreign materials, rodents or pests. Clean if necessary. Confirm that the driver compartment will allow for water or moisture drainage. Inspect speaker wiring connections for any sign of corrosion.**

- **Verify tightness of all mounting hardware.**
- **Check all wiring terminations and connections.**
- **Verify lubrication of the rotor gear train. The recommended inspection interval is initially 6 months. Following the initial two inspections, the owner may determine if a longer inspection interval is acceptable. Varying weather conditions will affect this interval. Many stations are located in areas of the country where an annual inspection/ lubrication interval is acceptable.**

h) Station Performance Testing

Note: **Depending on local conditions and station options selected, the station may be tested on or off line. Off line testing of the station involves disconnecting the speaker drivers from the siren amplifiers, so as not to disturb the public when verifying tone generator operation. A complete test must, however, include the testing of the siren amplifier operation.**

A basic routine, verifying the performance and operation of the sample station previously described, would be as follows:

1. Local and Remote Activation -

   Activation of each remote station function by local control and remote control. With amplifiers on and off line as needed. An examination of each activation function will also facilitate a verification of related and subsequent system module activations and electrical connections that would be caused by an activation command. Also confirm function time outs (ex.: does the Alert signal time out at three minutes as per user specification?).

2. Response to Station Address and All Call address programming -

   Control Center reception and activation on SI TEST® or non-tone activation, for individual station address and All Call address selection.

3. Siren Amplifiers -

   Inspect for complete operation with speaker drivers (observe LED's).

4. SI TEST® Station Analysis -

Observe and confirm diagnostic status of:
AC
DC
Partial Amplifier & Speaker Driver Operation (disable one amplifier to confirm this test).
Full Amplifier & Speaker Driver Operation
Verify AC drop out during SI TEST® mode.

5. Battery Charger Operation -

   Observe for proper charging operation.

6. Batteries -

   Verify voltage stability under load.

   Perform a load test.

7. Status Encoder -

   Perform a diagnostic SI TEST® of the station and compare status information with observations made locally at the station.

   Disable one speaker and verify that the "Full" LED indicator is off.

   Disable AC and verify that the "AC" LED indicator is off.

   Compare battery voltage return status with observed and measured battery voltage.

8. Transmitter -

   Check status encoder DTMF tone level modulation with transmitter.

   Check transmitter set up.

   Verify power output and SWR.

9. Rotor -

   Activate the siren with Si-test™ or tone and verify speaker rotation. Speaker should oscillate back and forth.

Note: **On concluding any examination of a station where connectors have been opened and closed, a final radio test by either SI TEST® or full power should be performed and the results observed for a complete successful test.**

The following is a sample form that may be used for quarterly inspection and maintenance.

MAINTENANCE CHECK LIST

Station #:_____ **Siren Address:**_____

Installation Date:____/____/____ **Inspection Date:**_____

Inspector:_____

PHYSICAL INSPECTION:

	OK	NOT OK	COMMENT
Mounting Hardware	___	_____	_____
Speaker Assembly	___	_____	_____
AC Service	___	_____	_____
Proper Grounding	___	_____	_____
Solar Panels*	___	_____	_____
Antenna*	___	_____	_____
Conduit Connections	___	_____	_____
Siren Case Assembly	___	_____	_____
Batteries	___	_____	_____
Components Secure	___	_____	_____
Harnesses	___	_____	_____

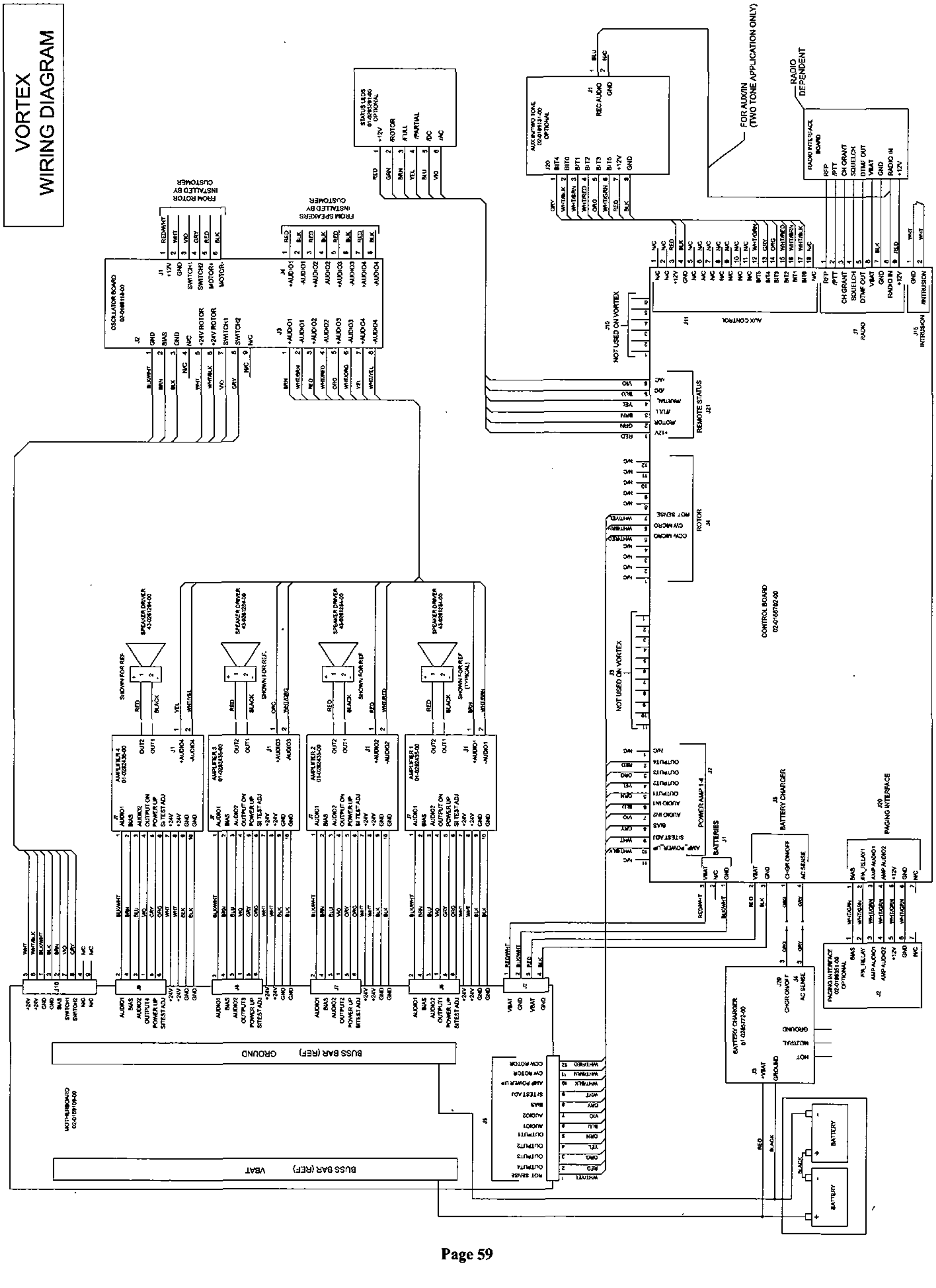
LOCAL OPERATIONAL TESTING

Battery Voltage	___	_____	_____
Manual Test:			
Clear	___	_____	_____
Wail	___	_____	_____
Attack	___	_____	_____
Alert	___	_____	_____
Airhorn	___	_____	_____
Hi-Lo	___	_____	_____
Whoop	___	_____	_____
Clockwise	___	_____	_____
Counter Clockwise	___	_____	_____
(SI TEST®):	___	_____	_____
AC LED	___	_____	_____
DC LED	___	_____	_____
Partial LED	___	_____	_____
Full LED	___	_____	_____
Rotor LED	___	_____	_____
Timer Set LED	___	_____	_____
Audio Present LED	___	_____	_____

MAINTENANCE CHECK LIST
(continued)

	OK	NOT OK	COMMENT
Radio*:			
Squelch Control	___	_____	_____
Sensitivity	___	_____	_____
Antenna Tuned*	___	_____	_____
Transmit LED	___	_____	_____
Remote Activation:			
Clear	___	_____	_____
Wail	___	_____	_____
Attack	___	_____	_____
Alert	___	_____	_____
Airhorn	___	_____	_____
Hi-Lo	___	_____	_____
Whoop	___	_____	_____
Wail / 5 Sec.	___	_____	_____
All Call	___	_____	_____
Speaker LEDs:			
1	___	_____	_____
2	___	_____	_____
3	___	_____	_____
4	___	_____	_____
SI TEST®:			
AC	___	_____	_____
DC	___	_____	_____
Partial	___	_____	_____
Full	___	_____	_____
Status Request	___	_____	_____
Intrusion*	___	_____	_____

***Optional**


VORTEX
WIRING DIAGRAM
FOR AUX/IN
(TWO TONE APPLICATION ONLY)
RADIO
DEPENDENT

PUBLIC WARNING SYSTEM PRODUCTS ONLY

USER DIRECT WARRANTY

PUBLIC WARNING SYSTEM PRODUCTS ONLY

Whelen's warranty on Whelen High-Power Voice and Siren Systems is limited to the following:

For a period of 24 months from the date of manufacture, Whelen will repair* or replace at its option, defective modules, which are manufactured by Whelen Engineering Company, Inc. in their entirety, and are returned by the customer via prepaid freight. Whelen will return repaired modules via prepaid ground transportation if shipping address is within the 48 contiguous states or District of Columbia. Repaired modules shipped outside of the 48 contiguous states or District of Columbia are at customer's expense.

Excluded from warranty consideration is any loss arising from vandalism, tampering, misuse, improper installation, environmental damage or alterations to the product.

A "pass-through" warranty is offered for products manufactured by other companies that are sold with Whelen High-Power Voice and Siren Systems and Whelen Electronic Sirens. Typical examples of such products include, but are not limited to: computers, printers, weather data sensors, un-interruptible power supplies, and batteries. Warranties on these products are "pass-through", meaning the equipment warranty will be limited to that offered by the equipment's original manufacturer and that the warranty will exist solely between the manufacturer and end user. Exceptions will be by prior contractual agreement only.

For a three year period following the 24 month warranty, Whelen will repair defective modules, which are manufactured in their entirety by Whelen and are returned to Whelen via prepaid freight for a flat fee. Whelen reserves the right to determine if the unit is repairable. This flat fee is now $75 per module. This offering is limited to defective modules, exclusive of any loss arising from vandalism, misuse, improper installation, tampering or environment damage. Whelen warrants its repair of defective modules for a period of one year.

Whelen will not be held liable for any incidental or consequential damages, and assumes no responsibility or liability for expenses incurred in the removal and/or reinstallation of products requiring service and/or repair, nor the packaging, handling and shipping to the Factory Repair Center; nor for the handling of products returned from the repair center after service or repair. Failure to use the batteries recommended by Whelen Engineering Company, Inc. will void your warranty.

There are no warranties, expressed or implied, including, but not limited to, any implied merchantability or fitness for a particular use.

Whelen Engineering Company, Inc. reserves the right to discontinue, modify, or upgrade any products of its manufacture with design improvements without prior notice.

This Warranty gives you specific rights and you may also have other rights which vary from state to state.

WHELEN®

ENGINEERING COMPANY, INC.

Route 145, Winthrop Road, Chester, CT 06412-0684

Tel: (860) 526-9504 • Fax: (860) 526-4784

PWSWARR-10572D-011806

* The only AUTHORIZED WHELEN REPAIR CENTER(S) are predetermined by the Whelen Factory via official listing obtained from Whelen Engineering Company Inc., Chester, CT.

[redacted] Engineering Company, Inc.

Home
Where To Buy
Omni-Directional Sirens
Rotating Sirens
Student Alert
Recorded Message Library
Warning Tones
FAQ's
Press Releases
Literature
Installation Guides
Motorsports

RECORDED MESSAGE LIBRARY FOR VOICE & SIREN SYSTEMS

Winter Weather	Severe Weather	Tornado	Hurricane
Severe Thunderstorm	Flash Flood	Test	Post Test
Chemical Release	*Evacuation, Hazardous*	*Materials*	*Terrorist Alert*
All Clear	General Emergency	Post Disaster	General Announcement

Click on Model # to listen to message. Messages are 30 seconds or less.

WINTER WEATHER WARNING (16 Seconds)

16 Seconds	
Model # WWW1:	Winter Weather Warning, Winter Weather Warning, Take emergency precautions immediately, Take emergency precautions immediately.

SEVERE WEATHER WARNING

10 Seconds	
Model # SWW1:	*Severe Weather Warning. Seek shelter immediately. Severe weather* warning. Seek shelter immediately. Severe Weather Warning. Seek shelter immediately.

TORNADO WARNING

24 Seconds	
Model # TW1:	Tornado warning. A tornado warning has been issued for this area. Tornado warning. A tornado warning has been issued for this area. Tornado warning.

19 Seconds	
Model # TW2:	Attention! A tornado warning has been issued. Seek shelter now. Do not delay. Seek shelter now.

17 Seconds	
Model # TW3:	A tornado warning is in effect! Seek shelter now! Tune to your local TV station for further information. Seek shelter now!

16 Seconds	
Model # TW4:	Warning! A tornado warning has been issued for our location. Please take shelter immediately.

HURRICANE WARNING Return to top

13 Seconds	
Model # HW1:	Hurricane warning. A hurricane warning has been issued for this area. Hurricane warning.

SEVERE THUNDERSTORM WARNING Return to top

19 Seconds	

Model # STW1:	Severe Thunderstorm Warning. A severe thunderstorm warning has been issued for this area. A severe thunderstorm warning.

19 Seconds	
Model # STW2:	Thunderstorm Warning!!! A Severe thunderstorm warning has been issued for this area. Seek shelter away from this area immediately!

13 Seconds	
Model # STW3:	Thunderstorm warning. Large hail and high wind is possible. Listen to radio and TV details.

FLASH FLOOD Return to top

17 Seconds	
Model # FF1:	Attention: A flash flood warning is in effect for your area avoid low areas. Be alert for rising waters.

THIS IS A TEST Return to top

14 Seconds	
Model # T1:	This is a test. This is a test of the emergency warning system. This is only a test.

13 Seconds	
Model # T2:	This is a test. This is a test of the emergency warning system. This is only a Test. This is a Test. This is a test of the emergency warning system. This is only a Test.

16 Seconds	
Model # T3:	This is a test of the Emergency Management Public Warning System. This is only a test.

18 Seconds	
Model # T4:	Attention: The following is a regular monthly test of the outdoor warning system. This is not an emergency. This is only a test.

POST TEST ANNOUNCEMENT Return to top

13 Seconds	
Model # PTA1:	This has been a test of the emergency warning system. This was only a test.

CHEMICAL RELEASE WARNING **Return to top**

16 Seconds	
Model # CRW1:	Chemical Release. Stay inside buildings and close windows and doors unless advised by authorities to evacuate area. Chemical release. Stay inside buildings and close windows and doors unless advised by authorities to evacuate area. Chemical release.

14 Seconds	
Model # CRW2:	Attention: There has been a chemical release in your area. Everyone should evacuate immediately.

18 Seconds	
Model #	Attention: There has been a chemical accident in your area. Go inside,

CRW3:	tune your radio or television to a local station for additional information!

EVACUATION WARNING Return to top

15 Seconds	
Model # EW1:	An emergency evacuation of this area is required. Follow evacuation route instructions. Listen to radio and TV for details.

26 Seconds	
Model # EW2:	Attention! This is an emergency evacuation order. Remain calm, follow the instructions of the emergency officials. This is an emergency evacuation order. Obey the emergency officials. Remain calm

HAZARDOUS MATERIALS Return to top

18 Seconds	
Model # HM1:	Hazardous Material Incident. A hazardous material incident has occurred, *follow instructions of authorities to evacuate area of concern.*

22 Seconds	
Model # HM2:	Hazardous Materials Incident. A hazardous materials accident has occurred. Please listen to your local news for information. Hazardous Materials Incident.

12 Seconds	
Model # HM3:	The hazardous materials emergency for this area has been canceled.

28 Seconds	
Model # HM4:	Attention: A hazardous material release has occurred in your area. Go inside, close all windows and doors, cut off all ventilation systems, air conditioners, and heating units. Be alert for further information and instructions.

16 Seconds	
Model # HM5:	There has been a hazardous materials incident. Please tune to your local radio for details.

15 Seconds	
Model # HM6:	A hazardous materials accident has occurred in the city. Seek shelter indoors. Listen to radio and TV for details.

TERRORIST ALERT WARNING Return to top

13 Seconds	
Model # TA1:	Terrorist alert. A terrorism alert has been issued, please follow procedure.

ALL CLEAR Return to top

9 Seconds	
Model # AC1:	All Clear. The emergency is over. All Clear. The emergency is over. All Clear. The emergency is over.

15 Seconds	

Model # AC2:	Attention: The emergency is over. I repeat the emergency is over. Resume your normal duties.

GENERAL EMERGENCY CONDITIONS Return to top

17 Seconds	
Model # GEC1:	Attention: An emergency condition exists, stand by for instructions. An emergency condition exists, stand by for instructions.

POST DISASTER WARNING *Return to top*

22 Seconds	
Model # PDW1:	Attention: Standby for a list of shelter and first aid stations. All residents listen for a shelter location in your area. Proceed with caution. Watch for downed power lines.

GENERAL ANNOUNCEMENT **Return to top**

15 Seconds	
Model # GA1:	Attention all residents. Stand by for an emergency announcement. Stop all traffic and stand by for an emergency announcement.

CITY OF JONESBORO

RFP 2008:30

TORNADO SIREN SYSTEM

DUE 2:00PM CDT AUGUST 27, 2008

ORIGINAL

SECTION 1

INTRODUCTION

1.1 Description of the City of Jonesboro

The City of Jonesboro is located on the hills of Crowley's Ridge in Eastern Arkansas, 65 miles northwest of Memphis, TN. The city limits is 82 square miles with a population of approximately 62,000 and is one of two county seats in Craighead County. Arkansas State University main campus resides within the borders of Jonesboro.

1.2 Background and Special Circumstances

Currently there is a warning system in place at The City of Jonesboro. Said warning system consists of 26 warning sirens. At present 22 are in working condition The city's goal in securing these services is to replace the system for notifying the community in the event of a manmade or natural disaster.

1.3 Objective of this Request for Proposal

The City of Jonesboro, Arkansas is soliciting proposals in response to this Request for Proposal for Selection of a Vendor to Provide outdoor warning siren system Services related to outdoor warning emergency notification system, RFP No. 2008:30 (this "**RFP**"), from qualified vendors to provide outdoor warning systems services (the "**Services**") related to the City of Jonesboro, Arkansas. The Services, which are more specifically described in **Section 5.4** (Scope of Work)

SECTION 2

NOTICE TO VENDOR

2.1 Submittal Deadline

City of Jonesboro will accept proposals submitted in response to this RFP until Thursday August 27, 2008 @ 2:00 pm Central Prevailing Time CST (the "**Submittal Deadline**").

2.2 City of Jonesboro Contact Person

Vendors will direct all questions or concerns regarding this RFP to the following City of Jonesboro contact (the "**City of Jonesboro Contact**"):

Steve Kent
Purchasing Agent
City of Jonesboro
P.O. Box 1845
Jonesboro, AR 72403-1845
(515 West Washington Ave 72401)
Phone - 870-336-7200
Email- **skent@jonesboro.org**

City of Jonesboro specifically instructs all interested parties to restrict all contact and questions regarding this RFP to written communications forwarded to the City of Jonesboro Contact. The City of Jonesboro Contact must receive all questions or concerns no later than Friday August 20, 2008 at 5:00 pm. The City of Jonesboro will have a reasonable amount of time to respond to questions or concerns. It is City of Jonesboro's intent to respond to all appropriate questions and concerns; however, City of Jonesboro reserves the right to decline to respond to any question or concern.

2.3 Criteria for Selection

The successful Vendor, if any, selected by City of Jonesboro in accordance with the requirements and specifications set forth in this RFP will be the Vendor that submits a proposal in response to this RFP on or before the Submittal Deadline that is the most advantageous to City of Jonesboro. The successful Vendor is referred to as the "**Contractor**." Vendor is encouraged to propose terms and conditions offering the maximum benefit to City of Jonesboro in terms of (1) services to City of Jonesboro, (2) total overall cost to City of Jonesboro, and (3) project management expertise. Vendors should describe all educational, state and local government discounts, as well as any other applicable discounts that may be available to City of Jonesboro in a contract for the Services.

2.4 Key Events Schedule

Issuance of RFP August 07, 2008

Deadline for Questions/Concerns August 20, 2008 5:00 pm CST (ref. **Section 2.2** of this RFP)

Submittal Deadline August 27, 2008 2:00 p.m Central Prevailing Time (ref. **Section 2.1** of this RFP)

SUBMISSION OF PROPOSAL

3.1 Number of Copies

Vendor must submit a total of 16 complete and identical copies of its *entire* proposal. An *original* signature by an authorized officer of Vendor must appear on at least one (1) copy of the submitted proposal. The copy of the Vendor's proposal bearing an original signature should contain the mark "original" on the front cover of the proposal.

3.2 Submission

Proposals (16 copies) must be received by City of Jonesboro on or before the Submittal Deadline (ref. **Section 2.1** of this RFP) and should be delivered to:

Steve Kent
Purchasing Agent
City of Jonesboro
P.O. Box 1845
Jonesboro, AR 72403-1845
(515 West Washington Ave 72401)
Phone 870-336-7200
Email- **skent@jonesboro.org**

3.3 Proposal Validity Period

Each proposal must state that it will remain valid for City of Jonesboro's acceptance for a minimum of sixty days (60) after the Submittal Deadline, to allow time for evaluation, selection, and any unforeseen delays.

3.4 Terms and Conditions

3.4.1 Vendor must comply with the requirements and specifications contained in this RFP, the Terms and Conditions (ref. **Section 4** of this RFP), the Notice to Vendor (ref. **Section 2** of this RFP), Proposal Requirements (ref. **APPENDIX ONE**) and the Specifications and Additional Questions (ref. **Section 5** of this RFP). If there is a conflict among the provisions in this RFP, the provision requiring Vendor to supply the better quality or greater quantity of services will prevail, or if such conflict does not involve quality or quantity, then interpretation will be in the following order of precedence:

3.4.1.1. Specifications and Additional Questions (ref. **Section 5** of this RFP);

3.4.1.2. Terms and Conditions (ref. **Section 4** of this RFP);

3.4.1.3. Proposal Requirements (ref. **APPENDIX ONE**);

3.4.1.4. Notice to Vendors (ref. **Section 2** of this RFP).

3.5 Submittal Checklist

Vendor is instructed to complete, sign, and return the following documents as a part of its proposal. If Vendor fails to return each of the following items with its proposal, then City of Jonesboro may reject the proposal:

3.5.1 Signed and Completed Execution of Offer (ref. **Section 2 of APPENDIX ONE**)

3.5.2 Signed and Completed Pricing and Delivery Schedule (ref. **Section 6** of this RFP)

3.5.3 Responses to Vendor's General Questionnaire (ref. **Section 3** of **APPENDIX ONE**)

3.5.4 Responses to questions and requests for information in the Specifications and Additional Questions Section (ref. **Section 5** of this RFP)

SECTION 4

4.1 Venue; Governing Law

City of Jonesboro, Craighead County, Arkansas shall be the proper place of venue for suit on or in respect of this Agreement. This Agreement and all of the rights and obligations of the parties hereto and all of the terms and conditions hereof shall be construed, interpreted and applied in accordance with and governed by and enforced under the laws of the State of Arkansas.

4.2 Compliance with Law

Contractor is aware of, is fully informed about, and in full compliance with its obligations under existing applicable law and regulations, including but not limited to Title VI of the Civil Rights Act of 1964, as amended (42 USC 2000(D)), Executive Order 11246, as amended (41 CFR 60-1 and 60-2), Vietnam Era Veterans Readjustment Act of 1974, as amended (41 CFR 60-250), Rehabilitation Act of 1973, as amended (41 CFR 60-741), Age Discrimination Act of 1975 (42 USC 6101 et seq.), Fair Labor Standards Act of 1938, Sections 6, 7, and 12, as amended, Immigration Reform and Control Act of 1986, and Utilization of Small Business Concerns and Small Business Concerns Owned and Controlled by Socially and Economically Disadvantaged Individuals (PL 96-507), the Americans with Disabilities Act of 1990 (42 USC 12101 et seq.), the Civil Rights Act of 1991 and all laws and regulations and executive orders as are applicable.

4.3 City of Jonesboro's Right to Audit

At any time during the term of this Agreement and for a period of three (3) years thereafter City of Jonesboro or a duly authorized audit representative of City of Jonesboro, at reasonable times, reserves the right to audit Contractor's records and books relevant to all services provided under this Agreement. In the event such an audit by City of Jonesboro reveals any errors/overpayments by City of Jonesboro, Contractor shall refund City of Jonesboro the full amount of such overpayments within thirty (30) days of such audit findings, or City of Jonesboro, at its option, reserves the right to deduct such amounts owing City of Jonesboro from any payments due Contractor.

4.4 Access to Documents

To the extent applicable to this Agreement, in accordance with Section 1861(v)(I)(i) of the Social Security Act (42 U.S.C. 1395x) as amended, and the provisions of 42 CFR Section 420.300, et seq., Contractor agrees to allow, during and for a period of not less than three (3) years after the Agreement term, access to this Agreement and its books, documents, and records; and contracts between Contractor and its subcontractors or related organizations, including books, documents and records relating to same, by the Comptroller General of the United States, the U.S. Department of Health and Human Services and their duly authorized representatives.

4.5 Insurance

4.5.1 Contractor, consistent with its status as an independent contractor, will carry at least the following insurance in the form, with the companies and in the amounts (unless otherwise specified) as City of Jonesboro may require:

4.5.1.1 Workers' Compensation Insurance with statutory limits, and Employer's Liability Insurance with limit of not less than One Million Dollars ($1,000,000) per accident or disease. Policies must include All States Endorsement and a waiver of all rights of subrogation and other rights against the City of Jonesboro;

4.5.1.2 Commercial General Liability insurance, including Blanket Contractual Liability, Broad Form Property Damage, Personal and Advertising Injury, Completed Operations/Products Liability, Medical Expenses, Interest of Employees as additional insured's and Broad Form General Liability Endorsements, for at least One Million Dollars ($1,000,000) per occurrence on an occurrence basis;

4.5.1.3 Commercial Automobile Liability insurance covering all owned, non-owned or hired automobiles to be used by Contractor, with coverage for at least One Million Dollars ($1,000,000) Combined Single Limit Bodily Injury and Property Damage;]

4.5.2 Contractor will deliver to City of Jonesboro:

4.5.2.1 Evidence satisfactory to City of Jonesboro in its sole discretion, evidencing the existence of all the insurance promptly after the execution and delivery hereof and prior to the performance or

continued performance of any services to be performed by Contractor hereunder from or after the date of this Agreement; and

4.5.2.2 Additional evidence, satisfactory to City of Jonesboro in its sole discretion, of the continued existence of all required insurance not less than thirty (30) days prior to the expiration of any required insurance. If, however, Contractor fails to pay any of the renewal premiums for the expiring policies, City of Jonesboro will have the right to make the payments and set-off the amount thereof against the next payment coming due to Contractor under this Agreement. Such insurance policies, with the exception of Workers' Compensation and Employer's Liability, will name and the evidence will reflect City of Jonesboro as an Additional Insured and will provide that the policies will not be canceled until after thirty (30) days' unconditional written notice to City of Jonesboro.

4.5.3 The insurance policies required in this Agreement will be kept in force for the periods specified below:

4.5.3.1 Commercial General Liability Insurance, Commercial Automobile Liability Insurance will be kept in force until receipt of Final Payment by Contractor; and

4.5.3.2 Workers' Compensation Insurance and Employer's Liability Insurance will be kept in force until the Services have been fully performed and accepted by City of Jonesboro in writing.

4.6 Indemnification

4.6.1 TO THE FULLEST EXTENT PERMITTED BY LAW, CONTRACTOR WILL AND DOES HEREBY AGREE TO INDEMNIFY, PROTECT, DEFEND WITH COUNSEL APPROVED BY CITY OF JONESBORO AND HOLD HARMLESS CITY OF JONESBORO, AND THEIR RESPECTIVE AFFILIATED ENTERPRISES, REGENTS, OFFICERS, DIRECTORS, ATTORNEYS, EMPLOYEES, REPRESENTATIVES AND AGENTS (COLLECTIVELY "**INDEMNITEES**") FROM AND AGAINST ALL DAMAGES, LOSSES, LIENS, CAUSES OF ACTION, SUITS, JUDGMENTS, EXPENSES, AND OTHER CLAIMS OF ANY NATURE, KIND, OR DESCRIPTION, INCLUDING REASONABLE ATTORNEYS' FEES INCURRED IN INVESTIGATING, DEFENDING OR SETTLING ANY OF THE FOREGOING (COLLECTIVELY "**CLAIMS**") BY ANY PERSON OR ENTITY, ARISING OUT OF, CAUSED BY, OR RESULTING FROM CONTRACTOR'S PERFORMANCE UNDER OR BREACH OF THIS AGREEMENT AND THAT ARE CAUSED IN WHOLE OR IN PART BY ANY NEGLIGENT ACT, NEGLIGENT OMISSION OR WILLFUL MISCONDUCT OF CONTRACTOR, ANYONE DIRECTLY EMPLOYED BY CONTRACTOR OR ANYONE FOR WHOSE ACTS CONTRACTOR MAY BE LIABLE. THE PROVISIONS OF THIS SECTION WILL NOT BE CONSTRUED TO ELIMINATE OR REDUCE ANY OTHER INDEMNIFICATION OR RIGHT WHICH ANY INDEMNITEE HAS BY LAW OR EQUITY.

4.6.2 IN ADDITION, CONTRACTOR WILL AND DOES HEREBY AGREE TO INDEMNIFY, PROTECT, DEFEND WITH COUNSEL APPROVED BY CITY OF JONESBORO, AND HOLD HARMLESS INDEMNITEES FROM AND AGAINST ALL CLAIMS ARISING FROM INFRINGEMENT OR ALLEGED INFRINGEMENT OF ANY PATENT, COPYRIGHT,

TRADEMARK OR OTHER PROPRIETARY INTEREST ARISING BY OR OUT OF THE PERFORMANCE OF SERVICES OR THE PROVISION OF GOODS BY CONTRACTOR, OR THE USE BY INDEMNITEES, AT THE DIRECTION OF CONTRACTOR, OF ANY ARTICLE OR MATERIAL; PROVIDED, THAT, UPON BECOMING AWARE OF A SUIT OR THREAT OF SUIT FOR INFRINGEMENT, CITY OF JONESBORO WILL PROMPTLY NOTIFY CONTRACTOR AND CONTRACTOR WILL BE GIVEN THE OPPORTUNITY TO NEGOTIATE A SETTLEMENT. IN THE EVENT OF LITIGATION, CITY OF JONESBORO AGREES TO REASONABLY COOPERATE WITH CONTRACTOR. ALL PARTIES WILL BE ENTITLED TO BE REPRESENTED BY COUNSEL AT THEIR OWN EXPENSE.

4.7 Publicity

Contractor agrees that it shall not publicize this Agreement or disclose, confirm or deny any details thereof to third parties or use any photographs or video recordings of City of Jonesboro 's employees or use City of Jonesboro's name in connection with any sales promotion or publicity event without the prior express written approval of City of Jonesboro.

4.8 Assignment of Overcharge Claims

Contractor hereby assigns to City of Jonesboro any and all claims for overcharges associated with the Contract arising under the antitrust laws of the United States, 15 U.S.C.A., Sec. 1 et seq.

4.9 Observance of City of Jonesboro Rules and Regulations

Contractor agrees that at all times its employees, agents and permitted subcontractors (if any) will observe and comply with all regulations of the facilities, including but not limited to, no smoking, parking and security regulations.

4.9.1 Payment

City of Jonesboro pays bills on the 10th and 25th of the month. Bills submitted at least five days before said dates will be paid if all appropriate approvals and documentation are attached. Contractor is responsible for obtaining correct approvals and documentation needed to suffice City of Jonesboro accounts payable systems.

4.9.2 Limitations

The parties to this Agreement are aware that there are constitutional and statutory limitations on the authority of the City of Jonesboro to enter into certain terms and conditions of this Agreement, including, but not limited to, those terms and conditions relating to disclaimers and limitations of warranties; disclaimers and limitations of liability for damages; waivers, disclaimers and limitations of legal rights, remedies, requirements and processes; limitations of periods to bring legal action; granting control of litigation or settlement to another party; liability for acts or omissions of third

parties; payment of attorneys' fees; dispute resolution; indemnities; and confidentiality (collectively, the "**Limitations**"), and terms and conditions related to the Limitations shall not be binding on City of Jonesboro except to the extent authorized by the laws and Constitution of the State of Arkansas.

4.9.3 Debarment

Contractor confirms that neither Contractor nor its Principals are suspended, debarred, proposed for debarment, declared ineligible, or voluntarily excluded from the award of contracts from United States ("**U.S.**") federal government procurement or nonprocurement programs, or are listed in the List of Parties Excluded from Federal Procurement or Nonprocurement Programs issued by the U.S. General Services Administration. "**Principals**" means officers, directors, owners, partners, and persons having primary management or supervisory responsibilities within a business entity (e.g. general manager, plant manager, head of a subsidiary, division or business segment, and similar positions). Contractor shall provide immediate written notification to City of Jonesboro if, at any time prior to award, Contractor learns that this certification was erroneous when submitted or has become erroneous by reason of changed circumstances. This certification is a material representation of fact upon which reliance will be placed when City of Jonesboro executes this Agreement. If it is later determined Contractor knowingly rendered an erroneous certification, in addition to the other remedies available to City of Jonesboro, City of Jonesboro may terminate this Agreement for default by Contractor.

4.9.4 Survival of Provisions

No expiration or termination of this Agreement will relieve either party of any obligations under this Agreement that by their nature survive such expiration or termination.

SECTION 5

SPECIFICATIONS AND ADDITIONAL QUESTIONS

5.1 General

The minimum requirements and the specifications for the Services, as well as certain requests for information to be provided by Vendor as part of its proposal, are set forth below. As indicated in **Section 2.3** of this RFP, the successful Vendor is referred to as the "**Contractor**."

5.2 Minimum Requirements

Each Proposal must include information that clearly indicates that Vendor meets each of the following minimum qualification requirements:

5.2.1 Vendor shall be a firm with at least 5 years experience in system planning, integration and installation of Outdoor Warning Systems of similar size and scope.

5.2.2 Vendor will have similar contracts with at least 5 municipalities or their equivalent.

5.2.3 Installer must be certified by manufacturer to perform installation

5.2.4 Vendor is aware of, is fully informed about, and is in full compliance with all applicable federal, state and local laws, rules, regulations applicable to the installation of an outdoor warning system including the applicable guidelines and/or standards referenced in the following documents

5.2.4.1 United Facilities Criteria (UFC) Standard. Department of Defense Document UFC 4-2021-01 .UFC 4-021-01 Design and O&M: Mass Notification Systems which outlines mass notification to be in compliance with the requirements of UFC 4-010-01, DOD Minimum Anti-terrorism Standards for Buildings.

5.2.4.2 NFPA — 72, Annex E Mass Notification Systems Standard. National Fire Protection Association (NFPA) 72, Appendix E, which names standards on providing information and instructions to people, in a building, area, site or other space using intelligible voice communications methods and possibly including visible signals, text, graphics, tactile or other communication methods.

5.2.4.3 FEMA document Ref. CPG1-17 entitled Outdoor Warning Systems Guide

5.3 Additional Questions Specific to this RFP

Vendor must submit the following information as part of Vendor's proposal:

5.3.1 If Vendor takes exception to any terms or conditions set forth in **Section 4** of this RFP, Vendor will submit a list of the exceptions.

5.3.2 In its proposal, Vendor must indicate whether it will consent to include in the Agreement the "Accessibility by Persons with Disabilities" provision that is set forth in **APPENDIX FOUR**. If Vendor objects to the inclusion of the "Accessibility by Persons with Disabilities" provision in the Agreement, Vendor must, as part of its proposal, specifically identify and describe in detail all of the reasons for Vendor's objection. NOTE THAT A GENERAL OBJECTION IS NOT AN ACCEPTABLE RESPONSE TO THIS QUESTION.

5.4 Scope of Work

Contractor will provide the following services to City of Jonesboro:

5.4.1 The system will provide for an outdoor siren warning system to include a minimum of three unique tones, controllers to provide continuous monitoring, and fixed site activation.

5.4.2 The VENDOR will provide a turn-key system, to include the design, equipment specifications, installation, service, monitoring, maintenance, training and technical support for outdoor warning system.

5.4.2.1 The VENDOR will incorporate the guidance outlined in FEMA publication CPG-1-17 entitled Outdoor Warning Systems Guide to insure to ensure effective and efficient coverage plan of the City of Jonesboro

5.4.2.2 Surveys, referenced in FEMA publication CPG-1-17 entitled Outdoor Warning Systems Guide used to determine placement of outdoor sirens. The submittal should also include a map of the City of Jonesboro that references the recommended locations of the speakers/sirens and the coverage area to include decibel contours.

5.4.2.3 Vendor is to make recommendations for the most efficient and cost effective placement of siren system to include pole mounted units for effective coverage of the City of Jonesboro

5.4.2.4 The system will provide multiple activation and control methods. A Fixed control panel is to be standard.

5.4.2.5 In addition to the 3 fixed control panels, the Vendor will provide optional cost for a laptop based mobile backup system as an alternative to the fixed based system.

5.4.2.6 The system must provide enough power for 30 minutes of continuous operation. With charge, the batteries must be able to back up the siren for at least 10 days with enough reserve for five (5) minute activation at the end of the 10 days.

5.4.2.7 The system A. If applicable, the City of Jonesboro has an existing UHF frequency license that can be immediately used until the license of new frequency can be obtained. The City of Jonesboro requires acceptance of this clause with proposal.

5.4.2.8 B. The 2.4GHz (2.400-2.500GHz) and 5.0GHz (5.725-5.875GHz), unlicensed frequency bands for implementation of this project are NOT acceptable to the City of Jonesboro as they will interfere with the current (and future) installation and deployment of the city wide wireless network.

5.4.3 The VENDOR will coordinate with the City of Jonesboro's Maintenance and Operations Department for electrical circuit availability and external mounting locations.

5.4.3.1 All electrical power requirements for all equipment locations are to be provided by the contractor and included with proposal price.

5.4.3.2 This RFP requires installation of all new conduit, Vendors are NOT to use existing conduit for this project instead Vendor must include in their pricing cost of any conduit required for this request.

5.4.3.3 If required as part of installation any cutting, patching and painting to be included in the cost

of the proposal price.

5.4.4 As part of submittal documents, the VENDOR is to include the following

5.4.4.1 Shop Drawings and Submittals – A complete equipment list, with manufactures' names, model numbers, and quantities of each item.

5.4.4.2 Manufactures' data sheets on all equipment items manufacturer name, model number/part number and complete specifications for the siren/tone warning

5.4.3.1 A map of the City of Jonesboro to include the location of the recommended speakers/sirens and the coverage area to include decibel contours.

5.4.3.2 Pole mounting specifications.

5.4.3.3 Sirens are to be mechanically sound with the ability to withstand up to 100 mph winds, include pole mounting brackets for pole and/or wall mounting.

5.4.4 The system should have the option for solar power charging.

5.4.5 The system will have the capability to incorporate future requirements and technology advances for future growth.

5.4.6 Final Test and Demonstration – The final testing and demonstration shall be performed after all installation and initial testing has been completed by the installer, but prior to any use of the system.

5.4.7 Owner Training and Familiarization – The Vendor will provide for onsite training for City personnel necessary to operate the system:

5.4.7.1 To include but not limited to training by factory certified personnel, training on system operation, training on trouble shooting of potential system problems, all training manuals, hands on experience, industry's best practices and all incidental expenses.

5.4.8 Guarantee and Warranty – Guarantee all parts, labor and installation furnished under this contract for a period of twelve months from the date of final system acceptance. Where warranties on individual pieces of equipment exceed twelve months, the guarantee period shall be extended to the warranty period of the particular items.

5.4.8.1 Warranty to include an annual maintenance agreement after warranty expires.

SECTION 6

PRICING AND DELIVERY SCHEDULE

Proposal of: Mo - Ark Communications
(Proposer Company Name)

To: The City of Jonesboro

Ref.: Outdoor Warning Siren System

RFP No. 2008:30

Ladies and Gentlemen:

Having carefully examined all the specifications and requirements of this RFP and any attachments thereto, the undersigned proposes to furnish the outdoor warning siren system services required pursuant to the above-referenced Request for Proposal upon the terms quoted below.

6.1 Pricing for Services Offered

6.1.2. Outdoor Warning Siren System

6.1.2.1 Cost / Specifications

a.) Number of Sirens	38
b.) Price per unit	$272.15
c.) Number of Controllers	38
d.) Price per Controller	Included In B
e.) Location, Attach map	Attached
f.) % of Coverage Area	98
g.) Price per pole	1200
h.) Installation price	3950

NOTE: INCLUDE MANUFACTURER, PART NUMBER AND COMPLETE SPECIFICATIONS FOR EQUIPMENT IN THIS TABLE WITH RESPONSE.

6.1.2.2 Training	$ 650
6.1.2.3 Annual Maintenance (after initial expiration)	$ 6000
6.1.2.4 Fixed Control panels for siren system (3)	$ 2000
6.1.2.5 Consultation/ Support Services	$ 20 Hrs Included $65 Hr After
6.1.3. Price the following options for the city's consideration:	
6.1.4. OPTION A: Mobile control panel option in addition to fixed control panel option	$ 5025
6.1.5. OPTION B: Solar panel option	$ 1420.65 per siren
GRAND TOTAL:	$ 523,716.70

6.2 Delivery Schedule of Events and Time Periods

10-14 Weeks - See Attached details

Respectfully submitted,

Proposer: Mo-Ark Communications

By: [signature]
(Authorized Signature for Proposer)

Name: Curt Majors

Title: Sales Consultant

Date: 7/27/08

APPENDIX ONE

PROPOSAL REQUIREMENTS
TABLE OF CONTENTS

SECTION 1

GENERAL INFORMATION

Purpose

City of Jonesboro is soliciting competitive sealed proposals from Proposers having suitable qualifications and experience providing services in accordance with the terms, conditions and requirements set forth in this RFP. This RFP provides sufficient information for interested parties to prepare and submit proposals for consideration by City of Jonesboro. By submitting a proposal, Proposer certifies that it understands this RFP and has full knowledge of the scope, nature, quality, and quantity of the services to be performed, the detailed requirements of the services to be provided, and the conditions under which such services are to be performed. Proposer also certifies that it understands that all costs relating to preparing a response to this RFP will be the sole responsibility of the Proposer.

PROPOSER IS CAUTIONED TO READ THE INFORMATION CONTAINED IN THIS RFP CAREFULLY AND TO SUBMIT A COMPLETE RESPONSE TO ALL REQUIREMENTS AND QUESTIONS AS DIRECTED.

1.2 Inquiries and Interpretations

City of Jonesboro may in its sole discretion respond in writing to written inquiries concerning this RFP and mail its response as an Addendum to all parties recorded by City of Jonesboro as having

received a copy of this RFP. Only City of Jonesboro's responses that are made by formal written Addenda will be binding on City of Jonesboro. Any verbal responses, written interpretations or clarifications other than Addenda to this RFP will be without legal effect. All Addenda issued by City of Jonesboro prior to the Submittal Deadline will be and are hereby incorporated as a part of this RFP for all purposes.

Proposers are required to acknowledge receipt of each Addendum as specified in this Section. The Proposer must acknowledge all Addenda by completing, signing and returning the Addenda Checklist (ref. **Section 4** of **APPENDIX ONE**). The Addenda Checklist must be received by City of Jonesboro prior to the Submittal Deadline and should accompany the Proposer's proposal. Any interested party that receives this RFP by means other than directly from City of Jonesboro is responsible for notifying City of Jonesboro that it has received an RFP package, and should provide its name, address, telephone number and FAX number to City of Jonesboro, so that if City of Jonesboro issues Addenda to this RFP or provides written answers to questions, that information can be provided to such party.

1.3 Public Information

Proposer is hereby notified that City of Jonesboro strictly adheres to all statutes, court decisions and the opinions of the Arkansas Attorney General with respect to disclosure of public information. City of Jonesboro may seek to protect from disclosure all information submitted in response to this RFP until such time as a final agreement is executed. Upon execution of a final agreement, City of Jonesboro will consider all information, documentation, and other materials requested to be submitted in response to this RFP, to be of a non-confidential and non-proprietary nature and, therefore, subject to public disclosure under the Arkansas Freedom of Information Act. Proposer will be advised of a request for public information that implicates their materials and will have the opportunity to raise any objections to disclosure to the Arkansas Attorney General. Certain information may be protected from release.

1.4 Type of Agreement

The Contractor, if any, will be required to enter into a contract with City of Jonesboro in a form that (i) includes terms and conditions substantially similar to the terms and conditions set forth in **Section 4** of this RFP, and (ii) is otherwise acceptable to City of Jonesboro in all respects (the "**Agreement**").

1.5 Proposal Evaluation Process

City of Jonesboro will select the Contractor by using the competitive sealed proposal process described in this Section. City of Jonesboro will open the Bid Envelope submitted by a Proposer in order to ensure that the Proposer has submitted the number of completed and signed originals. All proposals submitted by the Submittal Deadline accompanied by the number of completed and signed originals that are required by this RFP will be opened publicly to identify the name of each Proposer submitting a proposal. Any proposals that are not submitted by the Submittal Date or that are not accompanied by the number of completed and signed originals that are required by this RFP will be rejected by the City of Jonesboro as non-responsive due to material failure to comply with advertised specifications. After the opening of the proposals and upon completion of the initial review and

evaluation of the proposals, City of Jonesboro may invite one or more selected Proposers to participate in oral presentations. City of Jonesboro may make the selection of the Contractor on the basis of the proposals initially submitted, without discussion, clarification or modification. In the alternative, City of Jonesboro may make the selection of the Contractor on the basis of negotiation with any of the Proposers.

At City of Jonesboro's sole option and discretion, City of Jonesboro may discuss and negotiate all elements of the proposals submitted by selected Proposers within a specified competitive range. For purposes of negotiation, City of Jonesboro may establish, after an initial review of the proposals, a competitive range of acceptable or potentially acceptable proposals composed of the highest rated proposal(s). In that event, City of Jonesboro will defer further action on proposals not included within the competitive range pending the selection of the Contractor; provided, however, City of Jonesboro reserves the right to include additional proposals in the competitive range if deemed to be in the best interests of City of Jonesboro.

After submission of a proposal but before final selection of the Contractor is made, City of Jonesboro may permit a Proposer to revise its proposal in order to obtain the Proposer's best and final offer. In that event, representations made by Proposer in its revised proposal, including price and fee quotes, will be binding on Proposer. City of Jonesboro will provide each Proposer within the competitive range with an equal opportunity for discussion and revision of its proposal. City of Jonesboro is not obligated to select the Proposer offering the most attractive economic terms if that Proposer is not the most advantageous to City of Jonesboro overall, as determined by City of Jonesboro.

City of Jonesboro reserves the right to (a) enter into an agreement for all or any portion of the requirements and specifications set forth in this RFP with one or more Proposers, (b) reject any and all proposals and re-solicit proposals, or (c) reject any and all proposals and temporarily or permanently abandon this selection process, if deemed to be in the best interests of City of Jonesboro. Proposer is hereby notified that City of Jonesboro will maintain in its files concerning this RFP a written record of the basis upon which a selection, if any, is made by City of Jonesboro.

1.6 Proposer's Acceptance of Evaluation Methodology

By submitting a proposal, Proposer acknowledges (1) Proposer's acceptance of [a] the Proposal Evaluation Process (ref. **Section 1.5 of APPENDIX ONE**), [b] the Criteria for Selection (ref. **2.3** of this RFP), [c] the Specifications and Additional Questions (ref. **Section 5** of this RFP), [d] the terms and conditions set forth in **Section 4** of this RFP, and [e] all other requirements and specifications set forth in this RFP; and (2) Proposer's recognition that some subjective judgments must be made by City of Jonesboro during this RFP process.

1.7 Solicitation for Proposal and Proposal Preparation Costs

Proposer understands and agrees that (1) this RFP is a solicitation for proposals and City of Jonesboro has made no representation written or oral that one or more agreements with City of Jonesboro will be awarded under this RFP; (2) City of Jonesboro issues this RFP predicated on City

of Jonesboro's anticipated requirements for the Services, and City of Jonesboro has made no representation, written or oral, that any particular scope of services will actually be required by City of Jonesboro; and (3) Proposer will bear, as its sole risk and responsibility, any cost that arises from Proposer's preparation of a proposal in response to this RFP.

1.8 Proposal Requirements and General Instructions

1.8.1 Proposer should carefully read the information contained herein and submit a complete proposal in response to all requirements and questions as directed.

1.8.2 Proposals and any other information submitted by Proposer in response to this RFP will become the property of City of Jonesboro.

1.8.3 City of Jonesboro will not provide compensation to Proposer for any expenses incurred by the Proposer for proposal preparation or for demonstrations or oral presentations that may be made by Proposer, unless otherwise expressly agreed in writing. Proposer submits its proposal at its own risk and expense.

1.8.4 Proposals that (i) are qualified with conditional clauses; (ii) alter, modify, or revise this RFP in any way; or (iii) contain irregularities of any kind, are subject to disqualification by City of Jonesboro, at City of Jonesboro's sole discretion.

1.8.5 Proposals should be prepared simply and economically, providing a straightforward, concise description of Proposer's ability to meet the requirements and specifications of this RFP. Emphasis should be on completeness, clarity of content, and responsiveness to the requirements and specifications of this RFP.

1.8.6 City of Jonesboro makes no warranty or guarantee that an award will be made as a result of this RFP. City of Jonesboro reserves the right to accept or reject any or all proposals, waive any formalities, procedural requirements, or minor technical inconsistencies, and delete any requirement or specification from this RFP when deemed to be in City of Jonesboro's best interest. City of Jonesboro reserves the right to seek clarification from any Proposer concerning any item contained in its proposal prior to final selection. Such clarification may be provided by telephone conference or personal meeting with or writing to City of Jonesboro, at City of Jonesboro's sole discretion. Representations made by Proposer within its proposal will be binding on Proposer.

1.8.7 Any proposal that fails to comply with the requirements contained in this RFP may be rejected by City of Jonesboro, in City of Jonesboro's sole discretion.

1.9 Preparation and Submittal Instructions

1.9.1 Specifications and Additional Questions

Proposals must include responses to the questions in Specifications and Additional Questions (ref. **Section 5** of this RFP). Proposer should reference the item number and repeat the question in its response. In cases where a question does not apply or if unable to respond, Proposer should refer to the item number, repeat the question, and indicate N/A (Not Applicable) or N/R (No Response), as appropriate. Proposer should explain the reason when responding N/A or N/R.

1.9.2 Execution of Offer

Proposer must complete, sign and return the attached Execution of Offer (ref. **Section 2** of **APPENDIX ONE**) as part of its proposal. The Execution of Offer must be signed by a representative of Proposer duly authorized to bind the Proposer to its proposal. Any proposal received without a completed and signed Execution of Offer may be rejected by City of Jonesboro, in its sole discretion.

1.9.3 Pricing and Delivery Schedule

Proposer must complete and return the Pricing and Delivery Schedule (ref. **Section 6** of this RFP), as part of its proposal. In the Pricing and Delivery Schedule, the Proposer should describe in detail (a) the total fees for the entire scope of the Services; and (b) the method by which the fees are calculated. The fees must inclusive of all associated costs for delivery, labor, insurance, taxes, overhead, and profit.

City of Jonesboro will not recognize or accept any charges or fees to perform the Services that are not specifically stated in the Pricing and Delivery Schedule.

In the Pricing and Delivery Schedule, Proposer should describe each significant phase in the process of providing the Services to City of Jonesboro, and the time period within which Proposer proposes to be able to complete each such phase.

1.9.4 Proposer's General Questionnaire

Proposals must include responses to the questions in Proposer's General Questionnaire (ref. **Section 3** of **APPENDIX ONE**). Proposer should reference the item number and repeat the question in its response. In cases where a question does not apply or if unable to respond, Proposer should refer to the item number, repeat the question, and indicate N/A (Not Applicable) or N/R (No Response), as appropriate. Proposer should explain the reason when responding N/A or N/R.

1.9.5 Addenda Checklist

Proposer should acknowledge all Addenda to this RFP (if any) by completing, signing and returning the Addenda Checklist (ref. **Section 4** of **APPENDIX ONE**) as part of its proposal. Any proposal received without a completed and signed Addenda Checklist may be rejected by City of Jonesboro, in its sole discretion.

1.9.6 Submission

Proposer should submit all proposal materials enclosed in a sealed envelope, box, or container. The RFP No. (ref. **Section 1.3** of this RFP) and the Submittal Deadline (ref. **Section 2.1** of this RFP) should be clearly shown in the lower left-hand corner on the top surface of the container. In addition, the name and the return address of the Proposer should be clearly visible.

Upon Proposer's request and at Proposer's expense, City of Jonesboro will return to a Proposer its proposal received after the Submittal Deadline if the proposal is properly identified. City of Jonesboro will not under any circumstances consider a proposal that is received after the Submittal Deadline or which is not accompanied by the number of completed and signed originals that are required by this RFP. City of Jonesboro will not accept proposals submitted by telephone or proposals submitted by Facsimile ("**FAX**") transmission, in response to this RFP. Except as otherwise provided in this RFP, no proposal may be changed, amended, or modified after it has been submitted to City of Jonesboro. However, a proposal may be withdrawn and resubmitted at any time prior to the Submittal Deadline. No proposal may be withdrawn after the Submittal Deadline without City of Jonesboro's consent, which will be based on Proposer's submittal of a written explanation and documentation evidencing a reason acceptable to City of Jonesboro, in City of Jonesboro's sole discretion. By signing the Execution of Offer (ref. **Section 2 of APPENDIX ONE**) and submitting a proposal, Proposer certifies that any terms, conditions, or documents attached to or referenced in its proposal are applicable to this procurement only to the extent that they (a) do not conflict with the laws of the State of Arkansas or this RFP and (b) do not place any requirements on City of Jonesboro that are not set forth in this RFP or in the Appendices to this RFP. Proposer further certifies that the submission of a proposal is Proposer's good faith intent to enter into an agreement with City of Jonesboro as specified herein and that such intent is not contingent upon City of Jonesboro's acceptance or execution of any terms, conditions, or other documents attached to or referenced in Proposer's proposal.

1.9.7 Page Size, Binders, and Dividers

Proposals must be typed on letter-size (8-1/2" x 11") paper, and must be submitted in a binder. Preprinted material should be referenced in the proposal and included as labeled attachments. Sections within a proposal should be divided by tabs for ease of reference.

1.9.8 Table of Contents

Proposals must include a Table of Contents with page number references. The Table of Contents must contain sufficient detail and be organized according to the same format as presented in this RFP, to allow easy reference to the sections of the proposal as well as to any separate attachments (which should be identified in the main Table of Contents). If a Proposer includes supplemental information or non-required attachments with its proposal, this material should be clearly identified in the Table of Contents and organized as a separate section of the proposal.

1.9.9 Pagination

All pages of the proposal should be numbered sequentially in Arabic numerals (1, 2, 3, etc.). Attachments should be numbered or referenced separately.]

SECTION 2

EXECUTION OF OFFER

THIS EXECUTION OF OFFER MUST BE COMPLETED, SIGNED AND RETURNED WITH PROPOSER'S PROPOSAL. FAILURE TO COMPLETE, SIGN AND RETURN THIS EXECUTION OF OFFER WITH THE PROPOSER'S PROPOSAL MAY RESULT IN THE REJECTION OF THE PROPOSAL.

2.1 By signature hereon, Proposer represents and warrants the following:

2.1.1 Proposer acknowledges and agrees that (1) this RFP is a solicitation for a proposal and is not a contract or an offer to contract; (2) the submission of a proposal by Proposer in response to this RFP will not create a contract between City of Jonesboro and Proposer; (3) City of Jonesboro has made no representation or warranty, written or oral, that one or more contracts with City of Jonesboro will be awarded under this RFP; and (4) Proposer will bear, as its sole risk and responsibility, any cost arising from Proposer's preparation of a response to this RFP.

2.1.2 Proposer is a reputable company that is lawfully and regularly engaged in providing the Services.

2.1.3 Proposer has the necessary experience, knowledge, abilities, skills, and resources to perform the Services.

2.1.4 Proposer is aware of, is fully informed about, and is in full compliance with all applicable federal, state and local laws, rules, regulations and ordinances.

2.1.5 Proposer understands (i) the requirements and specifications set forth in this RFP and (ii) the terms and conditions set forth in Section 4 of this RFP, under which Proposer will be required to operate.

2.1.6 If selected by City of Jonesboro, Proposer will not delegate any of its duties or responsibilities under this RFP or the Agreement to any sub-contractor, except as expressly provided in the Agreement.

2.1.7 If selected by City of Jonesboro, Proposer will maintain any insurance coverage as required by the Agreement during the term thereof.

2.1.8 All statements, information and representations prepared and submitted in response to this RFP

are current, complete, true and accurate. Proposer acknowledges that City of Jonesboro will rely on such statements, information and representations in selecting the Contractor. If selected by City of Jonesboro, Proposer will notify City of Jonesboro immediately of any material change in any matters with regard to which Proposer has made a statement or representation or provided information.

2.1.9 PROPOSER WILL DEFEND WITH COUNSEL APPROVED BY CITY OF JONESBORO, INDEMNIFY, AND HOLD HARMLESS CITY OF JONESBORO, THE STATE OF ARKANSAS, AND ALL OF THEIR REGENTS, OFFICERS, AGENTS AND EMPLOYEES, FROM AND AGAINST ALL ACTIONS, SUITS, DEMANDS, COSTS, DAMAGES, LIABILITIES AND OTHER CLAIMS OF ANY NATURE, KIND OR DESCRIPTION, INCLUDING REASONABLE ATTORNEYS' FEES INCURRED IN INVESTIGATING, DEFENDING OR SETTLING ANY OF THE FOREGOING, ARISING OUT OF, CONNECTED WITH, OR RESULTING FROM ANY NEGLIGENT ACTS OR OMISSIONS OR WILLFUL MISCONDUCT OF PROPOSER OR ANY AGENT, EMPLOYEE, SUBCONTRACTOR, OR SUPPLIER OF PROPOSER IN THE EXECUTION OR PERFORMANCE OF ANY CONTRACT OR AGREEMENT RESULTING FROM THIS RFP.

2.1.10 Ay payments owing to Proposer under any contract or agreement resulting from this RFP may be applied directly to any debt or delinquency that Proposer owes the State of Arkansas or any agency of the State of Arkansas regardless of when it arises, until such debt or delinquency is paid in full.

2.2 By signature hereon, Proposer offers and agrees to furnish the Services to City of Jonesboro and comply with all terms, conditions, requirements and specifications set forth in this RFP.

2.3 By signature hereon, Proposer affirms that it has not given or offered to give, nor does Proposer intend to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor or service to a public servant in connection with its submitted proposal. Failure to sign this Execution of Offer, or signing with a false statement, may void the submitted proposal or any resulting contracts, and the Proposer may be removed from all proposal lists at City of Jonesboro.

2.4 By signature hereon, Proposer certifies that it is not currently delinquent in the payment of any taxes due or that Proposer is exempt from the payment of those taxes, or that Proposer is an out-of-state taxable entity that is not subject to those taxes, whichever is applicable. A false certification will be deemed a material breach of any resulting contract or agreement and, at City of Jonesboro's option, may result in termination of any resulting contract or agreement.

2.5 By signature hereon, Proposer hereby certifies that neither Proposer nor any firm, corporation, partnership or institution represented by Proposer, or anyone acting for such firm, corporation or institution, has violated the antitrust laws of the State of Arkansas, or the Federal antitrust laws, nor communicated directly or indirectly the proposal made to any competitor or any other person engaged in such line of business.

2.6 By signature hereon, Proposer certifies that the individual signing this document and the documents made a part of this RFP, is authorized to sign such documents on behalf of Proposer and to bind Proposer under any agreements and other contractual arrangements that may result from the submission of Proposer's proposal.

2.7 By signature hereon, Proposer certifies as follows: Proposer certifies that the individual or business entity named in the Proposer's proposal is not ineligible to receive the specified contract award and acknowledges that any agreements or other contractual arrangements resulting from this RFP may be terminated if this certification is inaccurate.

2.8 By signature hereon, Proposer certifies that (i) no relationship, whether by blood, marriage, business association, capital funding agreement or by any other such kinship or connection exists between the owner of any Proposer that is a sole proprietorship, the officers or directors of any Proposer that is a corporation, the partners of any Proposer that is a partnership, the joint ventures of any Proposer that is a joint venture or the members or managers of any Proposer that is a limited liability company, on one hand, and an employee of any component of The City of Jonesboro of Arkansas System, on the
other hand, other than the relationships which have been previously disclosed to City of Jonesboro in writing and (ii) Proposer has not been an employee of any component institution of The City of Jonesboro within the immediate twelve (12) months prior to the Submittal Deadline. All disclosures by Proposer in connection with this certification will be subject to administrative review and approval before City of Jonesboro enters into a contract or agreement with Proposer.

2.9 By signature hereon, Proposer certifies its compliance with all federal laws and regulations pertaining to Equal Employment Opportunities and Affirmative Action.

2.10 By signature hereon, Proposer represents and warrants that all products and services offered to City of Jonesboro in response to this RFP meet or exceed the safety standards established and promulgated under the Federal Occupational Safety and Health Law and all related regulations in effect or proposed as of the date of this RFP.

2.11 Proposer will and has disclosed, as part of its proposal, any exceptions to the certifications stated in this Execution of Offer. All such disclosures will be subject to administrative review and approval prior to the time City of Jonesboro makes an award or enters into any contract or agreement with Proposer.

2.12 Proposer should complete the following information:

If Proposer is a Corporation, then State of Incorporation: Arkansas

If Proposer is a Corporation then Proposer's Corporate Charter Number: _____

RFP No.: 2008:30

Submitted and Certified By:

(Proposer Institution's Name) Mo - Ark Communications

(Signature of Duly Authorized Representative)

(Printed Name/Title) Curt Majors. Sales Associate

(Date Signed) 8/27/08

(Proposer's Street Address) 1809 E Parker Rd

(City, State, Zip Code) Doniphan, MO 63935

(Telephone Number) 870-275-5053

(FAX Number) 870-268-5442

SECTION 3

PROPOSER'S GENERAL QUESTIONNAIRE

Proposals must include responses to the questions contained in this Proposer's General Questionnaire. Proposer should reference the item number and repeat the question in its response. In cases where a question does not apply or if unable to respond, Proposer should refer to the item number, repeat the question, and indicate N/A (Not Applicable) or N/R (No Response), as appropriate. Proposer will explain the reason when responding N/A or N/R.

3.1 Proposer Profile

3.1.1 Legal name of Proposer company: SEE Attached

Address of principal place of business:

Address of office that would be providing service under the Agreement:

Number of years in Business:

State of incorporation:

Number of Employees:

Annual Revenues Volume:

Name of Parent Corporation, if any _____

NOTE: If Proposer is a subsidiary, City of Jonesboro prefers to enter into a contract or agreement with the Parent Corporation or to receive assurances of performance from the Parent Corporation. SEE Attached

3.1.2 State whether Proposer will provide a copy of its financial statements for the past two (2) years, **if requested** by City of Jonesboro.

3.1.3 Proposer will provide a financial rating of the Proposer entity and any related documentation (such as a Dunn and Bradstreet analysis) that indicates the financial stability of Proposer.

3.1.4 Is Proposer currently for sale or involved in any transaction to expand or to become acquired by another business entity? If yes, Proposer will explain the expected impact, both in organizational and directional terms.

3.1.5 Proposer will provide any details of all past or pending litigation or claims filed against Proposer that would affect its performance under the Agreement with City of Jonesboro (if any).

3.1.6 Is Proposer currently in default on any loan agreement or financing agreement with any bank, financial institution, or other entity? If yes, Proposer will specify the pertinent date(s), details, circumstances, and describe the current prospects for resolution.

3.1.7 Proposer will provide a customer reference list of no less than three (3) organizations with which Proposer currently has contracts and/or to which Proposer has previously provided services (within the past five (5) years) of a type and scope similar to those required by City of Jonesboro's RFP. Proposer will include in its customer reference list the customer's company name, contact person, telephone number, project description, length of business relationship, and background of services provided by Proposer.

3.1.8 Does any relationship exist (whether by family kinship, business association, capital funding agreement, or any other such relationship) between Proposer and any employee of City of Jonesboro? If yes, Proposer will explain.

3.2 Approaches to Project Services

3.2.1 Proposer will provide a statement of the Proposer's service approach and will describe any unique benefits to City of Jonesboro from doing business with Proposer. Proposer will briefly describe its approach for each of the required services identified in **Section 5.4** Scope of Work of this RFP.

3.2.2 Proposer will provide an estimate of the earliest starting date for services following execution of the Agreement.

3.2.3 Proposer will submit a work plan with key dates and milestones. The work plan should include:

3.2.3.1 Identification of tasks to be performed;

3.2.3.2 Time frames to perform the identified tasks;

3.2.3.3 Project management methodology;

3.2.3.4 Implementation strategy; and

3.2.3.5 The expected time frame in which the services would be implemented.

3.2.4 Proposer will describe the types of reports or other written documents Proposer will provide (if any) and the frequency of reporting, if more frequent than required in the RFP. Proposer will include samples of reports and documents if appropriate.

3.3 General Requirements

3.3.1 Proposer will provide summary resumes for its proposed key personnel who will be providing

services under the Agreement with City of Jonesboro, including their specific experiences with similar service projects, and number of years of employment with Proposer.

3.3.2 Proposer will describe any difficulties it anticipates in performing its duties under the Agreement with City of Jonesboro and how Proposer plans to manage these difficulties. Proposer will describe the assistance it will require from City of Jonesboro.

3.4 Service Support

Proposer will describe its service support philosophy, how is it implemented, and how Proposer measures its success in maintaining this philosophy.

3.5 Quality Assurance

Proposer will describe its quality assurance program, its quality requirements, and how they are measured.

3.6 Miscellaneous

3.6.1 Proposer will provide a list of any additional services or benefits not otherwise identified in this RFP that Proposer would propose to provide to City of Jonesboro. Additional services or benefits must be directly related to the goods and services solicited under this RFP.

3.6.2 Proposer will provide details describing any unique or special services or benefits offered or advantages to be gained by City of Jonesboro from doing business with Proposer. Additional services or benefits must be directly related to the goods and services solicited under this RFP.

3.6.3 Does Proposer have a contingency plan or disaster recovery plan in the event of a disaster? If so, then Proposer will provide a copy of the plan.

SECTION 4

ADDENDA CHECKLIST

Proposal of: Mo-Ark Communications
(Proposer Company Name)

To: The City of Jonesboro of Arkansas

Ref.: Outdoor Warning Siren System Services

RFP No. 2008:30

Ladies and Gentlemen:

The undersigned Proposer hereby acknowledges receipt of the following Addenda to the captioned RFP (initial if applicable). Any addendum will be on the Purchasing web site at **www.jonesboro.org** no later than 1 (one) week before bid opening.

No. 1 _____ No. 2 _____ No. 3 _____ No. 4 _____ No. 5 _____

Respectfully submitted,

Proposer: Mo-Ark Communications

By: _____
(Authorized Signature for Proposer)

Name: Curt Myers

Title: Sales Consultant

Date: 8/27/08

MOMARK Communications

PUBLIC WARNING PRODUCTS

PRICE QUOTATION

HERE IS OUR QUOTATION ON THE GOODS NAMED, SUBJECT TO THE CONDITIONS NOTED BELOW.

TO: City of Jonesboro

ITEM	QTY.	DESCRIPTION	PRICE	AMOUNT
1	38	**VORTEXR3**, Mass Notification Product. Includes items 1-8.		**$314,341.00**
2	38	**VC2020**, 10 digit DTMF VHF High Band or UHF 2-Way. Specify frequency when ordering. Specify Wide or Narrow-Band		
3	38	**VPTB**, Speaker Pole Top Bracket		
4	38	**VINTRU**, Intrusion Alarm		
5	38	**BSETVOR**, One pair of Whelen approved batteries		
6	1	**E2010**, Encoder / Decoder		
7	1	**E2010P**, Siren Status Printer and Cable		
8	1	**E969**, Activation Encoder		
9	1	**FRTCRG**, Estimated freight charge, 06412 to Jonesboro, AR 72404. No liftgate, no call ahead		**$7,125.00**
		Please provide Name, City, State of enduser when ordering		
		Whelen assumes no responsibility for RF path and propagation		
		***Whelen will add a digit to correspond to the frequency**		

ROUTE 145, WINTHROP RD., CHESTER, CONNECTICUT, U.S.A. 06412-0684
TELEPHONE: (800) 637-4736 FAX: (860) 526-4784