



This purchase agreement (together with all attachments referenced herein, collectively, the “Agreement”), made and entered into by and between Atlantic Emergency Solutions, Inc., a Virginia corporation (“Atlantic”), and Kempsville Rescue Squad, Inc., (“Customer”) is effective on the last signature date set forth on the signature lines below (the “Effective Date”).

1. Purchase and Payment. Customer agrees to purchase and Atlantic agrees to sell to Customer the ambulance (and any associated equipment) furnished by Atlantic to Customer (hereinafter referred to, collectively, to as the “Ambulance”) as more fully described in the specifications attached hereto as Exhibit A (the “Specifications”) and incorporated herein for the total purchase price of \$238,270.00 USD (the “Purchase Price”). Payment shall be made as set forth on Exhibit A. In the event of a conflict between the Specifications and any request for proposal, request for bid, or other Customer provided or drafted documents, the Specifications shall control.
2. Changes to Specifications. If, subsequent to the Effective Date of this Agreement: 1) the manufacturer of the Ambulance (or a manufacturer of a component therein) makes design and/or production changes, including, but not limited to future drivetrain upgrades (such as engine, transmission or axle upgrades) (“Manufacturer Modifications”); or 2) design or production changes are made to the Ambulance to comply with any applicable government regulation (such as the Federal Motor Vehicle Safety Standards or the Environmental Protection Agency Emissions Standards) or industry standards (such as those adopted by the National Fire Protection Association) (cumulatively referred to hereinafter as “Compliance Modifications”), and if there is an increase in costs to Atlantic as a result of Manufacturer Modifications or Compliance Modifications, the Purchase Price shall be automatically adjusted to reimburse Atlantic for said costs. Atlantic shall make reasonable efforts to advise the Customer of such changes within a reasonable time and provide documentation to support any changes in price to Customer upon request. In addition, Customer and Atlantic may agree to make changes to the Specifications, but any such changes must be by written change order signed by Customer and Atlantic (“Change Order”). However, in the case of Manufacturer Modifications or Compliance Modifications resulting in additional costs to Atlantic, Atlantic may execute Changes Orders without joinder of Customer, and any such Change Orders shall be binding on Customer. Atlantic shall not be liable to Customer for any delay in performance or delivery arising from any Change Order.
3. Cancellation or Default by Customer. In the event that Customer cancels its order or otherwise breaches this Agreement by reason of non-payment or otherwise prior to delivery, Atlantic shall be permitted to retain possession and ownership of the Ambulance and shall not be obligated to deliver same to Customer. In addition, Atlantic and Customer agree that if such Customer breach were to occur, it would be difficult to determine actual damages to Atlantic. Customer acknowledges and agrees that: 1) the Ambulance is a unique and highly customized vehicle, made specifically for Customer; 2) Atlantic has invested a significant effort and incurred significant expense in the design and engineering of the Ambulance for Customer; and 3) due to its unique and customized nature, resale of the Ambulance will be difficult to a third-party without a significant loss to Atlantic. As a result, Atlantic and Customer agree that Thirty Percent (30%) of the Purchase Price is a reasonable estimate of the damages that would be incurred by Atlantic if a breach occurred in the future and shall be due and payable to Atlantic by Customer in the case of such a breach. Customer and Atlantic agree that this amount of liquidated damages is fair and reasonable and would not constitute a penalty to Customer. In the event of non-payment by Customer subsequent to delivery, Atlantic may recover full possession of the Ambulance by any lawful means, and shall be entitled to any additional damages sustained by Atlantic as a result of any diminution of value of the Ambulance resulting from use or damage thereto to the extent that such damages exceed the liquidated damages above. Atlantic shall have and retain a purchase money security interest in the Ambulance to secure payment of the Purchase Price and all other sums owed by Customer to Atlantic. In the event of nonpayment by Customer of any debt, obligation or liability now or hereafter incurred or owing by Customer to Atlantic, Atlantic shall have and may exercise all rights and remedies of a secured party under the Uniform Commercial Code Secured Transactions (UCC) provisions as adopted by the Commonwealth of Virginia. In addition, Atlantic shall be entitled to recovery from Customer all of Atlantic’s reasonable attorneys’ fees and all costs of collection resulting from non-payment or other non-performance hereunder by Customer.

4. Delivery, Inspection and Acceptance. (a) Delivery. It is estimated that the Ambulance shall be ready for delivery F.O.B. (Yorktown Regional Service Center) within 24-28 months from the receipt of order, subject to delays caused by the Customer, delays caused by Change Order(s) or delays provided for in Paragraph 10 below. The stated delivery date is an estimate only and not guaranteed. Atlantic shall advise Customer when the Ambulance is ready for delivery. (b) Inspection and Acceptance. Upon delivery, Customer shall have fifteen (15) days within which to inspect the Ambulance for substantial conformance to the Specifications. In the event of substantial and material non-conformance to the Specifications, Customer shall furnish Atlantic with written notice sufficient to permit Atlantic to evaluate such non-conformance (“Notice of Defect”) within said fifteen (15)

day period. If the Ambulance is not in substantial and material conformance with the Specifications, any material and substantial defects shall be remedied by Atlantic within thirty (30) days from the Notice of Defect. In the event Atlantic does not receive a Notice of Defect within fifteen (15) days of Delivery, the Ambulance shall be deemed to be in conformance with the Specifications and fully accepted by Customer.

5. Notice. Any required or permitted notices hereunder must be given in writing at the address of each party set forth below, or to such other address as either party may substitute by written notice to the other in the manner contemplated herein, by one of the following methods: 1) hand delivery; 2) registered, express, or certified mail, postage prepaid, return receipt requested; or 3) nationally-recognized commercial overnight courier.

Atlantic Emergency Solutions, Inc.
Director of Order Management
12351 Randolph Ridge Lane
Manassas, Virginia 20109

Kempsville Rescue Squad, Inc.
5145 Ruritan Court PO BOX 62345
Virginia Beach, VA 23462 23466



6. Warranty. Any applicable warranty or warranties are attached hereto as **Exhibit B** (collectively, the "Warranty") and made a part hereof. Any additional warranties must be expressly approved in writing by Atlantic.

7. Disclaimer of Additional Warranties. OTHER THAN AS EXPRESSLY SET FORTH IN PARAGRAPH 6 ABOVE AND EXHIBIT B TO THIS AGREEMENT, ATLANTIC (AS WELL AS ITS SUPPLIERS), THEIR PARENT COMPANIES, AFFILIATES, SUBSIDIARIES, LICENSORS OR SUPPLIERS, THEIR RESPECTIVE OFFICERS, DIRECTORS, EMPLOYEES, SHAREHOLDERS, AGENTS AND REPRESENTATIVES MAKE NO WARRANTIES, WRITTEN OR ORAL, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, BY STATUTE OR OTHERWISE. FURTHERMORE, ANY OTHER WARRANTIES, WHETHER WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF QUALITY, IMPLIED WARRANTY OF MERCHANTABILITY, IMPLIED WARRANTY AGAINST INFRINGEMENT, AND IMPLIED WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, ARE EXPRESSLY EXCLUDED AND DISCLAIMED. CUSTOMER FURTHER ACKNOWLEDGES THAT STATEMENTS MADE BY SALES REPRESENTATIVES OR IN PROMOTIONAL MATERIALS DO NOT CONSTITUTE WARRANTIES.

8. Exclusions of Incidental and Consequential Damages. IN NO EVENT SHALL ATLANTIC (OR ITS SUPPLIERS) BE LIABLE TO CUSTOMER FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES INCURRED BY CUSTOMER (INCLUDING, BUT NOT LIMITED TO LOSS OF USE AND/OR LOST PROFITS) AS A RESULT OF ANY BREACH OF THIS AGREEMENT, WHETHER ARISING UNDER THEORIES OF BREACH OF CONTRACT, STRICT LIABILITY, STATUTORY LIABILITY, BREACH OF EXPRESS OR IMPLIED WARRANTY, NEGLIGENCE, OR OTHERWISE.

9. Indemnity. To the extent permitted by law, Customer shall indemnify, defend and hold harmless Atlantic and all of its officers, directors, employees, representatives, dealers, agents and subcontractors, from and against any and all claims, costs, judgments, liability, loss, damage, attorneys' fees or expenses of any kind or nature whatsoever (including, but without limitation, relating to personal injury or death) caused by, resulting from, arising out of or occurring directly or indirectly in connection with Customer's purchase, operation, ownership, installation or use of any items (including, without limitation, the Ambulance) sold or supplied by Atlantic, except only to the extent caused by the sole negligence of Atlantic.

10. Force Majeure. Atlantic shall not be responsible nor deemed to be in default on account of delays in performance due to causes which are beyond Atlantic's control which make Atlantic's performance impracticable, including but not limited to, wars (declared or not), terrorism, insurrections, strikes, riots, fires, hurricanes, storms, floods, earthquakes, other acts of nature, acts of God, explosions, accidents or mechanical breakdown, acts of sabotage or vandalism, any acts of government authority, delays or failures in transportation, inability to obtain necessary labor supplies, inability to utilize manufacturing facilities, regulations or orders affecting materials, equipment, facilities or completed products, failure to obtain any required license or certificates, epidemics, quarantine restrictions, failure of vendors to perform their contracts or labor troubles causing cessation, slowdown, or interruption of work.

11. Manufacturer's Statement of Origin. It is agreed that the manufacturer's statement of origin ("MSO") for the Ambulance covered by this Agreement shall remain in the possession of Atlantic until the entire Purchase Price has been paid. If more than one Ambulance is covered by this Agreement, then the MSO for each individual Ambulance shall remain in the possession of Atlantic until the Purchase Price for that Ambulance has been paid in full.

12. Assignment. Neither party may assign its rights and obligations under this Agreement unless it has obtained the prior written approval of the other party.

13. Severability. If any provision, or part hereof, of this Agreement shall be declared invalid by judicial determination or legislative action, only such provision, or part thereof, so declared invalid shall be affected, and all other provisions not consistent therewith or directly dependent thereon shall remain in force and effect.

14. Governing Law; Jurisdiction. Without regard to any conflict of law provisions, this Agreement is to be governed by and under the laws of the Commonwealth of Virginia. Atlantic and Customer further agree that the York County Circuit Court located in the Commonwealth of Virginia shall be the exclusive venue in the event of any litigation relating to this Agreement and/or the Ambulance.

15. Entire Agreement and Amendments. This Agreement, including the Interlocal Contract for cooperative purchasing and Attachment A entitled General Terms and Conditions, constitutes the sole and only agreement between Atlantic and Customer relating to the Ambulance, and supersedes any prior understanding or written or oral agreements between the parties relating to the Ambulance. No amendment, modification or alteration of the terms hereof shall be binding unless the same is executed in writing, dated subsequent to the date hereof and duly executed by Atlantic and Customer.

16. Waiver. The waiver of any breach of any term or provision hereof by either party hereto shall not be considered a waiver of any other term or provision or of any other or later breach of this Agreement, regardless of the nature of such subsequent event or breach, unless such waiver is expressly stated in writing by an authorized representative of the waiving party.

17. Captions; Counterparts. The captions and paragraph numbers appearing herein are inserted only as a matter of convenience and are not intended to define, limit, construe or describe the scope or intent of any paragraph, nor to in any way affect this Agreement or the interpretation or application thereof. This Agreement may be executed in duplicate counterparts which, when taken together, shall constitute one and the same Agreement.

Accepted and agreed to by:

ATLANTIC EMERGENCY SOLUTIONS, INC.

Name: _____

Title: _____

Date: _____


KEMPSVILLE RESCUE SQUAD, INC.

Name: KEVIN LIPSCOMB

Title: AMBULANCE PROCUREMENT COORDINATOR

Date: 28 July 2022

EXHIBIT A

SPECIFICATIONS AND PURCHASE DETAIL FORM

Atlantic Emergency Solutions, Inc.
Director of Order Management
12351 Randolph Ridge Lane
Manassas, Virginia 20109
Fax (703) 257-2572

Date: July 26, 2022

Customer Name: Kempsville Rescue Squad, Inc.

| Quantity | Chassis Type | Body Type | Price per Unit |
|----------|-----------------|----------------------|----------------|
| 1 | 2023 Ford E-450 | Wheeled Coach #3170F | \$238,270.00 |
| | | | \$ |
| | | | \$ |
| | | | \$ |
| | | | \$ |

Payment Terms: See "Other Terms" below

Other Terms:

All vehicles shall be delivered on ground to the City of Virginia Beach's Fleet Management Division / City Garage located on Leroy Road. Neither the buyer nor the City shall be responsible for unloading, assisting in unloading, or assembly of any equipment.

Contract specifies that vendor will only receive final payment after the buyer and all the following buyer agents have completed their inspections and given their approval:

- a. Virginia Beach Public Works Department Automotive Services Division
- b. Virginia Beach Information Technology Department Mobile I.T. Division

If the squad is providing its own requirements document to the vendor, contract specifies that the squad's requirements document takes precedence over the vendor's build order.

Contract specifies that the VA Beach EMS Department's Technical Asset Systems Integration Requirements (TASIR) document takes precedence over all other requirements and build order instructions.

Specifications: A complete copy of the applicable Specifications is attached hereto and incorporated herein by this reference.

Training Requirements:

If any portion of the Purchase Price is to be made subsequent to delivery of the Ambulance to Customer and it is necessary for Customer to obtain third-party financing for said payment, Customer shall provide proof of the availability of financing at the time of the execution of this Agreement. All taxes, excises and levies that Atlantic may be required to pay or collect by reason of any present or future law or by any governmental authority based upon the sale, purchase, delivery, storage, processing, use, consumption, or transportation of the Ambulance sold by Atlantic to Customer shall be added to the Purchase Price and paid by Customer. All delivery prices or prices with freight allowance are based upon prevailing freight rates and, in the event of any increase or decrease in such rates, the Purchase Price will be increased or decreased accordingly. Delinquent payments shall be subject to a carrying charge equal to one and one-half percent (1.5%) per month or, if such amount exceeds that permitted under the law, then the maximum lesser percentage amount which is permitted by law.

EXHIBIT B

WARRANTY

Conversion Warranty

The Manufacturer shall warrant to the original retail purchaser for a period of twelve (12) months or twelve thousand (12,000) miles from the date of delivery. This ambulance conversion shall be free of substantial defects in materials and workmanship, which are attributable to the Manufacturer and which arise during the course of normal use and service.

Limited Electrical Warranty

The Manufacturer shall warrant to the original retail purchaser for a period of twelve (12) months or twelve thousand (12,000) miles from the date of delivery of the completed new custom ambulance to the end user, regardless of subsequent ownership. This product shall be free of substantial defects in materials and workmanship, which are attributable to the Manufacturer and which arise during the course of normal use and service. The Manufacturer shall correct any defect in covered parts or workmanship, with either new or used replacement parts, at the Manufacturer's option. Covered parts are limited to custom module electrical systems and components such as electrical harness, harness installation, wires (but only to the extent that wires are broken, chafed, or pinched), electrical connections, terminal blocks, junction posts, and related components.

Printed circuit boards are covered for a limited lifetime. A lifetime is defined by this Limited Electrical Warranty as; 10 years from the expiration of the original Manufacturer's standard conversion warranty which is for an unlimited mileage for a period of twelve (12) months from the date of delivery for only original retail purchaser/owner.

Structural Warranty

The Manufacturer shall warrant to the original retail purchaser only, that the module structure that is the subject of this sale is structurally sound and free from all structural defects in material and workmanship and further warrants the module structure will remain free of structural damage due to rusting caused by electrolysis. The custom module structure limited warranty is in effect for the lifetime of a new vehicle. For the purpose of the lifetime custom module limited warranty, a lifetime is defined by the Manufacturer as; 20 years from the date of original retail owner's purchase/in service date from the Manufacturer or the period of time the ambulance is in continuous front line service with the original retail purchaser.

In the event of a module remount this custom module structural warranty shall remain in effect provided the remount work is completed within the defined lifetime period, and remount work is completed by the Manufacturer or a facility authorized by the Manufacturer.

This limited warranty covers repairs or replacement of any part of your new custom ambulance module structure (hereinafter Covered Parts) in which a defect in materials or workmanship appears during normal use, maintenance or service within the limited warranty period, subject to the limitations and exclusions.

LIMITED LIFETIME CABINET CONSTRUCTION WARRANTY

The Manufacturer shall warrant to the original retail purchaser upon expiration of the attached twelve (12) months standard conversion vehicle warranty. The following parts or components of the patient compartment cabinets of the vehicle will remain free from defects in material and workmanship:

- That the wood or non-wood material used for the construction of the cabinets shall not delaminate.
- That the wooden dowels used for the construction of the cabinets shall not allow the cabinet sections to separate.

This Cabinet Construction Warranty commences upon the expiration of the original Manufacturer's twelve (12) months standard conversion vehicle warranty and continues for the lifetime of the vehicle for the original owner on the original chassis. For the purpose of the Limited Lifetime Cabinet Construction Warranty, a lifetime is defined by the Manufacturer as; 10 years from the expiration of the original Manufacturer's twelve (12) months standard conversion vehicle warranty for only the original retail purchaser/owner.

BODY PAINT WARRANTY

The Manufacturer shall warrant to the original retail purchaser, under normal use and service, each new ambulance modular body paint job is free of all material and workmanship defects for a prorated period of five (5) years from the date of delivery. All warranty service is subject to the Manufacturer's prior examination and (written) approval.

The paint applied by the Manufacturer is limited to the original user and limited to the exterior painted surface of the module according to this warranty schedule:

0-36 months 100%
37-48 months 50%
49-60 months 25%

The warranty provided herein shall cover and extend to the following properties of the paint system according to the warranty schedule:

- Loss of adhesion of the paint system resulting in rust
- Cracking of paint system
- Fading or loss of gloss

KEMPSVILLE VOLUNTEER RESCUE SQUAD

AMBULANCE DETAILED TECHNICAL REQUIREMENTS

\$Revision: 6509 \$

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1 Introduction

In so far as the Kempsville Volunteer Rescue Squad (KVRS) owns or desires one or more ambulances, there exists a KVRS position derived from the KVRS bylaws called the Ambulance Procurement & Disposition Coordinator (hereafter, "the Coordinator"). Per the bylaws, The Coordinator is, among other things, required to:

Develop Detailed Technical Requirements (DTRs) by compiling, at a minimum, the following:

- Federal, state, and local requirements for such apparatus, as provided by the Captain
- Budget requirements provided by the President
- Official Vehicle Uniform requirements adopted by the membership in accordance with the Logos And Uniforms Article in these bylaws
- Special configurations and options, to the extent permitted by the budget

This document, along with the documents it references, helps to fulfill those requirements.

This document should be sufficiently detailed to specify, in a vendor-independent manner, an ambulance that reproduces, to the extent possible, what KVRS has owned in the past, plus or minus any changes KVRS desires.

Be mindful that items provided as standard equipment on KVRS's Wheeled Coach ambulances purchased between 2008 and 2017 may be assumed in this document to be provided as standard equipment from other vendors. For instance, bucket seats in the cab and intermittent windshield wipers are not enumerated as requirement items because they are now assumed to be standard.

2 Guiding principles

These requirements are derived from the following value system:

- We value meeting all legal requirements.
- We value keeping everyone safe, including crew members, patients, and others.
- We value optimizing patient care and operations.
- We value uniquely identifying ourselves and our units to incident commanders and to the public.
- We value signaling our traffic intentions to other drivers.
- We value fiscal responsibility.

3 Applicable documents & intentional abstractions

3.1 Government requirements

The following standards and regulations form a part of this specification, to the extent specified or required by law. Unless a specific issue of a standard or regulation is identified,

the issue in effect, on the date the ambulance is contracted for, shall apply:

- Federal Specification for the Star-of-Life Ambulance, KKK-A-1822, U.S. General Services Administration
- Virginia Emergency Medical Services Regulations (12 VAC 5-31)
- City of Virginia Beach Department of EMS Medical Equipment And Supplies Policy

In the event of a conflict between the text of this specification and the references cited above, the text of this specification shall take precedence to the extent feasible.

3.2 Included documents

The standards and requirements contained in the latest version of the following documents are hereby included by reference:

- KVRS Ambulance Graphics Package
- Letters issued to establish official markups to the KVRS Ambulance Graphics Package not yet incorporated into the package itself

3.3 Intentional abstractions

This document intentionally does not, nor should it be modified to, directly contain any specification of:

- make, model, or class of chassis
- items that depend upon chassis selection or configuration (such as walkthrough doors for Type III's or accordion bellows tube for Type I's)
- dominant colors or squad-specific graphic elements

The specifications in this document should be equally applicable regardless of the squad's choice of these items for a particular purchase order. Rather, the above kinds of specifications should be deferred to subordinate documents or purchase order line items.

4 Documentation conventions

4.1 Doors

When referring to doors in the payload module, the term entry door is used to describe doors intended for ingress/egress of personnel.

4.2 Relative location terminology

When referring to locations within a compartment, the terms left and right shall mean from the perspective of a person who is facing directly into that compartment. The terms inboard and outboard shall mean toward or away, respectively, from a line running through the center of the vehicle from its front bumper to its rear bumper.

4.3 Budget priorities

The budget priority column contains values to serve as a guideline when it is not financially feasible to implement this entire set of specifications. In particular:

| This indication... | ...means the specification is deemed to be... |
|--------------------|---|
| MAY | not important enough to implement if the squad's other funding priorities have not been met |
| SHOULD | important enough to implement if the ambulance procurement budget allows |
| MUST | so important that it would be better to secure additional funding than to not implement the specification |

5 SPECIFICATIONS

5.1 Safety

| # | Description | Rationale | Budget priority |
|-------|--|--|-----------------|
| 5.1.1 | Install exterior side mirrors that are remotely adjustable from the driver's position. | To optimize visibility adjustments, even when driver-only. | MUST |
| 5.1.2 | Install heatable exterior side mirrors. | To improve cold weather visibility. | MUST |
| 5.1.3 | Install the most durable valve stems available, meeting or exceeding the TR416 rating. | Tire pressure failure attributable to failure of the valve stem has been identified as not uncommon. | MUST |
| 5.1.4 | Install most durable available rear entry door hold-open systems such that doors will open as far as possible, and such that none of the prongs are likely to be used as a step. | To prevent rear doors from swinging in stiff winds and from interfering with patient loading/unloading. To prevent premature wear. To prevent damage from abuse. | MUST |

| # | Description | Rationale | Budget priority |
|--------|---|--|-----------------|
| 5.1.5 | Install brushed aluminum panels on interior of all payload module entry doors. | Allows application of reflective chevrons. | MUST |
| 5.1.6 | Install backup alarm without a cutoff switch. | Prevents crew from defeating safety mechanism. | MUST |
| 5.1.7 | Provide for both rear load lights and the rearmost side scene lights to activate when transmission is in "Reverse". | Increases backing illumination. | MUST |
| 5.1.8 | Install two white scene lights on each side of payload module. | Increases scene and backing illumination. | SHOULD |
| 5.1.9 | Install two white rear load lights. | Increases scene and backing illumination. | SHOULD |
| 5.1.10 | Provide for both curb-side scene lights to activate when side payload module entry door is open. | Improves visibility when exiting from side of payload module. | SHOULD |
| 5.1.11 | Install stepwell lighting in stepwell. | Improves ability to navigate steps in dark. | MUST |
| 5.1.12 | Install Squad Saver Net, 2" straps, black, at head of squad bench, attached with removable latches to floor, curb-side wall, and overhead liner. | Greater surface area than squad saver arm rest; and more likely to work when standard vehicle attitude is upset. Detachability allows tall patients to be secured supine on squad bench. | MUST |
| 5.1.13 | Provide "airway seat" with integral seat belt and integral child seat. Install so front edge of seat is 99" from closed rear doors when seat is moved all the way toward the cot. | Assures seat belt will work as engineered. Provides another option for transporting small children. Assures seat will be usable for airway management. | MUST |
| 5.1.14 | Use seamless upholstery in the payload module wherever possible. | Reduces chances of contaminants surviving decon efforts. | MUST |
| 5.1.15 | In interior over rear doors, install brake/turn indicators slaved to driver's controls, instead of clock. | Provides payload module occupants some warning of driver intent. | SHOULD |
| 5.1.16 | Install chevrons above and to both sides of the rear doors. The stripes should alternate between the squad's dominant color and reflective white. | Provides visual warning to the rear. | MUST |

| # | Description | Rationale | Budget priority |
|--------|--|--|-----------------|
| 5.1.17 | Install chevrons on the lower half of each rear entry door, and on the lower half of the payload module side entry door. | Provides visual warning to the rear when the doors are open. | MUST |
| 5.1.18 | Provide a Federal PA300 siren. | Extremely simple and intuitive interface that has remained the same for many years. All operations can be performed by touch. Minimizes need to look away from the road. | SHOULD |
| 5.1.19 | Install siren so that horn ring changes siren tones. | Allows driver to keep eyes on the road and both hands on the steering wheel. | MUST |
| 5.1.20 | Mount siren speakers through cutouts in front bumper if feasible. | Noticeably reduces amount of sound reflected back into ambulance cabin. | SHOULD |
| 5.1.21 | Do not provide vanity wheel covers. | Assures that actual lug nuts will be visible at all times. Eliminates need for valve stem extensions, failure of which has been identified as not uncommon. | MUST |
| 5.1.22 | Provide power windows and door locks for the cab. | Makes it faster and easier to control cab door locks from multiple positions, and makes it faster and easier to control cab windows from driver's position. | MUST |
| 5.1.23 | Provide a tilt (and telescopic, if available) steering wheel. | Allows finer control of driving position. | SHOULD |

5.2 Patient care and operations

| # | Description | Rationale | Budget priority |
|-------|--|--|-----------------|
| 5.2.1 | Provide a payload module at least 170" long. | This is the minimum size adequate to carry the gear that we are accustomed to carrying. A length that also allows designated areas for carrying crew personal items, including but not limited to turnout gear, is desireable. | MUST |

| # | Description | Rationale | Budget priority |
|-------|---|---|-----------------|
| 5.2.2 | Install an additional alternator, if a factory option. | The electrical system must be capable of simultaneously powering all typically attached electrical components, with enough reserve to handle at least some atypically attached electrical components. | MUST |
| 5.2.3 | Delete any air microfiltration system if it takes up otherwise useful space. | We are not satisfied that the effectiveness of these systems has been proven to the extent that it prevents disease transmission or hazmat exposure. We do not have an effective program in place for replacing microfilters on schedule, hence these systems go to waste. | SHOULD |
| 5.2.4 | Install air conditioner for the payload module of the highest capacity and highest Mean Time To Failure (MTTF) available. | Inadequacy and failure rates of air conditioning in the payload module have been frequent irritants. | MUST |
| 5.2.5 | Install "CPR seat" so that it will be adjacent to patient's pelvis/thigh area (not adjacent to a supine patient's chest). Delete rearward cabinets and/or rearward telemetry area, and extend action area to account for this seat placement. (See illustration section 6.1.) | No one sits down when doing CPR. Seat needs to be placed to optimize attendant position for starting an IV on patient's right hand/arm. Without moving the seat to this position, the seat is so far forward that the attendant is almost sitting behind the typical patient's field of vision. | MUST |
| 5.2.6 | Under "CPR seat" lid, provide sufficient storage for 3 "D" size oxygen tanks. Install a "W" trough at the bottom of the compartment. Install two quick release straps, to secure the tanks at the 1/4 and 3/4 tank length positions. Tanks are 21" long/high x 4.5" diameter. Must be able to place and remove the tanks without turning them sideways. (See illustration section 6.2.) | Allows for safe interior storage of additional portable oxygen. | MUST |
| 5.2.7 | Install additional "severe weather" in-wall insulation, if offered. | Assists with temperature control and sound dampening. | SHOULD |

| # | Description | Rationale | Budget priority |
|--------|--|---|-----------------|
| 5.2.8 | Apply undercoating, if offered. | Assists with temperature control, sound dampening, and corrosion resistance. | MAY |
| 5.2.9 | Provide an extended cab (but not a crew cab), if available on chassis. | Allows room for radio shop to mount radio/router equipment. May allow designated area for carrying crew personal items, including but not limited to turnout gear. | MAY |
| 5.2.10 | Provide a 3" drop skirt at outer edges of payload module forward of rear wheel. | Provides easier ingress & egress. Rampover angle is not a major concern in our district. | SHOULD |
| 5.2.11 | Provide a double step at side payload module entrance, each step equal height. | Provides easier ingress & egress. | SHOULD |
| 5.2.12 | Extend bottoms of compartments within drop-skirt area to bottom of drop-skirt. | Provides more room for gear. | SHOULD |
| 5.2.13 | Provide sweep-out compartment bottoms where feasible. | Easier to clean. | SHOULD |
| 5.2.14 | Provide a compartment (IV/DRUG COMPARTMENT) in the payload module right front cabinet that reaches ceiling level and that is dimensioned to hold at least one TEMS IV Box and one TEMS Drug Box, lockable with a standard padlock. Assume both TEMS boxes are 19" deep 10.75" high 11.5" wide. This compartment is only to be accessible from the interior, and its door must be made of a rigid material. | City requirement: "All IV and drug boxes will be stored in locked compartments or brackets when not in use. Compartment design must be approved by the Department and the Virginia Department of Health Office of EMS. A standard lock shall be used for all rescue squad, Department of EMS, and Fire Department operated vehicles." | MUST |

| # | Description | Rationale | Budget priority |
|--------|--|---|-----------------|
| 5.2.15 | <p>Provide a 100% height external right rearmost compartment (BACKBOARD COMPARTMENT). In this compartment, install a 3/16" thick 14" deep vertical divider 8.25" from right wall. Install a shelf forward of aforementioned vertical divider halfway between ceiling and floor, mounted on 20" of adjustable shelf track (10" of track above and below shelf).</p> <p>Install a seat belt across entire compartment opening, 30" down from ceiling, 2" from compartment opening, secured with zinc footman loops. (See illustration section 6.3.)</p> | Allows orderly stowage of backboards and scoop stretcher, velcro splint pack, and C-collar pack. Strap helps prevent gear from falling onto personnel. | MUST |
| 5.2.16 | <p>Provide a 3/4 height external left rearmost compartment (STAIR CHAIR COMPARTMENT).</p> <p>Approximately 40" from floor, make this compartment accessible from interior as well. In the lower approximately 40" of this compartment, install two adjustable 3/16" thick 40" tall 7.5" deep vertical dividers on shelf track mounted to and running the width of the inboard wall, to divide the inboard section of the compartment into thirds. Install a seat belt on the left and right walls, 8" from the inboard wall, secured with zinc footman loops.</p> <p>In the interior-accessible upper portion of this compartment, install adjustable shelf track and two shelves. (See illustration section 6.4.)</p> | Allows orderly stowage of traction splints and KEDs, and interior/exterior access to other items. Seat belts help prevent gear from falling into personnel. | MUST |

| # | Description | Rationale | Budget priority |
|--------|---|---|-----------------|
| 5.2.17 | Reinforce door/hinge of STAIR CHAIR COMPARTMENT. On interior of this door, near the bottom, mount a box sufficient to carry a 37.5" high 20.5" wide 8" deep heavy duty (Stryker 6252) stair chair. Reinforce the box with additional screws, or rivets, or internal and external continuous bead welds. Install a horizontal seat belt, secured with zinc footman loops, approximately 30" above bottom of stair chair box sufficient to secure top portion of stair chair. (See illustration section 6.5.) | Allows orderly stowage of stair chair and uses door rather than muscle to shift stair chair away from compartment interior. | MUST |
| 5.2.18 | Provide a 3/4 height external left forwardmost compartment (MAIN OXYGEN COMPARTMENT). The upper portion of this compartment must be accessible via a lexan door to the interior action area. | To carry main oxygen. Provides interior access to main O2 valve. | MUST |
| 5.2.19 | Provide a 1/2 height external left compartment immediately behind the MAIN OXYGEN COMPARTMENT. In this compartment, mount inverter on ceiling, close to forward wall. Install a fixed shelf sufficiently below the inverter to allow the following: Mount airhorn pump and vacuum pumps to the fixed shelf so they will sit immediately below the inverter. Install a single heat isolation cage around the area occupied by the inverter, airhorn pump, and vacuum pump. (See illustration section 6.6.) | Allows space-efficient mounting of inverter, airhorn pump, and vacuum pump. | MUST |
| 5.2.20 | Apply privacy tinting to all payload module windows. | Patient privacy and climate control. | MUST |

| # | Description | Rationale | Budget priority |
|--------|---|---|-----------------|
| 5.2.21 | Install a grab bar inside the side payload module entry. | To allow a person to steady self using left hand while entering payload module. | SHOULD |
| 5.2.22 | Install an exterior stealth failsafe switch in passenger side grill to unlock at least as many doors as may be required to regain access to all electrically-lockable spaces. | To prevent lock-outs. | MUST |
| 5.2.23 | Provide gas strut hold-open for side payload module door. | We've been dissatisfied with spring hold-opens. | MUST |
| 5.2.24 | Provide for compartment doors to open 135 degrees unless doing so allows compartment door to impact travel of another door at any point. | Allows easier access to gear. | SHOULD |
| 5.2.25 | Upgrade incandescent lighting to LED wherever possible. | Reduces electrical load and burn-outs. | MUST |
| 5.2.26 | Provide for payload module main power bus to be slaved to OEM ignition switch. | Allows more intuitive control of payload module power. | MUST |
| 5.2.27 | Provide 5 minutes of electrical power to payload module (but not to payload module air conditioner blower) when ignition is switched off. Provide dual-action momentary rocker switch on driver's side of cab console to (a) force timer to expire, and (b) reactivate timer. | Prevents sudden darkness from interfering with patient care and egress. Allows driver to conserve battery when timer is not needed. Allows driver to recover from inadvertent interference with timer function. | MUST |
| 5.2.28 | Install one extra 12V automotive battery in payload module battery compartment, wired in parallel but isolated, for use when the vehicle is not running without affecting ability to start the vehicle. | Reduces electrical and starting failures. | SHOULD |

| # | Description | Rationale | Budget priority |
|--------|---|---|-----------------|
| 5.2.29 | Install "'Main' Radio System', 'Portable Radio' chargers, and 'CAD MDT System' as indicated in 6.9, 6.10, and 6.11, using equipment specified by the City Of Virginia Beach / Communications & Information Technology Department / Telecommunications division. | For standard complement of radios & MDT equipment. | MUST |
| 5.2.30 | Provide a door for exterior access to the non-lockable portion of the payload module's right front cabinet. (See illustration section 6.7.) | For efficient outside access to portable equipment. | MUST |
| 5.2.31 | Provide 2 cigar lighter outlets, on 20 amp circuit, energized by ignition & shoreline, in payload module as follows: One on wall in action area adjacent to "airway seat", the other on wall in extended action area just forward of "CPR seat". | To power squad and personal gear. | SHOULD |
| 5.2.32 | Provide a cigar lighter outlet, on 20 AMP circuit, energized by ignition & shoreline, in payload module as follows: In right front cabinet, in the uppermost portion that is accessible from the interior and the exterior. | To charge portable gear. | MUST |
| 5.2.33 | Provide a 12VDC 15 amp power source (hot and ground) on ignition circuit w/6 ft pigtail, terminating behind the action area wall. | To power gear. | MUST |
| 5.2.34 | Provide a 12VDC 15 amp power source (hot and ground) on ignition circuit w/6 ft pigtail, terminating in the front cab console. | To power gear. | MUST |

| # | Description | Rationale | Budget priority |
|--------|---|---|-----------------|
| 5.2.35 | Provide a 12VDC 30 amp power source (hot and ground) on ignition circuit w/6 ft pigtail, terminating behind the passenger seat. | To power gear. | MUST |
| 5.2.36 | Install auto-eject shoreline inlet, with interrupter, with white cover, on driver's side of payload module just forward of forwardmost compartment at approximately eye level. Install a green LED 110VAC shoreline indicator light just above. (See illustration section 6.8.) | To make the shoreline easily accessible to the driver as driver gets in/out of driver's seat, and to indicate whether circuit is successfully energized. Interrupter prevents sparking if under load when ejected. | MUST |
| 5.2.37 | Provide 2 dual-socket 110VAC outlets in payload module as follows: One on wall in action area adjacent to "airway seat", the other on wall in extended action area just forward of "CPR seat". | To power gear. | MUST |
| 5.2.38 | Provide a dual-socket 110VAC outlet in payload module as follows: In right front cabinet, in the uppermost portion that is accessible from the interior and the exterior. | To power gear. | MUST |
| 5.2.39 | Rig inverter to be "always on". Delete action area inverter switch. | Required by our standard complement of I.T. gear. | MUST |
| 5.2.40 | If allowed by engine manufacturer, install engine block heater, with switch behind driver's seat, wired to shoreline. | Extends engine life. | SHOULD |
| 5.2.41 | Use 1050W inverter/charger to power all 110VAC receptacles, "charger 20 amp automatic w/integral cut off". | To power and charge gear appropriately. | MUST |
| 5.2.42 | Provide "Miami-Dade" front cab console (or similar). | Has room for our standard complement of radio heads. Allows orderly stowage of more gear. Has cup-holders. | MUST |

| # | Description | Rationale | Budget priority |
|--------|---|---|-----------------|
| 5.2.43 | Replace OEM cab domelight with domelight that can be switched to either white or red, wired to ignition, with switches on dome light itself. | Allows interior lighting with less impact on driver vision, and intuitive activation. | SHOULD |
| 5.2.44 | If using CoolBar or equivalent with angled faces, install additional white scene light on lower half of each angled face, to come on with same-side standard scene lights. | Extends scene lighting to area more forward than standard. | MAY |
| 5.2.45 | On payload module interior ceiling, install white lights, with appropriate switches in action area, as follows: 3 dual-intensity on curb side; 4 dual-intensity on street side; 3 florescent recessed approximately on center line. | Increases illumination options for patient care. | MUST |
| 5.2.46 | Install a 5" (or so) light under cabinetry to illuminate action area only, with integral switch. | Allows limited lighting for attendant without necessarily lighting patient. | MAY |
| 5.2.47 | Install 15-minute timer switch on battery circuit on curb-side wall at front of squad bench, to allow activation & deactivation of interior overhead florescent lights only. | To better control lighting. | MUST |
| 5.2.48 | Install small light in circuit board compartment, with integral switch, on constant hot circuit. | To assist with electrical troubleshooting. | SHOULD |
| 5.2.49 | Install approximately full-length overhead grab rail in payload module. | To assist with steadyng personnel. | MUST |
| 5.2.50 | Install high-durability grab rails on payload module door interiors. | To assist with entering/exiting payload module. | MUST |
| 5.2.51 | Install rack for M or H oxygen cylinder in MAIN OXYGEN COMPARTMENT, on right wall as close to inboard wall as possible, allowing hand access to 3 ratchet-style straps. | Our oxygen replenishment system negates need to remove/replace oxygen cylinders. | MUST |

| # | Description | Rationale | Budget priority |
|--------|---|---|-----------------|
| 5.2.52 | Install Ohio-style oxygen/suction ports as follows: 2 O2 outlets and 1 vacuum port in action area; 1 O2 outlet on curb-side wall at head of squad bench. | Provides for airway & oxygenation of high acuity patient on cot, while also providing for oxygenation of lower acuity patient on squad bench. | MUST |
| 5.2.53 | Provide IV hooks only as follows: Perko style or equivalent, just below ceiling; w/velcro straps positioned to prevent IV bags from swinging; 1 on curb-side at front of squad bench; 1 on curb-side roughly midway down squad bench; 1 on street side just forward of "CPR seat"; 1 on street side just rear of "CPR seat". | Unobtrusive, convenient, and proximity to walls helps prevent swinging even if straps aren't utilized. | MUST |
| 5.2.54 | Install tethered oxygen wrench in MAIN OXYGEN COMPARTMENT . | | MUST |
| 5.2.55 | Use lexan interior compartment doors to the extent possible, without compromising the required rigidity of the IV/DRUG COMPARTMENT. | Allows attendants to see contents of compartment without having to open compartment. | SHOULD |
| 5.2.56 | In payload module right front cabinet, if any interior compartment doors open to the side, make sure the handle is on the left and the hinge is on the right. | Experience shows that access is hindered if doors open in other direction. | MUST |
| 5.2.57 | Provide a squad bench with a split 50/50 lid. | Allows access to gear under lid(s) even if gear or people are occupying one lid and can not be easily moved. | MUST |
| 5.2.58 | Provide gas strut (at least 30 LB capacity) hold-opens for squad bench lids. | Prevents lids from inadvertently falling and scraping/pinching personnel. | MUST |
| 5.2.59 | Use rivets to secure front & rear kickplates/stoneguards to body. | Our experience is that screws tend to back out. | MUST |
| 5.2.60 | Install dri-deck, turtletile, or equivalent, at bottom of all exterior compartments and shelves. | Allows rain to drip below gear. | SHOULD |

| # | Description | Rationale | Budget priority |
|--------|---|--|-----------------|
| 5.2.61 | Install a Stryker Power-LOAD system. | Power loading reduces likelihood of exertion-related crew injury and has member recruitment & retention value. | MAY |
| 5.2.62 | Install an ACDC Industries MZL-180 (or, upon customer approval, a functionally equivalent) voltage-sensing delay timer in the electrical/IT cabinet, and rig it to supply power to the CAD MDT System CPU. | Allows CAD MDT to receive messages while ambulance is off, unless voltage drop would risk preventing ambulance from being started. | MUST |
| 5.2.63 | Do not install anything at front of squad bench that would interfere with securing a tall patient supine on the squad bench – unless also providing a quick-release mechanism to allow removal of the interfering object. | Allows crew to secure a tall patient supine on the squad bench in multiple casualty situations. | MUST |

5.3 Unique identification

| # | Description | Rationale | Budget priority |
|-------|--|--|-----------------|
| 5.3.1 | Place the ambulance's "unit number" as high as feasible in the following locations on the exterior payload module bulkheads: Driver's side facing forward; as far forward as feasible facing left; as far forward as feasible facing right; driver's side facing the rear. Use dark numbers on a white background. | Allows incident commander to identify unit from any direction. High contrast aids visibility. | MUST |
| 5.3.2 | Place the ambulance's "unit number" as high as possible on the interior of the driver's side rear entry door. Use dark numbers on a white background. | Allows incident commander to identify unit from the rear even when rear entry door blocks view of the rear exterior unit number. Also reminds attendants in the payload module what unit they are in. | MUST |

| # | Description | Rationale | Budget priority |
|-------|--|---|-----------------|
| 5.3.3 | Place the ambulance's "unit number" in large characters on the roof. Use retro-reflective vinyl. | Allows responders at high altitudes (such as from hi-rises or aircraft) to identify the unit. Retro-reflectivity enhances visibility. | SHOULD |
| 5.3.4 | Apply a large version of the squad's logo (simplified as appropriate) on the roof of ambulance, instead of a Star Of Life. Use retro-reflective vinyl. | Allows observers at high altitudes (such as from hi-rises, traffic cameras, or aircraft) to associate the ambulance with the logo it uses in its public relations material. Retro-reflectivity enhances visibility. | MAY |
| 5.3.5 | Coat rear bumper supports to prevent corrosion. | Prevents outward appearance of deterioration. | SHOULD |
| 5.3.6 | Provide ambulance with all-white paint. Do not provide a paint belt or pinstriping. ¹ | Prevents color mismatches between any graphic elements applied later. | SHOULD |
| 5.3.7 | Do not apply Star Of Life to roof. Instead, deliver Star Of Life decal unapplied. | Allows application of squad logo instead. Allows us to use Star Of Life for other purposes. | SHOULD |
| 5.3.8 | Provide chrome or brushed aluminum wheels (without vanity covers) for all out-facing tire-wheel assemblies. | Provides attractiveness for public relations purposes without compromising safety. | MAY |
| 5.3.9 | Provide license plate brackets at the front and back of the vehicle. | Virginia requires both front and back license plates. | MUST |

5.4 Traffic signaling

| # | Description | Rationale | Budget priority |
|---|-------------|-----------|-----------------|
|---|-------------|-----------|-----------------|

¹Other squads may replace requirement 5.3.6 (at the risk of violating the associated rationale) with a requirement for one or more paint belts, but the replacement requirement should specify that the edges of all paint belts should be smoothed to prevent seams from forming underneath any graphics applied over the edges later.

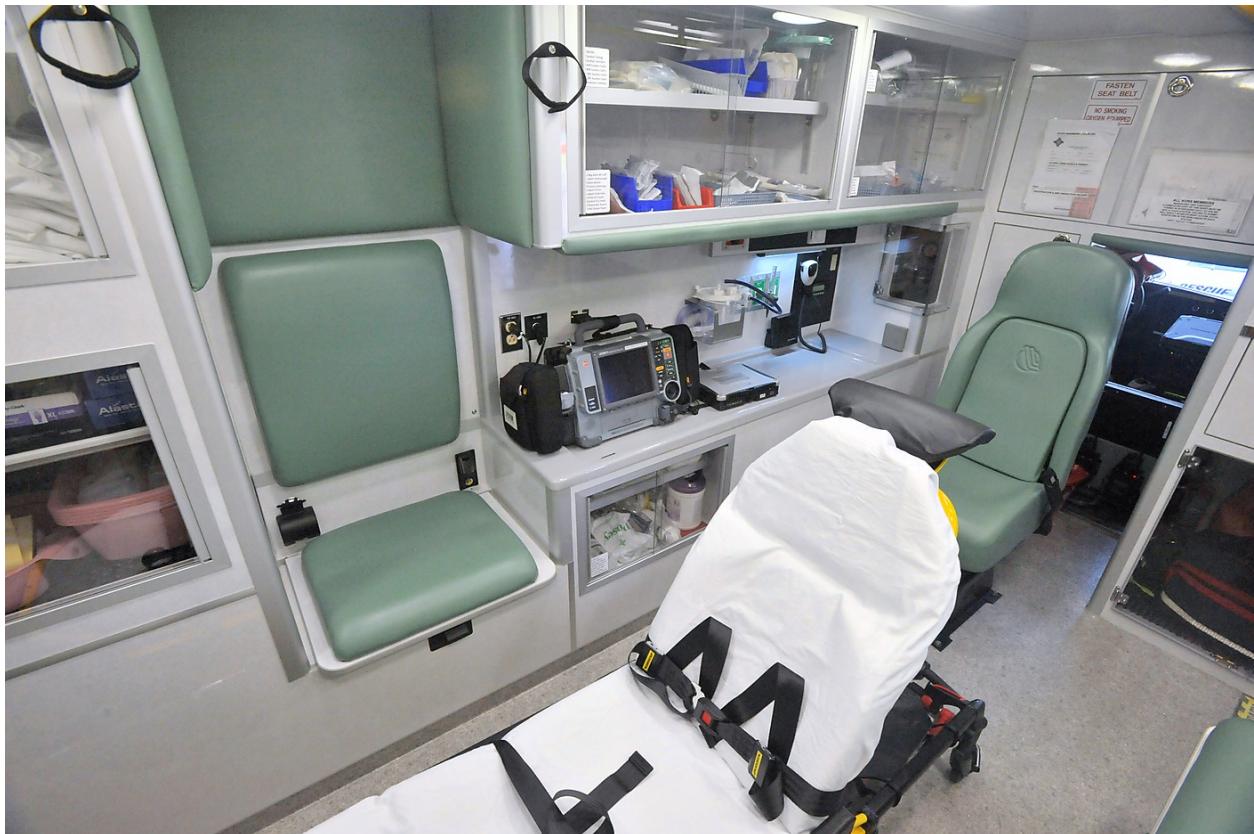
| # | Description | Rationale | Budget priority |
|--------|---|---|-----------------|
| 5.4.1 | Install LED OptiCom as high and centered as is feasible. If dimensions allow, install it flush with front bulkhead (or CoolBar) behind clear lens. Wire OptiCom so it only activates when sequencer is "on" and transmission is in "Drive". | To control traffic signals. Flush mounting improves aesthetics. OptiCom use is only permitted when responding lights & siren. | MUST |
| 5.4.2 | Provide ambulance warning light sequencer & load manager system, with switches on console. | Manages load on electrical system. | MUST |
| 5.4.3 | Wire siren to be sequencer-hot only. | Prevents operation of siren without warning lights. | MUST |
| 5.4.4 | Provide airhorns, tuned "dissonant rather than "pleasant" if feasible. | For better warning to other drivers in sound-insulated vehicles. Dissonant tuning gives audible indication that we are an emergency rather than commercial service. | MAY |
| 5.4.5 | Install airhorn activation valve w/lanyard, located in center of headliner. | Makes activating airhorn more intuitive. | MAY |
| 5.4.6 | Install 2 red ambulance warning lights on rear to be visible through windows when rear doors are opened. | Provides additional signaling protection to rear, not masked by open doors. | SHOULD |
| 5.4.7 | Install 2 red ambulance warning lights inboard of mandated corner red lights at top front of payload module. | Provides additional signaling to clear traffic ahead. | MAY |
| 5.4.8 | Install an amber ambulance warning light at top center rear, to alternate with mandated corner red lights. | Provides additional signaling protection to rear. | MAY |
| 5.4.9 | Install a red ambulance warning light above and forward of each front wheel as front intersection lights. | Provides forward signaling to crossing traffic as nose enters lane, and to adjacent-lane traffic. | MUST |
| 5.4.10 | Install 2 red ambulance warning lights as grill lights. | Provides forward signaling to clear traffic immediately ahead (that may not have visibility to higher lights). | MAY |

| # | Description | Rationale | Budget priority |
|--------|---|---|-----------------|
| 5.4.11 | If using CoolBar or equivalent with angled faces, install additional red ambulance warning light on upper half of each angled face. | Provides additional signaling to front and sides. | MAY |
| 5.4.12 | Install a red ambulance warning light just over each rear wheel. | Provides additional signaling to crossing and adjacent-lane traffic. | MAY |
| 5.4.13 | Install "wig-wag" headlight flasher system, to activate in accordance with VA state law. | Provides additional signaling to clear traffic ahead. | MAY |
| 5.4.14 | Install additional amber arrow turn signals, one each under front mandated corner red lights, slaved to OEM turn signals. | Provides additional signaling of intent to turn or change lanes to traffic ahead that may not have visibility to lower OEM turn signals. | MAY |
| 5.4.15 | Upgrade incandescent lights to LED (or better) wherever possible. | Reduces electrical load and burn-outs. | MUST |
| 5.4.16 | Use clear lenses on ambulance warning lights to the extent possible. | Improves aesthetics. | MAY |
| 5.4.17 | Use chrome-plated flanges around ambulance warning lights to the extent possible. | Improves aesthetics. | MAY |
| 5.4.18 | Label the warning light sequencer switch "EMERGENCY LIGHTS". Configure this switch to energize/de-energize all installed official warning light systems, including "wig-wag" and interlocked OptiCom. Delete all legacy subordinate switches. | Adopted from FDNY specifications. Fine-grained control over emergency light subsystems has been rendered unnecessary by technology improvements. Reducing the operator interface to just one switch will eliminate control misconfigurations and prevent defeat of safety features. | MUST |

6 Illustrations

6.1 CPR seat placement

6.1.1 View from right rear interior corner



6.1.2 View from side entry door



6.2 Portable oxygen bottle storage

6.2.1 Stocked



6.2.2 Empty



6.3 Backboard compartment

6.3.1 Stocked



6.3.2 Empty



6.4 Stairchair compartment space

6.4.1 Stocked



6.4.2 Empty (overview)



6.4.3 Empty (detail)



6.5 Stairchair bracket

6.5.1 Stocked



6.5.2 Empty



6.6 Electric motor mounting & cage

6.6.1 Overview



6.6.2 Detail



6.7 Exterior access to payload module right front cabinet



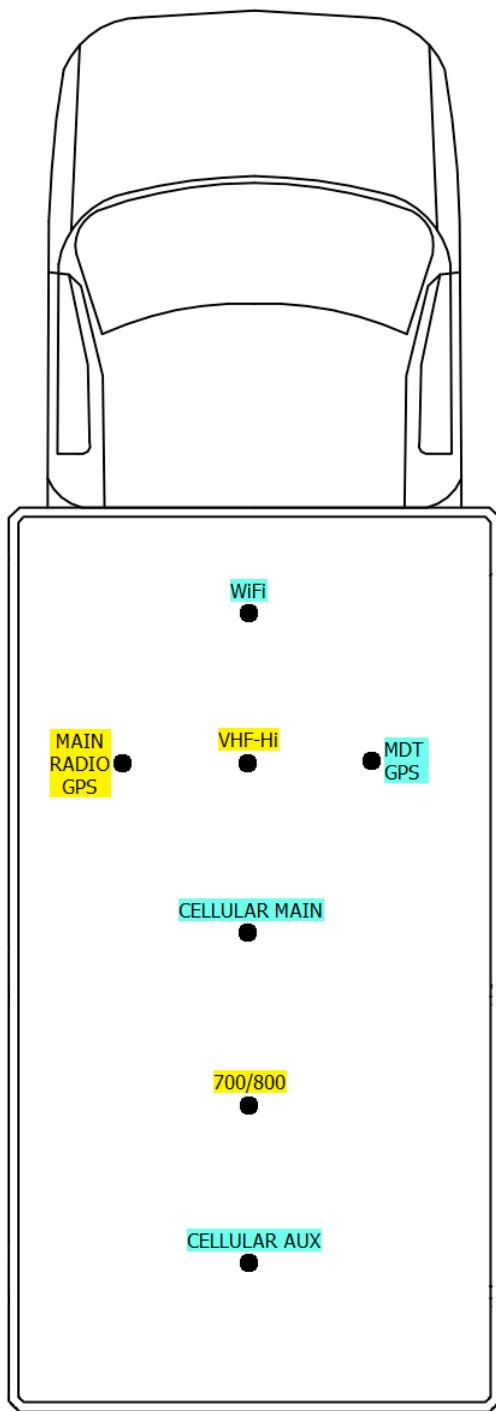
6.8 Shoreline inlet/indicator positioning



6.9 Exterior antennas

NOTE

The following diagram **ONLY** shows the number, nature, and rough placement pattern for required roof antennas. Nothing else in this diagram constitutes a requirement.



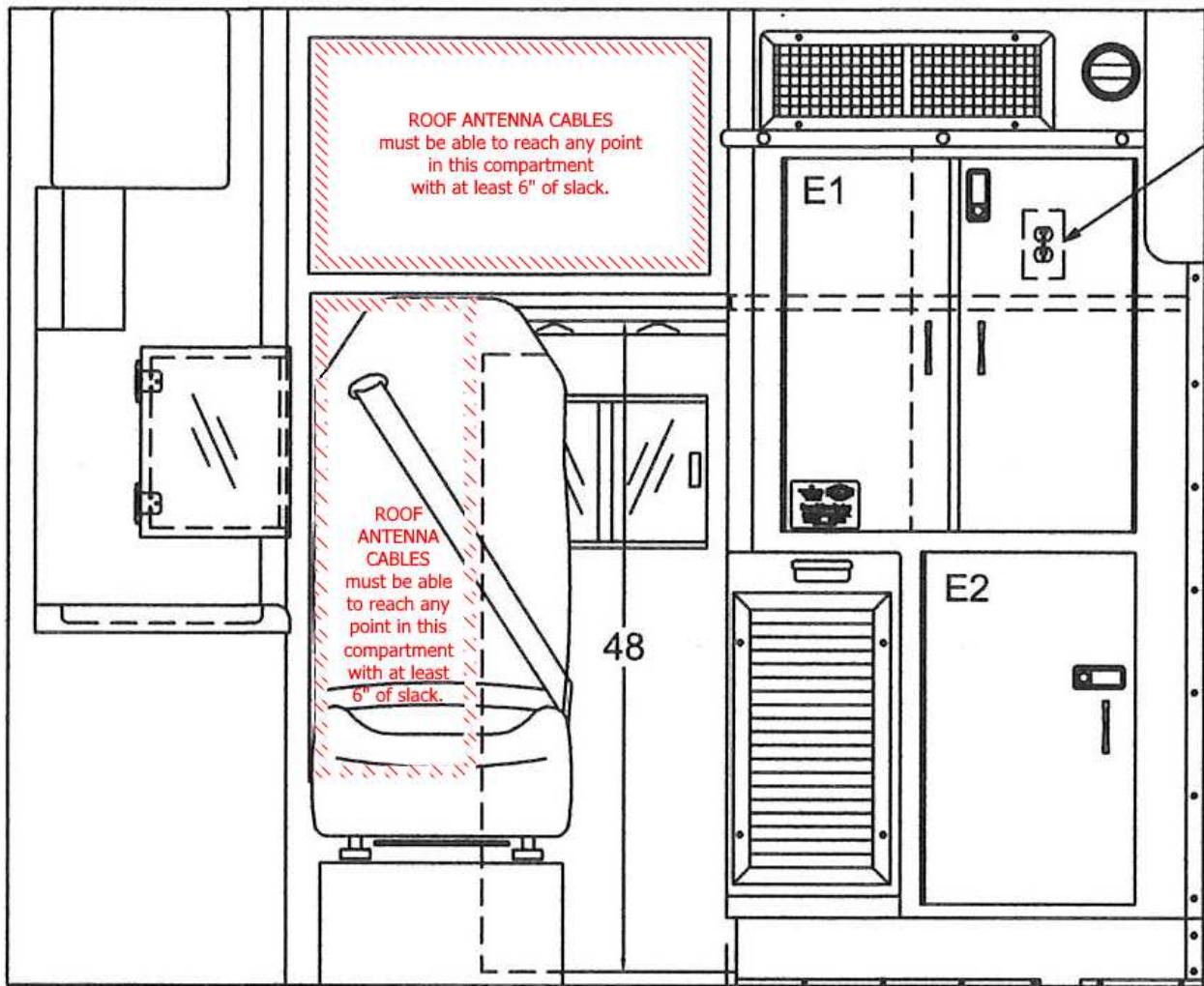
6.10 Cable termination points for exterior antennas

6.10.1 Bulkhead interior view

NOTE

The following diagram **ONLY** shows spaces into which exterior antenna cables should terminate. Nothing else in this diagram constitutes a requirement.

If you are viewing this diagram in black & white, the spaces of interest are the ones bordered by diagonal crosshatching.

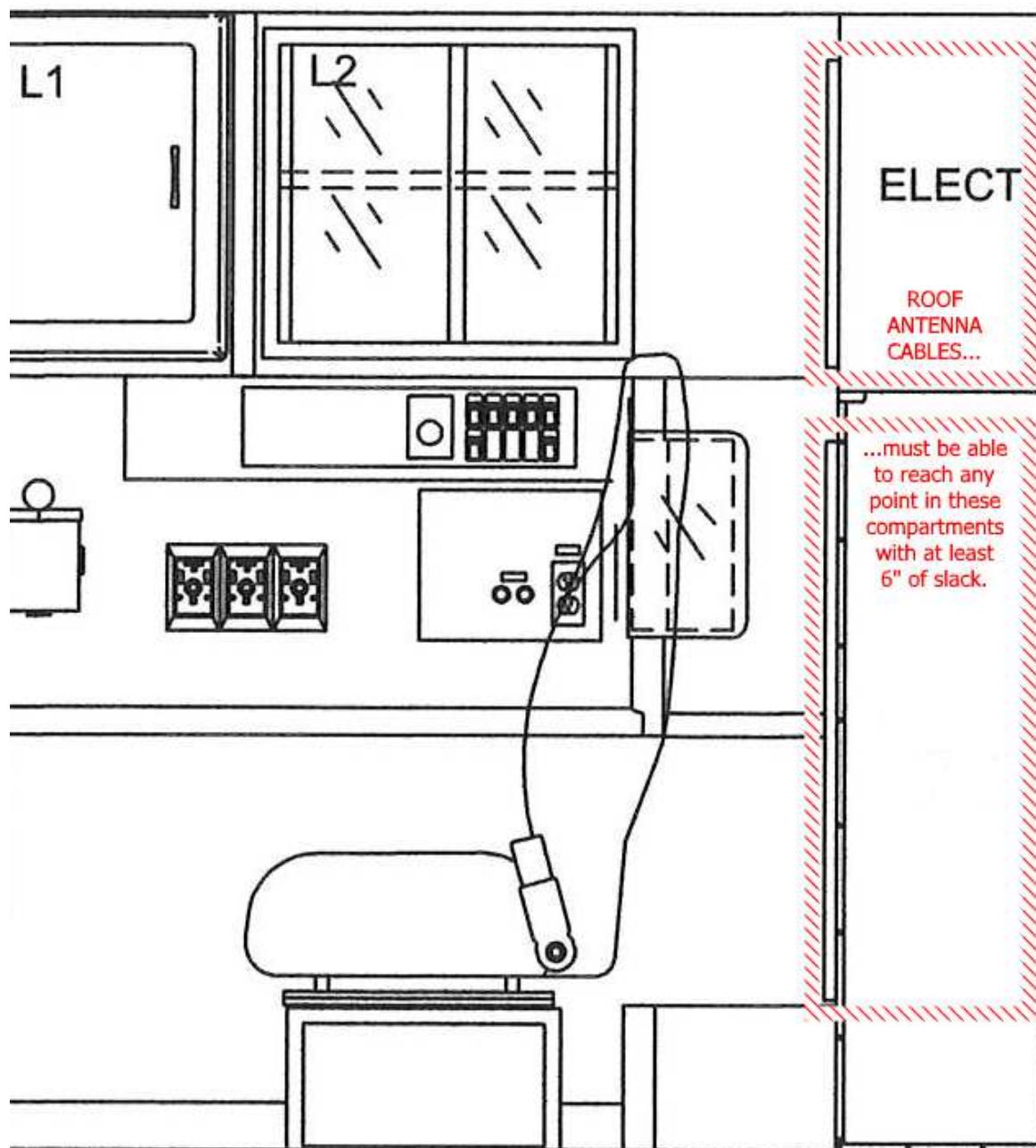


6.10.2 Left interior view

NOTE

The following diagram **ONLY** shows spaces into which exterior antenna cables should terminate. Nothing else in this diagram constitutes a requirement.

If you are viewing this diagram in black & white, the spaces of interest are the ones bordered by diagonal crosshatching.



6.11 Communications/IT component mounting and power source chart

| Ambulance IT Component Plan | | POWER SOURCES | | MOUNTING LOCATION | | POWER SOURCE | | PORTABLE RADIOS (APX6000) | | CAD MDT SYSTEM (MW810C) | |
|----------------------------------|-----------------|------------------|-------------|----------------------|-----------|----------------------------|-----------|------------------------------|---------|----------------------------|-------------------------|
| "MAIN" RADIO SYSTEM (APX7500) | | MAIN TRANSCEIVER | | CAB CONSOLE | | PAYLOAD MODULE COMMS PANEL | | ROOF | | GPS ANTENNA | |
| Roof | 700/800 antenna | VHF-Hi antenna | GPS antenna | Control head & mic 1 | Speaker 1 | Control head & mic 2 | Speaker 2 | Chargers | Display | Keyboard | GPS antenna |
| Electrical/IT cabinet | ^=v | ^=v | ^=v | ^=v | ^=v | ^=v | ^=v | ^=v | ^=v | ^=v | WiFi antenna |
| | | | | | | | | | | | Cellular antenna (main) |
| | | | | | | | | | | | Cellular antenna (aux) |
| | | | | | | | | | | | |

The chart illustrates the physical locations of various IT components and their power and signal connections. Components are color-coded: yellow for the Main Radio System, pink for the CAD MDT System, and light blue for the MAIN TRANSCEIVER. Mounting locations are indicated by shaded boxes. Power sources are listed in the bottom row.

- Power Sources:**
 - OrigEM IGNition circuit
 - OrigEM ACCESSORIES circuit
 - CustomEM Master circuit
 - Voltage-sensing delay timer circuit (ACDC Industries MZL-180)
 - OrigEM unswitched BATTer circuit
 - Shoreline circuit
- Mounting Locations:**
 - Roof
 - Electrical/IT cabinet
 - Cab console
 - Payload module comms panel
- Components:**
 - "MAIN" RADIO SYSTEM (APX7500)
 - CAD MDT SYSTEM (MW810C)
 - MAIN TRANSCEIVER
 - Cab console
 - Payload module comms panel
 - Roof
 - Chargers
 - Control head & mic 1
 - Speaker 1
 - Control head & mic 2
 - Speaker 2
 - Display
 - Keyboard
 - GPS antenna
 - WiFi antenna
 - Cellular antenna (main)
 - Cellular antenna (aux)
 - VHF-Hi antenna
 - 700/800 antenna

Kempsville Volunteer Rescue Squad

Ambulance Graphics Package



Ambulance Graphics Package

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Kempsville Volunteer Rescue Squad
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Appendix – Drawings

Standard Layouts

- Sheet 1 – “AMBULANCE” (Reversed)
- Sheet 2 – Unit Number – KEMPSVILLE – Unit Number
- Sheet 3 – “KEMPSVILLE VOLUNTEER RESCUE SQUAD”
- Sheet 4 – Unit Number on Contrasting background
- Sheet 5 – “AMBULANCE”
- Sheet 6 – “www.kvrs.org” with “KEMPSVILLE AMBULANCE”
- Sheet 7 – Marking Stripe
- Sheet 8 – Stylized Logo
- Sheet 9 – Stylized Logo, dimensioned
- Sheet 10 – Standard Logo

Typical Graphics Layouts

- Sheet 11 – Front, Chassis and Module and Rear, Module
- Sheet 12 – Left (Driver’s) Side, Module
- Sheet 13 – Right (Passenger’s) Side, Module
- Sheet 14 – Module Doors to Patient Compartment, Interior Face
- Sheet 15 – Module, Roof
- Sheet 16 – Chassis Stripe Transition
- Sheet 17 – Bordered Letters

Revisions

Revisions to this manual include changes made since its original publishing date, 05 May 11. Below are all revisions in this edition.

Revision 1: On sheets 11 and 14, extended chevrons on the rear of the unit from the top of rear doors to underside of rain rail. On sheet 14, added a note to indicate this. (29 June 11)

Kempsville Volunteer Rescue Squad Ambulance Graphics Package

Purpose

This manual is developed to concisely and accurately define the graphic elements specific to ambulances and other vehicles put into service by Kempsville Volunteer Rescue Squad (KVRs), in Virginia Beach, Virginia. The graphic elements depicted are typically the lettering, striping, and specific logos utilized on the exterior of the vehicles, but also includes some examples installed on the interior surfaces. The individual graphics are combined in a vehicle specific package to:

- Clearly identify an emergency vehicle as required by state code,
- Improve vehicle safety through conspicuous reflective graphics and effective warning systems,
- Enumerate units to provide unique identification at emergency scenes,
- Display the squad's corporate identity for public viewing, and,
- Project the rescue squad's individuality through graphic presentation.

The depictions provided in this manual are comprehensive, and are the primary guide to installing graphics on a KVRs ambulance. Variations can be generated through any number of factors, including color, dimensions, positions and specific modification. However, it is intended that each depiction of an element will be the standard by which the installation will be measured and contract compliance will be verified.

This manual will be referenced by KVRs as part of a contract for installing graphics on an ambulance. Any contractor applying vehicle graphics will use these standard depictions for the placement of each element. Only specifically defined variations marked within this package, and initialed by both the ambulance committee representative and the contracted graphics company representative, are allowed to take precedence. Any variation from these standards will be in violation of the contract and grounds for mandatory, unpaid correction by the graphics company as directed by the appropriate KVRs representative.

Definitions

Fonts

A **font** shall comprise a specific style and formation of each letter of the alphabet and of the numbers 1 through 9 and zero. Where a font is referenced by name, it shall conform to the American standard for TrueType fonts for that particular style of font.

- The **stroke width** of a letter shall define the width of one segment or arc of a letter in a font. Fonts often use variations of this width to create the style of a font in individual letters. The stroke width shall in all cases use width of the vertical segment of a font's letter "L" as the stroke width
- As with stroke width, the **height** of a font varies across the letters of the alphabet. This is necessary to make a letter's vertical size appear proportional to the other letters. For example, the letters "O" and "S" will have a slightly larger dimension measured on the vertical centerline than the letters "H" and "T". Where defined, the height of a font is measured along the left edge of a capital letter "L" from the top of the vertical stroke of the letter to its bottom edge.
- **Width ratio** of a font expresses how "fat" or "skinny" a letter is in relation to the standard for that font. A letter "S" with a 0.85 width ratio is 85% as wide as the same font "S" with a 1.00 width ratio.
- **Bordered lettering** – In some instances, an individual font letter will be cut in one color of vinyl, and superimposed on the same letter of the same font with a different stroke width, usually in a contrasting color. The effect results in a letter with a "border". The thickness of the border will be defined in this manual as a percentage of the stroke width for a non-bordered letter of the same size and stroke width. For example, the contrasting color of the border may be 25% as wide as the width of the vertical segment in the letter "L". This will be described as a ".25 Stroke Border".
- The term **kerning** refers to the amount of "white space" between font letters in a word. It is difficult to specify this distance in various graphic projects because the spacing is often set by eye because it "reads" correctly when viewed. Many font-based programs use either a programmed or adjustable kerning to their fonts. In this instance, if a portion of text needs greater kerning, it will mean that the white space between letters should increase.

In all instances, contracted graphics companies shall make available examples of the fonts to be used. See the "Contractor Submittals" section of this manual.

Colors

Colors of an ambulance are a point of pride within the individual rescue squad and often a central part of the graphic identity projected by that squad to the public. Besides their use in vehicle graphics, the same or similar colors are often used on stationary, uniforms, emblems and equipment. Wherever possible, colors will be referenced to the Pantone Color System number. The base ambulance will be defined as "white" regardless of actual tint of white applied to the unit. In the case of KVRS ambulances, shades of green, black and gold will be utilized.

Wherever DARK GREEN is indicated, match Pantone "DARK GREEN 553C". Provide matching samples or closest approximation to the squad representative for approval as defined under the "Contractor Submittals" section of this manual.

Gold can refer to a solid color vinyl appliqué, a stylized vinyl with a printed pattern much like gold leaf inlay, or actual gold leaf applied to the base coat and accented with paint, varnish or other coloring agents. Actual gold leaf, typically 23K gold, can also have hand spinning in it, the process of applying a swirled affect in the gold itself. This effect can be replicated on applied vinyls and may be desirable as part of a graphic. Any specification of "gold" in a graphic shall have a clear reference to the type of material utilized.

Working Points

Complex dimensioned graphics will include on the plan a specific working point, from which all dimensions will be measured. The working point will also be used to locate the entire graphic on the vehicle. It will be a circle divided into four equal quadrants which alternate black and white. The working point is NOT part of the graphic and will only be used as a dimensional reference for building and applying the appropriate graphic.

Chassis / Ambulance Module

Placement of graphics is highly dependent on the amount and location of available space on the vehicle. Vehicle lines and the position of features can also provide alignment for striping and lettering. In particular, the ambulance stripe will attempt to take advantage of the dominant horizontal median down both sides. Lines such as the top rain rail of the ambulance module will provide the reference for horizontal. Vertical shall be parallel with the vertical edges of module doors.

Unit Number

This manual shows a typical unit number of "921" on the accompanying graphics. Note that this number is depicted as an example only. The contracted graphics company shall verify with the KVRS representative which unit number will be applied to the specified ambulance.

The correct unit number for this contract is _____.

Contractor submittals

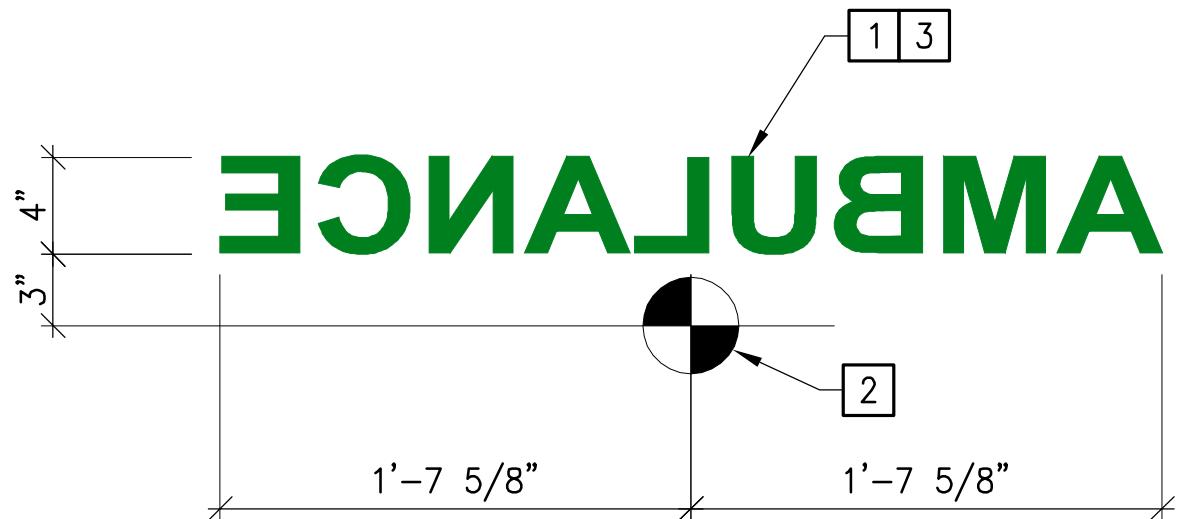
- **Paint**
Contractor shall mix paint to match the selected color(s). For each paint color, contractor shall apply primer to (2) aluminum chips, 3"x4" of any nominal thickness. After drying, both chips shall be painted on at least one side with the paint color. Both chips will be delivered to the squad representative along with a paint specification sheet.
- **Lettering / Numbers**
For each font and color of applied vinyl used for lettering, contractor shall cut two (2) samples of lettering to match the font, height, width ratio and color. The letters to be cut shall be "KVR". Provide both samples to the squad representative. See Appendix Sheet 17 for requirements for bordered letters.
- **Reflective material**
For each color of light reflective applied vinyl used in any vehicle graphic, contractor shall cut two (2) 3"x4" samples. Provide both samples to the squad representative, along with a specification sheet from the manufacturer defining the light reflective quality of the product.
- **Applied Vinyl**
For each color of applied vinyl not specifically directed above to be provided as a sample, the contractor shall cut two (2) 3"x4" samples of all vinyls to be used in graphics. Provide both samples to the squad representative along with a specification sheet from the vinyl manufacturer.
- **Gold Leaf**
For each specification of actual gold leaf, contractor shall prime and paint two (2) 3"x4" aluminum chips with white paint to match the existing vehicle color. Contractor shall cover both chips with 23K gold leaf and provide a hand-spun finish as specified. Provide both samples to the squad representative.
- **Dimensioned layouts – shop drawings**
Contractor shall provide scaled drawings depicting all graphics to be applied to the vehicle to the squad representative. The drawings provided in this manual will not be submitted as shop drawings.

Note: In the event that a sample is deemed not satisfactory by the station representative, the contractor shall provide replacement samples of acceptable products to the squad at no additional cost.

KVRS Logos

Over its history, Kempsville Volunteer Rescue Squad has developed a corporate identity with its own logos. Besides the ambulance graphics, their logo is printed in a multitude of formats and on all manner of media. Currently, the station uses two different logo designs:

- Standard – a cross surrounded with a circle and text, with cross blazes outside of the circle. As a monochromatic image, it is typically used on uniform items and equipment. In this graphics package, it is typically only applied to the roof of the ambulance. See appendix, page 10.
- Stylized – A three color logo with an intertwined cross and rings, occasionally paired with extended left and right blazes. It has customarily appeared on the squad's emergency response vehicles. See appendix, pages 8 and 9.

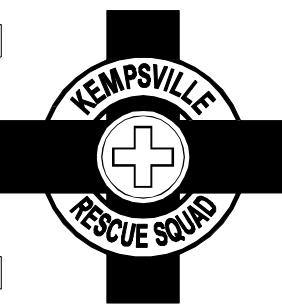


NOTES

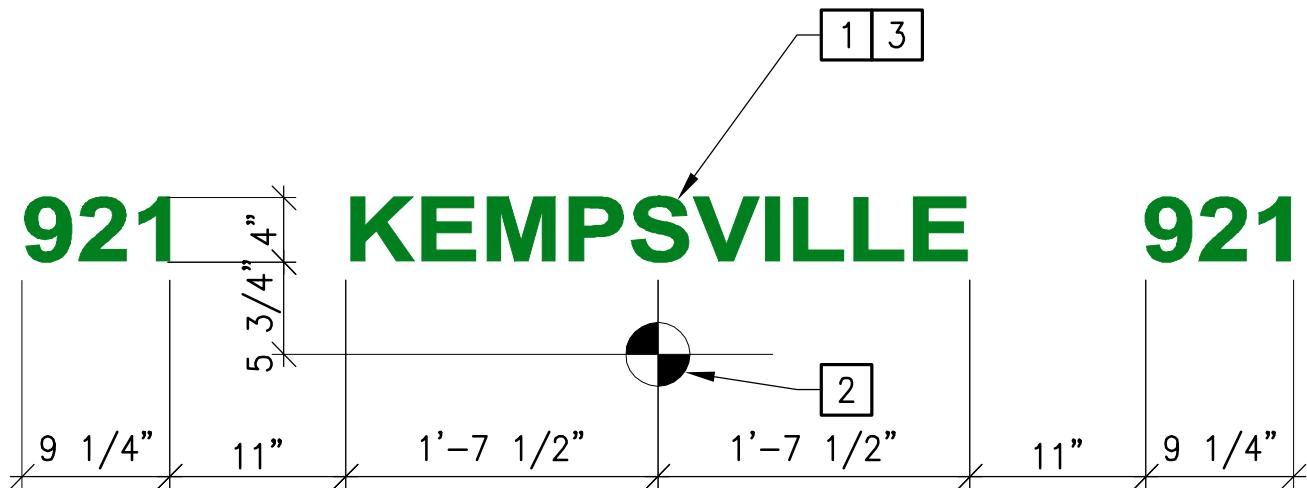
- 1 FONT: ARIAL, WIDTH FACTOR=1.1, STROKE = 7/8". COLOR = "DARK GREEN". LETTERS MUST BE IN REVERSE.
- 2 WORKING POINT IS CENTER OF FRONT EDGE OF VEHICLE HOOD.
- 3 MATERIAL: APPLIED ADHESIVE VINYL.

Drawing **AMB - REVERSE**

1 1/2" = 1'-0" Scale



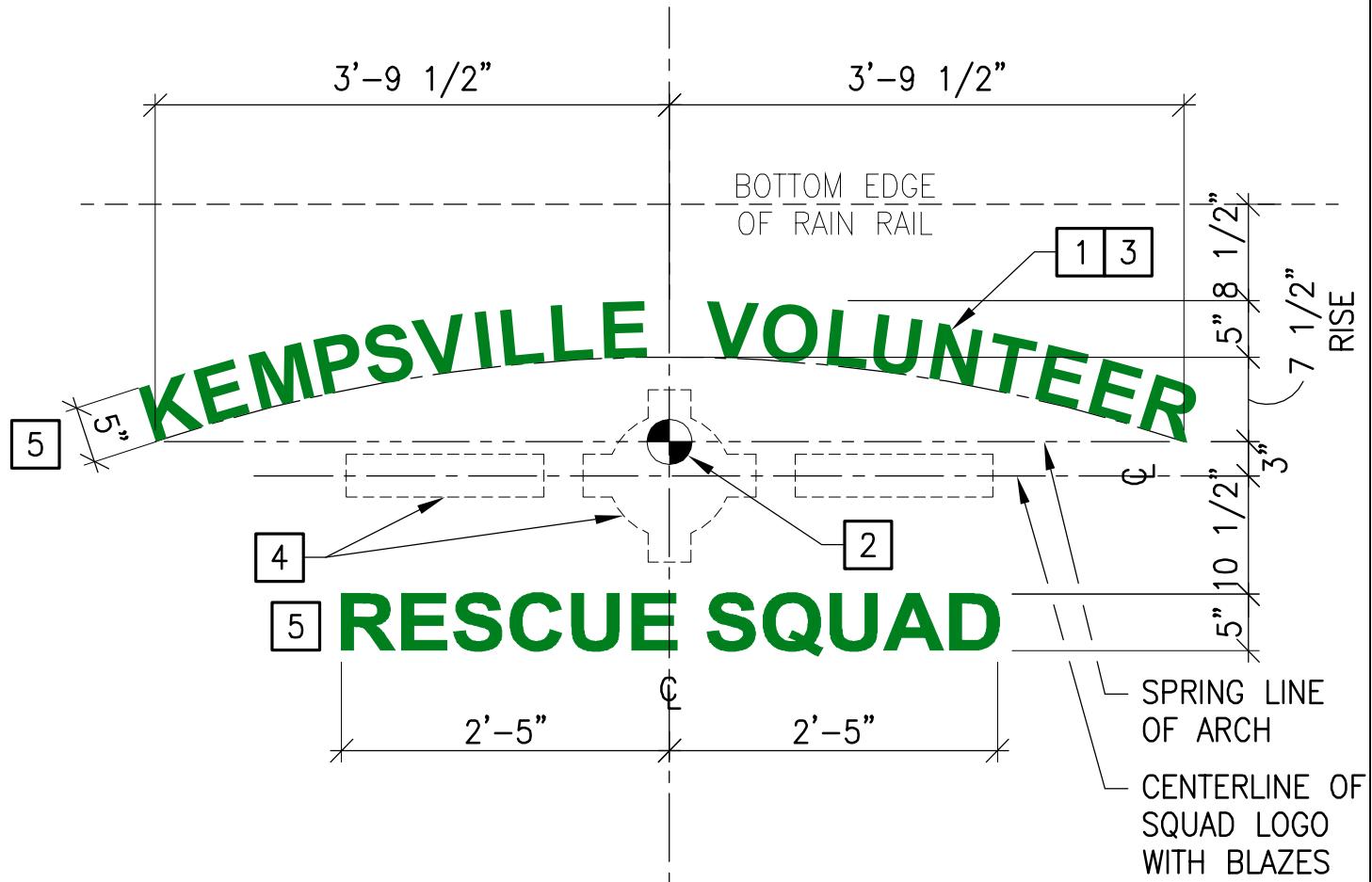
1 Sheet



NOTES

- 1 FONT: ARIAL, WIDTH FACTOR=1.1, STROKE = 7/8". COLOR = "DARK GREEN".
- 2 WORKING POINT IS CENTER OF THE CHASSIS ROOF AT THE MODULE.
- 3 MATERIAL: APPLIED ADHESIVE VINYL.

| | | |
|---------|---|------------|
| Drawing | UNIT-KVRS-UNIT | Scale |
| |  | 1" = 1'-0" |
| | | |
| | | Sheet |
| | | 2 |



NOTES

- 1 FONT: ARIAL, WIDTH FACTOR=1.1, STROKE = $1\frac{1}{16}$ ". COLOR = "DARK GREEN".
- 2 WORKING POINT IS THE MIDPOINT OF THE SPRING LINE OF THE ARCH MADE BY THE WORDS "KEMPSVILLE VOLUNTEER".
- 3 MATERIAL: APPLIED ADHESIVE VINYL.
- 4 SQUAD LOGO AND (2) BLAZES. SEE DETAIL, SHEETS 8 AND 9.
- 5 THE 5" HIGH TEXT "KEMPSVILLE VOLUNTEER RESCUE SQUAD" SHALL BE COMPOSED OF BORDERED LETTERS, AS DEPICTED ON SHEET 17, AS DIRECTED BY THE SQUAD REPRESENTATIVE.

Drawing KVRS - LATERAL

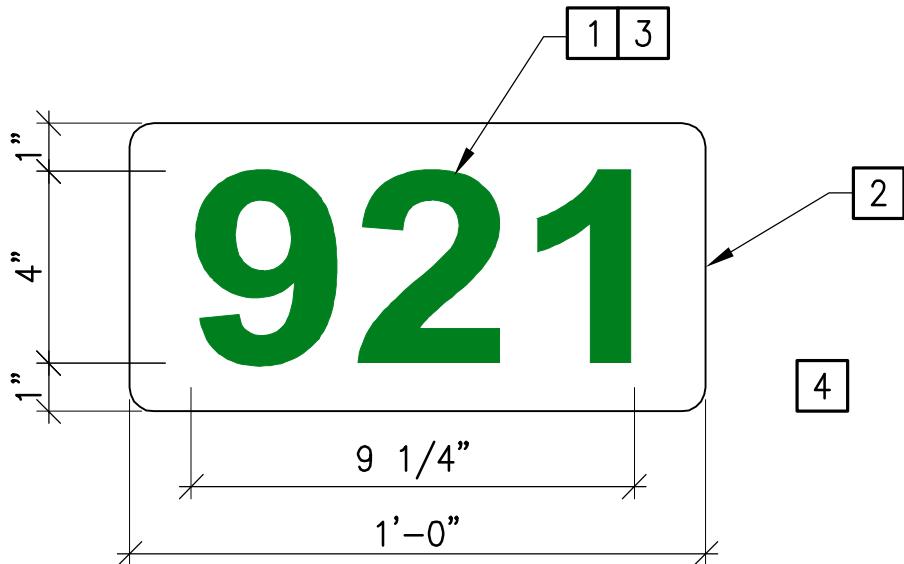
3/4" = 1'-0"

Scale



3

Sheet



NOTES

- 1 FONT: ARIAL, WIDTH FACTOR=1.1, STROKE = 7/8". COLOR = "DARK GREEN".
- 2 APPLY UNIT NUMBER TO CONTRASTING COLOR FIELD (TYPICALLY "WHITE") OF DIMENSIONS SHOWN. FIELD IS NON-REFLECTIVE.
- 3 MATERIAL: APPLIED ADHESIVE VINYL.
- 4 COORDINATE EXACT PLACEMENT WITH SQUAD REPRESENTATIVE.

Drawing **UNIT-CONTRAST**

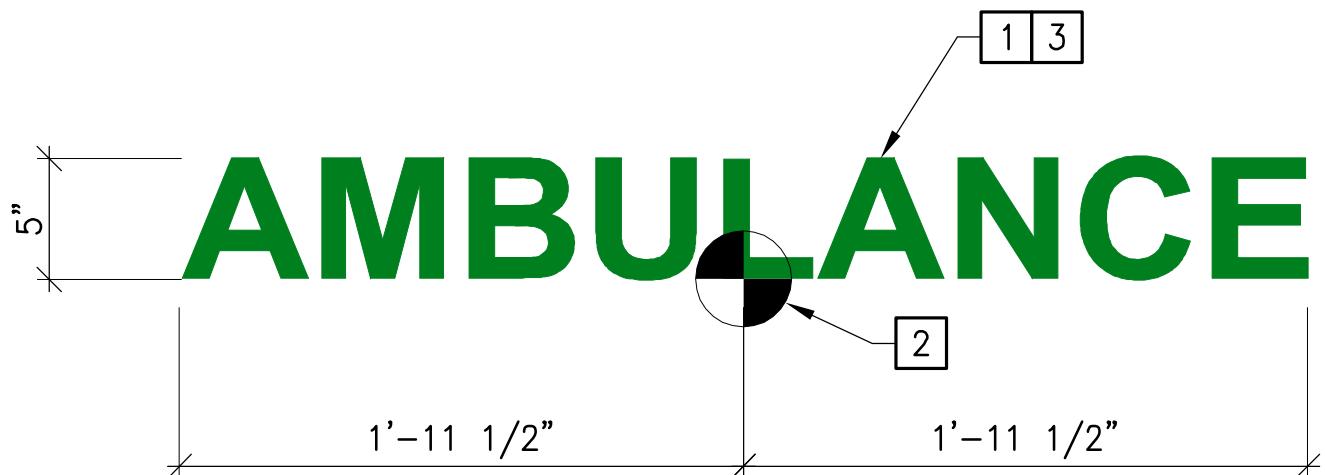
3" = 1'-0"

Scale



4

Sheet



NOTES

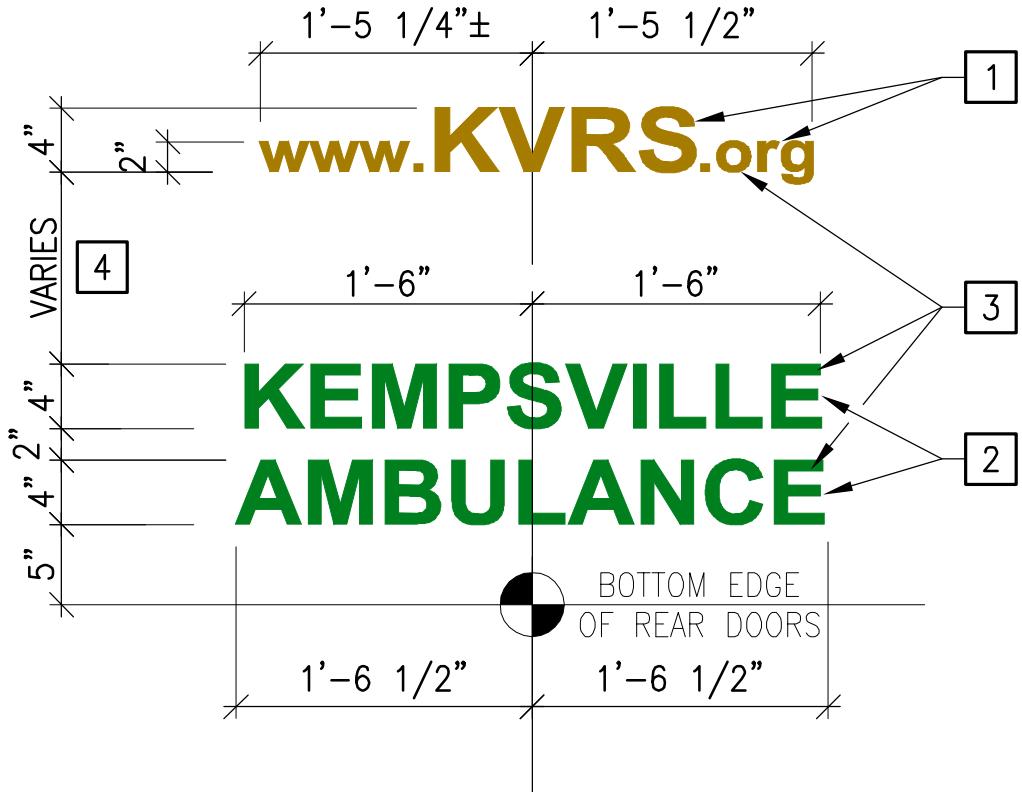
- 1 FONT: ARIAL, WIDTH FACTOR=1.1, STROKE = 1 1/16". COLOR = "DARK GREEN".
- 2 WORKING POINT IS CENTERPOINT OF THE WORD AT IT'S BASE
- 3 MATERIAL: APPLIED ADHESIVE VINYL.

Drawing **AMBULANCE**

1 1/2" = 1'-0" Scale



5 Sheet



NOTES

- 1 FONT: ARIAL, WIDTH FACTOR=1.1, STROKE = 7/8". COLOR = "GOLD". LETTERS "KVRS" DELIBERATELY LARGER IN SIZE THAN REMAINDER OF WEB ADDRESS. FOLLOW DIMENSIONS FOR LETTERS.
- 2 FONT: ARIAL, WIDTH FACTOR=1.1, STROKE = 7/8". COLOR = "DARK GREEN".
- 3 MATERIAL: APPLIED ADHESIVE VINYL.
- 4 CENTER WEB ADDRESS VERTICALLY BETWEEN BOTTOM OF WINDOW AND TOP OF DOOR HANDLES. CENTER "V" ON DOOR GAP.

Drawing ORG-KVRS-AMB

1" = 1'-0"

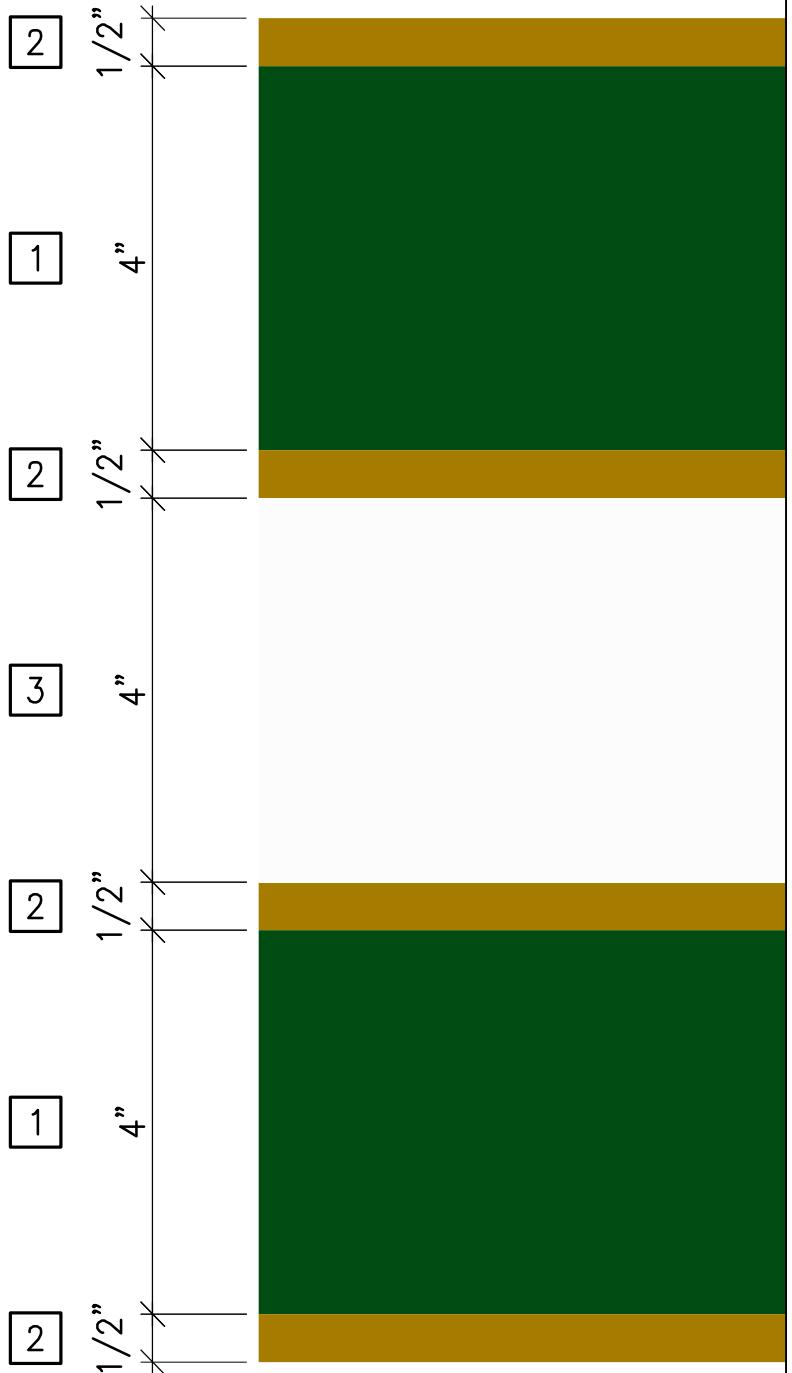
Scale



6 Sheet

NOTES

- [1] STRIPE OF "DARK GREEN"; MATERIAL AND COLOR AS APPROVED BY THE SQUAD REPRESENTATIVE. ENSURE SAMPLE CHIP PROVIDED TO SQUAD REPRESENTATIVE.
- [2] APPLIED ADHESIVE VINYL STRIPING, COLOR = "GOLD".
- [3] HIGHLY REFLECTIVE APPLIED ADHESIVE VINYL STRIPE, "BRILLIANT WHITE". THE 4" DIMENSION FOR THE STRIPE IS A STATE REGULATIONS REQUIREMENT AND MUST BE PROVIDED AS SHOWN.

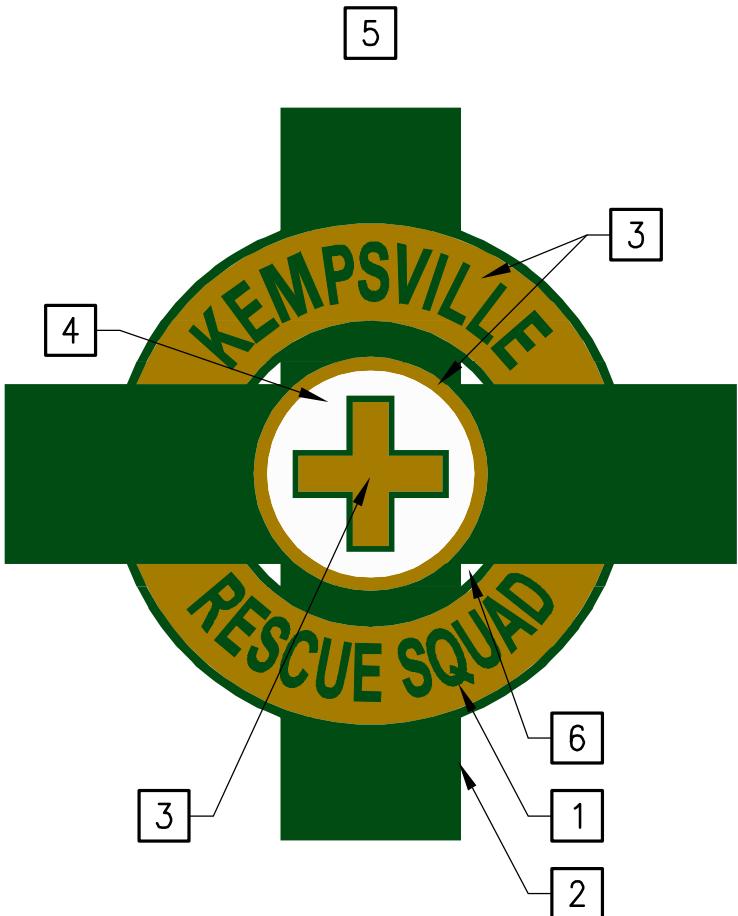


Drawing **STRIPE**

6" = 1'-0" Scale



7 Sheet



NOTES

- 1 FONT: ARIAL, WIDTH FACTOR=0.6, STROKE = 5/32". COLOR = "DARK GREEN". LETTERS ARE 1.2" HIGH, CENTERED IN THE GOLD RING WIDTH.
- 2 ADHESIVE VINYL, COLOR = "DARK GREEN", TYPICAL IN THIS LOGO.
- 3 HAND-TURNED 23K GOLD LEAF, OR APPROVED ADHESIVE VINYL, TYPICAL.
- 4 ADHESIVE VINYL, COLOR = "BRILLIANT WHITE".
- 5 SEE DIMENSIONS ON SHEET 9.
- 6 VOID IN LOGO, FOUR LOCATIONS. BACKGROUND MATERIAL (PAINT, GLASS, ETC.) SHOWS THROUGH.

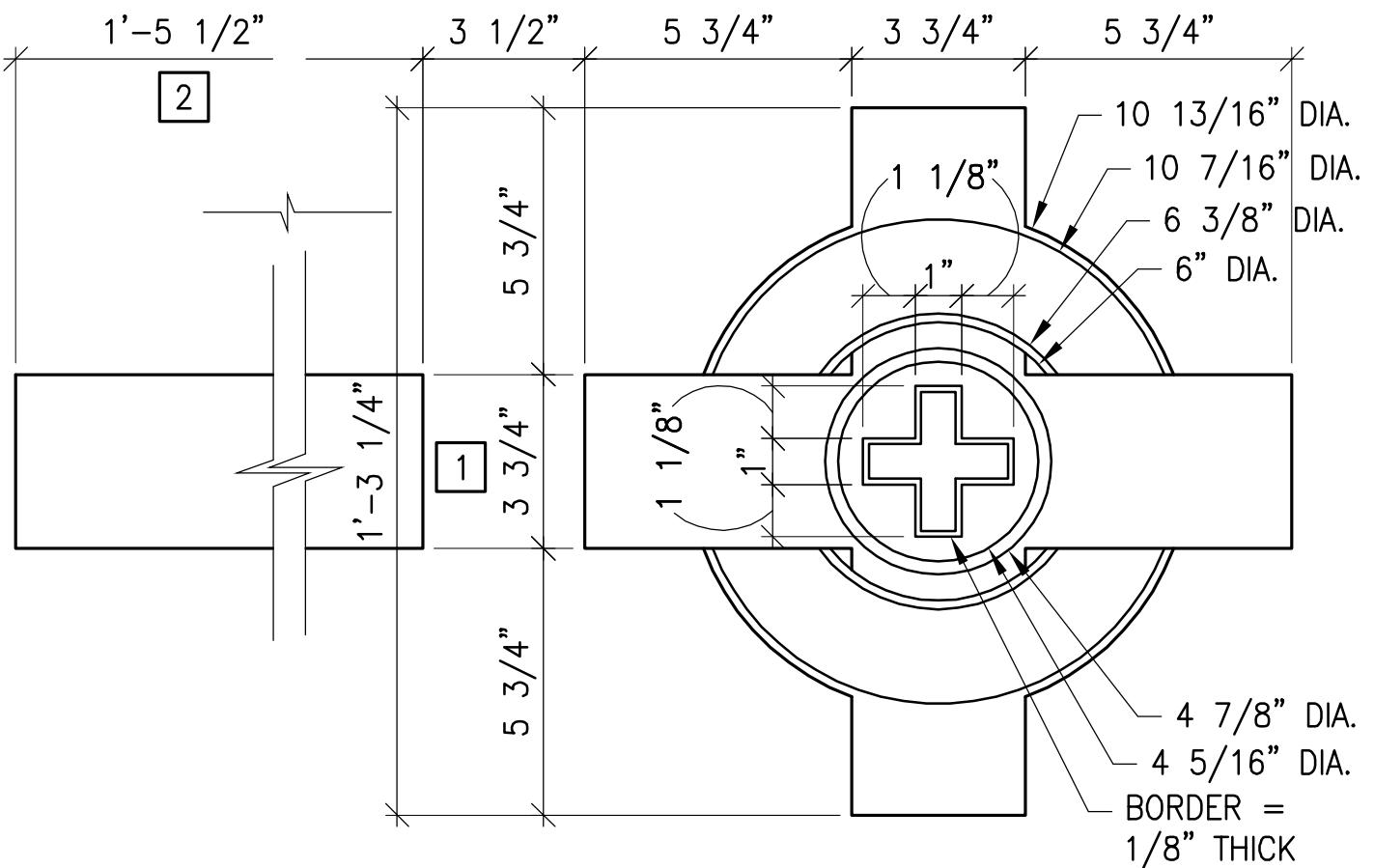
Drawing **STYLIZED LOGO**

3" = 1'-0"

Scale



8 Sheet



NOTES

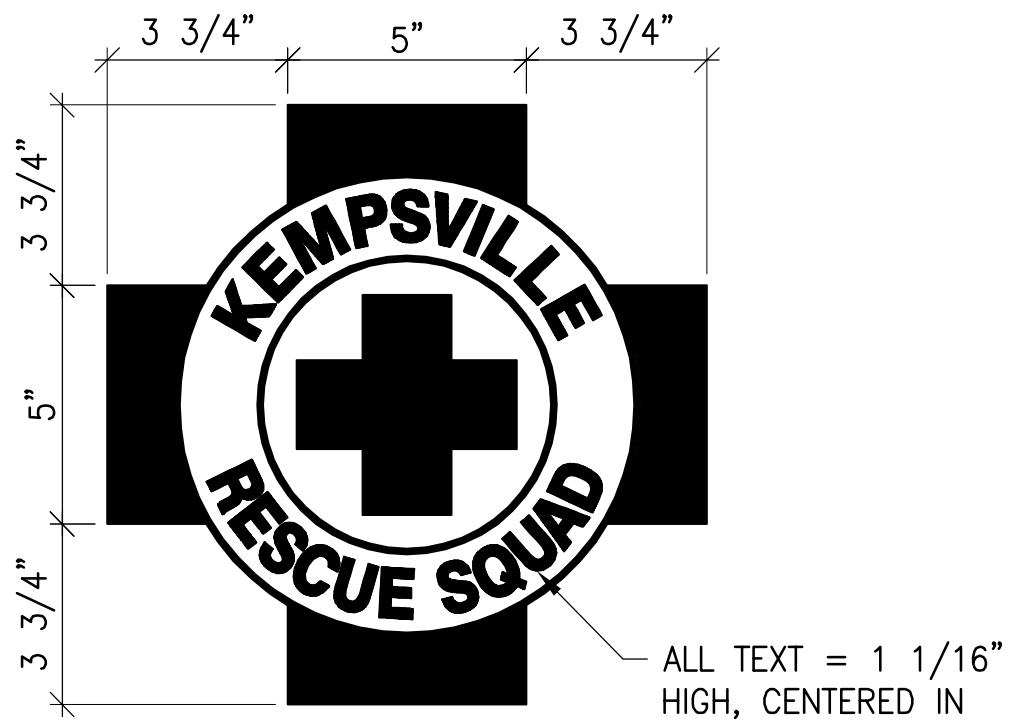
- 1 BLAZE WIDTH MATCHES WIDTH OF ADJACENT CROSS ARM.
- 2 BLAZE LENGTH MAY VARY. COORDINATE WITH SQUAD REPRESENTATIVE.

Drawing STYLIZED LOGO - DIMS

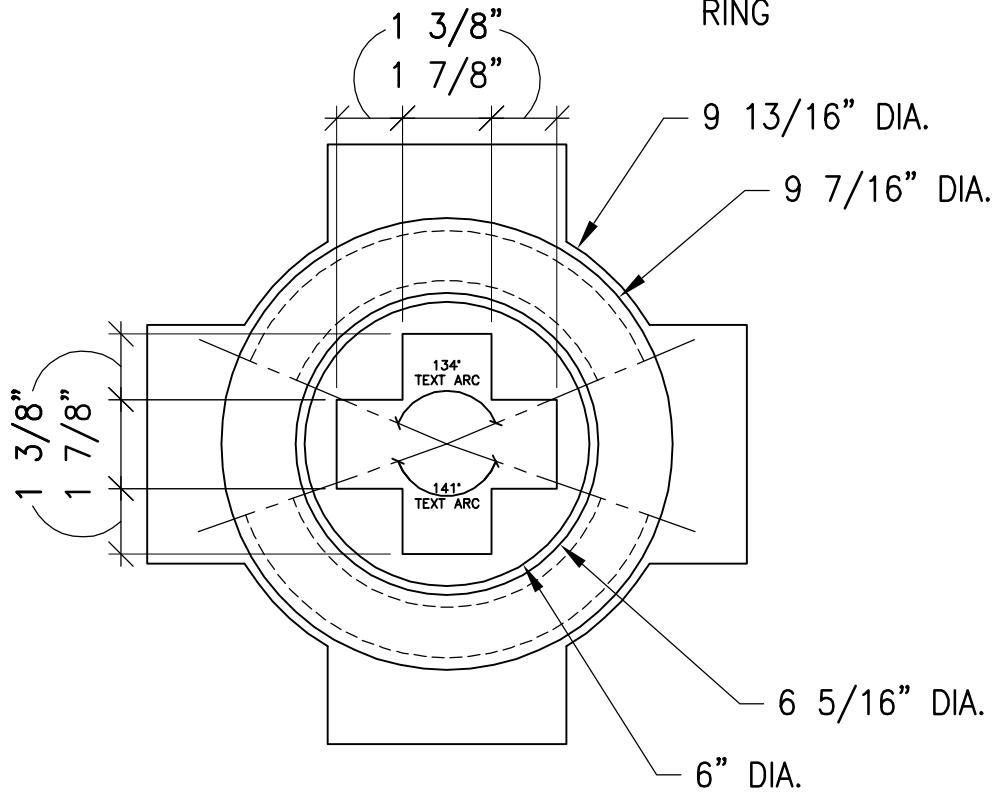
3" = 1'-0" Scale



9 Sheet



ALL TEXT = 1 1/16"
HIGH, CENTERED IN
RING

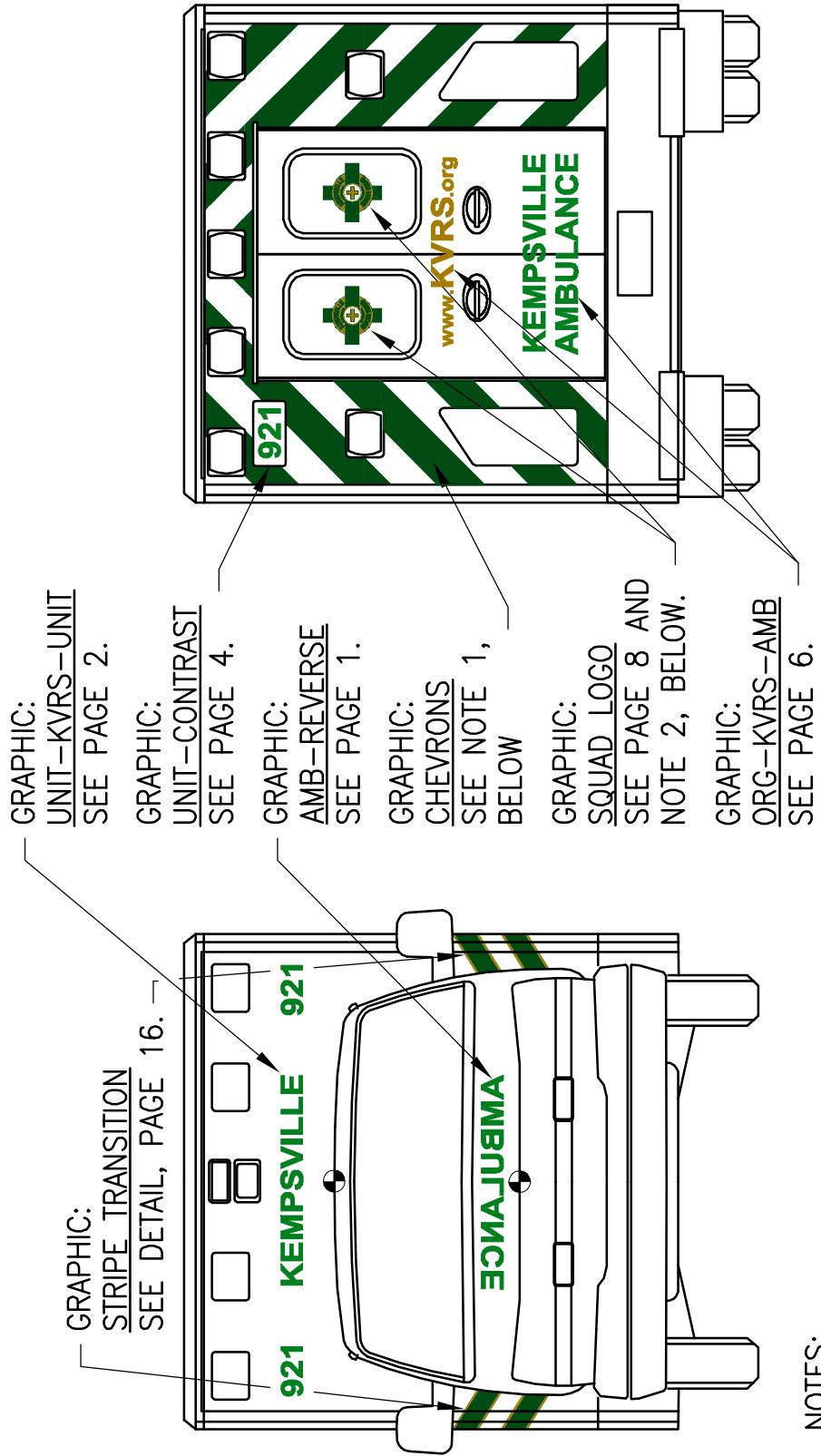


Drawing **STANDARD LOGO**

3" = 1'-0" Scale



10 Sheet



NOTES:

1. CHEVRON PATTERN OF 6" WIDE ADHESIVE VINYL, COLOR = "DARK GREEN", ALTERNATING WITH 6" WIDE HIGHLY REFLECTIVE WHITE APPLIED VINYL STRIPES, ALTERNATING DARK GREEN-WHITE PATTERN. STRIPES AT 45 DEGREE ANGLE FROM HORIZONTAL.
2. SQUAD LOGO ACTUAL HEIGHT = 10 3/4". SCALE DESIGN FROM ORIGINAL SHOWN ON PAGE 8 AND 9. APPLY LOGO TO WINDOW, CENTERED HORIZONTALLY, 1/2" ABOVE CENTERLINE VERTICALLY. LOGO SHALL HAVE AN ADDITIONAL 1/4" WIDE WHITE BORDER AROUND ENTIRE PERIMETER.

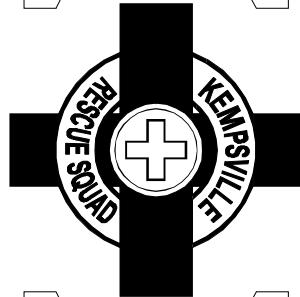
Drawing **UNIT-FT-REAR**

3/8" = 1'-0" Scale

Revisions **1**

11 Sheet





GRAPHIC:
STRIPE

SEE PAGE 7. ON CHASSIS,
ALIGN TOP OF STRIPE WITH
TOP EDGE OF DOOR HANDLE.
TAPER TOP EDGE OF DARK
GREEN STRIPE TO FOLLOW
SLOPE OF HOOD. TOP GOLD
STRIPE CONTINUES ALONG
SLOPE, UNDIMINISHED.

GRAPHIC:
KVRS-LATERAL

SEE PAGE 3. WORKING POINT
SHOWN, NOT PART OF GRAPHIC.

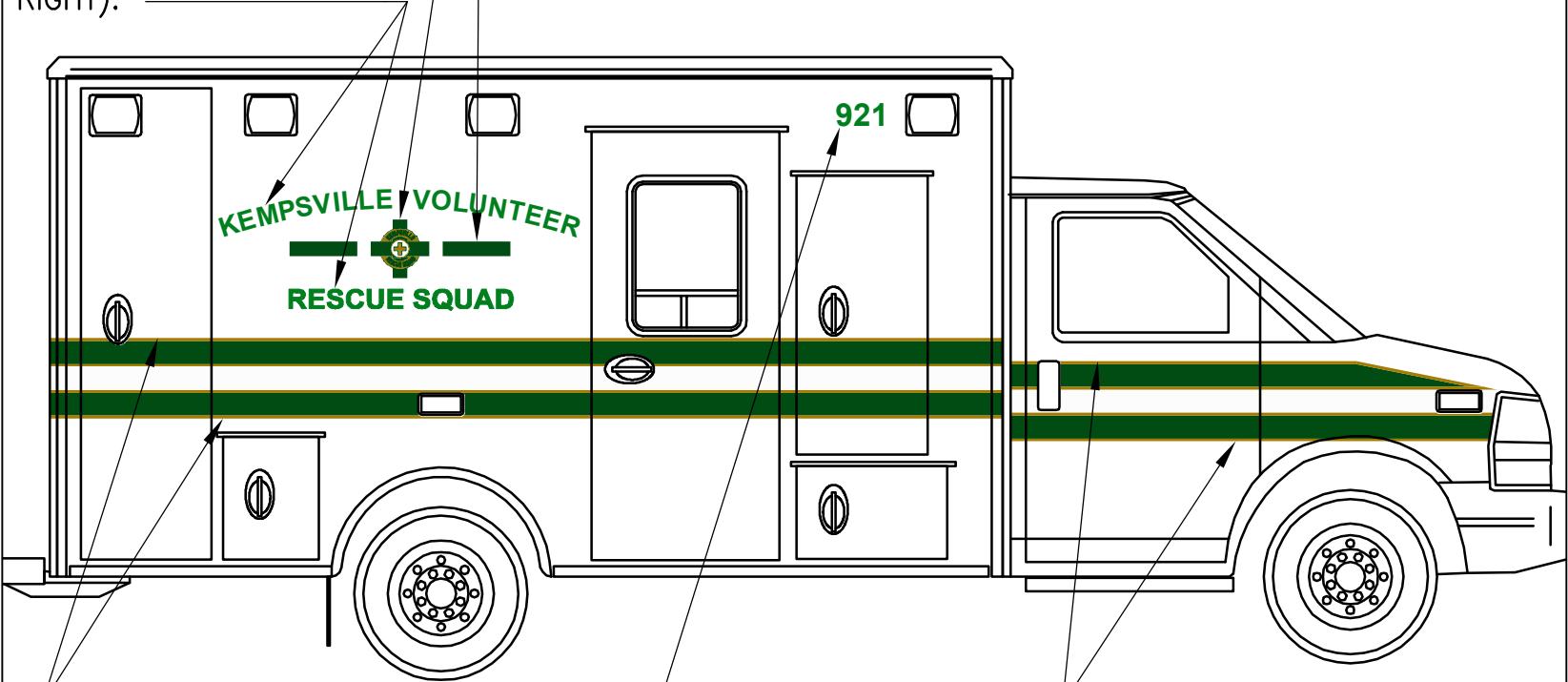
GRAPHIC:
UNIT NUMBER

4" HIGH, VINYL
NUMBERS, CENTERED IN
AVAILABLE FIELD AND
CENTERED WITH LIGHT
MODULE. COLOR =
DARK GREEN. SIMILAR
TO PAGE 4.

GRAPHIC:
STATION LOGO, WITH BLAZES

SEE PAGE 8 AND 9. ALIGN
AS SHOWN ON PAGE 3.

GRAPHIC:
KVRS-LATERAL
SEE PAGE 3.
COORDINATE SIZE AND
POSITION WITH SQUAD
REPRESENTATIVE, AND
WITH STATION LOGO
REQUIREMENTS (SEE AT
RIGHT).

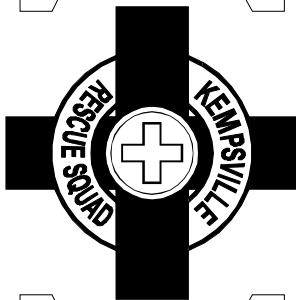


GRAPHIC:
STRIPE
SEE PAGE 7. ON
MODULE, TOP OF STRIPE
SHALL BE EXACTLY THE
SAME ELEVATION AS
DEPICTED ON LEFT SIDE
OF VEHICLE (PAGE 12).

GRAPHIC:
STATION LOGO, WITH BLAZES
SEE PAGE 8 AND 9. DUE TO WINDOW ON MODULE WALL (NOT
SHOWN ON THIS DRAWING), INSTALLATION OF THIS GRAPHIC
REQUIRES CLOSE COORDINATION. INTEGRATE GRAPHIC WITH
WINDOW USING ALTERED GRAPHIC DIMENSIONS, VEHICLE WRAPS,
OFFSET LOCATIONS AND/OR OTHER METHODS AS APPROVED BY
SQUAD REPRESENTATIVE.

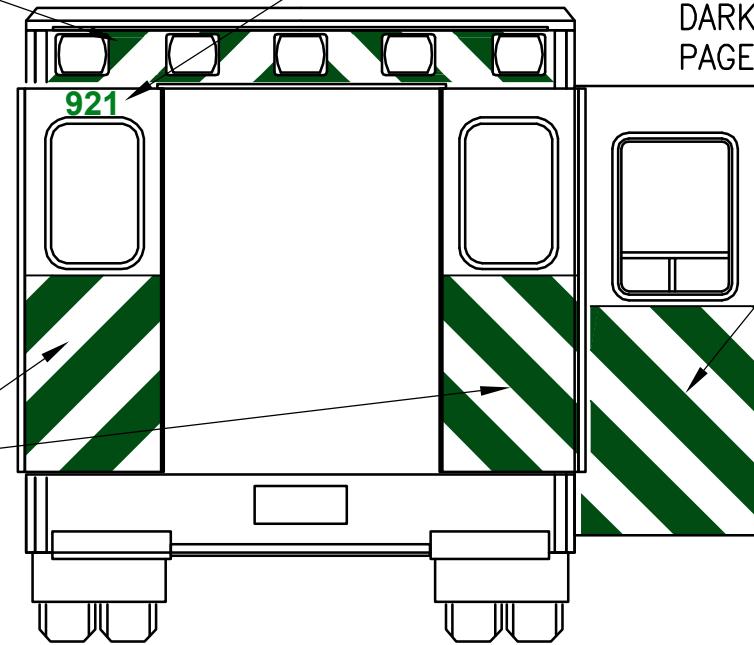
GRAPHIC:
UNIT NUMBER
4" HIGH, ADHESIVE
VINYL NUMBERS,
CENTERED ABOVE DOOR
AND CENTERED WITH
LIGHT MODULE. COLOR
= DARK GREEN.
SIMILAR TO PAGE 4.

GRAPHIC:
STRIPE
SEE PAGE 7. ON
CHASSIS, ALIGN TOP OF
STRIPE WITH TOP EDGE OF
DOOR HANDLE. TAPER
TOP EDGE OF DARK GREEN
STRIPE TO FOLLOW SLOPE
OF HOOD. TOP GOLD
STRIPE CONTINUES ALONG



GRAPHIC:
CHEVRONS
SEE SHEET 11
FOR CHEVRONS
APPLIED TO
REAR OF UNIT

GRAPHIC:
CHEVRONS
APPLIED TO
INSIDE OF
BOTH REAR
DOORS, BELOW
WINDOW SILL.
SEE NOTE 1,
BELOW



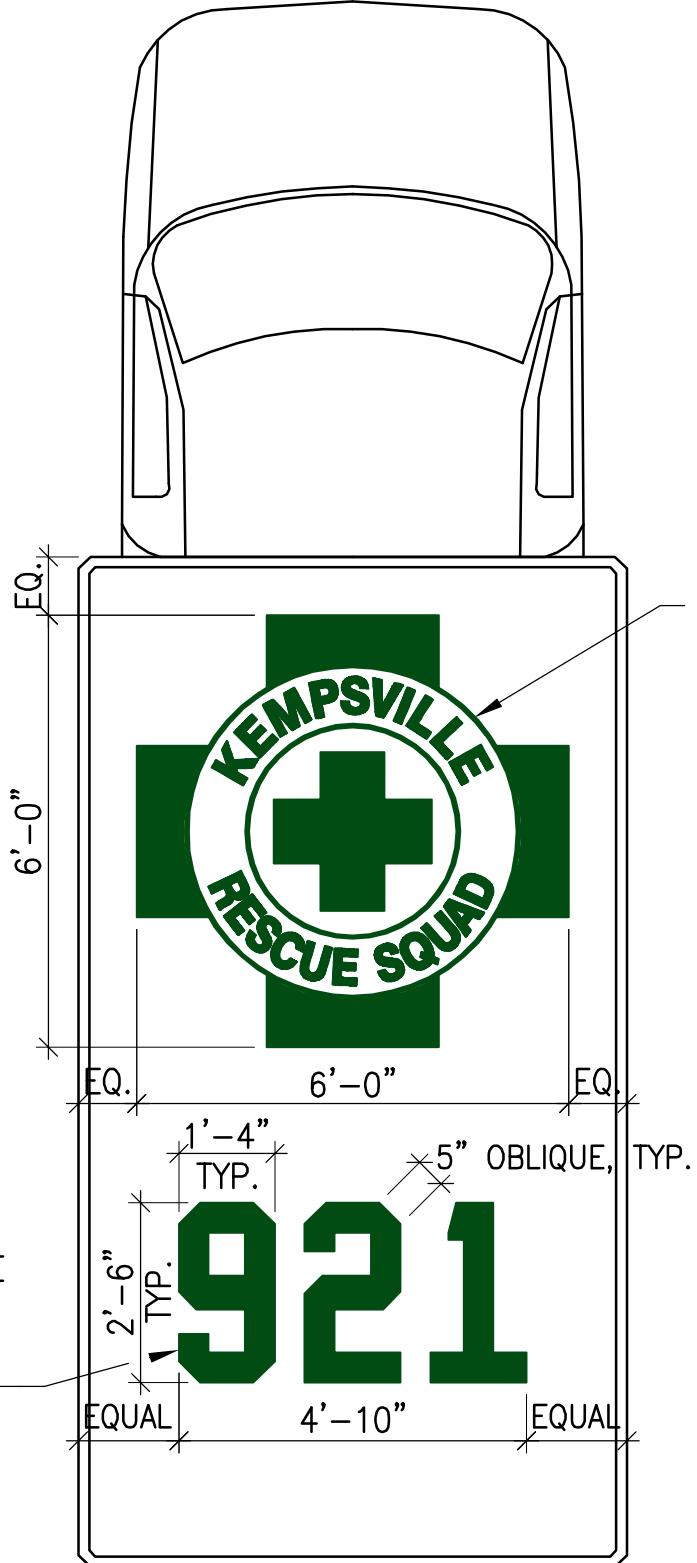
GRAPHIC:
UNIT NUMBER
4" HIGH, VINYL NUMBERS
APPLIED TO INSIDE OF
DRIVER'S SIDE REAR DOOR,
ABOVE WINDOW. COLOR =
DARK GREEN. SIMILAR TO
PAGE 4.

GRAPHIC:
CHEVRONS
APPLIED TO
INSIDE OF
MODULE SIDE
DOOR, BELOW
WINDOW SILL.
SEE NOTE 1,
BELOW

NOTES:

1. CHEVRON PATTERN OF 6" WIDE NON-REFLECTIVE APPLIED VINYL STRIPES IN DARK GREEN, ALTERNATING WITH 6" WIDE HIGHLY RETROREFLECTIVE WHITE APPLIED VINYL STRIPES. STRIPES AT 45 DEGREE ANGLE FROM HORIZONTAL.

GRAPHIC:
UNIT NUMBER
DIMENSION
NUMBERS AS
SHOWN,
STROKE OF
EACH NUMBER
= 5" WIDE,
TYPICAL.
MATERIAL IS
RETROREFLECTIVE
APPLIED VINYL.
COLOR =
DARK GREEN.



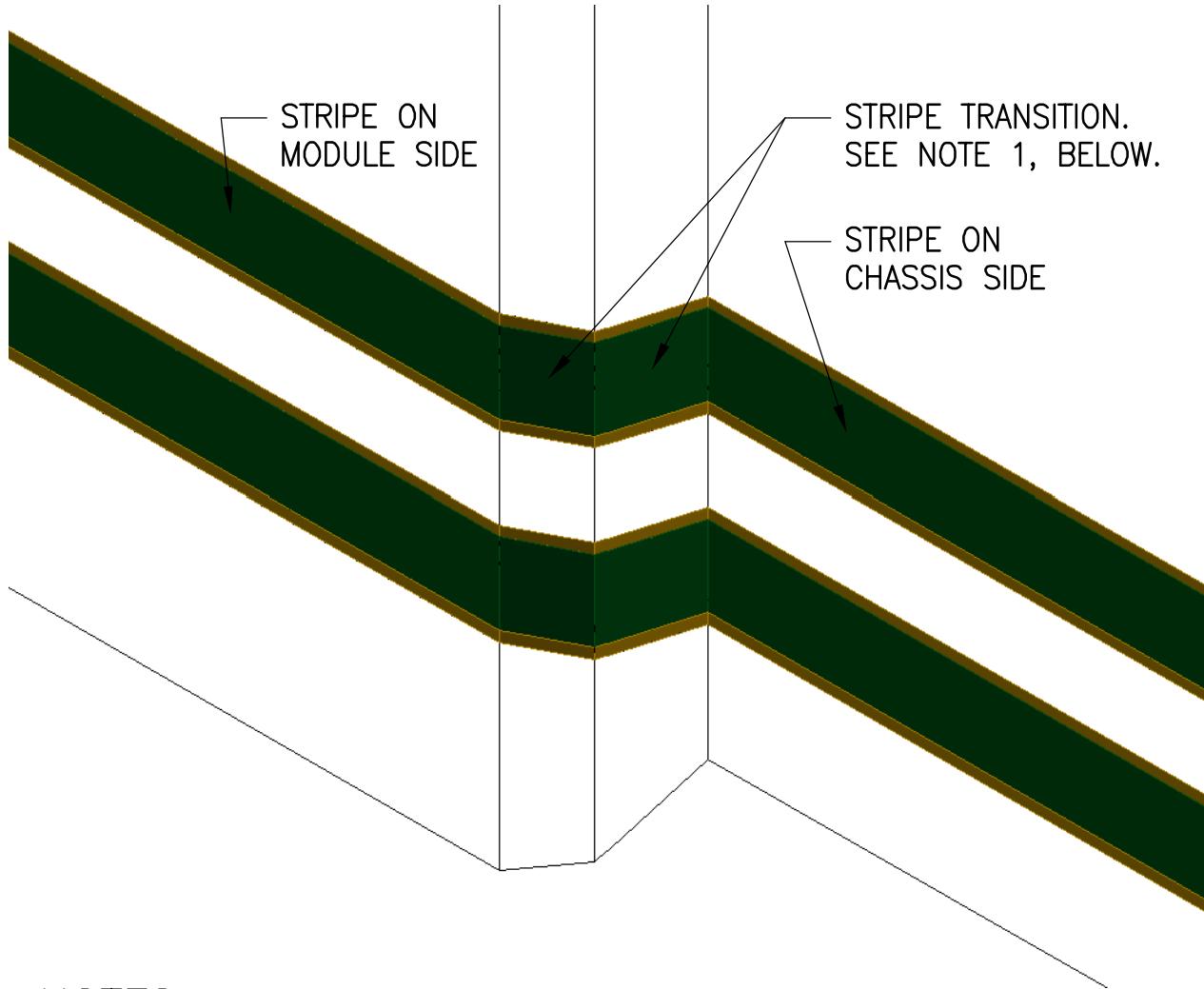
GRAPHIC:
STANDARD LOGO
SCALE FROM
DIMENSIONED
DRAWING ON
SHEET 10.
MATERIAL IS
RETROREFLECTIVE
APPLIED VINYL.
COLOR = DARK
GREEN. CENTER
GRAPHIC ON ROOF.

Drawing **UNIT-TOP**

3/8" = 1'-0" Scale



15 Sheet



NOTES

- 1 THE STRIPE TRANSITION SHALL BRIDGE THE GAP BETWEEN THE MODULE STRIPE AND THE CHASSIS STRIPE. SLOPE THE ENTIRE GRAPHIC FROM THE TRAILING BEVEL EDGE OF THE MODULE AT AN APPROPRIATE ANGLE TO MEET THE STRIPE ON THE CHASSIS. THE WIDTH OF ALL INDIVIDUAL STRIPES SHALL REDUCE AS REQUIRED TO ATTAIN A SMOOTH ALIGNMENT OF LINES AS SHOWN ABOVE. COORDINATE WITH SQUAD REPRESENTATIVE PRIOR TO APPLYING PAINT OR VINYL TO THE VEHICLE. DRAWING IS CONCEPTUAL ONLY. CURVED CHASSIS NOT SHOWN.

Drawing

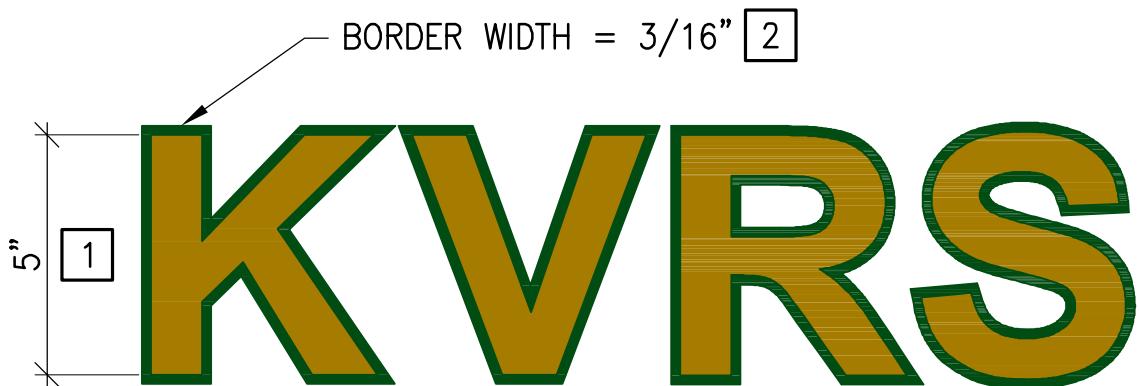
STRIPE TRANSITION

Scale



NOT TO SCALE

THIS PAGE DEPICTS AN EXAMPLE OF BORDERED LETTERING, WHICH WILL BE USED FOR THE WORDS "KEMPSVILLE VOLUNTEER RESCUE SQUAD" ON THE LEFT AND RIGHT OF THE AMBULANCE. THIS PAGE DEFINES THE CONCEPT OF THE BORDERED LETTERS. CONTRACTOR SHALL PROVIDE SAMPLES OF SUCH LETTERS IN THE SIZE, SHAPE AND COLOR DESIRED BY THE SQUAD REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION ON THE VEHICLE. CONTRACTOR SHALL ALSO PROVIDE SAMPLES OF THE SAME SIZE FONT WITH THICKER AND THINNER BORDERS FOR COMPARISON.



NOTES

- [1] THE FONT SHALL BE MEASURED AT THE GOLD PORTION OF THE LETTER. FONT: ARIAL, WIDTH FACTOR=1.1, STROKE = $1\frac{1}{16}$ ". MATERIAL SHALL BE HAND-TURNED 23K GOLD LEAF OR APPROVED PATTERNED APPLIED VINYL.
- [2] THE BORDER DIMENSION SHALL BE THE WIDTH BEYOND THE EDGE OF THE GOLD LETTER. MATERIAL SHALL BE APPLIED VINYL OF APPROVED COLOR = "DARK GREEN".

Drawing **BORDERED LETTERS**

3" = 1'-0"

Scale



17 Sheet



KEMPSVILLE VOLUNTEER RESCUE SQUAD

28 July 2022

Jeff Hawkins
Atlantic Emergency Solutions, Inc.
VIA EMAIL

This Addendum documents markups to the KEMPSVILLE VOLUNTEER RESCUE SQUAD AMBULANCE GRAPHICS PACKAGE (henceforth, "THE PACKAGE") that any graphics worker should make prior to using THE PACKAGE to produce graphics for any Kempsville Volunteer Rescue Squad (KVRS) product, and particularly to the vehicle identified by the above referenced VIN. KVRS intends to include the markups listed in this Addendum in a new version of THE PACKAGE as soon as such new version can be published. Markups not listed in this Addendum are not approved by KVRS for any use.

To be sure you are applying these markups to the current baseline of THE PACKAGE, please confirm that the "Revisions" page of THE PACKAGE (that is, the page just before page 1) lists "Revision 1", dated "29 June 11", as the most recent revision.

The last paragraph of the "Purpose" section on page 1 of THE PACKAGE indicates that "Only specific defined variations marked within this package, and initialed by both the ambulance committee representative and the contracted graphics company representative, are allowed to take precedence." For the purposes of that sentence, this Addendum shall be considered equivalent to "specific defined variations marked within this package".

MARKUPS

1. On page 3, in the "Colors" section, 2nd paragraph, replace the 1st sentence with: "Wherever DARK GREEN is indicated, match Pantone 3302C. The 3M Scotchcal Electro-Cut Graphic Film 'Forest Green' (7125-66 or 7725-66) shall be deemed to meet this requirement. Wherever GOLD is indicated, 3M Scotchlite Reflective Graphic Film 'Gold' (680-64 or 5100-64) shall be deemed to meet this requirement. Wherever RETROREFLECTIVE GREEN or RETROREFLECTIVE DARK GREEN is indicated, 3M Scotchlite Reflective Graphic Film 'Green' (680-77 or 5100-77) shall be deemed to meet this requirement." This last sentence is only pertinent to the graphics applied to the vehicle roof as shown on Drawing UNIT-TOP / Sheet 15.
2. On page 3, in the "Unit Number" section, replace the 2nd paragraph with "The correct unit number for this contract will be provided to the vendor at least 30 days before graphics work starts."

3. On Drawing AMB - REVERSE / Sheet 1, at the end of Note 1, add "NO GOLD INSETS." High contrast is desired here for traffic clearing reasons.
4. On Drawing UNIT-KVRS-UNIT / Sheet 2:
 - (a) Delete the graphic word "KEMPSVILLE" and the left-most graphic unit number "921". This markup is necessary because the space formerly utilized for the deleted items will instead be used for the Cool Bar, and because having the unit number on both sides of the front of the box has been deemed overkill.
 - (b) At the end of Note 1, add "NO GOLD INSETS." High contrast is desired here for Incident Management reasons.
 - (c) Replace Note 2 with "WORKING POINT IS THE APPROXIMATE CENTER OF THE CHASSIS ROOF AT THE MODULE, SUCH THAT THE UNIT NUMBER SHALL APPEAR BELOW THE LOWEST LENS MOUNTED ON THE DRIVER SIDE OF THE FRONT OF THE MODULE". This markup is necessary because the vehicle on order will include an up-high turn signal that was not present on prior KVRS vehicles.
 - (d) Replace "921" with the unit number specified at graphics application time.
5. On Drawing KVRS - LATERAL / Sheet 3, pay special attention to Note 5, which requires BORDERED LETTERS, AS DEPICTED ON SHEET 17. A future version of THE PACKAGE will actually show the desired bordered letters in the graphic.
6. On Drawing UNIT-CONTRAST / Sheet 4:
 - (a) At the end of Note 1, add "NO GOLD INSETS." High contrast is desired here for Incident Management reasons.
 - (b) At the end of Note 2, add "THE (WHITE) CONTRASTING COLOR FIELD SHALL BE COMPLETELY OPAQUE." This markup is necessary because a prior vehicle was delivered to KVRS with a somewhat translucent contrasting color field, which allowed a diagonal line on the backing to show through inappropriately.
7. On Drawing AMBULANCE / Sheet 5, at the end of Note 1, add "NO GOLD INSETS." High contrast is desired here.
8. On Drawing ORG-KVRS-AMB / Sheet 6, in Note 1, change "'GOLD'" to "'GOLD' WITH 'DARK GREEN' BORDERS'. This is a new requirement, and applies only to the "www.KVRS.org" section of the graphic. A future version of THE PACKAGE will actually show the desired bordered letters in the graphic. This markup is necessary because gold-only lettering for the "www.KVRS.org" is too hard to read in some lighting situations.
9. On Drawing STRIPE / Sheet 7:
 - (a) Change "STRIPE OF" to "APPLIED ADHESIVE VINYL STRIPING.". In other words, whether the vehicle is built with a factory paint stripe or not, the same DARK GREEN vinyl should be applied on top of the existing paint to assure that all DARK GREEN on the vehicle matches perfectly.

- (b) Add the following to the end of Note 1: "HEIGHT OF BOTH DARK GREEN STRIPES MAY BE REDUCED EQUALLY TO PREVENT BACKGROUND DIFFERENCES FROM SHOWING, OR TO ACCOMODATE LIMITS OF BODYWORK."
10. On Drawing STYLIZED LOGO / Sheet 8, change Note 4 to 'IF OVERALL BACKGROUND IS NOT WHITE, APPLY ADHESIVE VINYL, COLOR = "BRILLIANT WHITE".' In other words, the area referred to by Note 4 may be left void if the overall background is already white.
11. On Drawing UNIT-FT-REAR / Sheet 11:
- Replace all "921" markings with the unit number specified at graphics application time.
 - On the front view:
 - Delete "KEMPSVILLE" and the left-most "921" from the graphic, in accordance with item 4 (a) of this Addendum.
 - Position the remaining unit number under the "turning left" indicator, but above the cab roof line if possible. The goal is for this unit number to be as visible to Incident Commanders as possible.
 - On the rear view:
 - Do not allow the diagonal striping to be at all visible behind the contrasting color field behind the unit number specified at graphics application time.
 - Use bordered lettering for "www.KVRS.org" in accordance with item 8 of this Addendum.
 - Use solid dark green lettering (no gold insets) for "KEMPSVILLE AMBULANCE" in accordance with item 7 of this Addendum.
12. On drawing UNIT-LEFT-LAT / Sheet 12, use bordered lettering for the words KEMPSVILLE VOLUNTEER RESCUE SQUAD as depicted on Sheet 17. Do not use gold insets for the unit number.
13. On drawing UNIT-RIGHT-LAT / Sheet 13, use bordered lettering for the words KEMPSVILLE VOLUNTEER RESCUE SQUAD as depicted on Sheet 17. Do not use gold insets for the unit number.
14. On Drawing UNIT-TOP / Sheet 15, note that KVRS does not require the vinyl on the roof to be a perfect match for the colors on the other parts of the vehicle. RETROreflective vinyl is required, however, for the best visibility from high altitude viewpoints, such as from aircraft or hi-rise buildings.
15. On Drawing BORDERED LETTERS / Sheet 17, in Note 1, delete the word "PATTERINED".

For KVRS:

K. Johnson

For Atlantic Emergency Services, Inc.:

VIRGINIA BEACH DEPARTMENT OF EMS

TECHNICAL ASSET SYSTEM INTEGRATION REQUIREMENTS

(TASIR)

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1 Introduction

In so far as each of the Department's volunteer rescue squads desires to operate its own technical assets (ambulances, duty radios, etc) in the Virginia Beach EMS system, there exists a need to integrate those assets with municipal and regional infrastructure and processes. This document, along with any documents it references, specifies requirements for such integration.

1.1 Desired state

This document is written with the following high-level goals in mind:

- System integration concerns are defined before a procurement begins and are raised at initiation of the procurement process.
- Such definitions are composed of:
 - Written words
 - Charts
 - Drawings
 - Pictures
- Compliance with these requirements is verified prior to an asset being ordered.

1.2 Guiding principles

Squads are strongly encouraged to make data-driven procurement decisions, organized according to a well-developed value system. For instance, the following strategy is particularly appropriate for ambulance procurement projects:

| Priority | Value statement | Tactic | ...to the extent supported by... | ← MAKE DATA-DRIVEN DECISIONS → |
|----------|---|--|---|--------------------------------|
| | | | | |
| 1 | We value meeting all legal requirements. | Spend budgeted money on meeting legal requirements... | authoritative documentation | |
| 2 | We value keeping everyone safe, including crew members, patients, and others. | Spend remaining budget on keeping everyone safe... | risk data | |
| 3 | We value optimizing patient care and operations. | Spend remaining budget on optimizing patient care & operations... | performance data | |
| 4 | We value uniquely identifying ourselves and our units to incident commanders and to the public. | Spend remaining budget on unit markings, agency identification, logos, and other graphics... | best practice and survey data | |
| 5 | We value signaling our traffic intentions to other drivers. | Spend remaining budget on signaling... | demonstrable and scientific data | |
| 6 | We value fiscal responsibility. | Save remaining budget for other aspects of mission or for next ambulance... | action plans | |

1.3 Continuous process

This document is a work product intended to serve as the “hub” of a dynamic “hub-and-spoke” process driven by progress. The “spokes” of the process include:

1.3.1 Identification of control points in the procurement process

Control points are opportunities to assess compliance with requirements and to address any discrepancies. Currently-identified control points include when:

- A squad becomes interested in procuring a technical asset
- A squad submits a Memorandum Of Understanding for DEMS approval
- A squad submits a grant application for DEMS or state approval
- A squad submits a loan application for DEMS or city approval
- A squad finishes a purchase or build order, and is ready to sign a contract
- A squad performs an end-of-assembly inspection, or takes delivery of a technical asset
- A squad submits an asset for integration into the Virginia Beach EMS system
- An asset gets refurbished, rechassied, recapitalized, etc
- The city budget planning process begins

The Department and the squad should review this document together at each control point to assess ongoing compliance with requirements.

1.3.2 Identification of Subject Matter Experts (SMEs)

This document is only as legitimate as the endorsements it receives from the appropriate authoritative personnel. As personnel move in, out, and across the workforce and the market, it is important that the Department review this document to assure that its references to, and endorsements from, SMEs are current, correct, and complete.

1.3.3 Interviews with SMEs

The Department should conduct periodic interviews with identified SMEs to review the contents of this document, and to gather:

- New, changed, or obsolete requirements
- Supporting artifacts to include explicitly or by reference

1.3.4 Endorsements from SMEs

The Department should make sure that it gets an explicit endorsement from the appropriate SME for every set of integration requirements for a given system or subsystem. Such endorsements should be in writing and should be attached or otherwise made available with this document.

1.3.5 Advocacy for SMEs at appropriate control points

The Department should take at least each control point as an opportunity to raise stakeholder awareness of SME concerns. The Department acknowledges that the SMEs are not responsible for directly communicating new, changed, or obsoleted requirements directly to the squads, nor are the squads responsible for making direct inquiries to the SMEs. Rather, the SMEs are responsible for communicating changes to the Department, and the Department is responsible for communicating that information to the squads via this document (see [1.1↑](#)).

2 Business cycles and processes

2.1 Squad procurement cycle

Squad coordinators who are responsible for technical asset procurement should perform most or all of the following “cradle to grave” tasks:

- Recognize the need to procure an asset.
- Ensure adequate squad funds are budgeted (also see section [2.2↓](#)).
- Develop full specifications using this document as a guide.
- Solicit quotes, bids, or proposals.
- Make sure any required Memorandum Of Understanding(s) with partner organizations are finalized.
- Issue a purchase order or sign a contract according to squad business rules.
- Make sure payments are processed in a timely manner.
- Ensure contract performance (inspect asset thoroughly using specifications and build order as guides).
- For ops assets, turn asset over to ops staff for full commissioning.
- Determine well ahead of time when an asset will no longer be of use or value.
- For ops assets, receive decommissioned asset from ops staff.
- Remove and reallocate useful sub-components (ie, EMS gear, radios, computers, dashcams, power load systems, etc, for a vehicle).
- Remove highly conspicuous squad markings as necessary.
- Initiate final sale or disposal process.

2.2 City budget process

This document is primarily intended to define requirements for integrating squad-owned technical assets into city infrastructure, but in some cases a squad must consider city budgetary issues. For example, in the traditional arrangement for adding an ambulance to the VB EMS fleet, the EMS Department must seek and receive approval to pay for additional fuel, maintenance, city-supplied medical gear, etc. The timeline for this process is enforced by the

Budget & Management Services Department, the City Manager, and City Council – not by the EMS Department.

Each budget cycle begins more than nine months before the budget becomes effective and generally proceeds as follows:

- September** EMS chief officers solicit input from staff on budget needs.
- October** Management Services provides the Department with “target” budget figure based on projected revenues, known obligations and other factors as determined by city leaders.
- November** Department prepares a two-level request: One that does not exceed the “target” amount, and one that identifies other needs that would exceed the “target”.
- December** Department submits its two-level request to Management Services.
- January** Department negotiates its request with City Manager and his deputies.
- February** Management Services reconciles outstanding issues with the Department.
- March** Department presents its request to City Council.
- April** EMS Chief negotiates its request with City Council and public hearings are held.
- May** City Council finalizes the budget for the coming fiscal year.
- July** Department begins spending from approved budget.

2.3 City loans

As a courtesy, City Council has traditionally honored well-prepared formal requests from its volunteer rescue squads for no-interest loans. Such loans have been provided to support capital asset and real estate purchases.

City loans for vehicle purchases shall be subject to maximum amounts that are indexed to the state RSAF grant limits in effect at the time of purchase, and to the vehicle’s compliance with all relevant requirements.

3 SPECIFICATIONS

3.1 Mobile ComIT gear

To integrate into the VB EMS system, a vehicle may require a complex set of mobile communications and information technology (ComIT) gear as described in the following sections.

3.1.1 Gamber Johnson mounting system

To integrate into the VB EMS system, a vehicle with a Mobile Data Computer (MDC) must have a Gamber Johnson mounting system for the MDC. Because these mounting systems are vehicle-dependent, the volunteer rescue squad is responsible for all Gamber Johnson pieces below the level of the MDC cradle and/or docking station. The MDC-dependent cradle and/or docking station is supplied by the City. For instance, the squad is responsible for any or all of the following pieces:

- Pedestal kit
- Mounting base
- Lower tube
- Upper pole
- Complete pole
- Locking slide arm
- Motion attachment

Not all mounting systems require all of the pieces in the above list.

The use of Gamber Johnson *Dash Mounts* is not authorized.

For new builds, these pieces should be installed by the upfitter to avoid costly retrofit work. Some upfitters will refuse to install these items if the items are used.

Gamber Johnson vehicle mounts can be selected from the following web page:

<https://www.gamberjohnson.com/products#vehicle-mounts>

3.1.2 Public safety radio system

3.1.2.1 Embedded pieces

The pieces listed in the table on the following page must be installed in an ambulance to enable the approved public safety radio system. For new builds, these pieces should be installed by the upfitter to avoid costly retrofit work or weather intrusion.

PUBLIC SAFETY RADIO SYSTEM – EMBEDDED PIECES**"Embedded PSR Kit" packaging checklist**

| W:\Departmental\000-CMMI-SVC-PROCESS-AREA\SUPPLIER-AGREEMENT-MANAGEMENT\mobile-i-t-bundle\ambulance\embedded-pieces.xlsx | | | | | | |
|--|------------|-------------|--------------------|--|--------------------------------------|---|
| ✓ | Qty | Make | Part Number | Description | Install at | Run from <-> to |
| [] | 1 | MOTOROLA | HLN7002A | MID-POWER TRUNNION KIT | IT cabinet for transceiver brain box | |
| [] | 1 | MOTOROLA | HLN6911K | REMOTE CONTROL HEAD | Cab console | |
| [] | 1 | MOTOROLA | HSN4040A | 3.2 OHM EXTERNAL SPEAKER ASSEMBLY | Near/between cab headrests | this speaker <-> cab console remote control head |
| [] | 1 | MOTOROLA | HLN6911K | REMOTE CONTROL HEAD | Action area | |
| [] | 1 | MOTOROLA | HSN4040A | 3.2 OHM EXTERNAL SPEAKER ASSEMBLY | Action area | this speaker <-> action area remote control head |
| [] | 1 | MOTOROLA | HKN6169B | CABLE, REMOTE MOUNT, 5M | | IT cabinet transceiver trunnion <-> cab console remote control head |
| [] | 1 | MOTOROLA | HKN6188B | Control Head Power Cable | | IT cabinet transceiver trunnion <-> nearest 12V IGN source |
| [] | 1 | MOTOROLA | HKN6169B | CABLE, REMOTE MOUNT, 5M | | IT cabinet transceiver trunnion <-> action area remote control head |
| [] | 1 | MOTOROLA | HKN6188B | Control Head Power Cable | | IT cabinet transceiver trunnion <-> nearest 12V IGN source |
| [] | 1 | MOTOROLA | HKN4192B | 20 ft 12V DC Power Cable | | IT cabinet transceiver trunnion <-> nearest 12V IGN source |
| [] | 1 | LARSEN | NMOKHFUDSMAI | NMO HF MOUNT, 17' RG58/U DUAL-SHIELD SMA INSTALLED | | IT cabinet transceiver trunnion <-> roof |

Packed by: _____ for Squad name: _____ Order #_____

3.1.2.2 Accessible pieces

3.1.2.2.1 Mobile (vehicle-mounted) radios

To integrate into the VB EMS system, a mobile radio must have the following attributes:

| APC | Model | Description |
|-----|----------------|--|
| 656 | M30TSS9PW1N | APX7500 DIGITAL Dual Band Mobile RADIO |
| 656 | GA00244 | Primary Band 7/800 |
| 656 | GA00308 | Secondary Band VHF |
| 656 | GA00579 | Enable Dual Band Operation |
| 656 | G806 | Astro Digital Operation IMBE |
| 656 | G51 | ENH: SOFTWARE SMARTZONE SYSTEM |
| 656 | G361 | P25 operation |
| 656 | QA01749 | ADD: ADVANCED SYSTEM KEY - SOFTWARE KEY |
| 656 | G442 | Control Head |
| 656 | G444 | Control Head Software |
| 656 | G67 | Remote Mount |
| 656 | G174 | 3db gain low profile 762-870MHz HAF4013 |
| 656 | G792 | 136-174 Wideband HAD4021 |
| 656 | W22 | Palm Mic |
| 656 | G831 | 15 Watt Speaker |
| 656 | W947 | Packet Data Interface-included |
| 656 | G996 | POP25 |
| 656 | GA00229 | Enable Basic GPS |
| 656 | QA03399 | Enhanced Data for GPS |
| 656 | GA00268 | RFID Label |
| 656 | GA00580 | TDMA |
| 185 | GA00318 | 4 year SFS-RSA- One year Std warranty plus 4-total 5 years |
| 207 | DS450022 | Ant, GPS 5V, Black |
| 207 | DS487760 | /4" mnt 0-6 GHz SMA In |
| 430 | T7914UA00049AA | Radio Management License |

Mobile radios in ambulances (or other vehicles with a secondary communications area) must also have the following attributes:

| APC | Model |  Description |
|-----|---------|---|
| 656 | GA00092 | Dual Control Head |
| 656 | G628 | 17' Control Head Cable |
| 656 | W22 | Palm Mic |

3.1.2.2.2 Portable (handheld) radios

To integrate into the VB EMS system, a portable radio must be a **Motorola APX Series P25 700/800 MHz band** model with the following attributes:

| APC | Model |  Description |
|-----|----------|--|
| 481 | Q806 | ASTRO digital operation IMBE |
| 481 | H38 | Smartzone Software |
| 481 | Q361 | P25 operation |
| 481 | G996 | POP25-Programming over P25 |
| 481 | QA00580 | TDMA |
| 481 | QA03399 | Enhanced data for GPS |
| 655 | QA04526 | RFID Knob |
| 655 | QA9008 | Group Services- Broadcast Firmware update, Alias update, Location on PTT |
| 655 | QA09906 | Adaptive Noise Suppression 3 Watt Audio |
| 785 | NNTN8860 | Single Unit Charger |

A portable radio may include the following attributes:

| APC | Model | Description |
|-----|-----------|---------------------------------------|
| 562 | QA00574 | Secondary Band VHF |
| 562 | QA00579 | Enable Dual Band Operation |
| 562 | QA00577 | Front Display Full Keypad |
| 562 | QA01427 | impact green |
| 785 | WPLN7080 | Single Unit Charger |
| 372 | NNTN8203 | XE RSM Green |
| 453 | NNTN8029 | Spare Battery- LION2300MAH impress FM |
| 481 | H499 | Delta T submersibility |
| 372 | PMMN4069A | RSM 3.5mm Audio Jack |
| 785 | NNTN7624B | APX Portable Vehicle Charger |

Other options may be allowable upon approval of the SME for VB EMS-related radio and mobile data terminal purchase specifications.

3.1.3 Internet-of-Things (IOT) system

Ambulances now being integrated into the VB EMS system must have a TCP/IP-based IOT system.

3.1.3.1 Embedded pieces

The pieces listed in the table on the following page must be installed in an ambulance to enable the approved IOT system. For new builds, these pieces should be installed by the ambulance upfitter to avoid costly retrofit work or weather intrusion.

INTERNET-OF-THINGS SYSTEM – EMBEDDED PIECES**"Embedded IOT Kit" packaging checklist**

| W:\Departmental\000-CMMI-SVC-PROCESS-AREA\SUPPLIER-AGREEMENT-MANAGEMENT\mobile-i-t-bundle\ambulance\embedded-pieces.xlsx | | | | | | |
|--|-----|-----------------|------------------|---|------------------------------|---|
| ✓ | Qty | Make | Part Number | Description | Install at | Run from <-> to |
| [] | 1 | CISCO | ANT-5-4G2WL2G1-O | 5 in 1 outdoor antenna- 4G/LTE-2, WLAN-2, GPS-1 | Roof | |
| [] | 1 | ACDC Industries | MZL-180 | Voltage-sensing delay timer power point | IT cabinet | |
| [] | 1 | COMPX | ES-PRKP-CAB | Series 300 eLock *VB-CONFIGURED FOR NETWORK CONNECTIVITY* | IV/drug box compartment door | |
| [] | 2 | Tripp-lite | N206-BC01-IND | RJ45 Bulkhead Coupler, Cat6, Female-to-Female, w/Dust Cap, IP68 rated | Action area | |
| [] | 1 | CISCO | 4G-CAB-ULL-20= | 20-ft (6M) Ultra Low Loss LMR 400 Cable with TNC Connector | | 5-in-1 antenna <-> IT cabinet |
| [] | 1 | CISCO | 4G-CAB-ULL-20= | 20-ft (6M) Ultra Low Loss LMR 400 Cable with TNC Connector | | 5-in-1 antenna <-> IT cabinet |
| [] | 1 | CISCO | AIR-CAB020LL-R | 20 ft LOW LOSS CABLE ASSEMBLY W/RP-TNC CONNECTORS | | 5-in-1 antenna <-> IT cabinet |
| [] | 1 | CISCO | AIR-CAB020LL-R | 20 ft LOW LOSS CABLE ASSEMBLY W/RP-TNC CONNECTORS | | 5-in-1 antenna <-> IT cabinet |
| [] | 1 | CISCO | IR829-DC-PWRCORD | DC Power Cord for IR829 | | IT cabinet <-> MZL-180-controlled power point |
| [] | 1 | COMPX | 300-DC12V | 12V to 9V converter | | 12V END: MZL-180-controlled power point <-> 9V END: CompX power cable |
| [] | 1 | COMPX | MA3234200000J | Assembly wire harness interconnect 16" | | 12V-to-9V converter <-> CompX eLock battery box |
| [] | 1 | (any) | (any) | CAT 6 Ethernet cable, 25 ft | | IT cabinet <-> top of Gamber Johnson pole in cab |
| [] | 1 | (any) | (any) | CAT 6 Ethernet cable, 25 ft | | IT cabinet <-> CompX eLock |
| [] | 1 | (any) | (any) | CAT 6 Ethernet cable, 25 ft | | IT cabinet <-> RJ45 coupler on action area panel |
| [] | 1 | (any) | (any) | CAT 6 Ethernet cable, 25 ft | | IT cabinet <-> RJ45 coupler on action area panel |

Packed by: _____ for Squad name: _____ Order # _____

3.1.3.2 Accessible pieces

The following devices must be installed and connected to an ambulance's IOT system:

- Mobile Data Computer, located at cab console
- CompX eLock 300 Series smartlock, located on door of IV/drug box compartment

3.1.4 Motorola Workstation (MW) system

3.1.4.1 Embedded pieces

The pieces listed in the table on the following page must be installed in any vehicle in which there will be a Motorola Workstation system. For new builds, these pieces should be installed by the vehicle upfitter to avoid costly retrofit work or weather intrusion.

MOTOROLA WORKSTATION SYSTEM – EMBEDDED PIECES**"Embedded MW Kit" packaging checklist**

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|--|------------|-------------|--------------------|---|-----------------------------|---|
| ✓ | Qty | Make | Part Number | Description | Install at | Run from <-> to |
| [] | 1 | MOTOROLA | FHN7006A | TRUNNION HOUSING ASSEMBLY for CPU MW810 | IT cabinet for MW brain box | |
| [] | 1 | MOTOROLA | FKN0004A | 60 Pin 16 ft Display Cable for MW810 R2.0 | | STRAIGHT END: IT cabinet MW trunnion <-> RIGHT-ANGLE END: top of Gamber Johnson pole in cab |
| [] | 1 | MOTOROLA | HKN4192B | 20 ft 12V DC Power Cable | | IT cabinet MW trunnion <-> nearest MZL-180-controlled power point |
| [] | 1 | MOTOROLA | HKN4192B | 20 ft 12V DC Power Cable | | Top of Gamber Johnson pole in cab <-> nearest MZL-180-controlled power point |

Packed by: _____ for Squad name: _____ Order #: _____

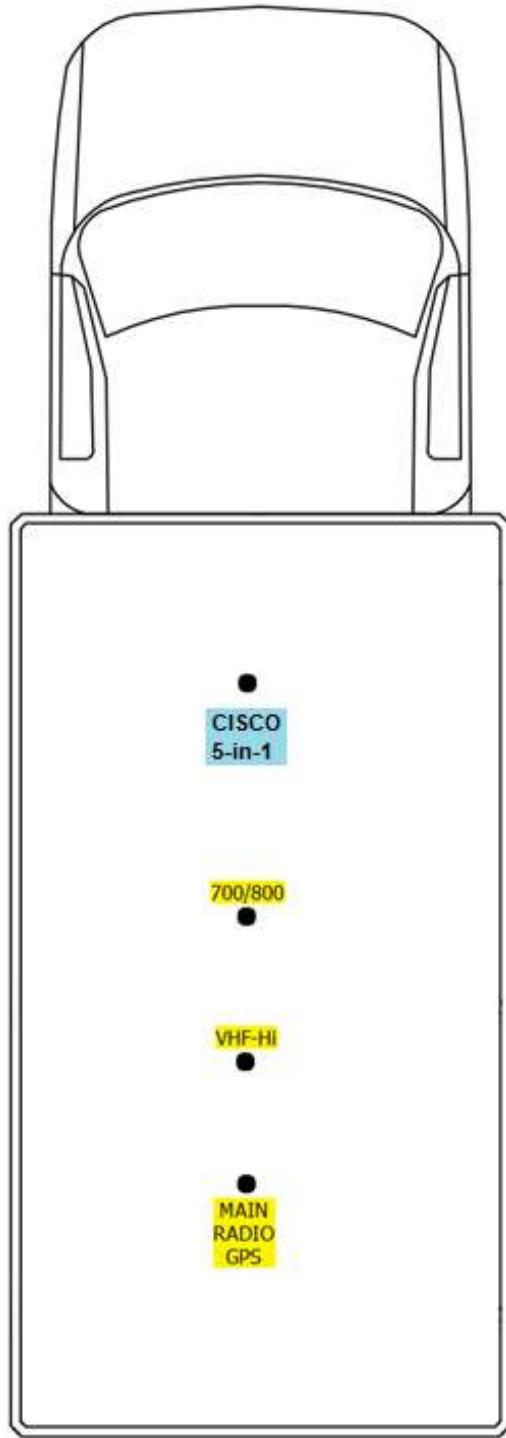
3.1.4.2 Accessible pieces

To integrate into the VB EMS system, a Motorola Workstation (MW) must have the following attributes:

| Type | Item | APC | Model |  | Description |
|---------------|------|-----|----------------|---|--|
| CPU | 1 | 736 | F5218 | | MW810 MOBILE WORKSTATION CPU |
| CPU | 1a | 736 | VA00796 | | 12.1"XGA 1500NIT DISPLAY,60 PIN,W/B |
| CPU | 1b | 736 | VA00822 | | ALT : WIN 7 PRO 32BIT OS ON MSATA |
| CPU | 1c | 736 | VA00079 | | ADD:COMM & VIDEO I/O EXPANSION BOAR |
| CPU | 1d | 736 | VA00738 | | INTEL I7-3610QE, IVY BRIDGE QUAD CO |
| CPU | 1e | 736 | VA00751 | | SOLID STATE DISK,256GB W/IMAGE WIN |
| CPU | 1f | 736 | VA00763 | | 8GB,DDR3, 1600MHZ DUAL SLOT |
| CPU | 1g | 736 | VA00799 | | R2.0 DEAD RECKONING GPS MODULE,NO A |
| CPU | 1h | 736 | VA00806 | | WLAN,802.11A/G/N,INTEL6300,3ANT. CO |
| CPU | 1i | 736 | VA00804 | | WAN1, SIERRA MC7750, VERIZON,NO ANT |
| CPU | 1j | 736 | VA00817 | | WLAN ANT., 3X3 MIMO, 12FT |
| CPU | 1k | 736 | VA00823 | | WAN1, TWO ANT. FOR MC7750, MAIN/DIV |
| CPU | 1l | 736 | VA00471 | | ADD:SMART CARD READER |
| CPU | 1m | 736 | VA00017 | | ADD: BLUETOOTH COMMUNICATION |
| CPU | 1o | 736 | VA00840 | | KEYBOARD,US |
| CPU | 1p | 185 | V699AZ | | ENH: 2 YEAR RSA MW810R2.0 |
| AuxCable | 2 | 736 | FKN0007 | | AUX CABLE W/TB, AND 2 EXTENDED CURR |
| GPSAnt | 3 | 207 | DSGPSNMO02 | | Ant, GPS 5V, Black |
| GPSMount | 4 | 207 | DSNMOKHFUDSMAI | | 3/4" mnt 0-6 GHz SMA In |
| Monitor Cable | 5 | 10 | FKN0004ASP01 | | (6 Meter 60/60pin CPU to Display cable for R2.0) |
| | 6 | 170 | DSGJ71100913 | | MW800/810 CUSTOM CRADLE 'VINNY' |
| | 7 | 170 | DSGJLOWSWIVEL | | LOW PROFILE SWIVEL MOTION ATTACHMEN |

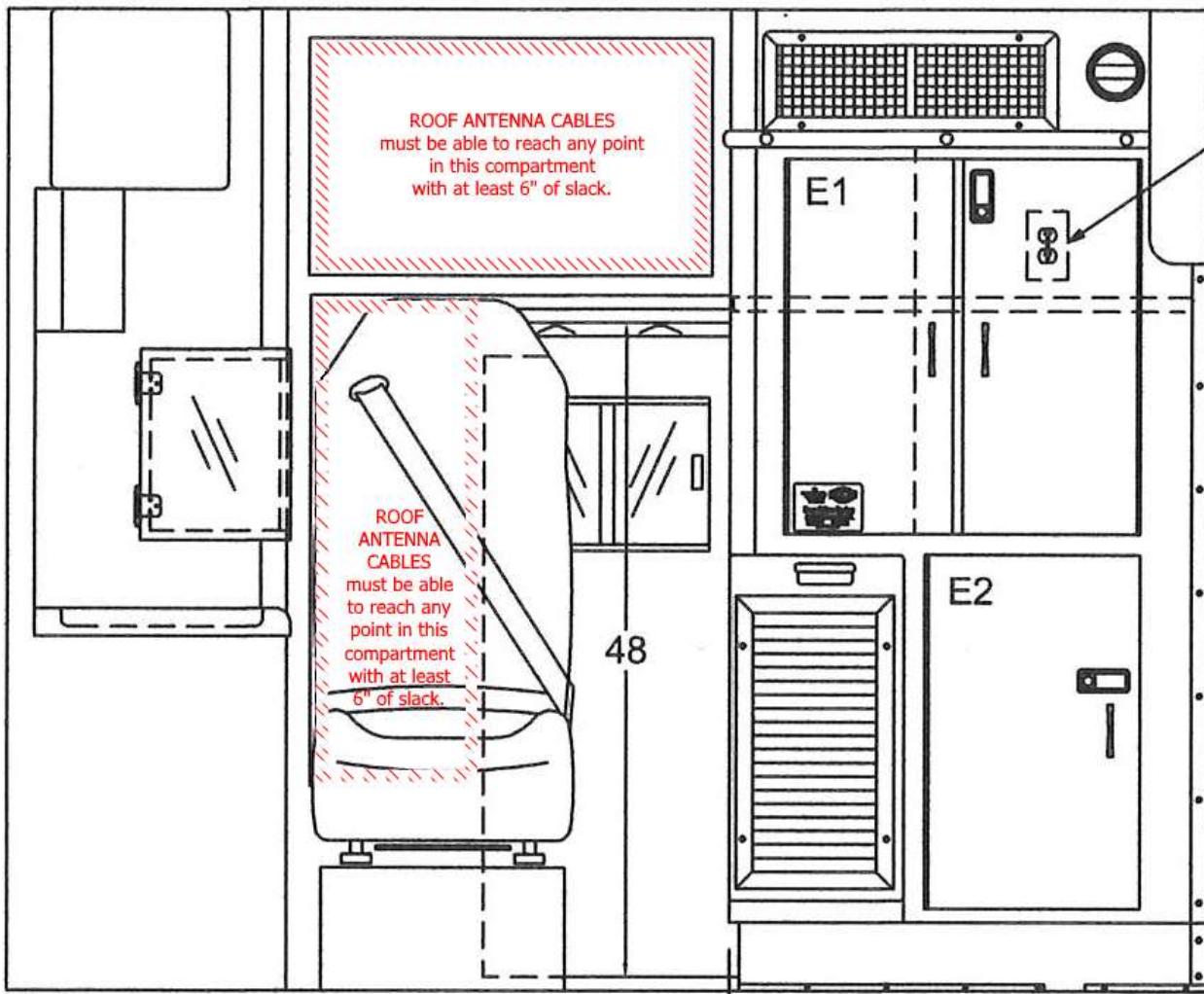
3.1.5 Vehicle antenna placement

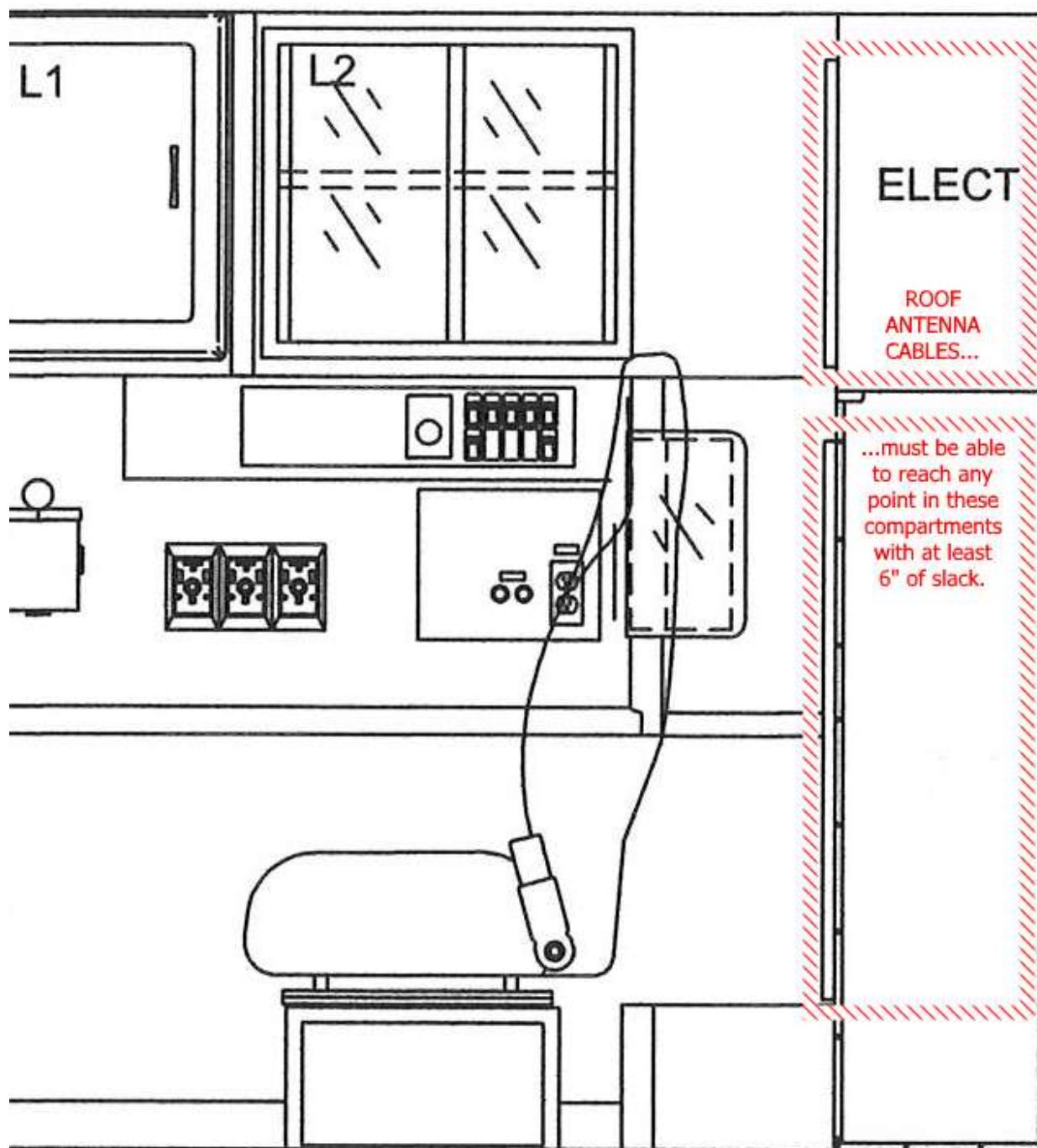
To integrate into the VB EMS system, a vehicle must have antennas mounted according to sound radio engineering principles. For instance, a vehicle equipped with an approved mobile radio and an approved MDT will have exterior antennas mounted something like this:



3.1.6 Antenna cable termination points

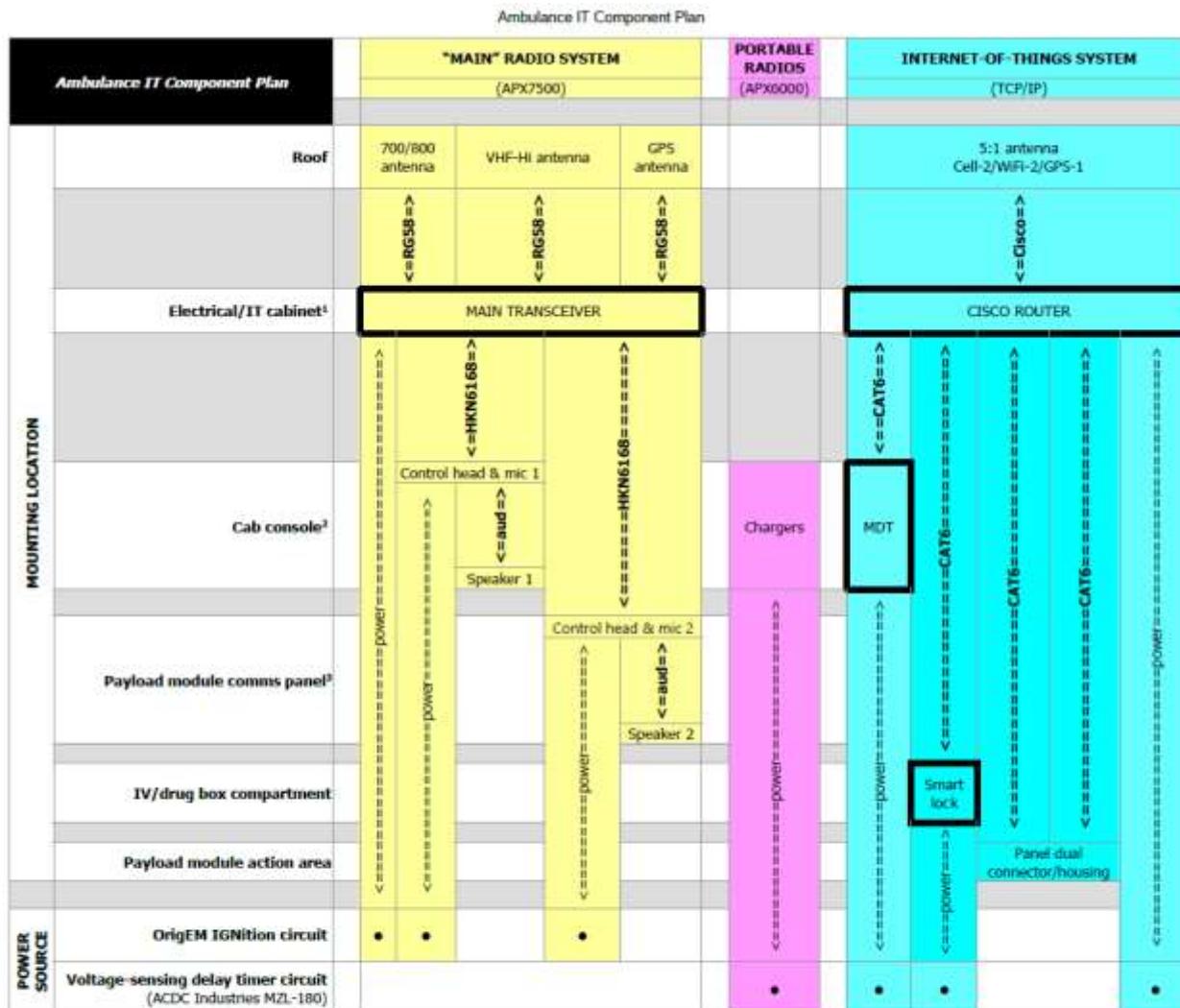
To integrate into the VB EMS system, an ambulance must be equipped with antenna cables that terminate as follows:





3.1.7 Component mounting and power source chart

To integrate into the VB EMS system, ComIT equipment must be mounted and supplied with power according to the following chart:



HOW TO READ THIS CHART

- ██████████ indicates a "brain box" with complex electronics and connectors for antennas or user interface components.
- <=> indicates a cable run (antenna, power, or signal, as appropriate).
- indicates a power stud or tap.

NOTES

- 1 Mount the voltage-sensing delay timer (ACDC Industries MZL-180) within or near the Electrical/IT cabinet.
- 2 Although none of the components shown are required to take power from the cab console, we recommend providing 12V positive (+) studs on the 35N and MZL-180 circuits, and a ground (-) stud.
- 3 If a 3rd control head & mic combo is specified, it should duplicate what is shown here for Control head & mic. 2.

3.2 Chassis, engine, and drivetrain

For safety reasons, wheel lugs and lug nuts may not be concealed by vanity wheel covers.

3.3 Fuel

To qualify for using fuel supplied by the Public Works Department, a vehicle must run on one of the following fuels:

- ULTRA-LOW-SULFUR DIESEL
- REGULAR UNLEADED GASOLINE

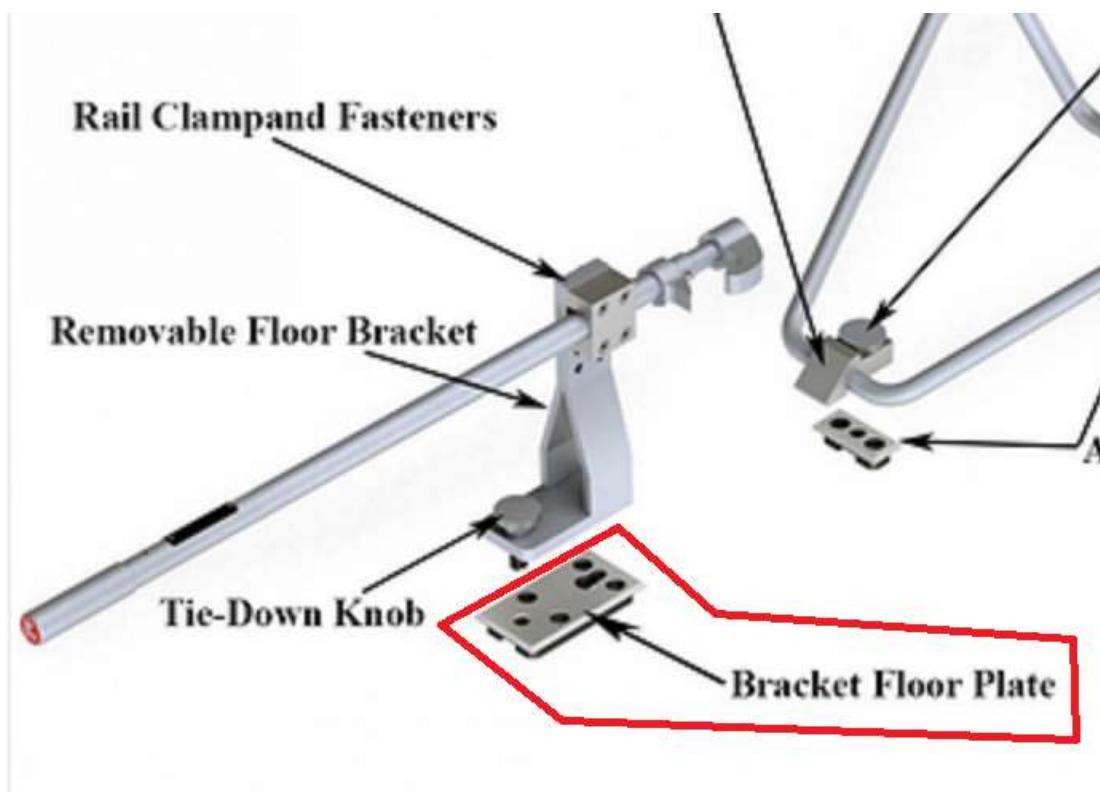
3.4 Traffic preemption systems

To integrate into the city's traffic preemption system, the following requirements must be met:

- The vehicle must be equipped with an OPTICOM INFRARED emitter. The emitter must only be active when the vehicle's transmission is in DRIVE and the emergency lights are on. For the embedded component, contact the Department Fleet Acquisition Division Chief to have an "Embedded Opticom Kit" shipped to the upfitter at City expense.
- Siren controllers must be configured to prevent siren activation unless at least the vehicle's secondary ("Hazard -- Vehicle Stopped on Right-of-Way" mode) flashing emergency lights are also activated. The intent of this requirement is to prevent the use of the siren when none of the official warning lights are on.
- Foot-actuated air horns (if installed) must be configured to prevent air horn activation unless the transmission is in Drive. This requirement also applies to any foot-actuated loud traffic warning device. The intent of this requirement is to prevent hearing damage caused by accidental activation of loud devices while the transmission is in not in Drive. This requirement does not apply to hand-actuated devices.

3.5 Payload module requirements (ambulances only)

- a. The backboard compartment shall be a vertical full-height compartment at the rear corner of the curb side of the ambulance. The door to the compartment shall open to the curb side.
- b. A Bracket Floor Plate to receive a legacy cot side bracket assembly must be installed for use with a VB EMS Bariatric Cot Kit:



3.6 Final stage mounted accessory gear

To integrate most efficiently into the Public Works Fleet Management vehicle onboarding process, final stage mounted accessory gear such as the following should be pre-installed by the factory or the dealer. Installation of such gear is not typical tasking for Fleet Management and should only be performed by qualified installation business establishments:

- Radio microphone clips
- Flashlight recharger bases, pre-connected to electrical power
- Fire extinguishers
- Commercial GPS devices (if hard-mounted or hardwired to electrical power)

- Aftermarket backup camera systems (all components)
- Portable suction brackets (if used)
- Monitor/defibrillator brackets or securing plates
- Laptop or tablet brackets or holding systems

3.7 Supply chain optimization conditions

The city can repair or replace the following makes and models of equipment expediently:

- Federal PA 300 siren system
- Whelen 900 or M series lightheads
- Vanner 1050W inverter for ambulances

Alternative equipment is not prohibited but may result in a unit being kept out of service for an extended period of time when problems arise.

3.8 Lifecycle budgetary conditions

To integrate into the city's maintenance and repair funding system, features of complex technical assets that are prone to failure, damage or loss, and that exceed minimum requirements and are considered by the City to be superfluous, vanity, or otherwise unnecessary items, may not be supported. The City may replace such features, once failed, damaged, or lost, with more economical solutions or removed altogether, as appropriate. Unsupported features may include, but are not limited to:

- Chrome fenderettes
- LED light strips

3.9 Garage space, vehicle aprons, structural additions and modifications

1. To fit inside all VB EMS stations, a vehicle (including protruding items such as mirrors and antennas) must be less than:
 - 118", which is 9'10", in HEIGHT (a limitation of the Thalia station)
 - 142", which is 11'10", in WIDTH (a limitation of the Plaza station)
 - 180", which is 15', in LENGTH (an approximate limitation of the Thalia station)

2. The Department may impose weight restrictions on heavy vehicles to avoid damage to station aprons, etc.
3. A squad must receive approval from both the EMS Department and the Public Works Department Buildings Division before making any substantial additions or modifications to city-owned buildings.
4. The sole authorities for negotiating the use of city-owned building space between the EMS and Fire Departments are the EMS Chief and the Fire Chief. Personnel at lower levels of authority are not authorized to alter existing arrangements. Similar rules shall apply if space is shared between EMS and any other city departments.

3.10 Roadway dimensions and load limits

1. The most limiting bridge that a VB EMS unit may reasonably be expected to cross is the North Landing Bridge on Route 165 (North Landing Road) at the Virginia Beach / Chesapeake city line, which has a weight limit of 13 tons, which is 26,000 pounds. Although emergency vehicles may be exempt from weight restrictions according to state law, a squad must receive approval from both the EMS Department and the Public Works Transportation Division before procuring a vehicle that would exceed the weight limit of the North Landing Bridge.
2. Squads procuring heavy or oversize vehicles should be familiar with Part A Section 5 of the Planning Department Permits & Inspections Division [Moving and Hauling Manual¹](#), and the Public Works Department Operations Division's [Blanket Permit Requirements Memo²](#) and [Blanket Permit Hauling Map³](#).

3.11 Regional Drug and IV Box System

If a vehicle is, according to the EMS Department, an addition to the fleet (as opposed to a replacement), and it should carry a regional IV box and a regional drug box, the vehicle owner must arrange to buy double the quantity of IV and drug boxes that will be kept on the vehicle. Half of the procured boxes will be kept on the vehicle. The other half will be kept in standby inventory in the hospital pharmacy system.

Regional IV and drug boxes shall be bought through the regional EMS council.

¹ <https://www.vbgov.com/government/departments/planning/permits-inspections/Documents/form-pdf/MovingandHaulingManual.pdf>

² <http://www.dmv.state.va.us/webdoc/pdf/vbc1.pdf>

³ www.dmv.state.va.us/webdoc/pdf/vbc2.pdf